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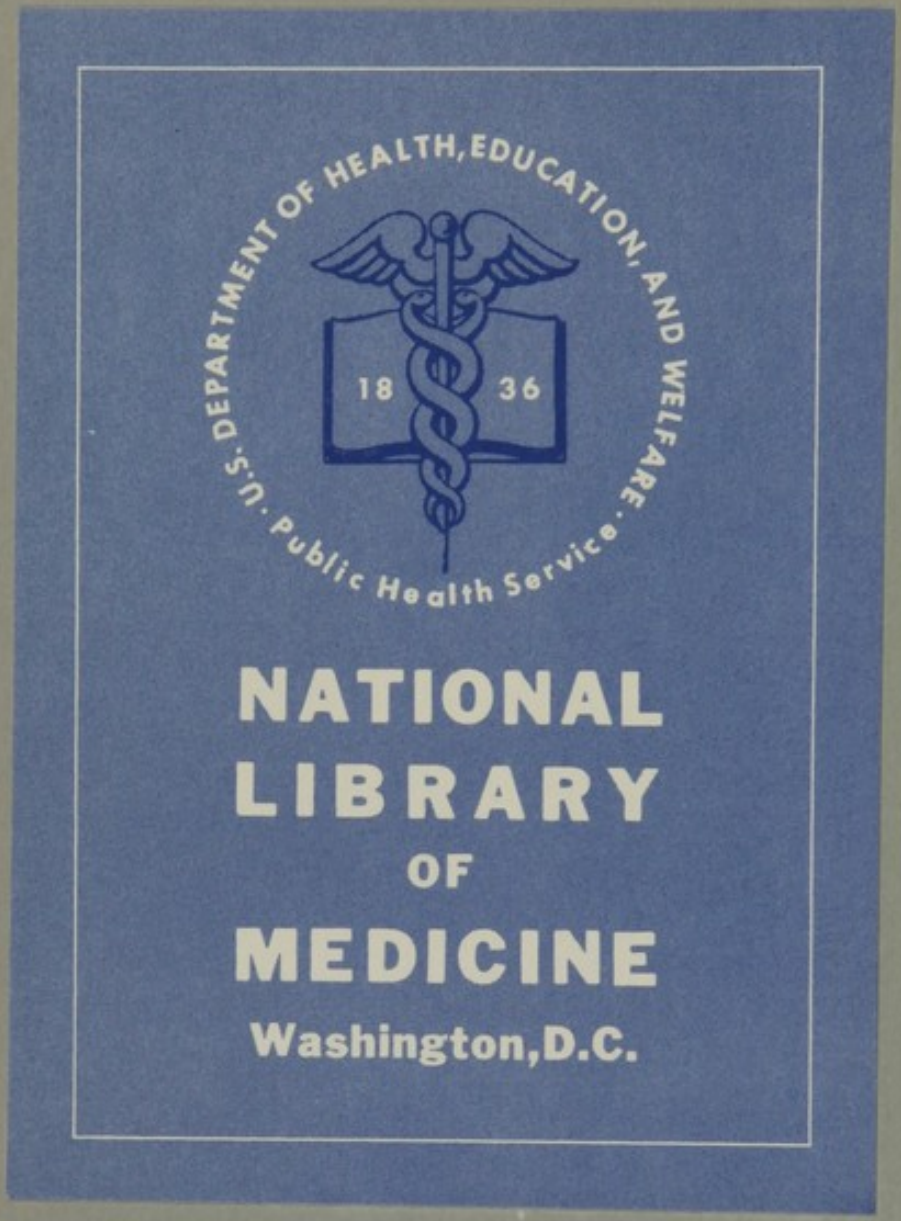
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THE

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THEORY AND PRACTICE

OF

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BY

E. E. MARCY, ..MD, AND F. W. HUNT, M.D.

VOLUME I.

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PREFACE.

The authors present this work to the profession with a hope that it may afford some aid to the medical man in the midst of his arduous and, sometimes, perplexing practical duties, as well as to the neophite who has just entered the portals of the temple of medicine.

While we have endeavored to present the results of our personal experience respecting the causes, nature, and treatment of diseases, we have not failed to collate, condense, and illustrate the discoveries and opinions of other physicians touching medicine and the collateral sciences. We have freely quoted from the writings of other reputable physicians, with a view of presenting to the profession all the varieties and shades of opinion in the homœopathic school. These views have been arranged and introduced in proper order under the various topics discussed; and it is proper in this place to remark that many of these opinions do not accord with our own. But as we are advocates of the largest liberty in all that pertains to medical thought and medical progress, we have deemed it expedient to furnish as complete a tableaux of the field of homœopathic literature as possible.

Our object throughout has been to present to the medical profession and the friends of homœopathy a comprehensive and intelligible view of the principles and practice of our school, as it is now represented by our best writers and practitioners; to embody, as far as our wide range of subjects permitted, the latest opinions and theories of investigators of every school on pathology and collateral sciences connected with medicine; and to give to all inquirers after advanced scientific truth the opportunity to investigate our principles, and to see them tested by facts, as illustrated in the clinical experience of a large number of reliable observers. From all accumulated materials we have aimed to sift the true from the false, and to condense within as small a compass as possible, all reliable facts bearing upon the subjects discussed.

Medical science is yet in its infancy. Our knowledge of the functions of the intricate organs of the human body, of the causes and nature of diseases, and of the effects of medicines, in health and disease, is still limited, although progressive. If we have added a mite to the general advancement, and have contributed something to the general sum of medical knowledge, we are content.

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THE

HOMŒOPATHIC

THEORY AND PRACTICE

OF

MEDICINE.

HISTORY OF MEDICINE.

The Science of Medicine has not hitherto been ranked among the *exact sciences*. Its most zealous votaries are still compelled to acknowledge that all efforts to reduce its principles to the precision of mathematical rules have failed; and, though we purpose to show that Theoretic and Practical Medicine is the grandest of all the *Sciences* and the noblest of all the *Arts*, we do not pretend to have discovered any royal road through which indolent or careless inquirers may ascend its sublimest heights. Persons who desire to be successful in treating even simple diseases must be willing to devote some time to the study of the human body, the nature of disease, and the effects of remedies.

The reading of primary Hand-books which may contain a mere summary of many subjects can never qualify for the full understanding and correct treatment even of the most common diseases. So extensive is the field of Medical Science, so intricate are the problems involved in the theory of all complicated forms of ill health, that a book which can be considered a safe guide for *any*-body in severe cases, must be something more extensive than a cheap domestic Manual, though works of that character have performed an immense public service in *qualifying the people* to discriminate between good and bad practice, —between substantial merit and pompous pretension in practitioners.

The object of the student of Medicine is the attainment of Truth as revealed in the human body in its relations to the created Universe; and all his aims are consistent with the best interests of our race. Those who study Medicine most extensively, will become most familiar with man's nature in all its aspects; they will become conversant with the sources of physical and moral evil; and, in penetrating the mystery

of affliction, they will learn to comprehend the laws by which nature is governed in her efforts to resist the powers of disease, as well as to aid those efforts in accomplishing their beneficent purposes.

The origin of Medical Science is lost among the obscure traditions and fables of the earliest ages. The mythological history of the ancients derived the art of curing diseases from the direct inspiration of their gods; and even among the moderns many authors of the highest reputation have attributed to Medicine a Divine origin. But, in reviewing the progressive steps by which the most sublime of all sciences has advanced from a position in which it was a mere appendage to the priestly office to that of a proud and noble profession, we may safely begin with the assumption that individual observations must have been made by the earliest inhabitants of our earth; that these observations embraced the diseases to which they found themselves subject, as well as the injuries received in war or by accidents. As in modern times the lowest savages discovered by explorers have possessed some degree of medical and surgical knowledge; it may be presumed that medicine in its rudest form is almost coeval with the duration of human existence. The sight of suffering in the earliest times must have led to the desire to relieve it. And when men's small experience failed, super-natural means, such as charms and incantations must next be tried.

At what period it began to be practiced as a distinct profession is not known. The most ancient physicians we read of were those who embalmed the body of the patriarch Jacob, by order of his son Joseph; and these physicians were the servants of Joseph, not priests, as the earliest physicians are supposed to have been. At that time Religion and Medicine had been already separated into distinct callings and they so continued ever afterwards.

The Egyptians themselves attributed the invention of Medicine to Thoth, the Hermes, or Mercury of the Greeks. He is said to have written many things in hieroglyphic characters upon certain pillars, in order to perpetuate his knowledge. These were transcribed by Agathodemon, or the second Mercury, whose son Teut is said to have composed books of them which were kept in the most sacred places in the Egyptian temples. The books however attributed to these ancient personages have long been considered as forgeries; and they were more probably written many ages after the time of Hermes.

The art of curing disease was blended in the religion of Egypt with superstitious traditions and observances; and it is certain that their first physicians were priests. They were treated by the people with the highest respect; and on certain public occasions they moved in solemn procession through the splendid temples and palaces of Thebes and Memphis, dressed in stately robes, and bearing the symbolic, representative bed of the goddess of Love and Beauty. As the Egyptians, and

afterwards the Greeks, considered diseases as a direct manifestation of the displeasure of the gods, they looked to the ministers of these deities, the officiating priests of the temples, as the divinely favored agents through whose influence the pestilence might be averted. They believed there were thirty-six spirits or demons of the air, who divided the human body among them; they had names for them all; and by invoking them according to the part affected, the patient was cured. This system has prevailed in all Pagan countries. The American Indian priests, says Monardes, when consulted by the Caciques, took large quantities of tobacco smoke, fell to the ground, and after lying a while in a stupor, they arose and delivered the answers they had received from the world of spirits.

It is not known that Mercury, the father of Medicine in Egypt, employed many natural remedies. The only prescriptions made by him that have been transmitted to us by the poets, consisted of the herb Mercury, of which he discovered the use, and the herb Moly, which he gave to Ulysses to secure him from the supernatural powers of Circe the enchantress. His successors learned the process of venesection from the Hippopotamus, which is said to perform the operation on itself by striking the leg against a pointed reed, taking care to direct the stroke against a vein. Cathartics, emetics, clysters and abstinence constituted the principal remedial measures of the early successors of Mercury in Egypt. Galen says that 630 years B. C. the Egyptian king Nechepsus wrote, that a green Jasper stone, cut in the form of a dragon, surrounded with rags, and applied to the epigastrium externally would strengthen the stomach and promote digestion.

At a later period Medicine was divided into numerous branches or specialties in that country. Herodotus says: "Each physician applies nimself to one disease only, and not more. All places abound in physicians: some are for the eyes, others for the head, others for the teeth; some devote themselves to parts about the abdomen; and others entirely to internal disorders."—(*Herodotus, Euterpe, cap.* 84.)

The art of embalming, which still astonishes modern nations was performed rather as a religious rite than as an appropriate appendage to the medical art. In the process, says Herodotus, the brains were drawn through the nostrils with an iron hook; and the intestines were taken out through an opening in the side with a sharp stone. It is not probable that those engaged in the art of embalming ever acquired much knowledge of the structure of the human body. The decaying bodies of the dead were viewed only as objects of disgust or superstitious reverence; and among the Hebrews, who had passed a captivity of near four hundred years in Egypt, he who even touched a dead body had certain ceremonies of purification enjoined upon him; and if these were neglected, it was declared that his presence defiled the sacred

Tabernacle, and he was separated from the congregation of Israel. On going out from Egypt to Canaan, the Israelites carried with them the bones of the patriarch Jacob, and his ear-rings were buried as amulets under the oak of Sichem. The Jewish priests continued to be the only physicians. The Law of Moses, combining enlightened principles of Hygiene with typical and emblematic religious observances, prescribed the separation of persons infected with the leprosy, and pointed out the diagnostic symptoms by which the priests should pronounce upon the character of any cutaneous disease which should present any of of its features. The Law directed that any "rising, scab, or bright spot" on the skin, which should "resemble the plague of leprosy," should be exhibited to a priest; "and when the hair in the plague is turned white, and the plague in sight be deeper than the skin of the flesh, it is a plague of leprosy, and the priest shall look upon him and pronounce him unclean," on whose skin it occurs. The further medical duties required of the priests are detailed in the twelfth and fifteenth chapters of Leviticus. They have long been regarded as embodying the most profound principles of medical police; and the latest writers have expressed "admiration for the wisdom and foresight which made such salutary regulations a religious duty."—(*Renouard's History of Medicine*, p. 33.) In the course of successive centuries after the arrival of the Jews in Palestine, medicine became a separate vocation. Sometimes men were consulted who professed to be in direct communication with the spirits or dæmons of the invisible world; as the king of Judah sent messengers to inquire, through the priests of Baalzebub, the god of Ekron, whether he should recover from his disease or not. The author of the Apocryphal book Ecclesiasticus mentions the office of physician as distinct from that of a priest about 200 years before the Christian era; and claims that high "honor is due him for the uses ye may have of him;" "For of the Most High cometh healing," and the physician "shall receive honor of the king." Josephus says (*Lib.* 8. *c.* 2, 5.) that Solomon the king discovered a plant which cured epilepsy with the aid of a charm or spell. The root was concealed in a ring and applied to the nostrils of the demoniac; and the historian says he saw it practiced with complete success in the presence of Vespasian, his sons and the Tribunes of the Roman army. From this tradition come the stories of the Seal of Solomon:

> "Some amulet of gems anneal'd
> In upper fires, some tabret *seal'd*
> With the GREAT NAME OF SOLOMON."
> Which spell'd by her illumined eyes
> May teach her, where beneath the moon
> In earth or ocean, lies the boon.
> The charm that can restore so soon
> An erring spirit to the skies. (*Paradise and the Peri.*)

The Greeks attributed the invention of medicine to several persons of whom Prometheus, Apollo, and Æsculapius were the most distinguished. Being a warlike people, the art of curing *disease* was little cultivated for centuries, while the *surgical* department of Medicine was so highly esteemed that their best poet declared, that

> "A wise physician skilled our wounds to heal
> Is more than armies to the public weal."

They trusted much to amulets as late as the days of Pericles, who was pronounced insane by Theophrastus, because he wore an amulet on his neck.

The most celebrated Greek physician during the fabulous ages was Æsculapius. His skill in curing diseases was so great that he was highly revered by the people during life; and, after his death it was believed that he had been removed from earth at the request of Pluto, who complained that the physician performed so many cures that he was rapidly diminishing the number of the dead. Æsculapius was afterwards ranked among the gods; and temples were erected in which his pupils, Chiron, Machaon, Podalirius solicited the aid of their great master. Among the pupils of Chiron the Centaur were: Hercules, who discovered the virtues of many plants; Aristæus king of Arcadia, who first used the drug called Silphium, supposed by many to be asafœtida; Theseus, Jason, Telemon, Peleus, and Achilles. The last named of these is said to have discovered the use of Verdigris in cleansing foul ulcers; and Palamedes prevented the plague, which had ravaged most of the cities of the Hellespont, including Troy, from entering the Grecian Camp. His method was to confine the soldiers to spare diet and oblige then to use much exercise. Helen mixed opium with wine and gave it to the guests of Menelaus under the expressive name of *Nepenthe*, to drive away their cares. Opium was obtained from Thebes in Egypt, from which Tincture of Opium was called *Thebaic-tincture.* (*Odyssey V.*)

The first great schools of medical knowledge among the Greeks were the Temples of Æsculapius. The priests who directed their erection knew how to select healthy locations; the reverence which the priests inspired in the minds of the invalids; the invigorating effects of hope, change of scenery, diversion of mind; and the exercise of long journeys by which the temples of the god were reached; all contributed to increase the fame, as well as the successes of the priests of Æsculapius. Their powers were greatly enlarged by strict hygienic rules, which men will observe when prescribed as parts of a religious ceremony, but scorn and neglect when dictated by true science and *common sense.* These priests (or Asclepiades) also employed many agents of real power. Darwin thought the Cumæan sibyl took a few drops of the juice

of the cherry laurel before ascending the prophetic tripod. Others suppose they used stramonium or opium. (Paris, Vol. 4, 24.) In some cases they prescribed bloodletting, purgation, emetics, friction, sea-bathing, and various mineral waters. Beyond all this, and exercising a powerful influence on the sick and their friends, was the mental influence of the doctor-priests. Admission to the temples was only permitted after certain processes of purification had been undergone. The interrogation and the answers of the oracle were often delayed for a day, and one or two nights while the patient remained lying in the temples. Abstinence, prayers, fastings, sacrifices followed. In some of the temples a ram or a fowl, at Cyrene a goat, and in other places various animals were sacrificed to Æsculapius before the will of the oracle was asked for. Socrates, requested in his last interview with his friends, that they would sacrifice for him a cock to Æsculapius. The answers were sometimes delayed, and sometimes mystical and difficult of interpretation. Sometimes the divinity was made to appear in the form of a serpent, devouring the cakes upon his altar; other manifestations were made through dreams which were interpreted by the priests. The temples of the god of Medicine thus became the first hospitals in which the sick were regularly treated. To them those who could reach them brought the afflicted; and those who could not, in various countries, exposed the sick by the side of the highways, that they might receive the advice of every one who passed. (*Good*, *Cabanis*, *Renouard*, &c.) In these early ages the knowledge that was accumulated by such means as these was chiefly transmitted to posterity by tradition. (*Strabo.*)

The chief temples of Æsculapius were those of Epidaurus in the Peloponessus, Pergamus in Asia Minor, Rhodes in the isle of Cos, Cnidos, and Cyrene in Lybia. Besides these nearly one hundred have been enumerated in the different countries afterwards included in the Roman Empire. (Schulze *Hist. Med.*) In these temples the first recorded experience of men in the treatment of diseases were transmitted to posterity in the form of inscriptions on plates of metal, wood or stone. The priests reported to new patients the history of cases which had been previously treated with success. The descriptions of cases and the methods of cure were briefly and imperfectly given; but they were of immense value to men in succeeding generations. They formed the first rudiments of that art which was in future to grow into a sublime and noble science, through that very method of observation and experiment which was there first inaugurated in the world. These temples of the god of Medicine maintained their rank in the estimation of men long after the genius and industry of Hippocrates had reformed the theories and practice of ancient medicine. Democedes, who had been the slave of a tyrant of Sardis, became court physician to Darius, Emperor

of Persia, by his success in curing the "king of kings" of a sprained ankle. The intellectual labors of Pythagoras, Heraclitus, and Democritus, had already divested it of many of its useless superstitions, when "that divine old man" Hippocrates undertook to create a new science out of the old materials; and then to supersede all the old by new observations on diseases of every form. At that time anatomy and physiology were almost entirely unknown. The Materia Medica of the Greeks was limited to a small number of articles, and the powers of these were imperfectly understood. But the reformer brought to his work the most extensive and varied qualifications. In the ability to observe, collect, arrange, and methodize, he surpassed all who had preceded him. Inheriting the wisdom recorded in the votive tablets of the Temples as the "seventeenth lineal descendant of Æsculapius," he commenced the labor of making a clinical report of the daily changes that occurred in individual cases of disease. In recording the symptoms from day to day, and narrowly watching the good and bad effects of his remedies, Hippocrates originated *Clinical Medicine;* through the "bedside experience" of the wisest and best physicians of all ages, Medicine, as a science and an art, has since grown to what it now is.

Hippocrates (born 460 B. C.) lived four centuries before Christ, and he is the most ancient medical author whose works have descended to our times. Regarding his science "as a principle of humanity, and not merely as a means for attaining profit and glory," he abandoned the course his ancestors had pursued; and, instead of instructing the members of his family alone, he endeavored to communicate his knowledge to strangers; and thus to extend the usefulness of medicine in the world. The "Æsclepiadean oath," by which the mysteries of the science were confined to the limits of a single family, was now superseded by the "Hippocratic oath" or declaration still respected in Modern Schools. Several of his pupils became his most distinguished successors. Many of the works attributed to him are known to be forgeries. Brevity, gravity, and the absence of visionary theorizings are the characteristics of his writings."

The Theories by which Hippocrates endeavored to explain the causes of disease were necessarily imperfect, though generally based upon patient observation. His knowledge of Anatomy was limited to the results of the dissection of animals; and but once in his life did he enjoy the privilege of seeing a human skeleton. He refers much to the humors of the body, particularly to the blood and the bile, supposing that there were but two fluids in the body; he employs the same word to express his idea of a *nerve*, a *ligament*, or a *tendon*; he gives much attention to the good and bad effects of sleep, watchings, exercise, and rest. With him the same word is used for an artery, a vein, or an excretory duct; and the word *aima* signifies *any* fluid. On

the subject of diet he wrote several books, and was particularly careful in selecting the food of invalids; in observing the courses and changing of the winds; the irregularity of the seasons, the rising and setting of the stars or of certain constellations; also, the times of the solstices, and of the equinoxes. To all of these meteorological and astronomical changes he attributed effects which he has not attempted to explain. He thought the above causes, with many others, when operating on different regions of the body, produced diseases of greater or less malignity; some of these he accounted mortal, others dangerous, and the rest easily curable, according to the cause from which they originate or the parts of the body on which they fall. He also distinguished diseases into acute and chronic, into *endemic*, when confined to certain localities, and *epidemic*, when they seized great numbers at a time, passing from one place to another; of this kind the most terrible known to him was the plague. He also remarked that single cases of diseases usually epidemic sometimes appeared alone: these cases he called sporadic. He distinguished between those diseases which are hereditary, or born with us, and those which are contracted during life; and also between those that are of a milder character and those of a malignant nature, and are less frequently overcome by medicine. The chief articles in his Materia Medica were: Hellebore, Colocynth, Elaterium, oxydes and scales of Copper, Onions, Garlic, Parsley, Wine, Honey, Cantharides. The peculiar merit of Hippocrates is found in that great power of observing facts which he so eminently possessed, and so conscientiously employed; in that high analytical intellect which could trace symptoms to their origin, and classify and arrange the vast number of observations made by himself and others; in that exalted morality which always commands respect; and in that intuitive insight into human character, and physical as well as moral peculiarities, by which minds can be controlled, and pathological conditions analyzed. Though but an indifferent practitioner in our view, he was the greatest of medical observers. Whatever may have been the merit of his successors, the improvements made by their master appear to have been so satisfactory to them, that no real advances were made for ages after his death, which occurred at Larissa, when he had reached the age of 90 years. He had practised his profession at Abdera, in Thessaly, but chiefly at Cos; which he had rendered famous by making it the only great School of Medicine in the world. At the same time that Hippocrates was constructing the Science of Medicine, "the illumined Plato" was employed in revolutionizing philosophy. Without entering into the study and practice of medicine, as a profession, Plato became familiar with what was then known of the theory, of the science and the economy of the human body. He was followed by Aristotle, whose wonderful genius left its impress on all the intellectual pursuits of men

for more than a thousand years. The character of his mind was different from that of any philosopher who had preceded him, in that strange power of "grasping, as if by *intuition*, all the stores of knowledge;" while it "leaves dull learning toiling far behind." His strength consisted, not in collecting with patient labor the minute facts of which a theory might be constructed; but in boldly penetrating the realms of the mysterious and unknown, and generalizing, as if by the aid of inspiration, the truths already known, and those which remained to be discovered. As a primary doctrine he regarded the soul as "the efficient, the final, and the formal cause of the body." That his profound speculations should be found *invariably* true, could certainly never have been hoped for by himself, but that his genius, such as it was, should have sufficient inspiration in it to sway the minds of men for a long series of ages, continues still to be a subject for the admiration of philosophers. Medicine in succeeding centuries permitted the Aristotelian Philosophy to mould her theories, when her disciples should have been employed in making new observations for themselves.

Among the most distinguished successors of Hippocrates were Polybius, Draco, Prodicus, and Praxagoras, who ventured to deviate from the opinions and practice of Hippocrates. He is said to have cured ileus by cutting open the abdomen and intestines and sewing them up again. Erasistratus adhered more strictly to the doctrines of the great master. He gave to the world the first regular indications of the pulse, and came near discovering the circulation of the blood; but he could not perceive the use of the two sets of cavities in the heart, and was afraid to bleed, lest the blood should find its way from the heart to the arteries which he thought contained nothing but spirit.

The death of Alexander the Great, 324 B. C., was followed by the dismemberment of the vast empire he had erected on the ruins of conquered kingdoms; and his successful general and half-brother, Ptolemy Soter, became king of Egypt, in the year 321 B. C. Alexandria, founded only seven years before, became his capital, and the centre of the science and learning of the Greeks. The first Ptolemy founded the library and museum of Alexandria, which were enlarged by the munificence of his successors until the literature of all nations were collected in the royal library of the successors of Alexander. After the purchase of the library of Aristotle, the largest then in the world, the Alexandrian collection, according to Eusebius, contained one hundred thousand volumina or rolls, the whole of which were placed "at the disposal of studious men, who were desirous to use them for their improvement and the advancement of science." (*Renouard*, p. 166.) The extensive commerce in which the Greeks were engaged, enabled the Ptolemies to gather together the rare plants and animals

of distant climates, stimulating the curiosity of naturalists and physicians. Medicine was now divided into three branches, the dietetic, the pharmaceutic, and the chirurgic; these branches became entirely distinct and were cultivated by different individuals.

Anatomy and Physiology now received a new impetus in the efforts of Herophilus and Erasistratus, who commenced the dissection of the human body and the vivisection of animals at Alexandria. About 287 B. C. Serapion of Alexandria formed a new sect called the *empirical*. He retained the practice of Hippocrates; but despising his mode of reasoning, depended on personal experience alone. His followers used Castor, Opium, Cicuta and Henbane. Those who maintained the value of theories were afterwards known as dogmatists; they insisted on the necessity of knowing the latent as well as the evident causes of disease; and taught that physicians should understand the natural actions and functions of the body. At this period there were medical schools of some importance at Smyrna, Pergamus, and Epidaurus, all of which attracted students, and were visited by distinguished pupils from Alexandria.

At Rome the study and practice of Medicine remained entirely unknown for more than six hundred years after the founding of the city. (*Pliny*, Liber 39. Chap. 1.) Though the usual efforts of ignorant men to mitigate pain must have been made, there was no class of men who devoted themselves to the treatment of diseases alone. The people had faith in the priests and oracles, and the mystical responses of the Cumæan Sibyl were particularly reverenced. *Æneid.*, Lib. VI. 78.)

According to Livy, the Roman historian, the medical and religious sciences of the Greeks were introduced at Rome 234 years B. C. Fifteen years afterwards Archagatus, son of Lysanias of the Peloponessus, settled in the Eternal City as a physician and surgeon. The practice of surgery was considered incompatible with kindness and humanity, and the Romans were deeply prejudiced against everything from Greece; hence all the Greek colonists in Italy were regarded with envy or hatred by the people; and Marcus Porcius Cato, the Censor, particularly distinguished himself in his hatred of physicians, (*Cornelius Agrippa, Arts and Sciences*, p. 297) and he even meditated the expulsion of every man from Rome who should attempt to practice there. For a century more no distinguished physician appears in that city, till Asclepiades of Bythinia (born 91, B. C.), who, having failed as a teacher of rhetoric at Rome, took up the practice of Medicine, at a comparatively late period of life. He at once openly opposed Hippocrates' theory of natural power and sympathy or attraction, and engrafted upon his science the physical principles of the Epicurean philosophy. By the general condemnation of the practice of his cotemporaries, and the disparaging manner in which he spoke of all the

doctrines of his predecessors, he attracted a large share of public attention. "His arts," says Pliny, were such as every fashionable physician employs: soothing the patient and avoiding every thing that can give pain till nature cures him, or he sinks under the disease." By these arts Asclepiades became the most fashionable practitioner of his time. He declared that he deserved no credit if he should ever become sick himself; and by good fortune he always escaped disease till extreme old age, and was then killed by a fall down stairs. He employed the lancet in acute diseases of the chest accompanied with pain; incised the tonsils; and was the first to perform the important operations of laryngotomy and tracheotomy. He originated the doctrine of "the self-limitation of diseases, asserting that the principal cure for a fever was the disease itself." (*Watson*, p. 101.)

On the conquest of Gaul and Britain the Romans became acquainted with the Druids, who were both priests and physicians. They gathered the Mistletoe or Viscum Album, cutting it with a golden knife when the moon was only six days old. This parasitic plant, when consecrated by certain ceremonies was considered the most certain remedy against poisons and sterility. The letter R used at the beginning of a medical prescription is now usually understood to be an abbreviation for the word *Recipe*, but was originally employed as the astrological symbol of JUPITER, as it was under this planet the plant prescribed was to be gathered.

Vervain was to be gathered after drinking of honey, at the rising of the dog-star, at a time when no sun or moon was shining, and collected only with the left hand. It then had power to cure fevers and the bites of serpents; and was employed to conciliate friends.

Immediately after Asclepiades arose Themison, the founder of the Methodic Sect; whose doctrines evinced equal hostility to the dogmatists and the empirics; he divided diseases into the two classes of *hypertonic* and *atonic;* a division which with some modifications has descended to the present day; Thessalus, who was contemporary with Nero, was a man of merit but of inordinate vanity.

Aurelius Cornelius Celsus, the first native Roman who wrote on Medicine, was born in the year 4, A. D. After receiving the best education the times afforded, he engaged in writing on various scientific subjects; and it is said that he served as Secretary to the Emperor Tiberius on his expedition to the East. Devoting himself to medicine, he left behind him a large work which is equally valuable for the elegance of its language, and the complete knowledge it gives of the state of medicine at the time he wrote. The Treatise "De re Medica, libri octo" is the only work of Celsus that has been preserved, and it is not entirely complete. In many parts of it the author agrees with Hippocrates, and quotes largely from him. Asclepiades is his next

highest authority; and after these Themison his contemporary, and Herophilus and Erasistratus of the Alexandrian school. Though agreeing in general with Hippocrates, Celsus rejected the doctrine of *critical days*, which has been often revived and exploded, and still holds a place in modern works on febrile diseases. (*Brit. & For. Rev.*, July, 1857, p. 61.)

In the time of Celsus Surgery had made more progress at Rome than it had ever done among the Greeks or Asiatics. Many of the largest operations are minutely described by Celsus; and the instruments and apparatus employed by the ancient surgeons have been displayed to modern eyes among the relics of the disentombed cities of Italy. In the year 79 A. D., while Celsus was still living at Rome, and was probably engaged in writing his great work "De re Medica," the Cities of Herculaneum and Pompeii were overwhelmed by a tempest of ashes, cinders, and lava, poured upon them by an eruption of Mount Vesuvius. The people with all their wealth were in a moment entombed in their own dwellings; and all their works of art, all the paraphrenalia of domestic life, and all the apparatus employed in all the branches of science, stood still in their places, and remained unchanged and uninfluenced by the revolutions of seventeen centuries. Modern enterprise has now disrobed the silent cities of the dead, and brought to light the long-buried remnants of ancient arts and sciences. Among them the offices of the physician and apothecary, and the various implements employed by the surgeon may be seen in the Royal Museum of Naples. (See *Prof. Vulpes'* "*Illustrazione Strumenti Chirur., &c.*"—Dublin Quar. Jour. Med., Aug. 1852.) The Romans still trusted much in the powers of charms and amulets, till the Emperor Caracalla passed an edict that no more amulets should be worn. (*Paris Pharmacologia Introduc.*) For 250 years, extending from the time of Asclepiades to Galen, Celsus was the only distinguished medical writer at Rome. The state of the sciences generally can be best seen in the works of Pliny the younger. The Romans made few discoveries, but they were ever ready to adapt to public uses the improvements made by the Greeks. Among their sanatory improvements may be noticed "their immense *cloacæ* for the drainage of the city,—their public baths,—their care in the selection of sites for new towns, villas, and private residences,—their improvements in architecture, and domestic arrangements of dwellings,"—all of which show that the lectures of their Greek masters on the rules of health had been properly appreciated. *Watson, Discourse*,—N. Y. Acad. of Med., 1856, p. 142.)

Of distinguished men in the distant provinces of the Empire, at this period, the most conspicious was Aretæus of Cappadocia. Though little is known of his life, it is supposed that he passed part of his life in Egypt, and probably made his way to Rome, the great capital of the

empire, (*Adams' Biogr. Works of Aretæus.*) He was the ablest of the defenders of the new doctrines of the sect called the Pneumatics; who taught that the body was constituted of solids, fluids, and pneuma or spirits, and upon the due correspondence and relationship of these three constituent elements depended health. The "pneuma" or spirits was regarded as a subtle fluid, passing from the lungs to the heart, and thence by the arteries distributed to all parts of the system. The heart was believed to be the focus or central point of the vital force or soul. "A dense pneuma" was supposed to cause organic obstructions. The description of Hypochondriasis by Aretæus is elegantly written and proves him to have been an accurate observer. The two Andromachi became conspicious at Rome, by the elder one, (the father), becoming physician to the Emperor Nero; and Dioscorides, born in Cilicia in the latter part of the first century, wrote the only complete treatise on the Materia Medica now extent among the labors of antiquity.

In the year 131 A. D., during the reign of the Emperor Hadrian, was born Claudius Galen at Pergamos in Asia Minor. Pursuing the study of medicine in his native city, in Smyrna, Corinth, and Alexandria, he, after travelling through Cilicia, Phœnicia, and the isles of Scyros and Crete, returned to Pergamus at the age of 28 years. It was not long till the successes of many Greek physicians attracted him westward to Rome. Here he commenced lecturing, writing and practicing his profession, and soon drew upon himself the envy of inferior men, who stigmatized him as a theorist and a dealer in magic. In less than five years he was obliged to leave Rome, under pretence of avoiding a plague then raging there, which had originated at Antioch, 166 A. D., but he was soon recalled from his native city to attend the two Emperors Aurelius and Verus, of whom the latter died. The physician made the long journey on foot, and Aurelius formed so high an opinion of Galen, that he entrusted him with the care of his two sons; and Galen having predicted the recovery of one of the princes from fever in opposition to the opinion of other physicians, rose at once to the highest rank in the profession. He lived to the age of 70 years and died during the reign of Severus. To him is commonly attributed the famous maxim: "*contraria contrariis curantur*," and the invention of cold and hot, dry and moist diseases.

Galen wrote about 750 Essays on various medical subjects, constitutions and medicines. His first object was to illustrate Hippocrates who was then imperfectly understood by the commentators.

Galen was evidently superior to all his contemporaries. And so successfully did he expose the "deficiency of their information," and the "futility of their reasoning," that he triumphed over all his rivals, and "attained a rank in the medical world, and swayed the opinions of physicians and the public on all points connected with medicine in a

manner before and since unknown." He lived at a time when the Roman Empire combined all nations into one; and when extended intercourse between men of different countries had developed the human mind to a degree that had not been reached at any former age. Of the many works attributed to him, eighty-three are believed to be genuine. The best edition of his works is that of Kuhn, in twenty volumes, 8vo. 1821–1833

Galen attached himself to no one of the different sects into which he found the profession divided, and despised those who gave themselves up to obey any particular master. He followed Hippocrates in denominating the vital principel *Nature*; like him he admitted the existence of four distinct humors, from the predominance, or deficiency, or disproportion of which originate the different temperaments of the animal frame, and the varieties in the different diseases to which it is subject; these humors are the blood, phlegm, yellow, and black bile. He likewise established three distinct kinds of auras, gases or spirits, a natural, a vital, and an animal, which he regarded as so many instruments to distinct faculties; referring the seat and action of the first chiefly to the liver, of the second to the heart, of the third to the brain.

Though Galen nowhere refers to the dissection of the human body, he frequently examined monkeys and other animals, and made some important experiments in Physiology. It had been taught by Erasistratus and the disciples of the Alexandrian school that the arteries contained only *air*. Galen contrived a series of experiments by which he demonstrated the fact that these vessels contained blood and blood alone. This was the most important discovery in Physiology that had ever been made: and the account he gives of the respiration shows also that his mind had caught hold of some correct ideas, which aided in the making of future discoveries. In pathology his views were less correct. Like Hippocrates, he supposed that the primary cause of disease existed in the fluids; and he adopted the doctrine of the four elements as the basis of all his reasonings. He distinguished between the *remote* or predisposing causes of disease, and those now called *exciting* or causes near at hand; and regarded the superabundance, the degeneration, or the putridity of the humors as the primary cause of all diseases. Upon this pathology his practice was based, and it was often successful, even when suggested by erroneous theories. In his general rules of regimen, diet, and the prescribing of medicines he followed Hippocrates; at Pergamos he acted both as physician and surgeon, according to the usage in provincial cities. In the great metropolis of the world he restricted himself to medicine exclusively. (*Brit. & For. Med. Chir. Rev.*—July 1857, p. 66.)

After the death of Galen no medical author of high abilities appear-

ed for centuries; and the reign of the "Prince of the Latin Physicians" continued unshaken. Ordinary men could originate nothing new; and they dared not express an opinion in opposition to the authority of Galen. After the overthrow of the Roman Empire of the West, the seat of learning and the arts was transferred to Constantinople; but no important discovery in medicine was made till the commencement of the sixteenth century. The Arabians adopted the chemical ideas which the learning of antiquity afforded; but they neglected the study of Anatomy, and the solid sciences on which alone a true system of medicine could be erected. There could be no general diffusion of medical knowledge so long as an individual could not obtain the written works of his predecessors. The few manuscripts that existed could only be seen in a few libraries, and the greatest collections the ancients had ever made were burned by ignorant or fanatical invaders or rulers who knew nothing of their value. The Alexandrine Library was destroyed by Cæsar's soldiers, and when the Arabs conquered Egypt a few centuries after, all that remained of classic literature in the city of the Ptolemies was burned by order of the sultan Amrou. (A. D. 640.) The Library founded by Constantine at Constantinople, containing at least 300,000 volumes, including the works of Homer written in letters of gold on the entrails of serpents, was burned by order of Leo Isaurus the bigoted Emperor. The Vatican library of Rome was destroyed by Charles, Constable of Bourbon. In France the first Library was founded by King Charles V., who died in 1380. The 20 volumes bequeathed to him by his father were augmented by him to 700, and placed in the Louvre. Before printing was invented a manuscript was a precious treasure. A Latin breviary was kept in a few churches, enclosed in an iron cage.

But little advance had been made in practical medicine since the time of Galen. Rhazes of the Arab Empire of Persia had described the small-pox and used some chemical remedies. He died A. D. 923. Avicenna followed him and died near 50 years later in the same city, (Bagdad). Averrhoes, of the Arabic capitol in Spain left a treatise on medicine at his death in 1206. His preceptor Avenzoar had made important observations, and is said to have lived to the extreme age of 135.

From this time no progress was made in science till the Turkish sultan Amurath II. took posession of Thessalonica in 1430. Theodore Gaza escaped from the captured city, carrying with him some valuable manuscripts, and reached Florence, where he was kindly received by the Medici family. From these manuscripts thus preserved, the stores of Grecian literature were gradually disseminated in Italy. But no new theories in medicine were promulgated till the time of Paracelsus. This man was born in Switzerland in 1493. Having made himself ac-

quainted with the old medical theories and chemical remedies, he travelled extensively, gathering up from all sources a knowledge of all the claims of empirics and quacks. Adopting the wildest theories of the alchemists, he boldly began the use of active remedies. With Mercury, Antimony, and Opium he appears to have effected some remarkable cures. These successful cases were displayed in the most pompous terms to all who consulted him. In 1527 he began lecturing in the university of Basel as the first professor of Chemistry in Europe. He now pretended to cure diseases by chemical remedies, burnt the works of the ancient authors Galen and Avicenna in solemn state, and professed to have discovered a universal remedy which would cure all manner of diseases, and give to his followers immortal life and health. But his death, in 1541, at the age of 47, exposed his vanity and blasted all their hopes.

Paracelsus was the first to give Mercury internally, though the salivation it causes when externally applied, had been known to Friar Theodoric in the 12th century. Though Paracelsus displayed human insolence, conceit, and insincerity, vanity as well as immorality in the most extravagant degree, he rendered important services to our race. He broke down the despotism of the schools and sects of his time, and introduced some valuable and powerful remedies. His example and teachings excited the envy of some, the emulation of others, and the industry of all. (*Paris, Pharmac. Vol.* 1, *p.* 27.) At the same time that he wandered from place to place, generally intoxicated, seldom changing his clothes, or even going to bed, he was teaching fragments of truth which the world could not receive till the discoveries of four centuries should teach men how to use them.

The great discovery of the Circulation of the Blood was the next step in the progress of discovery. Michael Servetus, (born in Arragon in 1509) was proceeding rapidly with the researches on this subject, when he was charged with heresy and arrested and imprisoned through the influence of John Calvin, the Reformer. When Servetus had completely established the fact of the passage of the blood through the lungs, he happened to pass through Geneva; there Calvin procured his arrest, brought against him a charge of blasphemy and heresy; and Servetus was found guilty and burned at the stake (in 1553) with his books around him, to kindle the flames. The tract on the circulation was saved by one of the judges; and was finally traced out by Dr. Sigmond through Dr. Mead and the Landgrave of Hesse Cassel.

The discovery rested for nearly three-fourths of a century. Twenty-five years after the death of Servetus, William Harvey was born in Kent, England. His education was prosecuted abroad and in England, and his researches occupied his time for many years before any publication of this theory of the circulation was made. In 1615 he was ap-

pointed lecturer on Anatomy and Surgery in London. In this position his new views which were soon to revolutionize all medical philosophy, became known (about 1619); but he fortified himself by every possible proof that the subject could admit of, before he published his first work on The Circulation in 1628. The publication of his theory brought upon him the most bitter opposition; some of his contemporaries condemned his doctrines as presenting an unjustifiable innovation, others declaring that it was no new discovery, but had been well known before. Though he lost popularity at the time of the publication of his discoveries, and his practice was diminished by it, he lived to see his opinions established in the scientific world; he served as physician to James I., and afterwards to Charles I. He became President of the College of Physicians, and saw his bust placed in its hall before he died in 1658. The best edition of his works is that of the College of Physicians published in 1666.

At this period the powerful remedies introduced by Paracelsus were still in the hands of quacks only: and Van Helmont who contracted the common itch in 1640, could not be cured by regular medicine, and had to resort to the *quack* remedy *sulphur*.

In this century the French Parliament interdicted the use of *Antimony* as a medicine, and the Faculty of Paris not only forbade the employment of all *chemical remedies*, but would not even allow them to be mentioned in theses, and examinations. In the same century, also, the discovery of the valves of the veins by Amatus Lusitanus was denied and ridiculed by the chief anatomists of the day.

In 1615 Solomon de Caus, the discoverer of steam-power, was imprisoned by Cardinal Richelieu in the Bicêtre, and there he became a lunatic. Lord Worcester who visited him there, thus spoke to his keepers: "Misfortune and captivity have deprived him of reason; you have made him mad, and when you threw him into that cell you shut up the greatest genius of the age."

At this period the universities, which possessed the sole power of authorizing physicians to practice medicine, were mere ecclesiastical establishments. They taught very little, but persecuted all who attempted to learn anything not found in the writings of Galen. When a few men attempted to learn something of Surgery by observation and experience, they were persecuted by the regular Galenist priests; who, having been prohibited by the Pope from the practice of surgery, themselves gave secret lessons in this branch to their barber servants; and these last became the Barber Surgeons. At this time hot irons, hot oil, and hot pitch were applied to wounds to stop bleeding; and Guy de Chauliac, asserting that it was better to let a limb drop off by sphacelation than to amputate it, compressed the limb with pitch plasters to compel it to mortify. Ambrose Paré saw the bad results of such practice, and invented the mode of arresting the bleeding by

tying the arteries, and curing the wound by mild dressings. But this discovery, though worth more to humanity than all the improvements made by the routine followers of Galen in a thousand years, was not permitted to be published; and Paré was so cruelly persecuted for pretending to innovate upon Regular Medicine that he was compelled, for his own safety, to adduce garbled and incorrect extracts from the old authors to prove that his discoveries were made by *them*, and not by *himself*.

The establishment of the important fact of the circulation of the blood did not, for a long period after its truth was admitted, produce all the advantages that might have been expected from it. For the physiologists of that day, in reasoning upon the powers by which this phenomenon, as well as others of the animal frame was accomplished, unfortunately took hold of the mechanical philosophy as their guide; and the explanation of every function was immediately attempted according to the law of projectiles; the system was speedily pushed so far that it destroyed itself by the absurdity to which it was carried.

The first English physician who introduced important improvements in medical practice was Thomas Sydenham, born in 1624. After graduating at Cambridge he commenced practice in Westminster. Devoting his attention to the study of febrile diseases, and finding ample opportunities in an extensive practice, after six years experience he published in 1666 his great work "*Methodus Curandi Febres.*" To this work he afterwards added the experience of nine subsequent years; and the whole of it displays the most careful observation of nature and the effects of remedies. In the treatment of small-pox he first introduced the method of checking the eruptive fever by means of cool air and other antiphlogistic means, by which he found that the eruption and subsequent danger were diminished; and the same practice has been since applied to other eruptive and febrile diseases. In the accurate histories he has left behind him of small-pox, measles, gout, hysteria, and some other diseases; in his close discrimination between the different varieties of the febrile maladies as they disclosed, in different seasons, and different years, peculiar epidemic constitutions of the atmosphere; Sydenham surpassed all his predecessors, from Hippocrates to his own time: and he has still maintained his rank as the first practitioner of his own country. He died in 1689. His work displays all the elements of a master mind, and will be referred to in all future time by the student who is ambitious to measure all the depths of the human intellect.—(*Gooch, Diseas. Fem.* &c. 1832.)

Regular Medicine lays claim to all the accidental discoveries made by men who do not pretend to be making their voyages of discovery under her authority. The discoveries of Peruvian-bark, Vaccination, Iodine, and Lemon-juice against scurvy, were made by accident. Peruvian-

bark was discovered by the Indians of South America, and was first brought to Spain in 1632. It remained in Spain seven years before it was tried by Alcala an ecclesiastic in 1639.

The medical profession was roused to fury by the introduction of this substance into popular practice. This remedy was not brought into the profession through the portals of the college; and the new discovery, says Bouillaud, had to be "baptized in tribulation." The physicians of Oliver Cromwell allowed him to die of ague rather than administer the hated specific. In the same century the president of the College of Physicians committed Dr. Groenvelt to Newgate, for daring to prescribe Cantharides internally.

Sydenham was followed by the great medical philosopher Boerhaave, who led the way to many important reforms both in theory and practice. He was born in Holland in 1668. After thoroughly studying the works of Hippocrates and Sydenham, he commenced making a selection from all the ancient and modern authors; and from these materials he constructed a new theory of Medicine, which was so well adapted to the existing state of science, and so ably explained and defended by its author, that it was generally adopted throughout Europe, and rendered its author a commanding authority for more than half a century. After several years devoted to teaching other branches he was appointed to the professorship of the practice of Medicine at Leyden in 1715. His lectures on this subject, on Chemistry and Botany rapidly extended his fame. Students flocked to him from all countries, until the little city of Leyden, which had so suddenly become the Medical Metropolis of the world, could scarcely furnish accommodations for the votaries of science drawn together by the genius of Boerhaave. He died in 1737, and his fellow-citizens erected an elegant monument to his memory. His theory of the origin of diseases from acrimony, lentor, or other morbid changes in the fluids of the body, has long since been so far modified by later discoveries that it can scarcely be recognized in the form in which it appears in the medical writings of the present day.

Hoffmann of Saxony was contemporary with Boerhaave. Appointed by the first King of Prussia Professor of Medicine at Berlin, he introduced to the public through his lectures and his "System of Rational Medicine," (a work which cost him the labor of twenty years,) an important modification of the humoral pathology. He has the merit of first directing the attention of physicians to the morbid affections of the nervous system, instead of framing mere mechanical or chemical theories; he laid the foundation of the spasmodic hypothesis, by resolving the origin of all diseases into a universal atony, or a universal spasm in the primary moving powers of the system. This theory still holds its place in modifying modern theories and practice. It was

this doctrine, combined with that of Stahl, from which Cullen selected the materials of that theory which can not yet be said to be entirely superseded by any more recent system. The popularity of Monro having made Edinburgh the chief centre of attraction for medical students, Cullen was appointed to a professorship there in 1756, and became at once a leading spirit in the profession. The humoral pathology had governed medical practice; though vague notions had been disseminated by Stahl, of the controlling power over the noxious disease-causing agencies, that was ever exerted by the internal rational soul, which resided within the animal economy and directed all its operations. The genius of Cullen seized upon the two prominent ideas of Hoffmann and Stahl and blended them into one harmonious system. His most important work: "The First Lines of the Practice of Physic," in four volumes octavo, published in 1784 revolutionized the theories and practice of the profession. Though, controverted by Brown and Darwin, in his own time, the theories of Cullen have never been entirely exploded. Medicine had thus reached a proud position among the sciences at the close of the eighteenth century. It was already established in the public mind as the most sublime, the most comprehensive, and the most useful of all the departments of human knowledge, and was cultivated with enthusiasm by a vast number of men of the highest order of mind in both hemispheres. In the medical schools of Europe and America new doctrines and new discoveries were being successively announced, such as never entered into the imagination of the wisest of ancient sages. Just at this time a new theory, which seemed to set at nought all the accumulated wisdom of ages, was proclaimed to the world by a physician of Germany.

In 1790 Samuel Hahnemann, then residing at Leipzig, was employed in translating Cullen's Materia Medica; and was dissatisfied with the explanation given by that author of the anti-febrile powers of the Peruvian-bark. He determined to discover by experiment on himself, what were the real properties of the bark. He took it in considerable quantities, while in perfect health, and found that it produced an ague, similar to the intermittent marsh fever. This remarkable fact was treasured up in the memory of Hahnemann, until its great value and significance could be rendered appreciable in the light elicited by further observations and discoveries.

Hahnemann was a native of the little town of Meissen, on the Elbe, near Dresden, in Saxony, born April 10th, 1755. His father, who was a painter on porcelain, enjoined the son to avoid all the liberal professions. But the youth managed to evade his father's injunctions, by secretly contriving for himself a midnight lamp; and by its aid he was able to gratify his intellectual longing for knowledge, while the members of the household were asleep. His assiduity excited the admiration of

the school-master, and the aspiring boy was advised to pursue a more intellectual vocation than his father had designed for him. The father was displeased, and placed him in a position where mental improvement was more difficult. But he was at length moved by the solicitation of the teacher, to permit the latter to direct his son's studies, which he did till young Samuel reached the age of 20 years. (*Dudgeon's Introductory Lecture.*) He now began his medical studies at Leipzig, where he supported himself by translating French and German works into English. From Leipzig he went to Vienna, where he studied under the direction of Dr. Von Quarin, who treated him with the greatest kindness. He graduated at the university of Erlangen in 1779, on which occasion he defended a dissertation, "*Conspectus Affectuum Spasmodicorum.*" He had already served Baron von Brückenthal, governor of Transylvania, for some years in the capacity of physician and librarian. He now commenced practice at Mansfeld, but soon removed to Dessau, and afterwards to Magdeburg. After some years in practice, he published his first medical work, giving an account of his practice in Transylvania. In this work he honestly confesses, that medical experience was unsatisfactory; and admits that most of his patients would have fared better if left without any treatment at all.

He had now practiced his profession eight years; and he says he had bestowed the most "conscientious attention" on his patients. And he had only "learned the delusive nature of the ordinary methods of treatment." He determined to relinquish the office of physician; as he said "it was painful" to him to "grope in the dark, guided only by books in the sick-room, to prescribe according to this or that (fanciful) view of the nature of the disease, substances that owe to mere opinion their place in the "Materia Medica." "I had," says he, "conscientious scruples about treating unknown morbid states in my suffering fellow creatures with these unknown medicines; which, being powerful substances, may, if they be not exactly suitable, change life into death, or produce new affections, or chronic ailments, which are often much more difficult to remove than the original disease;" "and how is the physician to know whether they are suitable or not, seeing that their peculiar special modes of action are not yet elucidated?" "To become in this way the murderer or the aggravator of the sufferings of my brethren of mankind, was to me a fearful thought—so fearful and distressing was it, that shortly after my marriage, I abandoned the practice and scarcely treated any one for fear of doing him harm," and "occupied myself chiefly with chemistry and literary labors."—(HAHNEMANN'S *Letters on the necessity of a regeneration of Medicine.* 1808.)

In chemistry his talents found a wide field for successful exercise, and in the course of a few years prior to 1790 he published some valuable tests for ascertaining the purity of wine, and a treatise on

Arsenic, which is still referred to by the ablest writers, as a work of great originality and scientific accuracy; and Dr. Christison quotes the account of poisoning by Arsenic. Berzelius admitted the claims of Hahnemann to distinction as a chemist.

In 1789 he was settled in Leipzig and published a medical report of some forms of disease which he had treated with success; and here he described his method of preparing "soluble Mercury." The next year he made the first step towards the discovery which was in future to infuse a regenerating influence into the whole science of Medicine.

His first conception of the Homœopathic law of cure, says Dr. Henderson, was not reached by the inductive method, nor has any other great discovery ever been made in that manner. "Lord Bacon's method was never tried by anybody but himself." Bacon himself once attempted to form a new theory of *heat* by gathering up all the facts he could find that had any bearing on the subject. He then tried to arrange them into a theory by placing them in tables; and, grouping them according to various methods, "he cross-questioned them in every possible way, and could educe no general law from them, for nature thus interrogated was silent; a "memorable instance of the absurdity of attempting to fetter discovery by any artificial rules." (*Brewster's Life of Newton.*)—Hahnemann's mode of proceeding was very different. Having abandoned the practice, he still reflected on the possibility of finding some more successful mode of treating disease.

Is it, said he, "the nature of the art that it should not be possible to bring it to any greater certainty?" Shameful, blasphemous thought. Shall it be said that the wisdom of the Eternal Spirit could not produce remedies to allay the sufferings from the diseases he allows to arise?" He thought there must yet be some "easy, sure, trust-worthy method," by which we might learn the effects of medicines, "as to what they are really, surely, and positively serviceable for." "The alterations which medicines cause on the healthy body do not occur in vain: *they must signify something*, else why should they occur? What if these alterations have an important, an extremely important signification? What if this be the only utterance whereby these substances can impart information to the observer, respecting the end of their being?" "How do medicines effect what they do in disease except by their power to alter the healthy body? Certainly in this way alone the effects can occur."

"It follows, then, that the medicine among whose symptoms these characteristics of the given case of disease occur in the most complete manner, must most certainly have the power of curing that disease; in like manner that a morbid state which a certain medicinal agent is capable of curing, must correspond to the symptoms these medicinal substances are capable of producing in the healthy body. In a word,

medicines must only have the power of curing diseases similar to those they produce in the healthy body, and only manifest such morbid actions as they are capable of curing in disease!"

Such were the reasonings of Hahnemann in the day when, through the inspiration of a highly illuminated intellect, he had grasped the outline form of that great *Law of Cure* which was in future to reconstruct the healing art; but which the *world could not receive* until it should be demonstrated by an amount of evidence that had never before been demanded for the establishment of any doctrine in physical science. Like Newton, meditating the tremendous problem of *Attraction*, he knew that his *clairvoyant* mind had seized upon one of the commonest facts, with which all men were familiar, and had "borne him away to conclusions that common minds never would have reached." But Hahnemann felt from the first a deep conviction that his first conjecture embodied an ever-living truth, and that his self-evident reasonings must be true also. "If all this be not true," said he, "how was it that those violent tertian and quotidian fevers which I completely cured, four or six weeks ago, (without knowing how the cure was effected,) by means of a few drops of tincture of bark, should present almost exactly the same array of symptoms that I observed in myself yesterday and to-day, after gradually taking, while in perfect health, four drachms of good Cinchona-bark by way of experiment."

Other men had developed intermittent fever by giving bark as a remedy for some other condition which they did not understand. Hahnemann alone possessed penetration enough to perceive that the disease caused by Cinchona was the *very same disease that it was capable of curing:* and that the remedy, both in causing and curing disease must be governed by some *higher law* than was yet known to men of science. He felt assured that the Being who created the universe must be the wisest and most benevolent of all beings; and that "there must somewhere exist a principle" through which the powers of the remedies he had created could be rendered available for the promotion of the happiness of "His best loved creatures." (See *Henderson*, p. 119.

Through successive steps the *one idea* of curing disease upon the simple principle of "*like by like*," took possession of his mind; but extensive and varied experience could alone demonstrate to the outer senses of men in an age of materialism, the truth of HOMŒOPATHY; though that truth was clearly embodied in his own mind in the aphorism "SIMILIA SIMILIBUS CURANTUR." To attain that precise knowledge which experiment can only give, he tested the powers of useful remedies, deadly poisons, and articles hitherto believed to be inert; he tried them on himself, his patients, and then on his friends; and he found that they all possessed powers new and hitherto unsuspected.

His experiments often resulted in astonishing cures; but difficulties, such as the advocates of revolutionizing truths always meet, and such as no reformer ever before met, obstructed his path, and persecution, poverty, and the dark clouds of adversity gathered around him. To carry out his own principles it became necessary that he should prepare his own medicines; and in doing this he was compelled to set at defiance that ancient law of Germany that restricted the preparation of medicines to the apothecaries; public sentiment and tradition erected tremendous barriers in the way of any man who dared to set at nought the wisdom of the wise, and threatened to scatter to the winds the counsels of the learned.

In 1792 Hahnemann was requested by the reigning duke of Saxe Gotha to take charge of an asylum for the insane in Georgenthal, in the Thuringian forest. Among the patients treated by him at that time was the Hanoverian minister Klockenburg, who had been rendered insane by a satirical epigram of Kotzebue; the successful treatment of this case by Hahnemann created some sensation; and from his report of it, published in 1796, it appears that he, in that first case, instituted the system of treating the insane by mildness instead of coercion. He says: "I never allow any insane person to be punished by blows or painful corporeal inflictions, since there can be no punishment where there is no sense of responsibility; and, since such patient can not be improved, but must be rendered worse by such rough treatment." It is believed that this is the first announcement of the modern doctrine which directs the moral treatment of the insane; though it was in that same year (1792), that the illustrious Pinel made his first experiment by unchaining the most furious maniac in the *Bicetre* at Paris; and, by treating him as a man and a friend, succeeded in restoring him to reason.

But is was not by discovering new modes of curing any one disease, but by the initiation of a radical doctrine that was to revolutionize the treatment of all diseases that Hahnemann had aroused the attention, as well as the hostility of medical men. To maintain the ground he claimed, and establish his doctrines on the basis of accumulated experience and facts, was the work of many painful years. In 1795 he established himself in Königslutter where he remained till 1799. During this time he published his "Friend to Health, a popular miscellany; his Pharmaceutic Lexicon; his Essay on a new principle for ascertaining the remedial powers of medicinal substances." (Hufeland's Journal 1796), and other works on the absurdity of complex prescriptions and regimen in the treatment of febrile and periodical diseases. In 1800 the scarlet fever prevailed extensively in Germany, and it was at this time that Hahnemann discovered the prophylactic power of Belladonna in averting this disease. For a long series of years he was depressed by poverty

and driven from one town of Germany to another by the persecutions of physicians and apothecaries. In 1803 he was without a fixed residence; and, though he had reached the age of forty-eight years, and had been styled by Hufeland "one of the most distinguished physicians of Germany," he felt himself a stranger in every corner of his native land. At one time engaged in writing a new book; at another experimenting on himself with a new remedy. Then, gathering up his family, his books and his medicines, he flies again before his enemies; and was at one time detained six weeks on the road by the turning over of his wagon, by which a limb of one of his children was fractured.

In 1803 he published a work on the injurious effects of coffee, as it was then used. After practicing for brief periods at different places in the north of Germany, in 1805 he published "Esculapius in the Balance," and "The Medicine of Experience." In the same year, Napoleon the First applied to the French academy to know if concentrated steam, according to Fulton's process, could propel a vessel? The question was answered by a burst of laughter, and the emperor was extremely mortified for having shown his ignorance. "The same body of philosophers rejected the proposition to light buildings by gas, as an impossibility: and a few years ago Mr. Arago was received with bursts of contemptuous laughter, when he wanted to speak of an electric telegraph,—his learned confrères declaring the idea to be *perfectly Utopian*."

In 1808, Hahnemann wrote to Hufeland his celebrated "Letter on the urgent necessity for a reform in medicine," in which he said: "I cannot resist the desire I feel to unveil to the public the convictions that now possess me. For eighteen years, I have wandered from the beaten track of medicine. It was a punishment to me to grope always in obscurity when called to wrestle with disease, and to prescribe medicinal agents which had at least an arbitrary place in the materia medica."

In 1810, while residing at Torgau, he wrote his "*Organon der rationellen Heilkunde*," which was published at Dresden the same year. At the same time he established himself in Leipzig: and, in order to obtain the privileges of a physician in that city, he defended his thesis, *De Helleborismo Veterum*, in 1812.

From this time till 1821 Hahnemann was actively engaged in defending his new system of medicine, in teaching it, and in enlarging its domains by new researches. In 1819 he published an improved edition of his *Organon*, which was further improved in a third edition, translated into French, English, and Italian, 1824. Homœopathy was introduced into Italy by the surgeons of the Austrian army, when they entered Naples in 1821. But all the rising prospects of the reformer only strengthened the hostility of his enemies. The law which prohi-

bited physicians from preparing their own medicines still existed; and Hahnemann, who could neither find his medicines already prepared, nor find apothecaries, who would obey his instructions, was compelled to violate it. A formidable combination of interested persons demanded of the government the enforcement of its own absurd statute, and Hahnemann the founder, the first apostle and, martyr of homœopathy, could no longer remain in the city which was in future to erect a monument to ask posterity to excuse the wrong she had inflicted on her noblest benefactor. Driven from Leipzig, Hahnemann found an asylum at Anhalt-Cöthen, where Prince Frederick offered him protection. Here he was permitted to practise his profession without fear of apothecaries, though his enemies circulated false statements, to prejudice the people against him. In 1828 he completed his great work on "Chronic Diseases," in five volumes; and its publication was followed by other smaller works, since collected in two volumes, under the title of "Minor Writings," 1829 to 1834. In the work on "Chronic Diseases," he announced and explained his theory of the origin of a great number of the most inveterate forms of disease. He says, that the majority of the cases known as palsies, asthmas, dyspepsias, consumptions, headaches, epilepsies, vertigoes, &c., are caused by the presence of a morbid matter or miasm existing in the body. When it comes to the skin, it produces, some of the obstinate cutaneous affections, known as, leprosies, milk-crusts, scald heads, ring-worms, itch, herpes, pustules, &c. The term *Psora*, he employed as a general designation, not of *itch*, but of all the constitutional hereditary affections described by other authors under the head of *psoric or dyscrasic* diseases.

In 1831, at the age of 76, whem epidemic cholera had excited the alarm of all the nations of Europe, Hahnemann examined the symptoms of the disease, as reported by those who had seen it, and predicted the remedies that would be found most successful in its treatment. His directions were printed and circulated; and their value and accuracy are attested by the general success of his disciples in the treatment of cholera asiatica.

The first public hospital and school for the advancement of homœopathy was established at Leipzig, and there the theory and practice of the new system of medicine continues to be taught.

When Hahnemann saw old age advancing upon him, he had the gratification of knowing, that he had not lived and labored in vain; but that his doctrines had been accepted by some of the progressive minds in all the countries of Europe, and by many in other parts of the world. Approaching the age of seventy years, he said: "I have paid no regard to either ingratitude or persecutions in the course of my life, which,

although toilsome, has not been without satisfaction, on account of the grandeur of the end I had in view."

"The grandeur of the end he had in view," was rapidly unfolding itself, when these words were spoken; and it has continued to expand with increasing splendor as successive years have passed away. His wife, who had witnessed and shared his trials and sufferings, without understanding him or sympathizing with him in the greatest of them, lived to see his fame safely established; and then died in 1830. At this time his writings had made his discoveries and successful practice known far from the city in which he had been almost imprisoned by the narrow prejudices of the people. In 1835 Mlle. Melanie d'Hervilly, of an ancient noble family of France, visited Hahnemann at Cöthen; and so thoroughly did she comprehend the greatness of the man and his discoveries, that she became one of his most distinguished pupils. At a later period she was united to him by marriage; and, obtaining from M. Guizot, then at the head of the cabinet of Louis Philippe of France, the privilege for her husband of practicing his profession in Paris, she induced him to remove to that city. The royal ordinance granting this permission, was dated August 31, 1835, and from that time till his death, Hahnemann was engaged in practice at Paris.

In 1843 he had reached the age of eighty-nine, but his intellect was still clear; his habits of constant and patient observation made it a pleasure to note the symptoms of disease; and his ever-glowing benevolence inspired him with an ever-burning zeal in the cause of science and humanity. "He was," says Hering, "a true man without falsity, candid and open as a child. When the last fatal hour had struck for the sublime old man, who had preserved his vigor almost to his last moments; then it was the heart of his consort, who had made his last years the brightest of his life, was at the point of breaking. "Why shouldst thou," she said, "who hast alleviated so much suffering, suffer in thy last hour? Providence should have allotted thee a painless death?" Then he raised his voice, as he had often done when he exhorted his disciples to hold fast to the great principles of homœopathy: "Why should I have been thus distinguished? Each of us should here attend to the duties which God has imposed upon him. Although man may honor, more or less, yet no one has any merit. God owes nothing to me. I to Him owe all," With these words he took leave of the world, his friends, and his foes."

As devoted admirers of the genius of Hahnemann we are still desirous to do no injustice to any other benefactor of our race. It will not be claimed, that the last victory of science had been won when the founder of homœopathy closed his eyes near the gardens of the Luxembourg. But, while we admit that important discoveries have been made by others which prepared the way for a higher unfolding of the prin-

ciples on which disease originates and may be removed, we must still claim the precise discovery made by Hahnemann, as that which of all others, the world most needed in the nineteenth century. Already the lightning had been drawn from the clouds, and all the properties of all the elements of the atmosphere had been examined with great accuracy. All the sciences, that sought to subdue the various kingdoms of the physical world had announced a succession of splendid victories; and strong impulses were moving in minds of a high order to stir them up to search for the laws that ruled, and the causes and principles which operated in some higher sphere, above the mere physical. There were men enough employed in constructing the winding pathway by which the hill-tops might reached; the world needed a commanding genius, who, "seeing the towering, distant tops of thoughts, that men of common stature never saw," could at once ascend to the point where the labors of other men were designed to end; and from that point take his "flight sublime" towards the brighter region that encircled the mountain top. It may not be necessary here to attempt to prove, that Hahnemann alone was capable of meeting the want of his age.

In his mind, says Dr. Henderson, a conspicuous feature was one common to the German mind, which "is impatient of ignorance where knowledge is impossible, most eager and enterprising, where the darkness is the thickest," and must trust to the wings of conjecture more than the solid footing of observation for reaching the goal at which it aims. Without it the *Homœopathic Law* would have floated through the world a 'viewless spirit,' and the extreme powers of attenuated medicines would have never been discovered. The literary labors of Hahnemann extended over a wide field of labor, embracing more than seventy different works on chemistry and medicine, some of which were large volumes. He also translated about twenty-four works from the English, French, Italian, and Latin, on chemistry, medicine, agriculture, and general literature. His philosophical principles are thus given in *Dr. Cl. Müller's Festival Speech, 9th April, at the Celebration of the 106th Anniversary of Hahnemann's birth, Leipzig:*—Homœopathy itself is "especially based on the peculiar observation of the *dynamic* element in the phenomena of life. Thus, far, from considering the organic life in its various aspects of health, disease, even the medical art, and the effect of medicines on the organism as chemico-mechanical processes, instead of these, homœopathy recognized therein the exclusive dominion of a peculiar power which is subject neither to the mechanical nor chemical laws, viz., the *vital* power; and the laws by which this operates are also her own. Thus not the mass—not the material as such, but only so far as it is vividly penetrated by this power, and thereby brought under the dominion of the laws of vitality

is it the object of her investigation and the scope of her efforts. Hahnemann in his *Organon* (5th Edit. § 9, &c.) expressly recognizes an independent vital power (autocracy) which in the healthy state of man as spiritual, rules to an unlimited extent over the living power of the material body, and keeps all its parts in a wonderfully harmonious tenor of sensation and activity, so that our indwelling rational spirit can employ itself for the higher objects of our existence, independent of this living instrument."

The material organism, considered apart from vital power, is capable of no perception, no activity, no self-support: it is only the immaterial that imparts to the former all its perception, and executes its vital action, whether in the healthy or diseased condition of the quickening principle. In disease, it is originally only the vital power that is morbidly out of tune, and expresses its suffering (the internal change) by abnormal states of the sensations and activities of the organism. The suffering of this diseased vital power, and the morbid power, and the morbid symptoms thereby originated, are an inseparable totality—one and the same thing. It is only through the psychical influence of the morbific evils that our psychical vital power can become diseased; and thus also it is only by the psychical "dynamic" operation of medicines that it can be restored to health. This recognition of a purely dynamic efficacy in the medicines, led Hahnemann to his theory of "potencies," inasmuch as it brought him to the conclusion, that, by a systematic attenuation (which at first he adopted merely to avoid undesirable primary and secondary action) combined with succussion, the dynamic curative powers would be exalted, and so in a manner the effect would be more powerful and free from interference."

Hahnemann as a philosopher was an opponent, aye, the very antipode of the modern system of materialism.

This system of philosophy, which is the dominant one of modern times, is "founded on the consideration of force and matter alone; and, by virtue of and in conformity to these, of the existing and working aggregate of the external world. It is based conclusively on the recognition that force and matter presented inseparably one with the other, keep at work incessantly according to stringent laws; and that the immense universe, with the immense riches of its incessantly changing forms, and with the full machinery of its mighty restless movement, is only a possible and positive fact, on the supposition of and in conformity to the operation of force and matter. Its leading principle is to take as a starting-point for the discovery of results nothing whatever but what—

1. Each one either knows assuredly by nature, or learns by observation.

2. Relatively, what the collective body of savans receives as positively attested and established by observation; and.

3. Under all circumstances, what the rational, impartial, unprejudiced mind must consider as true." (See PERE BUFFIER "Sur les premieres Verités."—See FLETCHER's Physiology of Pathology.)

The whole theory of Hahnemann may be termed nothing but the corrollary of that of John Brown. For while the Brunonian doctrine of the cure of indirect debility by stimulants is unimpeachable in the main, yet it fails in particular instances from disregard of the special character of the stimulus in both causing and curing the particular disease. Here Hahnemann steps in and supplies the missing link, and it now becomes clear not only how a stimulus can cure an inflammation that it could cause, but also why it is not *any* stimulus, but only one of a *special character* that will do so. We see that this character must be very similar to that of the stimulus which in other circumstances would produce inflammation. (*Müller.*)

The leading minds of the medical profession, who preceded Hahnemann, employed their highest powers in constructing general theories which should render close observation unnecessary. The grand object of pursuit has been a comprehensive theory of disease and of practice which shall "bind together the scattered facts of medical knowledge, and converge into one point of view the laws of organic life." It has been believed that such a theory "would on many accounts contribute to the interest of society, that it would capacitate men of moderate abilities to practice the art of healing with real advantage to the public; it would enable every one of literary acquirements to distinguish the genuine disciples of medicine from those of boastful effrontery and artful address; and would teach mankind in some of the most important situations, the knowledge of themselves."* This great desideratum of the medical philosophers was never realized, and the eighteenth century closed with the dawning light of the discoveries of Hahnemann, the importance of which was not yet appreciated by himself. Other medical discoveries of that period are still spoken of now with admiration, though not then so received by the profession. Jenner who had not really discovered the preservative power of the vaccine disease against the the small-pox, but who appropriated a discovery which he had heard of in Gloucestershire thirty years before, was lampooned, and ridiculed, and contemptuously excluded from the honors and privileges of the college of physicians, merely for advocating before the public the truth of a principle which had been known for ages before. Of other discoveries of the eighteenth and nineteenth centuries we shall not now undertake to give the history.

The principal improvements in the science of medicine made during the nineteenth century have grown out of the researches of anatomists

* Darwin's Zoonomia.

and pathologists. Bichat, of whom Corvisart said "no one had done so much in so short a time, and done it so well," announced his discoveries and died at the beginning of the century. The old theories of humoralism and solidism have since been often exploded and again revived. As modified by Hamilton, the former was introduced into England by Abernethy. The two united formed the basis of the systems of Pinel, Broussais, and later names which have receded before the improvements in microscopic pathology and chemistry.

Pinel occupied the highest places of medicine; a chair at the faculty clinique, at the hospital, a seat at the institute, at the academy, titles, decorations, &c. &c. All drew their inspiration from him; books, pamphlets, journals, official and other courses were but reflections of the nosography, so styled, *philosophical.* In the sight of these philosophers the medical problem was stated in the terms: *Given a malady; to determine its place in a nosographic category.* (*L'Art Med.*)

"And with the calm security of a conscience at peace with itself, they ticketed, they described diseases as objects of natural history; after which, these were neatly pinned each in its case, like a butterfly or a beetle upon its cork, and the savans slept soundly. If some patient, obtuse towards the perfections of nosology insisted on being cured, they silenced the impertinent, and snored on louder than before.

"Things went on thus during fifteen years, when suddenly appeared upon the horizon "L'Examen" of Broussais, a book which made a prodigious stir, and created a stampede in the Pinelist Camp.

"Broussais, henceforth master of the battle-field, over-ran, ploughed and harrowed it for the reception of his new doctrines. He held forth that—

"*There is no specificity* in *diseases*, in their *causes*, nor in *medicines.*

"Every disease is the cry of a suffering organ; *which* one, we must ascertain.

"There are but two diseases, inflammation and sub-inflammation; and of these two, the second only serves *pro memoriam*, and as a *diverticulum.*

The clinical problem is reduced to this:

"Where must we place the leeches, and how many leeches must we place?"—(*L'Montpellier Medical*, 1860.)

Matters were thus beautifully simplified, and indeed the practice was simpler than this: for as gastritis constituted the immense majority of maladies, if you did but prescribe an application of leeches to the epigastrium, you had but one chance in a thousand against you. It was magnificent.

"All the acute diseases,—fevers, exanthems: all the chronic diseases —dermatoses, gout, gravel, neuroses, &c.,—all these were gastrites or gastro-enterites, and all were treated by leeches and diet. Ah! the

diet, sir, was an admirable thing. What disease could have resisted a diet, more or less absolute in its severity, prolonged during weeks, during whole months?

"It is related that a patient once sought Broussais, complaining, "Doctor, your regimen fatigues me to the last degree; the diet is killing me; I am literally dying of hunger." Broussais reflected a moment, then said, "Well, you carniverous animal! I will content you." And he allowed him a teaspoonful of broth in a glass of water."

The medical system of Broussais was only fitted to amuse the profession for a few short years, when there came from St. Petersburg another giant in the person of M. Louis; a man of immense genius, if, as Buffon has affirmed, genius were only patience; M. Louis, armed with several thousand brute facts, which he calls observations, bravely flings them at the head of the colossus of Val the Grace, and at one blow fells it to the ground. Broussais, after making a few imperfect experiments in homœopathy on others, tried it on himself with partial benefit; but his friends objected, and he went back to his leeches and died.

The system constructed upon the bloody ruins of the temple of Broussais consists in the employment of the senses rather than of the intellect. To observe is simply to take account of all that strikes the external senses; to observe and count "how many times in a hundred or a thousand cases a certain symptom has occurred; and deduce the average. As to therapeutics, the study of signs, of indications, the determination of medical constitutions—all that is suppressed; we may employ, *ad libitum*, the first remedy at hand," no matter what may be the nature of the disease; and then it only remains to count on your fingers how many die, and how many get well under the influence of such or such a remedy. Indeed the game of goose is algebra beside such therapeutics! "Your school," said d'Amador, "has devised a new method. You *count facts* and pretend to appreciate their value by their number; you add, divide, subtract; and with candid simplicity believe that you are perfecting the methods of art."

Thus the operation of the senses and statistics comprize the whole of medicine for M. Louis. Accordingly M. Bouilland bleeds his patients, while M. Delarocque evacuates them excessively upwards and downwards, M. Piedagnel inundates them with warm water. M. Steinbrenner swells them out with cold water, M. Magendie gorges them with punch, M. Serre with mercury, M. Petit with bark, M. Broca with quinine, Mr. A. Barthez with alum, others with asses' milk, others again with alcohol; while some, like M. Andral, do nothing at all;—and each boasts of his successes, invoking *statistics*, that lady of good help, who sets every body in the right.—(*L'Montpellier Medical.*)

The more rigid observers of nature now cultivating the wide fields

of pathology have abandoned the effort to construct a true theory by counting and averaging partially observed facts. In nature, says M. Bernard, "there never was, nor will be, such an anomaly as an average. Every thing is the absolute and certain result of fixed and definite causes. Alter these in any way, even to the least degree, and the results vary *accordingly*, and in a *fixed* and *certain proportion*. She knows no *medium*, she knows nothing but a unit; and this unit is a *combination* of facts, varying in each, and the originating results varying correspondingly—experimentation, therefore, and the accumulation of facts, can alone furnish us with the key to her enigmas—and each fact is valuable, just in proportion as *all* its conditions are *accurately* ascertained, and in that proportion only; and in collecting these facts we should be careful not to allow "preconceived ideas" to become "fixed ideas." The former are necessary, indispensable: we can do nothing without them; we should only know how to abandon them when they are no longer right. The preconceived idea is always interrogative; it addresses the question to nature, and calmly awaits the answer; ceasing to question when this is received, and adopting the fact with the same readiness, whether opposed to, or in accordance with itself."

GENERAL PRINCIPLES OF MEDICAL SCIENCE.

The present position of allopathic medicine must be ascertained by asking the opinions of its standard authors. A few of these may be permitted to speak for the profession: Prof. Christison of the University of Edinburgh, addressing a class of graduates thus speaks of therapeutics: "It is of all the medical sciences the most unsettled and unsatisfactory in its present state, and the least advanced in its progress." (*Edin. Monthly Journ. Med. Sciences.* Sept. 1851.) In an address delivered before the British Medical Association at Edinburgh in 1858, he said: "Therapeutics considered as a branch, whether of medical science or medical art, and compared with the other branches of medicine, fundamentally and practically is in a backward and unsatisfactory condition. It is not enough to admit that for a good many years past we can neither point to a single great authority, nor to a single plausible or generally admitted theory as to the action of remedies, but even our therapeutical facts must be allowed to be too often scanty, vague, or insecurely founded."—(*Lancet*, Aug. 7, 1858.)

Dr. Headland of London, author of the essay on the action of medicines, when reviewing the relative operations of the various branches of medical science, says: "For the proper perfection of medicine as a rational science, two things are in the main needed: the first is, a right understanding of the causes and symptoms of disease;—the second, a

correct knowledge of the action of remedies. Should our acquaintance with these two subjects be complete, we should then be able to do all that man could by any possibility effect in the alleviation of human suffering. This sublime problem is already being unravelled at one end. Diagnosis and nosology are making rapid strides: and perhaps we shall soon know what we have to cure. But at the *other end*, our medical system is in a less satisfactory condition; and though some impatient men have essayed to cut the gordian knot, and have declared boldly on subjects of which they were entirely ignorant; yet it must be confessed, that in the understanding of the action of medicines and of their agency in the cure of diseases we do not so much excel our ancestors. While other sciences are moving and other inquiries are rapidly advancing, this subject, so momentous in its applications, has in spite of the earnest labors of a few talented investigators, made after all, but small progress." The late Dr. Adams of Banchory, who was said to be the most learned man in the profession during the last half century, said: "Now-a-days we have abandoned all general rules of practice, and profess to be guided solely by experience. But variable and uncertain have been its results! I myself—though but verging towards the decline of life—can well remember the time when a physician would have run the risk of being indicted for culpable homicide if he had ventured to bleed a patient in common fever; about twenty-five years ago, venesection in fever and in almost every disease was the established order of the day; and now, what shall I state is general practice that has been sanctioned by the experience of the present generation? I can scarcely say;—so variable has the practice in fever and in many other diseases become of late years."

There is a widely-spreading skepticism in all the old systems of medicine. Such questions as the following are continually rising: "Is there such a thing as therapeutic science? Is the world considered as one complex individual, advancing more and more towards maturity in medical knowledge?" Some really believe that the controversies and sects are incapable of settlement: and that whilst "old divisions continue for ages, new ones arise to increase the distraction of the human mind." To many, no doubt, the claims of homœopathy will still continue to be classed as one of the multitude. Dr. Oesterlen (Medical Logic, Sydenham Edition, p. 238) says: "If we bring to the bedside of the same patient, a disciple of Brown or of Broussais, an empiric of the old, or one of the modern stamp, an adherent of the so-called Vienna anatomical or of the Giessen chemical school, a nerve-pathologist, or a blood-pathologist, each will recognize a different state of things. The opinion, which each forms of fever, and similar aggregates of symptoms, of their origin, connection and dependence upon various local or general changes and conditions, and of those in their relations

to each other, will be different from that of the others. Each of them, if he reflects upon it at all, will form a different notion of all that he has been able to observe. He will arrange and combine the various phenomena in the patient after his own manner—that is in accordance with his own point of view. If the same remedy be administered in a given case, the assertions and opinions of each concerning its effects will equally differ; for each has expected from it different services, and modes of operation in accordance to his previously formed theory; he will, therefore, interpret what he has observed in the manner which best corresponds to his own views; and in the remedy employed will acknowledge only such effects as it has been his aim to produce."

Such views as those from the work now quoted are common among the leading men of the regular profession; and one of the sharpest controversies they have engaged in during the present century is now going on, to determine which is best for the patient, "Medication or Non-Medication."

Medical skepticism is openly taught from our chairs of clinical medicine, and from the seat whence Dr. Henderson was deposed for his revolutionary tendencies, Dr. Bennett now utters such sentiments as these: "At this time, medicine is undergoing a great revolution, and to you, gentlemen, to the rising generation, do we look as to the agents who will accomplish it. Amidst the wreck of ancient systems, and the approaching downfall of empirical practice, you will, I trust, adhere to that plan of medical education which is based on anatomy and physiology. Everything promises that before long a law of true harmony will be formed out of the discordant materials which surround us; and if *we* your predecessors have failed, to *you*, I trust will belong the honor of building up a system of medicine, which from its consistency, simplicity, and truth, may at the same time attract the confidence of the public aud command the respect of the scientific world."

DOCTRINES RESPECTING A VITAL PRINCIPLE.—NERVOUS FLUID. DYNAMIC INFLUENCE.

The universe is governed by the same divine Power that created it; and he exercises upon all animate and inanimate things a controlling influence which is perpetually in operation; but he operates in all conditions in accordance with certain fixed and invariable principles, usually spoken of as the *Laws of Nature*. All created objects are divided into two great classes, called living and dead; and they are all in some degree subject to the physical laws of nature. But living bodies are also endowed with a set of properties entirely different, called *vital properties*, which living matter continues to manifest so long as it is alive, and no longer. The study of life, its manifestations, is the

object of the science of physiology; in the state of health this vital influence, perpetually emanating from the Creator, exercises an absolute sway over every portion of the body, and maintains all its functions in order and harmony, both of sensation and action; and when these conditions of order and harmony exist, "our indwelling rational spirit may freely employ these living healthy organs for the superior purposes of our existence."

Of this "*vital principle*" all authors on physiology and medicine have written something.

"There is not," says professor Paine, "in the whole range of medical literature, one author, however devoted to the physical and chemical views of life, who does not evince the necessity of admitting a governing *vital principle*, as a distinct entity, distinct from all other things in nature. I say, there cannot be produced *one* author of any consideration, who does not summon to the aid of his discussion a *vital principle* whenever he touches upon the abstract phenomena of life." Thus Hippocrates speaks of the "Phusis," Paracelsus and Van Helmont of "Archæus," Stahl of "Anima;" medical men of the present day of the "vital principle." "*Vis vitæ, vis insitæ.*"

But the reasonings of physiologists on this subject contain little of scientific accuracy.

"To speak of the vital forces, to give them a definition, to interpre phenomena by their aid, and yet to be ignorant of the laws which govern them, is doing nothing, or rather is doing worse than nothing It is to attempt an impossibility, it is to content the mind to no pur pose, to stop the search after truth. To state that the liver separates the elements of the bile from the blood by means of the *vital force*, is merely to assert that the bile is formed in the liver. By thus varying the expression, a dangerous illusion is established." *

In regard to the nature of the intelligence, or soul, and *how* it acts upon the material parts, to aid in producing the phenomena of life, we do not now propose to inquire. We are able to see its results, and appreciate its wonderful influences, but the mode of its operation we will not now attempt to explain. It pervades every part of the body, and operates in a different manner on different organs. It gives rise to sensation in the organs of sense, motion in the organs of motion, digestion, absorption, assimilation, respiration, circulation, &c., in the organs provided for these functions.

All modifications or derangements of structure, alter the peculiar effects of this spiritual power; for it acts only through the medium of the organs as they actually exist. All deviations therefore from the normal organization of parts, induces corresponding alterations in the manifestations of the intelligence.

* Matteucci on Living Beings.

The living intelligence has no particular location, but pervades every portion of the nervous system, exercising a constant, and direct influence over every organ and tissue. This is clearly apparent from the experiments of Philip, Stilling, Hall, and others, which prove, "that the power of the heart and vessels of circulation, is independent of the brain and spinal narrow," and "that the power of the muscles of voluntary motion, vessels of secretion, and peristaltic motion of the stomach and intestines, are independent of the nervous system, and that their relation to this system is of the same nature with that of the heart and vessels of circulation, the nervous power influencing them in no other way than as other stimuli and sedatives do."

From these and other experiments, Dr. Philip supposed, that the vessels possess "a principle of motion independent of their elasticity," and identical with galvanism. The experiments of Magendie and later physiologists have shown that the hemispheres of the brain and cerebellum may be removed in a mammiferous animal, and it will continue to experience sensation, perceiving odors, sounds, and rapid impressions. Vision, however, is abolished."

Dr. Dowler of New-Orleans, has instituted a series of experiments on the alligator, which exhibit in the clearest manner the peculiar operation of the living intelligence upon the organism. In one experiment Dr. D. divided the muscles of the neck, the cervical vertebræ, and the spinal cord, also the spinal cord between the shoulders and hips, destroyed the sympathetic nerve, and removed the intestinal viscera, "yet, for a period of more than two hours, the alligator exhibited *complete intelligence, volition, and voluntary motion in each and all divisions of the body. It felt, saw, defended itself; showed anger, fear, and even friendly attentions to its keeper, a black boy!*" In another experiment, "the upper portion of the skull, including a horizontal stratum of the brain, was removed! The animal performed a series of voluntary motions, intelligibly directed, to ward off injuries. *The entire brain and the medulla oblongata were now removed, without diminishing its power to direct its limbs to any part that was pained by the slightest touch of a pin or knife.* A metallic rod was passed many times within the spinal cord, completely destroying the spinal marrow beyond the hips. It was still found that both voluntary motion and sensation remained, though their manifestations were greatly impaired."

Dr. D. concludes from these and numerous other experiments of a similar nature, "that voluntary motion is neither directly communicated from, nor regulated by the brain, or the cerubellum; that the muscles in connection with the spinal marrow, perform voluntary motions for hours after having been severed from the brain; that these motions are not only entirely independent of the brain, but may take place, though

imperfectly, after the destruction of the cord itself; *that the trunk, as well as the brain, thinks, feels, and wills*, or *displays psychological phenomena; that the sensorium is not restricted to a single point, but is diffused, though unequally, or in a diminished degree, in the periphery of the body; and that actions which take place after decapitation, as described above, are in absolute contrast to* REFLEX ACTIONS, *being sensational, consentaneous, voluntary, and in other respects dissimilar.*" Is it any more wonderful that the soul conduces to the phenomena of digestion, assimilation and appropriation, when the natural stimuli of these organs are presented to them, that *sight* is appreciated when the natural stimuli of the eye, the rays of light, are applied to this organ? Is it any more singular that this spiritual stimulus should endow each structure with power to exclude all noxious substances, and *select* each its natural excitant, than that the sense of hearing should only appreciate one voice in the midst of a hundred other voices and instruments, whenever the will so directs?

In order to acquire a correct idea of the functions of life, it is necessary, in the first instance, to contemplate the body as a perfect machine —adapted in every part by a definite and special organization, to receive different impressions according to the nature of the substances or excitants presented, and the offices which they are destined to perform. Without doubt, *chemical* and *mechanical* forces exercise an important influence in the operations of this machine. The combustion of oxygen with the carbon at the lungs, and in other parts of the system, must develop heat, expansion and motive power, and mechanical causes may operate somewhat in adding to this force, yet all of these influences are wholly inadequate to accomplish and perpetuate the more complicated phenomena of life. It is then essential that another important agency should be everywhere present, in order to enable the organs to respond properly to their specific stimuli. Consequently we have "superadded to the body" an intelligence, which affords a specific stimulus to every part; acting solely through each particular structure as it exists, and modified in its operation according to the modifications or alterations in the organs themselves. If the structure of the eye is injured, an imperfect image will be formed upon the retina, the intelligence will manifest itself through this injured structure, and this sense will be altogether impaired. If the structure of other organs be altered, so that their natural stimuli cannot be brought to bear as usual, the operation of the spiritual stimulus will be modified in proportion, and disordered function result.

This mental or spiritual stimulus acts at each particular part specifically, and in a measure independently of other parts, causing irritability of different grades in the muscular fibres, and exercising those peculiar properties every where. The influence likewise which it

exercises upon the body as a cause of disease has never yet been properly appreciated.

In the ordinary waking state, the operations of the soul are manifested directly through the media of *all* the physical structures, and these manifestations are limited in extent and variety, and subject to certain fixed laws, having reference to the *structures* and *stimuli* acting upon them. Thus, the power and extent of vision is determined by the physical condition of the eyes and brain, (which furnishes them with blood vessels and nerves,) and the number and intensity of the rays of light which strike the retina. *Light*, in this instance, is the *material stimulus* or rather the undulatory nerve-force, which passes through the structure of the eye in the same manner as it passes through an optical instrument, producing the reflection of images upon the retina in a manner analogous to images formed in the *camera* of the photographer. The soul takes immediate cognizance of these images upon the retina, in precisely the same manner that it recognizes the images in the *camera obscura*. It is worthy of note, that these images may be formed upon the retina, and yet the soul be entirely unconscious of them; so may an absent-minded man look into the *camera obscura*, filled with reflected figures, and derive no impressions from them. Without this invisible, incomprehensible, and eternal soul, the eye would be but a mere optical instrument, perhaps taking the first rank among such instruments, but entirely on a par with them, and subject to similar laws. No imponderable agent, like electricity, magnetism, or galvanism, or what has been termed animal nervous fluid, could ever enable it to appreciate impressions, or perform a single act of intelligence.

Every structure of the organism, whether situated within the cranium, chest, abdomen, or in any other part, is in a similar condition in relation to the soul, and without its presence and influence, is subject only to the ordinary laws of matter.

It is the office of the soul to preside over the necessities of the physical man—to guard against and ward off injurious influences, and to respond to all impressions made upon the textures. So long as the normal physical condition exists, and no undue influence is exerted upon the mind, a spiritual or *vital* equilibrium is maintained throughout the system; but if a part be attacked by an enemy in the form of inflammation, or if an undue impression is made upon the mind, this equilibrium is disturbed,—the spiritual force is unequally distributed, and disordered action follows.

We append a few examples to illustrate the influence of mental impressions in modifying the action of the tissues: an individual in perfect health, and undisturbed by any external influence, finds himself in a gallery of paintings. At one point a devoted daughter is seen brav-

ing the horrors of a foul dungeon, to offer from her own breast sustenance to an aged and starving father, and while we look, the lachrymal glands are excited, and unbidden tears flow freely. At an other point, an inhuman monster has seized an innocent child, and is in the act of dashing out its brains against the wall, and while we gaze, the blood mounts to the brain, the cheeks glow with indignation, and the heart throbs violently at the bare contemplation of the outrage. Another tableau meets the view, and we see the executioners in the act of casting a struggling criminal into a den of poisonous serpents, and, as we behold the reptiles coiled up for a deadly spring, with fiery eyes, and forked tongues, the blood forsakes the surface, the stomach sickens, the heart sinks, and a cold shudder steals over the whole system. Another scene presents itself; we behold a table loaded with the most tempting viands and fruits, and an immediate change occurs in the salivary glands, the mouth fills with saliva, the stomach indicates its want, and a general perturbation of the digestive system ensues. The mere sight of an epileptic often induces a corresponding complaint in others; the indulgence of bad habits in one member of a family like snuffling, distortion of the mouth, eyes, &c., frequently bring about the same habits in other members of the family. Violent emotions from sudden intelligence, whether good or bad, often induce *diarrhœas*, *syncope*, *catalepsy*, *apoplexy*, *mania*, &c.; fear and apprehension are most powerful *predisposing* causes of disease, and when excessive, often act as *exciting* causes, particularly during the prevalence of epidemic or contagious affections, as *cholera asphyxia*, *small-pox*, *yellow* and *typhus fevers*, &c. Protracted grief is a common cause of chronic diseases, like *dyspepsia*, *jaundice*, *neuralgia*, *hypochondria*, *phthisis pulmonalis*, &c. Intense and exclusive application to any subject, eventually causes disease of the brain and nervous system, and mental derangement. The hypochondriac, who suffers under the effects of morbid fancy, continues to feed his malady by pondering over his imaginary ailments; the monomaniac, as he dwells upon his delusion, fans the flame that is consuming him. If an individual in the most perfect health be told by several different persons that he looks pale, haggard, and sick, it is more than probable that the impression will exercise so powerful an influence, that he will actually feel sick, and take to his bed; we have witnessed more than one example of this kind.

The case of the criminal is often quoted, who died of fright by the simple flowing of tepid water over his limb, while the attendants made suitable remarks on the effects of the loss of blood, till fatal syncope was produced. Professor Bennett says, a butcher was brought into the office of a druggist, suffering from a terrible accident. "The man on trying to hook up a heavy piece of meat over his head, slipped, and the sharp hook penetrated his arm so, that he was himself suspended.

On being examined, he was pale, almost pulseless, and expressed himself as suffering acute agony. The arm could not be moved without causing excessive pain, and in cutting off the sleeve, he frequently cried out; yet when the arm was exposed, it was found quite uninjured, the hook having only traversed the sleeve." In disease also, the manner, bearing, and expression of the physician, often exert the most surprizing effects upon the patient, either in ameliorating or aggravating his malady. Most diseases are attended with an exalted state of the nervous system, and with a highly sensitive and irritable condition of the mental faculties. In this condition, a doleful expression of countenance, or words of doubt, discouragement and sadness, are often capable of plunging the patient into the most profound state of mental and physical depression, and thus aggravating, to a serious extent, his malady; while on the other hand, a cheerful face, a lively and agreeable manner, and words of hope and encouragement usually exercise an influence of the most favorable character, and conduce very materially in bringing about a curative action of the organism. It should never be forgotten, that courage, hope, confidence, and a cheerful state of mind, are powerful *tonics*, and often enable the healthy system to resist the influence of contagious, epidemic, and other noxious impressions, and the sick organism to combat successfully the destructive effects of disease; while fear, apprehension, grief, despair of recovery, sadness, and depression of spirits, by impairing the resisting powers of the economy, become both predisposing, and exciting causes of disease. Show me a physician who has attained a high reputation in the treatment of difficult, and dangerous cases of disease, and I will have confidence, that he is one who carries a cheerful face; who delights in dwelling upon the bright and pleasant things of life, rather than upon those which are gloomy and dismal; and who does not fail to infuse into his patients, and all around him, confidence, hope, and comfort. The expression and bearing of such a man always act as a beacon of hope, to arouse the sinking energies of the patient, and to encourage him to strive against the depressing influence of his malady. In these and other analogous instances, it is the intelligence alone which is operated on and which diffuses its influence, not over any vital properties of the organism, but upon the respiratory, circulatory, digestive, and nervous systems.

We have, then, constantly operating upon the machine first, what may be termed the *material* or *natural stimuli*, and second, the *immaterial* or *spiritual stimuli*, both of which are absolutely essential to the continued performance of the functions. In some parts of the organism, these material excitants, must be constantly present, in order that the system may be kept in operation. The heart and blood vessels, and the respiratory organs must be incessantly acted upon by the

blood and atmospheric air, in order to ensure life. Other parts, like the stomach, lacteals, capillaries, &c., may be deprived of their natural stimuli for a length of time without causing death, but not without inducing derangement of function, or causing disease. These *material stimuli*, not only exercise a highly important influence in the phenomena of life, but it is upon them that morbific and other noxious impressions are often made in causing disease. According to Liebig, "the slightest action of a chemical agent upon the blood, exercises an injurious influence." Any material deviation, then, from the natural properties of the inspired air, or the other stimulants of the organism, must constitute a source of disease.

The other agency exerts a not less important influence over all parts of the body, and gives rise to its manifestations in accordance with the peculiar organization and modification of each structure.

The operation of this intelligence upon the organs produces that peculiar state which enables them, when supplied with their *material stimuli*, to accomplish their functions. It manifests its power in the capillary system in enabling these vessels to exclude the red globules; over the lacteals, in enabling them to exclude all but the nutritious portions of food, over the organs of involuntary motion, in enabling them to respond with unformity and regularity to their material excitants; over the nerves of sensation and motion, in enabling them to take cognizance of injurious foreign impressions, and to exercise voluntary motions; over the organs of the special senses, in enabling them to appreciate sight, hearing, smell, taste, and touch. This spiritual influence operates only through the *medium* of these organs and tissues, developing specific and harmonious manifestations, according to the peculiar use and structure of each part. Under its guidance the molecules are appropriated and become a part of the organism. Through the same influence the system is enabled to resist, to a certain extent, morbific and other injurious impressions. It is this stimulus which endows each tissue with its specific irritability, causing each part to recognize and respond to its own natural material excitant, and offer resistance to the application of all disturbing agencies.

The soul does not leave the body, until the structures are so much injured, that the functions *all cease operation*. Many organs may be destroyed or rendered incapable of transmitting mental or spiritual impressions, yet the intelligence, entire and unaltered of itself, will still pervade the remaining portions of the organism. It will still manifest itself just so far as it finds normal organs and tissues to operate through, or manifest an influence upon. The *material* parts alone may be impaired or obliterated, but so long as there is life, the *immaterial* part must pervade the body unaltered, although its manifestations may be entirely changed.

PERVERSIONS OF HEALTH.—NATURE OF DISEASE.

The boundary between HEALTH and DISEASE, though in some degree familiar to all, is not easily defined. Health in perfection is perhaps never seen in such a world as ours. It is usually described as a condition of the organism, in which there is "freedom from pain and uneasy sensations, and freedom from all those changes in the structure of the body that endanger life, or impede the easy and effective exercise of the vital functions." Departures from this happy state of life present themselves to us both in form and degree in infinite variety.

Disease consists in some deviation from a state of health. It may extend no farther than to some simple derangement of function, in which no alteration of structure is discovered or suspected; or may be attended with appreciable change of texture, and may run a longer or shorter course, with or without modification from medical treatment. The former of these grades of disease may often be properly assigned to the care of the hygienist, who, by dietetic regulations, by correct employment, food, drinks, temperature, and pure air, may restore the invalid to a state of health. The physician must also be a practical hygienist, and able to employ auxiliary agencies with scientific propriety, as well as to select with certainty the necessary specific remedy On the "nature of the relations of the sciences of Therapeutics and Hygiene," Dr. Dunham remarks:

"That the province of Hygiene is, to discover whatever causes may have contributed to induce or perpetuate the diseased condition, and if possible to remove them.

"That Hygiene alone is sufficient to restore many sick persons to health, and that it is in most cases an indispensable aid to Therapeutics.

"That *Therapeutics* concerns herself only with the discovery and selection of an individually-specific remedy for each individual case of disease; which is done in accordance with a therapeutic law. This law may be the homœopathic formula, or it may be some broader generalization,—but there can be but one law of this kind.

"That in so far as Hygiene is concerned, homœopathists and allopaths occupy common ground,—the philosophy of the science being the same for both, however modified and shaded in practical application by the different therapeutics of the two schools.

"That in Therapeutics alone, that is, in the discovery and selection of the individually-specific remedy for each individual case of disease, do we differ radically from the old school of medicine,—the allopaths having in fact no science of Therapeutics whatever, *their philosophy of cure being an application of the principles of Hygiene to all diseased conditions.**

* Homœopathy, the science of Therapeutics.

THERAPEUTICS.

There are but three modes of treating disease. They are distinguished as follows:

1. The *Homœopathic*, which only is salutary and efficacious. It "alone leads in a direct way to a mild, sure and durable cure, without either injuring the patient, or diminishing his strength."

2. The *Allopathic* or *Heteropathic*. Without regarding what is really diseased in the body, it attacks those parts which are sound, in order to draw off the malady from another quarter, and direct it towards the latter.

3. The *Antipathic* or *Enantiopathic*, which is merely palliative.

This consists in paying attention to only a single symptom or feature of the disease,—that of which the patient complains most loudly, and prescribes a remedy which may palliate that. For pains of every description, Opium, which may benumb the senses and allay the pain. For diarrhœa, the same remedy to stop the peristaltic action, or an astringent to suppress the secretions. For insomnolence, the same remedy. For long-continued constipation, purgatives. For habitual debility, Wine.

Of these different modes of treating disease, the first alone is truly efficient and salutary. The reason that this is true, and that all the others are pernicious, says Hahnemann, "is founded upon the difference which exists between the *primary* action of every medicine, and the reaction, or *secondary* effects, produced by the living organism (the vital power)." *

At the present time there exists no uniform or general system of therapeutics, because there is no theory of disease in which universal confidence is reposed. The medical world being divided into several distinct schools, each inculcating a different doctrine concerning pathology and the methods of cure, and all endeavoring to sustain their favorite systems, without much regard to accuracy respecting facts, or to logic in their inductions, it is not surprising, that the science of medicine is so often looked upon by the public with distrust and disrespect. We behold the vitalist denouncing the doctrines of the chemist and mechanician, as inconsistent and highly dangerous in practical operation, while all agree in ridiculing that system which is alone founded on accurate observation of facts, homœopathy.

It is doubtless true, that many new and valuable ideas may be derived from each of these conflicting schools by the medical philosopher, whose sole object is truth. Indeed, the coincidence of opinion between the father of homœopathy and many of the most prominent advocates of the vital theory, like Paine, Bichat, Philip, &c., in regard to physio-

* Hahnemann, Organon, § 63.

logy and pathology, is remarkable. These eminent authors not only agree, respecting the "properties and laws of healthy beings," but they concur as to the changes and modifications which take place in diseased states of the organism. Although they entertain totally different views concerning the practical application of remedies, it will be observed, that the allopath often adopts the precept "*similia similibus*," in effecting his cures.

Nor are there men wanting,—men, who stand high in the ranks of allopathy,—who unhesitatingly place the pathological and therapeutical doctrines of homœopathy, far above those of either the chemical or physical schools.

Thus Paine in his "*Institutes of Medicine*," observes: "It is due to truth (*fiat justitia ruat cœlum*), that the physiologist concedes to the homœopath, that his hypothetical views may be directed by an enlightened understanding of the properties and laws of healthy beings. Upon this ground, indeed, his hopes can alone repose; and even his doctrines in pathology and therapeutics are a thousandfold better, more rational, more consistent, more conducive to health and to life, than any or all of the tenets of the chemical or physical schools."

We shall not be surprised at this concession, when the opinions of Hahnemann are contrasted with those of many allopathic authors who have written since his days.

The vitalists hold, "that all disease consists in modification of the vital properties and a consequent change of function, and is, therefore, only a variation of the natural states, that the artificial cure consists in a restoration of these properties and functions, by making upon the former certain impressions, which enable them to obey their natural tendency to a state of health; that remedial agents of positive virtues operate like the truly morbific, but less profoundly in their therapeutical doses, and that the philosophy of their cure consists in establishing, in a direct manner, certain morbid alterations in the already diseased properties and actions of life, which are more conducive to the natural tendency that exists in the vital properties to return from a morbid to their natural state." (*Paine.*)

Hahnemann, in his "*Organon*," says: "It is solely the morbidly affected vital principle which brings forth diseases: that in disease this spontaneous and immaterial vital principle, pervading the physical organism, is primarily deranged by the dynamic influence of a morbific agent, which is inimical to life. Only this principle, thus disturbed, can give to the organism its abnormal sensations and incline it to the irregular actions which we call disease."

So also of the operation of remedies, Hahnemann has it, "that the brief operation of the artificial morbific powers which are denominated medicinal, although they are stronger than natural diseases, renders it

possible that they may, nevertheless, be more easily overcome by the vital energies, than the latter, which are weaker. Natural diseases, simply because of their more tedious burdensome operation, can not be overcome by the unaided vital energies, until they are more strongly aroused by the physician, through the medium of a very *similar*, yet more powerful morbific agent, (a homœopathic medicine). Such an agent, upon its administration, urges, as it were, the instinctive vital energies, and is substituted for the natural morbid affection hitherto existing. The vital energies now become affected by the medicine alone, yet transiently; because the medicinal disease is of short duration."

The vitalists of both schools also suppose that natural, morbific and remedial agents, possess certain peculiar and distinct properties, which enable them to exercise an influence only on particular parts of the system through the means of particular nerves; "*passing over, in the fulfilment of this law, various intermediate nerves of more direct anatomical connection.*"—(*Paine.*)

Although we are not advocates of the vital theory thus stated, yet it must be conceded that this principle of elective affinity is so universal, as applied to the operation of the morbific and remedial agents, that the influence which any substance of either class exerts upon the organism, may with propriety be denominated its *specific effect.* The miasms of plague, of intermittent, yellow, and certain other fevers; the infection of contagious diseases; the virus of hydrophobia, syphilis, gonorrhœa, &c., all produce peculiar and specific effects upon the system. Each of these substances possesses the property of *selecting* that tissue for which it has an affinity, and of expending its entire primary action upon the particular part selected.

It is owing to this specific law, that medical men have been able to classify diseases; to predict with certainty, that the exposure to the influence of morbific agents, under certain circumstances, will give rise to abnormal action in certain parts, attended with a definite and uniform train of symptoms.

It is also in virtue of this specific law, that medicines may be administered which operate with certainty upon particular tissues and organs and effect those primary and sympathetic modifications in diseases of the organism, which enable nature to bring about safe and speedy cures.

One of the chief objections urged against the therapeutical doctrines of homœopathy is the supposed "fallacy of reasoning from the effects of remedial agents upon healthy to morbid conditions." (*Paine's Institutes of Medicine.*) The reason adduced for this opinion, is the fact that *diseased* parts become modified in their action, and far more susceptible to the operation of remedies than when *healthy.* This last

statement is doubtless true, and it stands, as we shall endeavor to show, at the foundation of the homœopathic method of administering medicines.

Although the axiom, "*contraria contrariis opponenda*," is almost universally acknowledged as a principle of faith among the different schools of allopathia, so far as *theory* is concerned, yet in *practice*, the principle "*similia similibus curantur*," is as we have before observed, not unfrequently adopted.

In order that a clear understanding may be acquired of the manner in which medicines operate, as exhibited by the old and new schools, we shall attempt to demonstrate:—

1. That most morbific and remedial agents operate *specifically* and with much uniformity, both in health and in disease, as causative and curative agents.

2. That all drugs produce upon the human body *primary* and *secondary* effects, the first of which appear speedily, and when the dose has not been excessive, are of short duration, and are then succeeded by the second, which are of opposite character and permanent.

3. That in *disease*, the susceptibility of the affected parts to the action of remedies is vastly greater than of the same parts when in *health*.

4. That medicines, when administered in crude form, and in large doses, according to the doctrines and ordinary practice of the old school, whether applied directly to the diseased organ or tissue, or to a healthy structure, remote from the diseased part, are not only incompetent to eradicate disease in a safe and speedy manner, but generally serve to aggravate the already existing symptoms, and by superinducing additional medicinal disease, complicate, to a serious extent, the original natural affection.

5. That when a curable natural disease has been excited in the organism, attended with a definite train of morbid symptoms, a medicine capable of causing (in large doses,) a similar series of symptoms, in health, will become speedily curative of such natural disease, if administered in the attenuated doses of homœopathy.

SPECIFIC EFFECTS OF MORBIFIC AND REMEDIAL AGENTS.

All are aware that the natural poisons of certain animals, the virus of hydrophobia, syphilis, gonorrhœa, and sycosis; the miasms of plague, and of yellow, typhus, and intermittent fevers; the infection of contagious diseases, &c., when introduced into the circulation, produce *specific effects* upon the human system, and give rise to definite and easily recognized symptoms.

There are other morbific agents, like intense and protracted heat and cold, atmospheric vicissitudes, excessive physical and mental exertion,

violent emotions, &c., that operate in a more general, but not less specific manner. Their operation, when carried so far as to become morbific, induces debility of the nervous system; loss of irritability in the capillary vessels, which makes them incapable of excluding the red globules, and as a consequence, developing augmented heat, swelling, redness, and pain.

The influence of almost every agent, whether morbific or medicinal, appears to possess a kind of elective affinity for some particular organ or structure of the organization." This fact is so apparent in regard to *morbific* agents, that it scarcely requires notice; but there are many authors who still entertain doubts respecting the specific action of *medicines*. An attentive examination of the following facts, must, however, settle that question satisfactorily in the minds of all impartial inquirers.

Remedial agents operate in the same specific manner, both in health and in disease; but with the difference that in the latter condition, only a very minute quantity of the specific agents is requisite to produce a salutary impression, on account of the augmented suspectibility to remedial impressions which diseased parts acquire.

1. "A medicine administered in certain doses, and during a certain period of time, can produce pathological lesions analogous to those that characterize certain diseases."

2. "This same medicine, given to a healthy individual, on the same principles, produces the characteristic symptoms of the diseases whose pathological lesions it gives rise to."

3. "This medicine is a specific in these same diseases."

4. "Specificity is not therefore an isolated fact, but the law which should guide medical treatment." (*Des specifiques en médecine, Paris; par L. J. J. Molin*).

The experiments of Magendie, Blake, Pereira, Rau, Liebig, Müller, Orfila, Griesselich, Molin, Matteucci, and Philip, prove conclusively, that most morbific and remedial agents, when given in massive doses, produce their effects after having been absorbed into the blood. It has also been proved with equal certainty, that foreign substances, when absorbed into the circulation, are conveyed to those structures for which they have a special affinity, and there make a specific impression, which modifies the function of the part, according to the nature of the agent, and predisposition of the individual. The blood serves as conducting medium merely, and if the absorbed substances do not possess the power of exercising an influence upon any tissue, they may continue to circulate through the lungs until inspired air gradually neutralizes them, or they may remain for an indefinite length of time, (as sometimes happens in cases of hydrophobic virus, and fever miasms, without affecting the system), and yet retain their activity.

The reason of this may be, that the tissues upon which they act, are in so perfect a state of vigor as to be able to resist the power of the noxious agent, until some cause shall enfeeble the part to be affected, and thus predispose it to receive the injurious impression.

It will not be denied, that both in healthy and diseased states of the organism, Cantharides, Copaibæ, Cubebs, the Turpentines, Juniper, Squills, Colchicum, Digitalis, Apis-mel. Cajeputi, and most other diuretics, produce their effects by acting directly or *specifically* upon the kidneys, as topical irritants; that the preparations of Mercury, Nitric-acid, Iodine, &c., exercise a direct and specific action upon the glands, mucous membranes, and skin; that Senega, Phosphorus, Ipecacuanha, tartarized Antimony, (whether taken into the stomach, or injected into the veins), and many of the resins exercise a specific action upon the lungs; that Aloes, Gamboge, Colocynth act specifically upon the stomach and rectum, while Senna, Rhubarb, Scammony, Jalap, and certain other cathartics, spend their effects upon all portions of the intestinal canal; that Ergot, Savin, Pulsatilla, Madder, Tansy, &c., operate *specifically* upon the uterus; that Belladonna, Opium, Stramonium, Strychnine, Hyoscyamus, Conia, and Coffee impress specifically some portion of the nervous system; and in a word, that almost every drug impresses certain tissues in preference to others, and that a knowledge of the manifestations to which these different impressions give rise, can alone enable us to combat diseases. That the above enumerated substances are actually absorbed, and exert a topical effect, is apparent from the fact, that they have often been detected in the blood, secretions, excretions, and even the solids of the body.

It is asserted by Flourens, "that Opium acts *specifically* on the cerebral lobes; that Belladonna in a limited dose, affects the tubercula quadrigemina, and in a larger dose the cerebral lobes also; that Alcohol, in a limited dose, acts exclusively on the cerebellum, but in a larger quantity, it affects also neighboring parts; and lastly, that Nux-vomica more particularly affects the medulla-oblongata." He also states, "that in birds, it is possible to observe, through the cranium, changes of color, (some alterations in the vascular condition of the parts) which these agents affect in the brain." Pereira, in his Materia Medica, also declares, that "the ammoniacal, empyreumatic and phosphoric stimulants, containing Ammonia and its salts, the empyreumatic oils, Phosphorus, Musk, and Castoreum, all agree in producing a *primary* and *specific* effect on the nervous system, the energy and activity of whose functions they exalt. On account of their specific influence over the nervous system, they are administered in various spasmodic or convulsive diseases, especially in hysteria, and also in epilepsy and chorea. The beneficial influence of some of the vegetable tonics, (as Cinchona), in intermittent diseases, should probably be referred to the *specific*

effects of these agents on the nervous system. The preparations of Arsenic, Silver, Copper, Bismuth, Zinc, &c., are usually, but I think most improperly, denominated tonics. They are agents, which in small and repeated doses, as well as in large and poisonous doses, *specifically* affect the nervous system."

We are also assured by Liebig, in his work on animal chemistry, that "we can by remedial agents exercise an influence on every part of an organ, by substances possessing a well-defined chemical action." It will be observed, that we have adopted, in part, the views of Müller, in regard to the operation of morbific and remedial agents. This distinguished physiologist supposes, that the blood is only the "vehicle of introduction," and that as it passes through the tissues of different organs, the medical particles with which it is impregnated "act on one or more parts, which are endowed with a peculiar susceptibility to their influence." He also supposes, "that a change is effected in the composition of the organic matter of the parts acted on."

That medicinal substances induce modifications in the functions of the organs by topical action, is proved, as we have before observed, from the fact, that medicinal particles are often found in the excretions of the affected part. The inference must follow, from a careful consideration of all the facts bearing upon the subject, that the functions of the organism are generally morbidly altered by the direct action of noxious substances. (For further proofs respecting the doctrine of absorption and topical action of drugs, see the experiments of Müller, Tiedemann, Gmelin, Magendie, Matteucci, Liebig, Rau, Flourens, Dutrochet, Blake, Hering, Mayer, Christison, Orfila, and Dumas).

In regard to the mode in which these substances operate, we suppose that their primary impression is made upon the sentient extremities of the nerves, impairing their integrity, and rendering them incapable of conducting the spiritual stimulus (which is an essential condition to *irritability*,) to the extreme vessels.

It must be borne in mind, that in all inflammations, the capillaries are the "instruments of disease," that the primary impressions of all deleterious agents are made upon these delicate structures, and that all of our remedies must be directed with reference to the state of these vessels in curing disease, "upon these vessels, all remedial agents exert their curative effects, whether by their direct action, or through the instrumentality of the nervous power." (*Paine*).

The extreme terminations of the nerves are so highly impressible, that the very minutest quantity of a specific agent is capable of producing prompt and decided effects, while the same agent would prove powerless if applied to the larger nerves. Thus it is that imponderable substances and mental emotions are so often the causes of disease. Here we have one reason, also, why medicines, when administered ho-

mœopathically, produce those happy modifications in the affected parts which dispose them so speedily to recovery. In connection with this, if we take into consideration the extreme sensibility which diseased parts acquire to the operation of medicinal agents, we shall be unable to doubt the propriety of administering medicines according to the homœopathic method.

Müller supposes, that when impressions are made by specific substances, "changes are effected in the composition of the organic matter of the parts acted on." Of this, however, there is no satisfactory evidence. On the contrary, we know positively, that very many cases of disease occur without giving rise to any change whatever in the organic construction of the parts affected.

One of the first indications generally observable in an abnormal state of an organ or tissue, is a loss of tone, or irritability and perverted function of the capillary vessels. In the experiments performed on the blood by Philip, Alston and Gallois, it was observed, that the smaller vessels were the first to succumb to foreign influences, and then, if the potency of the agent were increased, the larger vessels would become affected.

Now, when we reflect, that *irritability* is dependent, 1., upon a normal organization of parts; 2., a regular and uniform supply of *natural material stimuli*, the arterial blood, &c., and, 3., a healthy action of the mind, in order that the *spiritual stimulus* shall make its due impression, we can readily conceive, how slight a cause, moral or physical, morbific or remedial, may disturb or impair this irritability, and thus induce disease. "Every part of the organism depends for the performance of its proper functions on the receipt of arterial blood and of nervous influence; so alterations in the supply of either of these essentials may modify or even suspend the functions of a part." (*Pereira's Materia Medica.*)

The nerves are simply the *conductors* of the intelligence, and so long as their integrity, tone or conducting power remains unimpaired, this essential condition of irritability will remain. If, however, any cause acts upon them in such a manner, as to injure or destroy this important property, the stimulus of the superintending spirit is not transmitted, and, as a consequence, disease must result from the absence of one of the important requisites of irritability or contractility.

Injurious impressions may be made upon the extreme nerves either by deleterious matters absorbed into the blood, and brought into direct contact with them, or by certain external applications, like electricity, magnetism, heat, cold, exercise. Inflammation may be excited by the operation of either of these causes, by a primary effect upon the sentient extremities of the nerves, which induces

loss of tone and conducting power, and, as a consequence, loss of irritability and resisting power in the capillaries. This impression is not made, as some theorists would have it, upon an *immaterial principle*, but upon something material, tangible and demonstrable, viz., nerves themselves.

Poisons and other noxious substances, when taken into the blood, are rapidly conveyed to all parts of the body; and when they arrive at the structures, upon which they have a specific action, nature makes an effort to expel them through these particular parts. If the substance be active in its effects, the impression which is made upon the minute nerves of the part, will be in a corresponding manner severe. The length of time required for foreign substances to produce their effects is extremely variable. Some articles, like several of the salts of Potash, Juniper, the Turpentines, Asparagus, Indigo, Madder, &c., are expelled through the urinary organs in a few moments, while other substances may remain in the blood for an indefinite period of time, or until some predisposing cause shall act upon the system in such a manner as to augment its susceptibility and place it in a condition to be affected by the morbific agent. In some instances, the morbific agent remains harmless in the circulation for months, and even years, when suddenly some tissue becoming enfeebled and incapable of resisting the action of the specific agent, the disease in all its violence bursts forth. In cases like these, it is quite evident, that the injurious impressions can not be made upon the *vital properties* of parts, for the effects must be sooner propagated and rendered apparent. Neither can we suppose with the advocates of the chemical hypothesis, that the constituents of the blood become altered and contaminated with the peculiar miasms or virus, for such blood introduced into the circulation of a healthy individual gives rise to nothing like the original disorder. We again repeat, that the blood is simply the vehicle which conveys the poison, and that no effects are produced until the structure for which the poison has the greatest affinity, has become ready from predisposing cause, to receive the impression of the deleterious agent, and thus is specifically affected.

Why it is, that morbific and remedial agents *select* particular organs and tissues to exert their action upon, we do not know; but that such is the fact, all medical observers will bear witness. Nor is it more surprising, than that some of the natural fluids, like the urine, gastric juice, bile, &c., remain with impunity in some parts of the body, while if they gain admission to other parts, as the cellular substance or peritoneum, they occasion inflammation, sloughing and death.

Those substances in nature, which in certain modes of application to

the living organism produce immediate death, and in other degrees of their power only derange the healthful operations and produce disease, are usually known under the name of *poisons*.

Poisonous substances produce disease by three different modes:*

1. By local destruction or irritation of the living surface to which they are applied.
2. By producing changes in the composition of the blood.
3. By direct changes in the nervous system.

I. The first class of poisons embraces all substances that produce their effects in accordance with the laws of organic chemistry: such as concentrated acids, alkalis, some salts and metallic oxides, also some kinds of acrid vegetable matter. The effects of these articles vary widely according to the quantity in which they are employed, and they become deadly poisons or beneficent remedies according to the conditions under which they are used. A small quantity of Arsenic taken into the stomach excites a severe inflammation, with vomiting and diarrhœa, by which the irritated organ endeavors to expel the offending substance. If we take the one-thousandth part of a grain, a series of phenomena of a different character will be elicited. The minute particles of the poison having been tolerated in the stomach, pass out of it with its other contents; and may be absorbed with the chyle from the inner surface of the intestines and conveyed into the general circulation without producing violent symptoms. Thus the effect of a corrosive poison is entirely changed by merely reducing the dose. We will hereafter see, that when the dose is reduced to a quantity sufficiently small and finely attenuated, the agent would produce no perceptible effect on a person in health; but that the same dose, charged with the dynamic force, which is developed by the process of attenuation, is capable of exerting a curative influence in a patient affected by a disease which is similar to that which Arsenic is capable of causing.

Of this dynamic force, which is developed by trituration, and succussion in the preparation of homœopathic attenuations, Hahnemann says: The discovery by which this development of the medicinal powers of drugs is effected "*is of inexpressible value*, and so undeniable, that those who, from a want of knowledge of the resources of nature, consider homœopathic attenuations as *mere mechanical divisions* of the original drug, must be struck dumb when they consult experience."

II. There are other substances whose particles in their ordinary state adhere so firmly together that in their unchanged condition they manifest no action upon the human organism except in their chemical relations. Metallic gold, silver, tin, vegetable coal, silicea, &c., are entirely inert, even if taken in large quantities. But these apparently

* Dr. H Goullon.

powerless substances are, nevertheless, charged with a latent force, and by trituration with an inert substance, as sugar of milk, become changed into active medicinal agents. And the more perfectly their surface is atomized by trituration, *i. e.*, their atoms are liberated, "the more their latent peculiar electricity is developed, and at the same time transmitted to another vehicle, as is done by every electric-machine." They have then become *potentized*, *dynamized*, having "their latent force rendered active through the solution of cohesion." In order that this concealed or latent power might be effectually developed, Hahnemann directed that in preparing the first triturations, two whole hours should be consumed.

III. *Substances, chiefly Vegetable, which are active in their natural state.*—Of these the number is very large, and it is remarkable that the chemical composition of such as are feeble in their action, is almost the same as that of others which are virulent poisons. They are all active in their natural state; but, as remedies, they require to be used in small quantities, and they become highly useful in removing diseases and symptoms, such as they are capable of producing.

ALLOPATHY.

It would be very difficult to give a correct definition of the above term. The axiom, which is adopted by a portion of the disciples of the allopathic school, and upon which their hypothetical doctrines are founded, is "*contraria contrariis opponenda.*" Although distinctions are recognized between the *antipathic* or *palliative*, the *allopathic* or *heteropathic*, and the *chemical* methods of practice, yet in point of fact, they may all with propriety be resolved into one and the same school. All employ venesection, emetics, purgatives, diaphoretics, and alteratives, to reduce inflammations; opium to allay pain and suppress unnatural discharges; bark, iron, and brandy, &c., as tonics; blisters, setons, moxas, issues and escharotics to produce counter irritation; revulsives, derivatives, and indeed all of those means, which are termed allopathic.

Allopathists do not, however, uniformly adhere to any of the above doctrines, but often unconsciously encroach upon homœopathic ground, and, by practicing according to the law of "*similia similibus*," effect their speediest and safest cures.

Thus Rhubarb and Calomel, when administered in large doses during health, cause irritation or inflammation of the membranous tissue of the bowels, as is indicated by the griping pains, and discharges of watery or mucous fluids; yet these are favorite allopathic remedies for diarrhœa and dysentery; Copaiba, Cubebs, Turpentine, and Cantharides, when given in large doses in health, induce inflammation of the mucous membranes of the urino-genital apparatus; yet these specific medicines

are almost invariably prescribed in the acute and chronic affections of these parts; Ipecacuanha, in doses of twenty to thirty grains, is the most common emetic of the old school; yet this same school are constantly in the habit of administering this drug in doses of one-twelfth or one-sixteenth of a grain, in cases of obstinate nausea and vomiting, with the most happy results; inhalations also of the particles in Ipecacuanha cause asthma, cough, dyspnœa, &c.; yet it is a common remedy in small quantities for the cure of these complaints; excessive use of alcoholic liquors or opiates, often induces *delirium tremens;* yet Opium and Brandy, which exercise the same specific effect upon the brain, are the principal allopathic resources in curing this dangerous malady; the preparations of Mercury, when given in considerable quantities, cause ulceration and sometimes gangrene and sloughing of the mouth and throat, pains in the muscles and bones, eruptions upon the skin, and inflammation of the bowels, attended with tenesmus, and mucous and bloody stools; yet for syphilitic and other ulcerations of the throat, pains in the limbs, eruptions, and bowel affections, the use of small doses of this mineral, in some form is deemed indispensable by the allopath. Sir Astley Cooper, in his Lectures observes: "Children often contract syphilis *in utero*, and within twenty-four hours after their entrance into the world, have the palms of their hands, the soles of their feet, and the nates covered with copper-colored eruptions; and the nails begin to peel off, and if care be not taken, the little patient will sink under the effects of disease. In these cases you give the *mother* a quantity of Mercury, the influence of which is communicated to the child, through the medium of the milk, and it becomes cured of the syphilitic disease."—*Cooper's Manual of Surgery by Castle.*)

This is excellent homœopathic treatment; the Mercury in this instance is attenuated in the mother's milk to a very great extent—probably to such a degree that no analysis can detect it, or any scales weigh it, and yet Sir Astley Cooper assures us, that the infinitesimal quantity of Mercury, which finds its way to the milk of the mother, is sufficient to effect a speedy cure upon the child. In this instance nature, instead of art, attenuates the drug. Tartarized Antimony exercises a specific effect upon the lungs, stomach, and secretory organs, causing, according to Magendie, an inflammation or engorgement of the two first named organs, whether taken into the stomach or injected into the veins; yet this is the sheet-anchor of allopathy in pneumonia, pleurisy, and in the first stages of gastric or bilious fevers. Arsenic, when taken in large doses, in health, has a specific influence upon the nervous system, heart, skin, and alimentary canal; and this is an important old-school remedy in neuralgia, epilepsy, chorea, angina-pectoris, cutaneous affections, and intermittent fevers. When nitrate of silver is absorbed in health, it makes a specific impression upon the nervous

system the brain, &c.; allopathists employ it in epilepsy, chorea, and morbid sensibility of the gastric and intestinal nerves. Large and repeated doses of Nux-vomica or Strychnia, taken in health, produce "rigidity and convulsive contractions" of the muscles; yet in cases of traumatic tetanus, Strychnia has effected cures in the hands of allopathic physicians, in doses of one-fourteenth to one-twentieth of a grain.—(*See Report of a case by Dr. Fell,—N.-York Med. and Surg. Reporter, No.* 8.)

The specific action of Nux-vomica under all circumstances is upon the cerebro-spinal system, and thence its efficacy when properly exhibited in tetanus, epilepsy, chorea, and hysteria. Belladonna, taken in health, gives rise to inflammation of the throat and a scarlet eruption upon the skin; and yet this remedy is highly extolled and extensively used as a prophylactic against scarlatina by many leading men opposed to homœopathy. An eruption resembling psora is often produced by an excessive use of Sulphur and Iodine; still these are the grand remedies in cutaneous affections of this kind. Pereira prescribed Prussic-acid to a lady who had been suffering for months from gastrodynia; in a few hours, to the astonishment of every one, she was quite well. "It can hardly be imagined," says Pereira, "that irritation of the stomach can be rapidly removed by a substance which is *itself an irritant.*" The direct application of blisters to surfaces affected with rheumatic, erysipelatous, and other natural cutaneous inflammations, is constantly recommended at the present time by the followers of Hippocrates. "Erysipelas and other cutaneous inflammations may be removed by the direct action of Cantharides upon the part inflamed. The remedial agent in these cases varies the mode of inflammation, and thus introduces a modification in which the properties of life are brought into recuperative action;" (*Paine's Institutes of Medicine*); yet they affect a superlative contempt for the law of "*similia similibus curantur*!"

It is from experience alone, that the old-school physicians have learned, that Ipecac., in doses of one-twelfth to one-sixteenth of a grain, arrests, nausea and vomiting, and imparts tone and vigor to the stomach; that Calomel, in doses of one-twentieth of a grain, is invaluable for the cure of inflammation of the mucous membranes of the bowels: "in cases of inflammation of the mucous tissue of the intestines, attended with frequent watery discharges, there is nothing comparable with Calomel, in doses varying from the twentieth to the eighth of a grain once in four to twelve hours." (*Paine's Institutes of Medicine.*) That Quinia, in doses of one-sixteenth or one-twentieth of a grain is more efficient in removing remittent and intermittent fevers, and as a general tonic in diseased states of the system, than when exhibited in quantities of from one to ten grains at a dose, is admitted by the best authors. "Quinia, in the dose of five to ten grains," says Dr. Payne,

"may speedily arrest an intermittent fever by its *febrifuge* virtue; but this is bad practice, since, by its associate *tonic* virtue, it is likely to increase or to induce local congestions; thus leaving the patient imperfectly cured, and subject to relapses: I have seen, in my own family, the most formidable grade of remittent fever, of long duration, and attended with the foregoing complications, ardent heat, thread-like pulse, loss of mind, &c., and where hope of recovery had been abandoned, *yield to less than a grain of Quinine, divided into sixteen doses.*" (*Institutes of Medicine*). By experience also they have learned, that Strychnia in very minute quantities, will cure tetanus; and that the class of remedies denominated *alteratives*, are capable of producing powerful effects upon the organism, and that too in a manner altogether unknown and imperceptible.

But how do these physicians know that the virtues of these medicines cease at these points? Have they ever made honest trials of them in a *pure form*, and in doses of one-fiftieth, one-hundredth, or a still smaller proportion of a grain, and learned from *actual observation*, that they have then lost their power of impressing diseased structures? We venture to affirm, never, or they would long since have deserted the standard of allopathy.

This leaning towards the modern theory is not altogether confined to the few practical cases, which we have cited, but some of their most eminent writers have approached so near to the views of Hahnemann, that we are at a loss whether to rank their theoretical doctrines as homœopathic or allopathic.

Pereira in his Materia Medica, writes as follows: "Unguents and lotions are used in cutaneous diseases, ulcers, &c.; gargles in affections of the mouth and throat; Collyria in ophthalmic diseases, and injections into the vagina and uterus in affections of the urino-genital organs. *In all such cases, we can explain the therapeutical effect in no other way, than by assuming, that the medicine sets up a new kind of action in the part affected, and that the new action subsides when the use of the medicine is suspended or desisted from.*"

This explanation is the true one. The medicines in these cases, as well as in all other instances where appropriate specific remedies are used, do "*set up a new kind of action in the part affected*, creating a *medicinal disease*, which supersedes the *natural one*."

The only fault we have to urge against the allopathists in the treatment of these and analogous cases, is, that they give much too large doses, and thus create a far more violent medicinal disease, than is necessary to bring about their cures. Notwithstanding, however, their errors in exhibiting medicines in a crude and impure form, and in unnecessarily large doses, we must give them the credit, (*fiat justicia*

ruat cælum), of occasionally curing disease (although unwittingly) in a "rational and consistent manner."

"When the intestinal mucous tissue," says Dr. Paine, "is affected with that condition of disease which results in a preternatural watery secretion and consequent evacuations, which is called diarrhœa, and Rhubarb is administered in a certain dose, this substance first impresses the membrane in such a way as to determine an increase of the peristaltic movement, *but it simultaneously alters the morbid state of the intestinal mucous tissue in such a way, that the natural secretion is arrested.* Whether, therefore, the Rhubarb purge, or prove astringent or tonic, a common principle and common laws are concerned throughout; *and all the sensible results depend upon certain alterations, which the agent effects in the vital properties and actions of the vessels or tissues which are the seat of the morbid conditions, or in which the various phenomena may take place.*" (*Institutes of Medicine.*)

The same principle directs the practitioners of the old school in the treatment of many other diseases, and yet they sneer at homœopathy, and hold up their own inconsistent and uncertain doctrines as philosophical and correct! They thus constantly administer medicines after the manner of the homœopathist, abandoning their own theories, they practice upon the principles of our modern heresy. Gentlemen of the old school, where is your pride, where your consistency? You have the boast of antiquity; you have received your "bundle of ideas" from Hippocrates and Galen, to whom you pay reverence and allegiance; you disdain innovations, and despise discoveries and improvements; you have withstood the changes of more than two-thousand years, and by your powerful dicta have continually discouraged all original induction, and endeavored to crush in the bud every advancement in medical knowledge. Where is now your former pride, that you so often *practically* abandon your time-sacred axiom, "*contraria contrariis*," and adopt the new heresy, "*similia similibus*!" Perhaps the light of modern science and discovery breaks, against your will, through the crevices of your unjointed and heterogeneous theories, or you are startled from your propriety by the overwhelming accumulations of fact which Hahnemann and his disciples have displayed before the world; or, possibly, the disrespect and abuse of some of the most eminent and able of your caste, has impaired all confidence in, and respect for, your own dogmas and their applications, and you are at sea in search of a system. Are we wrong! If so, we have excuse in the following from the late distinguished editor of the "*British and Foreign Med. Chirur. Review*," Dr. Forbes, who asserts:

"1. That in a large proportion of the cases treated by allopathic physicians, the disease is cured by nature, and not by them."

"2. That in a less, but still not in a small proportion, the disease is cured by nature in spite of them; in other words, their interference opposing instead of assisting the cure."

"3. That, consequently, in a considerable proportion of diseases, it would fare as well or better with patients, in the actual condition of the medical art, as more generally practiced, if all remedies, at least all active remedies, especially drugs, were abandoned. We repeat our readiness to admit these inferences as just, and to abide the consequences of their adoption."

We have thus far made allusion to that part only of the allopathic *practice*, which bears some approximation to the correct method. In most of the instances enumerated, *specific medicines* are employed,—medicines that produce a similar state when given in health, to that which they are to cure. Although large quantities of crude and impure drugs are used in these instances, and the medicinal diseases are thus rendered violent and complicated, still it must be admitted that occasional cures are accomplished.

But we come now to a more interesting and momentous part of our subject. It becomes our duty to lay before our readers the doctrines and practice of allopathy, as they actually exist; to note their many inconsistencies, and to point out some of the innumerable evils which they entail upon mankind.

We have seen that in the treatment of disease, the old-school physicians make an indiscriminate use of the *palliative*, *heteropathic*, and, in a few instances, to the homœopathic methods of practice.

A general idea prevails that all diseases consist in "local determinations of blood," and that no two affections of any consequence can exist in different parts of the same organism, at once. On this account it is that new diseases are created in healthy parts for the purpose of removing the primary natural one.

Physicians have been led to adopt this mode of reasoning from observing that the spontaneous appearance of cutaneous eruptions, discharges of blood, profuse perspirations, &c., occasionally afford relief to morbidly affected internal organs. Without reflecting that these results are *merely symptoms* of the internal disorders, and that the causes upon which these signs depend are located in the blood, they attempt to annihilate diseases by imitating artificially *these symptoms*.

In regard to the first position, we affirm that their premises are untrue. There are no facts, which warrant the statement, that "no two excessive determinations of blood can exist in the same individual at the same time." Neither is it true, that the appearance of cutaneous eruptions, spontaneous sweats, diarrhœa, and discharges of blood are invariably, or even generally, indications that the affected organ is in process of restoration, or that the system at large is recovering its lost

energy and vigor; since it often occurs that the symptoms of the complaint are all aggravated upon the supervention of either of the above occurrences.

Dr. Wilson observes, that "there is often a remarkable tendency to the worst species of hæmorrhages from the bowels, towards the termination of fatal cases of phrenitis." Dr. Eberle says, "on the day preceding the fatal termination of a case of phrenitis, which came under my own observation, an exceedingly copious discharge of dissolved blood took place from the bowels, and on the following morning the hæmorrhage occurred also from the mouth and gums."—(*Practice of Physic.*)

Let us suppose a case of phrenitis. We have here an inflammation, or a congested state of the capillaries of the brain. To relieve this inflammation and withdraw a portion of the fluid which is concerned in the congestion, bloodletting, both general and local, is resorted to as a primary and indispensable means of cure. By this means the general strength is reduced, the pulse increased or diminished in frequency, and the temperature of the skin is altered, but the congestion still continues, and the morbid and debilitated state of the extreme vessels (in which the disorder alone resides) remains the same as before.

A resort is then made to *revulsives* and counter-irritants, in order that new inflammations may be created in healthy structures, which shall supersede that already existing in the brain. To effect this object purgatives of the drastic kind are exhibited, and blisters applied to the head, neck, and lower extremities, in order that the intestinal canal and portions of the skin, shall be placed in a state of artificial inflammation.

Let us understand the case clearly. We have a disease consisting solely in a loss of tone and irritability of the serous vessels of the brain, which prevents them from excluding the red blood, and of performing properly their functions. To obviate this condition, a quantity of blood is abstracted, and artificial or medicinal inflammations are caused in the intestinal canal, and upon different parts of the surface of the body.

We now inquire in what manner these violent means can, by any possibility, reach the *seat* of the malady, and impart tone and vigor to the weakened capillaries, so as to enable them to exclude from their structure the red globules, and resume their healthy function?

All will concede that inflammation consists in loss of tone and irritability in these vessels, and that no cure can take place, until this impaired irritability is restored. In inflammation, according to Philip, Hastings, Eberle, Wilson, and Allan, the capillaries of the part are in a state of *debility* and *passive relaxation*. The immediate exciting cause of the inflammation may be either *stimulant* or *sedative*. In both instances the impression is made upon the nervous filaments of the

capillaries, and if the cause acts as a *stimulant*, the reaction which must follow this augmented action will leave these delicate nerves in a state of debility proportionate to the amount of the previous excitement.

If the primary cause is directly *sedative*, no reaction will occur but a similar state of relaxation will obtain as in the former instance.

How then, we repeat, can venesection, catharsis, and blisters effect the necessary object? They do not certainly prevent the red blood from still entering the relaxed capillary tubes, for the whole *remaining* mass must continue to circulate through the brain, as well as other parts of the organism, every few minutes.

By lessening the quantity of blood, we also abstract a portion of that natural stimulus of the organism, which is one of the essential conditions of irritability. "Every part of the organism depends for the performance of its proper functions, on the *receipt of arterial blood and of nervous influence; no alterations in the supply of either of these essentials may modify or even suspend the functions of a part.*" (*Pereira,—Materia Medica.*)

How absurd and pernicious then, in inflammations, the very essence of which is debility and loss of tone, to detract from one of those conditions upon which this very tone and vigor depends! As well might you remedy the breach through which the waters of a raging torrent are madly rushing, by turning off from its course some small tributary rivulet. As well attempt to suppress the leak of a storm-tossed vessel, by diverting from its proper channel a portion of the stream on which it floats.

It is not the blood which is at fault; but a portion of the organism; correct therefore the *cause* of the disturbance by direct and appropriate specifics, and you may then, and not till then, effect cures, safely and philosophically. Seek not to deprive the system of that fluid, which is so essential to the organism, and on whose integrity its functions depend; for by so doing, the *cause* of the malady will remain untouched.

It is very true, that when a large quantity of blood is abstracted, during inflammation, there will seem to be in some instances an apparent amelioration of all the symptoms, but this effect is only temporary; for as soon as the reaction comes on, the enfeebled capillaries again admit the destructive "carriers of oxygen" as before; the state of congestion and inflammation remains, while the system at large has lost a portion of that stimulus, which conduces so materially, not only to sustain the normal integrity of the functions in health, but to aid in the restoration of enfeebled and diseased parts.

The remedies, which stand next in importance in the old-school method of treating inflammation of the brain, are *revulsives* and *counter-*

irritants. It is supposed, that by exciting the intestinal exhalents, inflaming the membrane of the bowels, and portions of the skin, the circulation is diverted from the brain and directed especially to these parts.

But by this means is the brain in reality relieved? Is the whole mass of blood thus prevented from circulating as usual through this organ once in three or four minutes, or the character of its red globules changed? By exhausting the energies and resisting force of distant healthy structures, and creating sympathetic symptoms throughout the body—thus complicating the already existing disease, and impairing the entire nervous and muscular energies—are the inflamed capillaries of the brain placed in a more favorable condition to recover their impaired tone and irritability? Every man who has a correct idea of the laws which govern the organism in health and disease, and who is willing to banish prejudice and be guided by common-sense and true philosophy, must answer in the negative.

We object to these remedies, however, not only because they are incompetent to produce salutary impressions upon inflamed parts, but because of the evils of a positive character to which they give rise.

The chief remedies of the old school are the preparations of Mercury, Opium, Antimony, and Bark. In a vast majority of all the cases treated by the practitioners of this school, one or more of these articles is made use of. Indeed scarcely a single malady of any moment can be named, in which one of these medicines is not considered indispensable.

Let us then examine some of their effects, in allopathic doses, upon the healthy and diseased organism.

1. Mercury.—This mineral is more uncertain in its action in all states of the system, than any other article in use. It possesses the power in different constitutions and under certain circumstances of affecting nearly every organ and tissue of the body; and it is not in the power of the most judicious physician to say beforehand, *where*, or *in what manner*, it will exert its force.

Some of the more common deleterious effects of Mercury are: *excessive salivation and sloughing of the gums, mouth and throat, gastro-enteritis, mercurial erethism, dysentery, cutaneous eruptions, inflammation of the periosteum and bones, nodes, excessive derangement of the nervous system, paralysis, tremors, necroses of the maxillary and other bones, rheumatism and ophthalmia.*

When Mercury is administered, even in a moderate quantity, no human being can be at all certain that one or another of these evil consequences will not result. Indeed it is the direct object oftentimes, to produce some of them to operate as *counter-irritants.*

Whether it is employed in large or small quantities, solid, or in the

form of vapor, it is of little importance, so far as its power of affecting the system is concerned. The following, from the editor of the *Med. and Surg. Journ.*, illustrates the baneful influence of the vapor when inhaled: "In 1810 the Triumph, man-of-war, and Phipps, schooner, received on board several tons of quicksilver, saved from the wreck of a vessel near Cadiz. In consequence of the rotting of the bags, the Mercury escaped, *and the whole of the crew became more or less affected.* In the space of three weeks 200 men were salivated, two died, and all the animals, cats, dogs, sheep, fowls, a canary-bird,—nay, even the rats, mice, and cockroaches were destroyed."

The following cases, resulting from the employment of Calomel, have come under our own observation, viz., three cases of necrosis of the inferior maxillary bones, requiring the removal of portions of the jaw; several cases of gangrene and sloughing of the mouth and throat, which have terminated fatally; a number of cases of mercurial palsy; numerous instances of ulceration of the nose, throat, &c., skin diseases, affections of the bones, nodes, rheumatic affections, &c., &c.

Professor Chapman of Philadelphia, after descanting upon the woful effects, which have been so often produced by Calomel, and referring to many disgusting cases of mercurial disease, which had come under his own observation, thus concludes: "*Who is it*, that can stop the career of Mercury at will, after it has taken the reins in its own destructive and ungovernable hands! He, who, for an ordinary cause, resigns the fate of his patient to Mercury, is a vile enemy to the sick; and if he is tolerably popular, will in one successful season have paved the way for the business of life; for he has enough to do ever afterwards to stop the mercurial breach of the constitutions of his dilapidated patients. He has thrown himself in fearful proximity to death, and has now to fight him at arm's length as long as the patient maintains a miserable existence."

And this dreadful poison is the most common,—yes, the daily remedy of allopathy, for almost every disorder, whether mild or severe, acute or chronic. This is the agent with which artificial diseases are created in healthy parts, to cure primary or natural ones! This is the substance with which unfortunate mortals are drugged, from the time they come into the world until their wretched and too ofen premature departure, with its well-known and generally-admitted evils and dangers,—from the contemplation of which the well-instructed and experienced allopath shrinks with instinctive dread,—and from its questionable value in most instances of its prescription, it may justly detain our attention. Calomel and Opium are the common remedies in traditional practice for a large number of diseases. We will see to what extent they may be used in a practice that is philosophical.

By glancing at the standard works on the practice of medicine, it

will be observed, that there is scarcely a single malady, either acute or chronic, in which one or both of these articles is not recommended as an important, if not indispensible means of cure.

The allopath is taught to believe, that Mercury excites the functions of all the organs,—acts specifically upon the liver, salivary glands, heart, lungs and nervous system,—and therefore that it may be administered almost universally. Regardless of the secondary sympathetic affections to which it usually gives rise, he attributes all of these symptoms to the natural disorder, and if the patient succumbs before the combined attacks of the primary disease and the medicinal one, he consoles himself with the reflection that he has followed his authorities and prescribed as his predecessors have done for centuries before him.

Ask him, what are his views concerning inflammation, and he answers, that it consists in a debilitated and congested state of the capillaries of the part affected. Ask him, what is the *methodus medendi* of Mercury in cure of inflammation,—how any of its effects can reach the seat of the malady, the congested capillaries, and restore to them their impaired tone and healthy functions,—and he either avows his ignorance, or offers an unsatisfactory explanation.

2. Opium.—If we except Calomel, this drug, and its preparations are more frequently used by the medical men of the old school, than any other article in the materia medica. Possessing the power, as it does in an eminent degree, when exhibited in large doses, of *covering* (not curing) symptoms, and of *shutting* the mouths of clamorous and inquiring patients, it is used constantly and indiscriminately in nearly all protracted maladies.

Let us then briefly examine the effects of opium in health and disease, and see if it possesses the wonderful property of reaching every structure, and of counteracting so many diverse and contradictory symptoms.

Its effects upon the human system, in medium doses, are in the first instance *stimulating*, but in a short time this is followed by a condition of diminished sensibility and desire to sleep. This state "continues from eight to twelve hours, and is followed by *nausea*, *headache*, *tremors*, *and other symptoms of diminished and irregular nervous energy*. All of the secretions, with the exception of that from the skin, are either suspended or diminished." (*Wood and Bache, U. S. Dispensatory.*) These effects, with a very few exceptions, are uniform under all circumstances, so far as we can judge.

How, then, is this substance applicable to the treatment of so many diseases?

We have remarked, that in a large proportion of all known maladies, there exists an inflammation of an acute or sub-acute character in

some part of the organism, and it is the presence of this inflammation which maintains and perpetuates the disease. We have also observed that all inflammations consist in a congested state of the capillaries of the part affected, caused and kept up by a loss of tone, resisting power, or irritability, which disables them from resisting the intromission of red blood.

It is apparent, then, that in order to prove efficient, such remedies should be exhibited as are capable of acting upon the seat of the complaint, and of restoring the delicate capillary nerves to their normal state of integrity. Opium cannot accomplish this, for its operation tends to impair the nervous energy, instead of adding vigor, to dry up most of the secretions, instead of aiding nature to give vent to the poisonous, and pent-up fluid; it induces *nausea*, *headache*, *tremors*, and many other medicinal symptoms of sufficient severity to make a healthy man sick, or to complicate to a serious extent any existing natural affection.

If we have urged, that opiates have the power of allaying pain, while other more efficient measures are pursued to effect the cures, we reply, that by covering up the pain, the *real* state of the case is concealed; other new symptoms set in, which will be unnoticed by the benumbed patient, while secondary sympathetic affections will be propagated to every part of the body, aggravating and complicating the original disorder.

Opium is highly extolled in low forms of fever and other complaints, where the powers of the system are in an exhausted condition. But let it be remembered, that the *stimulating* effect of this drug is of short duration, and that the corresponding *reaction* or *depression* will bear an exact ratio to the previous exaltation. This law is fundamental; for the system possesses but a definite and limited amount of vital power, and is capable of resisting only a limited degree of unnatural action or disease, so that we can readily perceive how opiates and stimulants must ultimately prove deleterious.

It is true, that perspiration is promoted by the use of this narcotic, but this does not cure. Sweating is merely a symptom, and it may be favorable or otherwise. When excited artificially by medicine it is not productive of benefit, because this adds nothing towards invigorating the weakened capillaries.

"Perspiration," says Dr. Paine, "induced by medicine is of little moment, unless the remedy simultaneously impresses, directly or indirectly, *the parts diseased;* and then the salutary result, so far as the surface is concerned, depends upon special vital influences exerted by the remedy upon the skin and reacting sympathies. This is exemplified by the profound effects of tartarized Antimony, and Ipecacuanha, the uselessness of hot water, *and the frequent pernicious results of*

the compound powder of Ipecacuanha, when free perspiration may follow the administration of either. The effect, therefore, depends but very little upon the evacuation from the skin, as produced by what are called sudorifics." (*Institutes of Medicine.*)

It is proper to observe, that Opium may, and sometimes does effect cures in the hands of allopathists, when given as a *specific*. Its curative virtues in *delirium tremens* and intoxication, even in large doses, are well known. In these instances, the remedy *impresses directly the part diseased*, and cures *homœopathically*. It is quite true, that an infinitesimal quantity of the drug, properly prepared, will always prove more efficient, speedy and safe in accomplishing the object, and will not give rise to the unpleasant medicinal symptoms which necessarily attend the employment of large doses; yet the fact must be conceded, that clumsy and unscientific cures are occasionally effected by the course alluded to.

An interesting case is related by Pereira, illustrative of this: "Opium," says he, "is sometimes employed by drunkards to relieve intoxication. I knew a medical man, addicted to drinking, and who for many years was accustomed to take a large dose of laudanum, whenever he was intoxicated and was called to see a patient." The *specific effects* of the alcoholic stimulants and opium given during health, are exerted as remarked elsewhere, upon the same organ; and we should therefore expect that a malady *caused* by the excessive use of the one, might be *cured* by the specific action of the other.

Tartarized Antimony.—This salt has been several times formally banished from the materia medica on account of its dangerous qualities, and as often restored after some accidental benefits were observed from its use.

The faculty of medicine, at Paris, in 1566, and 1615, passed solemn decrees against it, as a virulent poison, and these decrees were even sanctioned by parliament, though afterwards formally reversed. (*Vale.*)

Since this period, some have loudly extolled its virtues in the treatment of a great variety of diseases, while others have as earnestly condemned its use, as deleterious in all cases.

The distinguished professor Nathan Smith, in his essay on typhus fever, remarks: "I have seen many cases, in which persons in the early stages of this disease were moping about, not very sick, but far from being well, and who upon taking a dose of tartrate of Antimony, with the intention of breaking up the disease, *have been immediately confined to their beds.*" He arrives at the conclusion after much experience, that "*Tartar-emetic* should not be used in this affection, even at its commencement, and in the latter stages of the disease, that it is sometimes followed by fatal consequences."

In emetic doses, tartarized Antimony irritates the stomach, causes

congestion, and sometimes inflammation of the lungs, attended with more or less constitutional disturbance.

When it fails to produce emesis speedily, it often acts violently upon the bowels, giving rise to severe griping pains and watery evacuations. The tenderness of the stomach and intestines, and the constitutional disturbance which succeeds its emetic and cathartic operation, indicates the injury which these delicate structures have sustained.

The primary impression of Antimony is not the only objection against its employment; for, like Calomel and Opium, it gives rise to numerous secondary symptoms in remote parts, which tend to aggravate in a serious manner any natural affection which may be present; one of the most important of these secondary evils is dilatation of the ventricles of the heart. Having witnessed this result in several instances, one of which occurred in my own family, my attention has been particularly directed to the subject, and I am fully of opinion that cases of this description, from the use of Antimony, are by no means unfrequent.

Cinchona.—In intermittent fevers, general debility, and in certain stages of most other affections, Peruvian-bark and its preparations are usually employed by the old school. For the cure of the former, especially, Quinine is the remedy upon which universal reliance is placed; possessing the property, when used in large and repeated doses, of speedily arresting the chills and fever, it is constantly prescribed for this malady, without the slightest knowledge of its specific powers, and without any regard to the dangerous medicinal disorders, which it superinduces.

All allopathists who have had much experience in the treatment of fever and ague, are aware that the mere suppression of the paroxysms by no means restores the patient to health; for in a great majority of instances, he lingers for months or even years in a diseased and miserable condition. In these cases it is probable that a medicinal affection is induced by the remedy, so serious in its character, as to supersede temporarily the primary one. This is evident, from the fact that after the effects of the medicine have somewhat subsided, the original disorder again generally makes its appearance. In some instances, however, the medicinal affection is so severe as to constitute a permanent disease, and thus entirely usurp the place of the fever.

"Experience," says Dr. Paine, "shows that, though bark and its alkaloids, in large doses, will often arrest intermittent fever suddenly, such doses are liable either to induce some congestion, especially of the liver or of the mucous tissue of the stomach, or will aggravate and establish some co-existing congestion; and thus while the patient is for the present relieved of the fever, *he is dismissed with an insidious local complaint that not only renders him a permanent invalid*, (resulting often from indurated enlargements,) *but which local malady*

may, and often does become, in process of time, the exciting cause of another attack of fever. In respect to relapses, it is not unfrequent that, when intermittents are suddenly stopped by a large dose of Quinine, the paroxysms return as soon as the patient begins to exercise much, or to take his ordinary food."—(*Institutes of Medicine.*)

We should naturally suppose that these untoward results would deter practitioners from using so frequently these dangerous remedies; or at all events, as rarely and in as small quantities as possible.

On the contrary it seems to be peculiar to allopathy, that her advocates take credit to themselves, when they succeed in administering this, as well as other medicines, *in larger doses than any of their contemporaries*, without *destroying* their patients. Indeed, so far has this destructive system been carried, of experimenting upon disease, that the enormous quantity of a scruple, and even half a drachm of Quinine has been exhibited at a dose, and repeated several times a day. These monstrous quantities create (say *Wood* and *Bache*) "gastro-enteritic irritation, nausea, griping, purging, head-ache, giddiness, fever, somnolency, in some cases delirium, in others stupor, &c." Paine asserts that he has witnessed many of these effects "from five grains only;" yet, as patients sometimes *live* in spite of this treatment, many persist in adhering to these desperate innovations.

There are many other medicines employed by allopathy in the treatment of disease, besides those to which we have alluded, but in general they serve only as *auxiliaries.* In this list may be ranked diaphoretics, diuretics, expectorants, refrigerants, emmenagogues, emollients, errhines, &c., but the articles belonging to each of these classes, in a crude state and in large doses are liable to important objections.

The fault of those medicines which operate specifically, like diuretics, emmenagogues, &c., in the hands of allopathists, is the aggravation which they must necessarily cause, if the part acted upon be irritated or inflamed. This objection will be clearly appreciated, when it is remembered how extremely sensitive to specific remedial impressions organs and tissues become during inflammation.

The evils resulting from the use of those medicines which are not specifics, are, first, their inability to reach the seat of the disease, and secondly, the sympathetic derangement to which they give rise in various parts of the body, the direct tendency of which is to retard and counteract the recuperative efforts of nature.

As an example of the first class, let us take the diuretic Copaibæ as a remedy for gonorrhœa. In this example, the remedy doubtless impresses directly the inflamed membrane of the urethra, but the impression is so violent, that either a decided increase of the inflammation ensues, or the discharge is suddenly suppressed, and some other organ, as the bladder, kidneys, testicles, or lungs, takes on diseased action. Indeed,

we are decidedly of opinion, that not one genuine case of virulent gonorrhœa can be adduced, where a safe and permanent cure has been effected by large doses of this balsam.

A not unfrequent effect of Copaibæ in moderate quantities, is to excite serious disorder of the lungs. This consequence I have often witnessed, and I have a patient at this time, who assures me, that he is unable to take a single dose of it, without being afflicted with a pain in his chest and cough.

Gastric and intestinal disturbance, also usually result from its use. In some instances, a troublesome eruption makes its appearance, rendering it necessary to discontinue its employment for a time. And yet, with all of these artificial consequences, the disease is very rarely, if ever, cured by this nauseous substance.

Diaphoretics were introduced into practice by the advocates of the humoral pathology, under the supposition that their sweating qualities would aid nature in throwing off the morbid humors. When the hypothesis universally obtained, that fevers were caused by an excess of one of the four humors, blood, phlegm, and black and yellow bile, and that this superabundance must be expelled through the pores of the skin, kidneys, &c., it was a rational deduction that the employment of diaphoretics and diuretics should conduce essentially to aid nature in the cure.

But when more correct ideas in regard to the nature and seat of diseases were introduced, and medical men had learned that spontaneous sweating diuresis, discharges of blood, diarrhœa, &c., in the latter stages of diseases occurred *in consequence* of a natural *amendment* or a sudden *prostration* in the powers of the affected parts, and not as an effect of the medicines, it is a matter of surprize that these uncertain remedies should have been retained.

The late Prof. *N. Smith* says: "As there is more or less sweating in the decline of most febrile diseases, and, as a general perspiration is often accompanied with other symptoms of amendment, it has been looked upon as the natural cure of the disease. Under this impression, it has been a pretty universal practice to encourage sweating; but with respect to the grounds upon which this practice is founded, it is a question whether the effect has not, in this case, been mistaken for the cause; that is, whether the sweating is not the effect of the amendment, rather than the cause of it; and, if so, it is still more questionable whether sweating, produced by art in the beginning of the disease, would be attended with good effects. *In all cases, where I have seen this sweating regimen adopted, the practice has been obviously injurious.*"

Many other eminent professors, as may be readily proved, entertain similar views in regard to this subject.

Physiology teaches us, that no unusual disturbance, no inflammation, and no functional derangement can accrue to any part of the body, whether by a moral, physical, morbific or medicinal agent, without being followed by secondary sympathetic symptoms in remote parts, more or less severe according to the violence of the exciting cause. The stomach and bowels more especially, being the grand centre of junction of the ganglionic system of nerves, are so intimately connected with all parts of the economy, that disturbances at either of these points are reflected through the sympathetic nerves upon remote healthy structures, thus complicating to a serious and often fatal extent, any disorder which may already be present.

There is scarcely any part of the machine, which is not called into morbid sympathetic action by derangements of the stomach and intestines. Even the presence of bile or acid, in unusual quantities, causes pains in the head and limbs, nausea, and other affections of a distressing nature, until the offending substances are removed.

All of the organs and tissues are so closely connected by the nervous system, that it may be laid down as a general rule, that no disorder can happen to one part without implicating more or less other parts, whether diseased or healthy. (*Müller's Physiology.*) "A particular state of one organ, such as inflammation, or a secreting action in it, often causes the production of a similar state in other parts. The principle of the balance of sympathy teaches us, *how we must avoid aggravating the morbid condition of one organ by the means we apply to another.*"

How reasonable, then, to expect that artificial medicinal inflammations of the sensitive structures of the economy should give rise to secondary affections of a grave and permanent character.

In conclusion, the theoretical and practical doctrines of allopathy may be briefly summed up as follows:

1. In the rude ages of the world, when the arts and sciences were in their infancy,—when vague, indefinite and absurd notions were entertained respecting diseases,—when anatomy, chemistry, physiology, pathology, botany, and even correct methods of induction were entirely unknown,—when the imaginatians of men, instead of ascertained facts, were appealed to in establishing theories,—and when systems of practice were founded upon merely fanciful conjectures,—then it was that blood-letting, cathartics, diaphoretics, diuretics, refrigerants, revulsives, derivatives, counter-irritants, and most of the other remedies of allopathy made their first appearance. As the *pathological* doctrines of this period were all entirely erroneous, it is but fair to conclude, that their *therapeutical* inferences must have been equally incorrect.

2. Whatever may have been the changes in respect to the *theory* of disease, from age to age, long established customs, the force of habit,

education, prejudice, &c., have served to retain until our own period, most of the violent, unnatural and pernicious methods of *treatment*, invented and adopted by the founders of medicine.

3. At the present time, every thing pertaining to the theory and practice of the old school is indefinite, obscure and uncertain. Scarcely two different allopathists entertain the same views in regard to patho logy, and no one can determine beforehand with any kind of certainty precisely what effects his medicine will produce; yet in the treatment of nearly all cases, *Venesection*, *Calomel*, *Opium*, *and Antimony* are empirically, and we might almost say, universally employed, in quantities too great to be beneficial or safe.

In those cases, where refrigerants, diuretics, expectorants, &c., are used, they can only be looked upon as auxiliaries, and are usually administered without any accurate knowledge as to whether they promote or retard the designs of nature.

4. Owing to the absence of any generally received or consistent theory of disease, allopathists are obliged to prescribe at random. They strike at the *name*, and not at the *seat* of the maladies, where alone remedies can prove efficient. Thus it is, that patients are so often reduced to the lowest point by medicines, while the disease continues its progress unchecked.

5. Lastly, there is every reason to believe, that the production of violent artificial diseases in healthy structures, for the suppression of natural maladies, is, upon the whole, far more productive of deleterious than of beneficial consequences.

The effort, to discover specific remedies for individual diseases, is not yet abandoned; but it is restricted to the making of experiments upon the *sick*, and results only in infrequent cures, which are never satisfactory and which can not be repeated or imitated in subsequent cases.

Hahnemann, in his essay, entitled: *Examination of the Sources of the Common Materia Medica*," (*Lesser Writings*, p. 748), with a masterly and irresistible logic, that has never been surpassed, shows that such experimentation is nothing but crude empiricism, and that, though it has been in vogue for some thousands of years, it has never yet given us a single reliable specific.

A great part of the medicine, given with the pretence of *curing* disease, is not expected to *cure*, but to *palliate*, to cover up the loud complaints that the organism is everywhere uttering for help. Dr Parrish, Lecturer on Pharmacy, (Philadelphia) said recently: "The prevailing doctrines among medical men at this time, direct, that a large per-centage of all the prescriptions now made contain Opium, Morphia, or Hyoscyamus." Five years ago, he ascertained, that his own prescriptions averaged thus: Opiates 24 per cent; Mercurials 23 per cent;

Iodine and Iodide of Potassium 6 per cent; Cinchona and its alkaloids 9 per cent.

These were the proportions in the *written* prescriptions. Of the *unwritten* prescriptions the proportion of Opium was larger, as Opium in some form was in every house. Second in importance is Hyoscyamus, Then, Conium, Belladonna, Stramonium, Cannabis-indica.

Allopathy is a mere collective title of all the various modes of treatment not homœopathic, and has no pretensions to a place among the definite curative modes by specifics. (*Müller.*)

The more recent theory of *specific* or *substitutive* action teaches, that diseases even widely dissimilar may supersede each other, or that one may supersede another: we have examples of such supersessions, and of a new and not similar disease complicating an old one, but not of removing it. "In fact, when the latter event takes place at all, it is only when the new disease approaches to the required degree of homœopathicity. In fine, the real fact of the matter we apprehend is simply this, that the degree of homœopathicity that suffices for cure is not accurately fixed; and, as we recede from complete homœopathicity, a certain margin is left within which specifics given in more massive doses may still have curative effects." Within this margin may room enough be found for the specificers, Rademacherians and Trousseauist substitutivists. But beyond that we protest against allowing any such method as an allopathic alterative one any positive existence at all. The great discovery of Hahnemann, viz., the positive homœopathic law of specifics must *not be let down* and diluted and refined away, by giving it only a place as one of a sliding scale of specific actions, all on pretty much the same footing. No! if we are compelled to admit as matter of fact that there are other actions of medicine, which we must on exceptional occasions make use of, such as the antipathic or revulsive, let us say so plainly, and not attempt to shade them off into the homœopathic. (*Müller.*)

In view, therefore, of the present condition of the medical art, we most earnestly request the allopath to pause or reflect deeply and seriously, before he rejects finally the most important discoveries in the art of curing disease, that have been made in ancient or modern times.

Let him remember that a high responsibility attaches to his position,—that the welfare, happiness and lives of his patients hang upon his judgment and decision,—and that an improper exhibition of remedies may so complicate and aggravate the natural disease, as to consign his patient to a premature grave. Let him look about, candidly and impartially, and see if there are really no improvements in the healing art since the times of Hippocrates and Galen. Let him submit new discoveries and new doctrines to a *rigid practical test*, and decide from the results,—from the cures effected,—what system is most correct

and best calculated to promote the welfare of the human race. Let him no longer reverence ancient doctrines and ancient names, simply on account of their *antiquity*, but seek after *truth alone*, whether of ancient or modern discovery, and found his practice only upon this certain basis.

HOMŒOPATHY.

The Discovery of the Homœopathic Mode of treating disease is thus announced by Hahnemann: *

"By observation, reflection, and experiment, I discovered, that, in opposition to the old allopathic method, the true maxim; *To effect a mild, rapid, certain, and permanent cure, choose in every case of disease, a medicine which can itself produce an affection similar* (ὅμοιον πάθος) *to that sought to be cured.*

"Hitherto no one has ever *taught* this homœopathic mode of cure, no one has *practiced it.* But if the truth is only to be found in this method, as I can prove it to be, we might expect that, even though it remained *unperceived* for thousands of years, distinct traces of it would yet be discovered in every age?

"And such is the fact. In all ages, the patients *who have been really, rapidly, permanently, and evidently cured by* medicines, and who did not merely *recover* by some fortuitous circumstance, or by the acute disease having run its allotted course, or by the powers of the system having in the course of time gradually attained the preponderance, under allopathic and antagonistic treatment, for being cured in a direct manner differs vastly from recovering in an indirect manner.—Such patients have been cured solely, (although without the knowledge of the physician), by means of a (homœopathic) medicine, which possessed the power of producing a similar morbid state."

When Hahnemann first promulgated to the world his pathological and therapeutical views, their novelty, their entire variance from all preconceived opinions, and their alleged superiority over all other systems, when applied to the practice of the healing art, induced physicians to suppose the man mad, and his ideas the offspring of a disordered imagination.

It was difficult to conceive that acute maladies could be cured without venesection, emetics, cathartics, sudorifics, refrigerants, alteratives, and counter-irritants and on this account the great discoveries of the father of homœopathy were for many years coldly received, and his arguments answered only by impudent sneers or senseless ridicule.

Like the illustrious Fulton, who—when he announced to his countrymen the powers of steam, and first applied this agent to the propulsion

* Organon.—Introduction.

of a vessel—was declared, even by his nearest friends insane, and his projects visionary: like Harvey, the discoverer of the circulation of the blood, who was bitterly assailed "by the bigotted abettors of old-established systems, with whispers, innuendoes, and controversial writings, and himself pronounced a reckless innovator, and unworthy of public confidence as a practitioner; like Galileo, who, after demonstrating the truth of the Copernican system was persecuted by his rivals, and twice compelled by the inquisition to abjure a system which he knew to be correct; like Columbus, Newton, Locke, Jenner, and many other benefactors of the human race, Hahnemann has been aspersed, and his doctrines, like theirs, have been ridiculed, misrepresented, and contemned: but time has cast all the columniators of Columbus, of Galileo, of Newton, of Locke, of Harvey, of Jenner, of Fulton, into a deserved oblivion, while the names of these eminent persons stand high on the roll of fame, and their discoveries remain to benefit the world.

Brief Exposition of the Homœopathic Method of Treating Disease.—The following truths are established by reason and experience:

1. There is nothing for the physician to cure in disease but the sufferings of the patient. The changes in his state which are perceptible to the senses comprise what is known by "the totality of the symptoms by which the disease points out the remedy it stands in need of." These changes are internal as well as external, and the physician takes into his enumeration of symptoms, not only all that appear upon the surface, but all the pathological changes which he knows to be going on internally.

2. Disease can not be converted into health but by the aid of medicines and agencies which are capable of producing similar disease-symptoms. The powers of a given remedy to produce similar symptoms are best learned through experiments on healthy individuals, so far as experimenting may safely go in such researches: where these necessarily terminate, we may learn their further powers from the accidental uses and abuses of the same agents in allopathic practice and cases of poisoning.

3. "According to every known fact," says Hahnemann, "it is impossible to cure a natural disease by the aid of medicines which have the faculty of producing a *dissimilar* artificial state or symptom in healthy persons. Therefore the allopathic method can never effect a real cure. Even nature never performs a cure or annihilates one disease by adding to it another that is *dissimilar*, be the intensity of the latter ever so great."

4. "Every fact serves to prove that a medicine capable of exciting in healthy persons a morbid symptom *opposite* to the disease to be cured, never affects any other than momentary relief in disease of long standing, without curing it, and suffers it to reappear after a certain

interval more aggravated than ever. The antipathic and purely palliative method is, therefore, wholly opposed to the object that is to be attained, where the disease is an important one, and of long standing."

5. The homœopathic method which employs against the totality of the symptoms of a natural disease a medicine that is capable of exciting in healthy persons symptoms that closely resemble those of the disease itself, is the only salutary method. It always annihiliates disease, or the purely dynamic aberrations of the vital powers, in an easy, prompt, and perfect manner. In this respect nature herself furnishes the example, when by adding to an existing disease a new one, that resembles it, she cures it promptly and effectually.

"A new and more intense disease suspends a prior and *dissimilar* one already existing in the body, only so long as the former continues, but it never cures it. If the *new* disease, which is *dissimilar* to the old be *more powerful* than the latter, it will then cause its suspension until the new disease has either performed its own course or is cured; but then the old disease *reappears*. We are informed by Tulpius (Obs. Lib. 1. Obs. 8.) that two children having contracted tinea, ceased to experience any further attacks of epilepsy to which they had till then been subject: but as soon as the eruption of the head was removed, they were again attacked as before. Schöpf saw the itch disappear when scurvy manifested itself, and return again after the cure of the latter disease. (*Hufel. Journ.* XV. 2.) A violent typhus has suspended the progress of ulcerous phthisis, which resumed its march immediately after the cessation of the typhoid disease (*Chevalier*). When madness manifests itself during the pulmonary disease, it effaces the phthisis with all its symptoms; but then the pulmonary disease again rears its head and kills the patient. (*Reil. Memorabilia*). When measles and small-pox exist together, and have both attacked the same child, it is usual for the measles which have already declared themselves, to be arrested by the small-pox which bursts forth, and not to resume their course until after the cure of the latter; on the other hand, Manget has also seen the small-pox, which had fully developed itself after inoculation, suspended during four days by the measles which intervened, and, after the desquamation of which, it revived again to run its course. The eruption of measles on the sixth day after inoculation has been known to arrest the inflammatory operation of the latter, and the small-pox did not break out until the other exanthemata had accomplished its seven days "course." (*J. Hunter on the Venereal Disease.*) In like manner vaccine disease and scarlatina have been seen to suspend each other, the stronger of the two expelling for the time the other.

"*It is the same in all diseases that are dissimilar: the stronger one suspends the weaker* (except in cases where they blend together,

which rarely occurs in acute diseases:) *but they never cure each other reciprocally.*"

"In the same manner, violent treatment with allopathic remedies never cures a chronic disease, but merely suspends it during the continuance of the powerful action of a medicine incapable of exciting symptoms similar to those of the disease: but afterwards the latter reappears, even more intense than before."

"Or the new disease, after having acted for a considerable time on the system, joins itself finally to the old one, which is dissimilar, and thence results a complication of two different maladies, either of which is incapable of annihilating or curing the other." In this case each occupies the particular region of the economy, installing itself in those organs with which it sympathizes, and abandoning the others to the diseases that are dissimilar. Thus venereal and psoric diseases, being dissimilar, "are incapable of annihilating or curing each other. The condition of the patient is worse under the two diseases than he would have been under either of them alone." (*Organon* § 40, p. 112.)

When a medicinal disease is excited which is *similar* to the existing one, and is stronger than it, the new disease supersedes the old one.

Two diseases, says Hahnemann, "that differ greatly in their species, but which bear a strong resemblance in their development and effects, —that is to say, in the symptoms which they produce, always mutually destroy each other when they meet together in the system. The stronger annihilates the weaker. Two *dissimilar* diseases may co-exist in the body, because their dissimilitude would allow of their occupying two distinct regions." But when the diseases are *similar*, the stronger disease exercises an influence upon the *same* parts as the old one, and even throws itself, in preference, upon those which have till now been attacked by the latter; so that the old disease, finding no other organ to act upon is necessarily extinguished. Or, to express it in other terms, as soon as the vital powers which have till then been deranged by a morbific cause, are attacked with greater energy by a new power, *very analogous* to the former, but more intense, they no longer receive any impression but from the latter, while the preceding one, reduced to a state of mere dynamic power without matter, must cease to exist."—(§ 45.)

"Of any two diseases which occur in the ordinary course of nature, it is only that one whose symptoms are *similar* to the other which can cure or destroy it. This faculty never belongs to a *dissimilar* disease. Hence the physician may learn what are the remedies with which he can effect a certain cure, that is to say, with none but such as are *homœopathic*."

A remedy that is perfectly homœopathic cures the disease without any accompanying ill effects; and a disease that is of no very

long standing ordinarily yields, without any great degree of suffering, to a first dose of a well-selected remedy. When a perfectly homœopathic remedy acts upon the body we see nothing more than symptoms analogous to those of the disease laboring to surmount and annihilate these latter symptoms by usurping their place. The remaining symptoms, caused by the medicinal substance, which are often numerous, and correspond in no respect with the existing malady, scarcely ever show themselves, and the patient improves from hour to hour. The remedy having expended its force in those portions of the organism that were already a prey to existing disease, and in these parts exerted that specific action by which it extinguished the original disease.

But there are a few exceptions to this general truth. "There is no homœopathic remedy, however suitably chosen, that does not (especially in a dose not small enough,) produce at least during its action, some slight inconveniences or fresh symptoms in very sensitive and irritable patients. In fact it is scarcely possible for the symptoms of the medicine to cover those of the malady with as much precision as two triangles with equal sides and angles. But these differences, which are of little importance in a case that terminates in a short time, are easily effaced by the energy of the vital principle, and the patient does not perceive it himself, unless he is excessively delicate. The re-establishment of health goes forward, notwithstanding, unless impeded by the influence of heterogenous medicinal agents upon the patient, errors of regimen, or excitement of the passions.—(*Hahnemann*, § 156.)

When a true homœopathic remedy in small dose has been given, it quietly annihilates the acute disease which is analogous to it, without exciting new and non-homœopathic symptoms; but it often happens that it produces at the end of one or two hours (according to the dose), a state something less favorable, which resembles the original disease so closely, that the patient supposes the primitive affection aggravated. But in reality it is nothing more than a medicinal disease, extremely similiar to the primitive one, and rather more intense in its nature.

This trifling *homœopathic aggravation* of the malady during the first few hours may be accepted as a happy omen that the disease will soon be cured, perhaps even with the first dose. The medicinal disease is similar to the other, but more intense than the one it is intended to cure. The smaller the dose of the homœopathic remedy, the slighter the apparent aggravation of the disease will be, and proportionably of shorter duration.

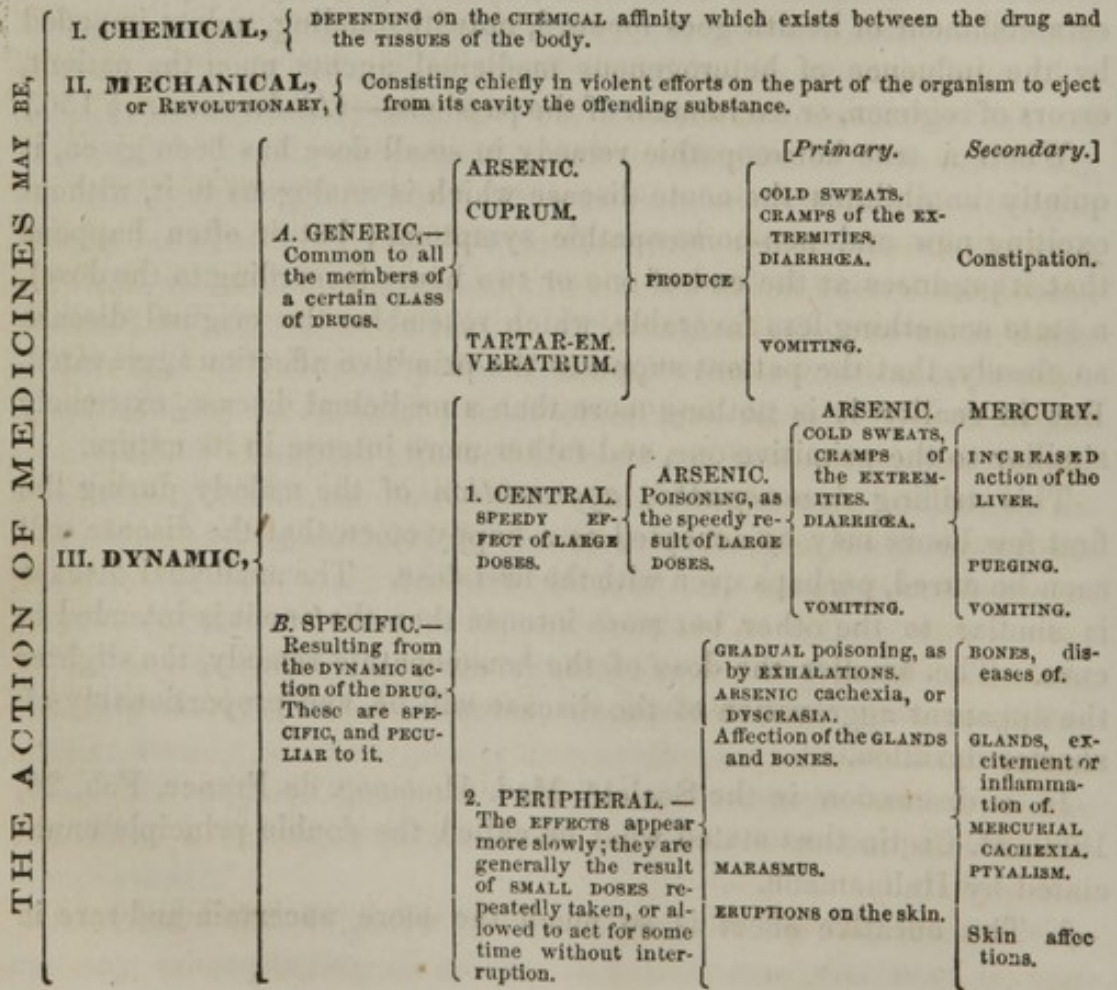
In a discussion in the Societé Med. Homœop. de France, Feb. 20, 1860, M. Cretin thus stated what he called the double principle enunciated by Hahnemann.

1. The curative effect is so much the more uncertain and rare in

proportion as the dose induces more marked and more numerous pathogenetic symptoms. (Superior limit.)

2. The curative effect is so much the more sure and constant in proportion as the dose approaches that which would excite the slightest aggravation of existing symptoms. (Inferior limit.)

The real nature of homœopathic cures is thus explained by Fletcher on the Brunonian theory: The primary action of stimuli, and therefore of all specifics, as well as of all other positive agents, is in reality twofold; and in all organic diseases, such as inflammation and its congeners, fevers, increased secretion, &c.,—consists in, first, a stage of excitement, with constriction of the capillary vessels, followed by indirect debility with dilatation of the capillaries, and increased secretion according to its kind. When the homœopathic cure takes place, the disease is in the stage of indirect debility, and the medicine exerts upon it its action, viz., that of a stimulus, and thus the cure takes place by *antipathic* action. But this must not be confounded at all with that action in the sense of the allopathists, for it does not refer with them to this view of the ultimate nature of the action of medicine, but to its broad meaning as primary and secondary on the healthy body.



CLASSIFICATION OF MEDICINES,

According to their Primary Effects in Massive Doses.

I. ALTERANTS.
- *a.* Anti-inflammatory.
- 1.
- 2.
- *b.* Anti-cachectic— or Invigorating.

II. EVACUANTS.
1. Blood-letting.
2. Emetics.
3. Cathartics.
4. Diuretics.
5. Antilithics.
6. Emmenagogues.
7. Expectorants.
8. Anthelmintics.
9. Diaphoretics.
10. Nauseants.

III. INCITANTS, OR EXCITANTS.
1. Stimulants.
2. Narcotics.
3. Antispasmodics.
4. Tonics.
5. Astringents.

IV. DERIVATIVES; REVULSIVES; COUNTER-IRRITANTS.
1. Baths, at Various Temperatures.
2. Frictions.
3. Rubefacients.
4. Epispastics.
5. Suppuratives.
6. Cauterizing Counter-Irritants.

The curative powers of drugs, says Hahnemann, are in no wise discoverable in themselves; and the pure experiments which have been made, even by the most skillful observers, exhibit nothing to our view which could be capable of rendering them medicines or curative remedies, except the faculty they possess of producing manifest changes in the general state of the human economy, particularly with persons in health, in whom they excite morbid symptoms of a very decided character. We ought to conclude from this, that when medicines act as remedies they can not exercise their curative virtue by the faculty which they possess of modifying the general state of the economy and giving birth to peculiar symptoms. Consequently *we ought* to rely *solely* upon the morbid appearances which medicines excite in healthy persons,—*the only possible manifestations of the curative virtues which they possess*, in order to learn what malady each of them produces individually, and at the same time what diseases they are capable of curing." (*Organon*, p. 21.)

"Medicinal substances manifest the nature of their pathogenetic power, and their absolute, true action on the healthy human body, in

the purest manner, when each is given singly and uncombined to healthy individuals. And thus we obtain the pure result of the form of disease that each of these medicinal substances is capable of producing absolutely, and in itself on the human body." (*Hahnemann's Lesser Writings, Marcy's Edition*, p. 452.)

"It is impossible that the alterations in man's health, which medicines are capable of producing, can be known and observed more purely, certainly and completely by any other method in the world than by the action of medicines upon healthy individuals; indeed there is no other way conceivable, in which it were possible to obtain experience that shall be at all of an accurate character. Even when given in human diseases, in order to ascertain their effects, the peculiar symptoms which were solely due to a medicine can never be distinctly recognized, never accurately distinguished amid the tumult of morbid symptoms already present, so as to admit of our ascertaining which of the changes effected were owing to the medicines, and which to the disease." *

PRIMARY AND SECONDARY ACTION OF DRUGS.

Homœopathy teaches that the impressions which drugs produce upon the organism, in health and in disease, are analogous in their character. But there is this important difference between healthy and diseased structures, that large quantities of the drug are required to produce appreciable impressions upon the former, while the susceptibility of the latter is so morbidly augmented that the most minute atoms of the medicine are instantly effective. Not only so, but even the natural material stimuli of the structures can not be tolerated, but become immediate and additional causes of disease, and, if persisted in, of fatal disorganization. If then, we desire to know the precise effects of drugs in disease, it is necessary to prove them by taking when in health doses sufficiently large or so often repeated as to affect the structures sensibly and decidedly. Even if *contraria contrariis opponenda* be adopted as the law of practice, this is an important discovery, for we may then administer the remedies with a full knowledge of the parts they impress and of the exact symptoms they induce, and thus remove allopathy a single step from empiricism. Some eminent writers of the old school have distinctly shown the importance of this subject. Thus, Dr. Paris, in his Materia Medica, remarks, "that observation and experiment upon the effects of medicine are liable to a thousand fallacies, unless they are carefully repeated under the various circumstances of *health* and *disease*, in different climates, and on different constitutions."

Professor Dunglison (*On New Remedies*, page 7) says: "to treat disease methodically and effectively, the nature of the actions of the

* Hahnemann's Lesser Writings, 721-722 pp.

living tissues, in both the healthy and morbid conditions must be correctly appreciated; the effects which the articles of the Materia Medica are capable of exerting under both those conditions must be known from accurate observation, and not until then can the practitioner prescribe with any well-founded prospect of success."

Pereira assures us, "that in order to ascertain the action of remedial agents on the living body, it is necessary that we examine their influence both in *healthy* and *diseased* conditions. For by the first we learn the positive or actual power of a medicine over the body; while, by the second we see how that power is modified by the presence of disease." (*Materia Medica and Therap.*, Vol. I., p. 126.)

Other equally distinguished allopathic writers now entertain the same views upon this point, but without taking into consideration some very important circumstances connected with the provings. We have reference to the great fact inculcated by Hahnemann, that all drugs exercise upon the organism *two effects*, a *primary* and a *secondary*, and that these secondary effects are always the *reverse* of the primary. A knowledge of this truth will enable us to classify both the primary and the curative results of medicines, and thus more clearly to appreciate the phenomena which should guide us in their application. The *primary* symptoms make their appearance soon after the medicine has been taken into the stomach, and continue for a longer or shorter period, according to the magnitude of the dose and the condition of the general health; after which they disappear, and the secondary or opposite series of phenomena manifest themselves and remain until the organism recovers its equilibrium. But in a few instances the power of drugs is displayed in such a manner that these primary or secondary effects appear in alternation for a considerable time, when the primary symptoms yield to the secondary, or serious organic derangements ensue. The mode of operation in these instances is probably analogous to that of the miasm of intermittent fever, in producing alternate chills and heat. Medicines of this description are termed *polycrests*.

No one who has candidly tested the operation of drugs, with reference to this law, can for an instant deny its truth and importance; and the law applies not only to large doses of drugs, but to every other cause which unduly impresses the structures: that is in such a manner as to disturb that healthy balance in the operations of the organs which constitutes health. Let us examine the ordinary effects of *cathartics* in health: First, the mucous membrane of the intestinal canal is irritated or inflamed, and the natural consequence of inflammation follows in the form of increased mucous and serous secretion, increased peristaltic action, and a painful and loose state of the bowels: this is the *primary* effect. After several thin discharges from the bowels, a *debility* and a *depression* of the parts occur, the degree of which is proportioned to

that of primary irritation; the peristaltic action becomes impaired or suspended, and *constipation* results as the secondary effect of the drug

There is no exception to this rule, unless the cathartic operates so violently as to produce a permanent inflammation and disorganization of the mucous membrane, in which case the primary symptoms may be continuous and constitute a permanent affection. Even in cases of this kind, however, partial reactions sometimes occur during the course of the malady, and secondary symptoms are manifested, in the form of constipation alternating with diarrhœa. These violent primary symptoms rarely continue beyond a few days without resulting in serious structural lesion, or a healthy and permanent reaction.

The primary effects of Opium, in large doses, are to induce sleep, lessen nervous and muscular sensibility, cause agreeable dreams, and diminish or suspend all of the secretions, with the exception of perspiration, which is augmented. If the quantity taken has been moderately large, a pleasurable excitement for a short time precedes the soporific influence as a primary symptom. These first results continue from twelve to forty-eight hours, according to the magnitude of the dose, when the organism reacts: the exhilaration is succeeded by depression, the sopor by constant and prolonged wakefulness, morbid irritation of the whole system, a return in preternatural quantities of all the secretions, which had been suspended, and a suppression of the cutaneous secretion, which had been morbidly augmented; and the *secondary* effects of the drug are thus manifested.

So long as *diuretics* continue to irritate the kidneys, they are forcibly stimulated to pour out an unusual quantity of urine; but as soon as the specific is omitted, the organism reacts against the temporary irritation set up by the medicine, and a corresponding diminution of the urinary secretion follows, until the organ recruits from the previous overaction, and the disturbed equilibrium is restored.

The *primary* operation of *stimulants* gives rise to an exaltation of the mental and physical powers, while a corresponding depression and abasement invariably result as *secondary* consequences.

The *primary* operation of *Digitalis* in large doses, is to *retard* the action of the heart and arteries. The reaction of the system against the drug, or the *secondary* effect, is an augmentation of this action.

The *primary* symptoms caused by *Aconite* are intenser action of the circulatory vessels: the *secondary* consequence consists of a reduction of the pulsations, in some instances as low as thirty-five in the minute.

The primary effect of intense *cold* is to stimulate and invigorate the whole system; and the *secondary* results are loss of muscular and mental energy, stupor and death.

All drugs, whatever may be the special nature of their action, give

rise in every part of the organism where this action manifests itself, to two orders of symptoms, which are generally, if not always, opposed to each other. Hahnemann attributed no other symptoms to the drugs directly, except those which he had seen develop themselves under their influence, and which he therefore called "*primary symptoms.*" Whereas he considered as simple *reactions of the organism* all those symptoms that succeeded the former, and which he therefore designated as "*secondary.*" Teste considers it not yet perfectly settled that the *secondary* symptom is always the contrary of the *primary.* (*Materia Med.*, p. 48.) Hahnemann says: Every agent produces, more or less, "some notable change in the existing state of the vital powers, or creates a certain modification in the health, of longer or shorter duration: this change is called the *primitive effect.* But our vital powers tend always to oppose their energy to this influence or impression. The effect that results from this, and which belongs to our conservative vital powers and their automatic force, bears the name of *secondary effect or reaction.*"

EXAMPLES.

The *Primary Effect* of dipping the hand in cold water is to make it hotter than in the common state.	*Secondary Effect.* After drying it becomes colder than before.
Violent exercise causes extreme heat.	Shivering and cold follow overheat.
Wine stimulates and heats the body.	Next day the slightest current of air produces chill.
An arm held for some time in freezing water becomes cold and pale.	Being withdrawn and dried it becomes hotter than the other.
Strong coffee stimulates the physical and mental powers.	It leaves behind it heaviness and drowsiness which lasts long.
Opium excites somnolence or deep stupor.	More difficult to fall asleep when its action is entirely expended.
Opium causes first constipation.	Diarrhœa follows the constipation.
Purgatives increase the action of the bowels.	Constipation follows the purging.

This law of *primary* and *secondary* action applies not only to *medicinal*, but to a large proportion of *morbific* agents. On this supposition we may readily account for the remissions and exacerbations which are observed in most fevers. It is only when the morbific influence has been very active and the resulting inflammation violent, that no reactions or remissions occur. It may nevertheless be set down as general law, that no structure of the human body can be called into

preternatural action, or stimulated *beyond* a *given point*, without a speedy tendency to reaction on the part of the organism. In severe forms of disease, this reaction may not be apparent for weeks, and perhaps until organic lesion occurs; yet, sooner or later, some reaction, with secondary symptoms, manifests itself. There is a healthy point in the functional actions of the organs—an equilibrium, if we may be allowed the expression, of the respiratory, circulatory, digestive, absorbent, assimilative, secretory and excretory functions—which can not be disturbed with impunity. Stimulate one of these beyond its natural point, and a corresponding depression must necessarily ensue before the normal balance is restored. Each tissue possesses only a definite amount of resisting power, and therefore every undue expenditure of this power entails future debility. Nature is constantly striving to maintain the functions in their natural condition, and this she accomplishes by inducing in the different parts a *reaction the reverse of the disturbing cause*, and bearing an *inverse ratio to this cause*. The amount of strength and resisting force which is acquired from the food, &c., is fixed and definite; and this force is expended in limited and definite quantities throughout the economy, and thus secures the healthy performance of the functions.

The practical deductions which legitimately arise from these views of this subject, are of the most interesting character, as regards the application of remedies; for if the ideas which have here been adduced are correct, it is plain that the antipathic doctrine of cure is erroneous, while the truth of the homœopathic becomes equally apparent.

SUSCEPTIBILITIES OF ORGANS AND TISSUES TO THE INFLUENCE OF REMEDIAL AGENTS, VASTLY GREATER IN DISEASE THAN IN HEALTH.

One of the principal arguments which has been adduced against Hahnemann's system of Therapeutics is the supposed fallacy of judging of the effects of medicines in *disease*, from their operation in *health*. It is considered that the modifications which occur in what are termed the "vital properties" of parts, in a state of disease, also alter the action of remedical agents in a corresponding manner.

The fact is incontrovertible, that tissues in a state of inflammation, do acquire properties very different from what they possess in the normal state, but respecting the nature of these acquired properties, numerous facts go to prove, firstly, that the parts actually inflamed, become extremely sensitive to the impressions of specific remedies; and, secondly, that the facility of absorption is promoted throughout the whole system. The recent experiments of Müller and Matteucci have demonstrated the fact, that in proportion as the tone of the nervous and

muscular systems becomes impaired, or inflammation obtains, up to a certain point, just in the same ratio will absorption be promoted, and foreign agents exercise their influence.

We have seen that inflammation consists in a "congestion of the capillaries" induced by debility and the want of resisting power in these structures to exclude the arterial blood, and that the effects of inflammation of a particular organ upon the general system, are lassitude, pains, and other symptoms which indicate diminished nervous and muscular energy. That condition, therefore, which is termed *erethism*, is not, as is sometimes supposed, indicative of increased nervous energy, but results directly from loss of strength.

In health the capillary vessels possess the power of excluding all of those constituents of the blood except the colorless fluid which is their natural stimulant. Although the capacity of these minute tubes is sufficiently large to admit the red globules with ease, yet they are endowed with a peculiar property which enables them to resist their entrance.

Any cause, therefore, capable of impairing this *natural irritability*, becomes a source of debility and inflammation.

It has been proved that, in health, most medicinal snbstanccs may become absorbed into the blood; but unless they possess some peculiarly noxious qualities, they will act upon those parts for which they have a specific affinity, and be thrown off in the form of excretions, causing in their passage through the structure on which they act, only a slight and perhaps unappreciable irritation.

When taken in disease, these same substances are absorbed with far greater facility, and exercise the same specific affinity for particular parts as in health; but with the difference, that they make impressions upon the inflamed tissues, far more energetic and strongly pronounced, than when taken in a healthy state of the organism. Nor is is this augmented susceptibility to the influence of remedies, confined to the tissues primarily affected, but the whole system becomes far more impressible than during health. It is a well established law, that no one structure can be inflamed without giving rise secondarily to sympathetic symptoms in other parts of the economy. It matters not whether the part *primarily* affected, be the lungs, stomach, skin, or any other structure, the whole system may bc ultimately disordered, through remote contiguous or continuous sympathy. The connection between the different parts of the human body, through the media of the sympathetic nerves, is so close and direct, that no organ can be acted on by a morbific agent, without developing secondarily sympathetic symptoms more or less violent, according to the nature of the agent, the severity of the primary impression, and the constitution of the individual.

All of the organs are so designed and constructed by the Supreme Architect, that, in health, a certain harmony of action prevails throughout every part of the machine, causing every function to be executed with uniformity, so that no disturbance can accrue to any single part without impairing this healthy equilibrium.

Dr. Paine, in speaking of this subject, presents the following views which will be found to coincide very nearly with the doctrines of Hahnemann; we only wonder that the practical deductions of these two distinguished authors should differ so materially:

"It appears, therefore, to be a most important law, that *morbid states* call into operation that function of sympathy among organs, which in their *natural state* manifest but feeble, and perhaps no direct relations whatever; and that in consequence of morbid changes, remedial agents will operate sympathetically through the stomach, &c., upon remote parts, when they would have no such effect in the healthy state of the organs. New vital relations being developed by disease, our remedies continue to operate through those acquired relations so long as they exist."

Again, "In proportion, therefore, as the susceptibility of the system at large is increased by morbid changes, or predisposed by morbific influences, so, in a general sense, will the alterative action of remedial agents be felt in a corresponding manner."

Again, "It is one of the most important laws in medicine, that the susceptibility of tissues and organs to the action of remedial agents, is more or less affected by disease. Many agents which operate powerfully in certain *morbid states*, and in certain doses, both locally and sympathetically, may be perfectly inert in the *natural* states of the same organs."

Finally, "It is worthy of repetition, that such is the analogy between morbific and remedial impressions, that the organs which sustain the former are rendered susceptible of the latter, when they might otherwise be insensible to the same remedial agents, in their appropriate doses. Take many of the most powerful agents, *Arsenic*, *tartarized Antimony*, *Iodine*, &c., and when administered in certain small and repeated alterative doses, they bring about the cure of the most obstinate and formidable conditions of disease; while the same doses may not manifest any action upon the system, or on any part of it, under circumstancss of health. This manifestly depends upon an increased susceptibility of the organic properties in their diseased conditions, to the action of foreign agents, and upon an increased disposition to undergo changes. This law, which unfolds a principle *latent in health*, and by which morbid organic properties acquire susceptibilities to salutary influences from agents which in health would either produce no effects, or lead to untoward results, and its ally, the great recuperative prin-

ciple, impose the highest obligation upon physicians to become medical philosophers."—(*Paine's Institutes of Medicine.*)

Most of the positions laid down by Dr. Paine in the above quotations are doubtless correct; but. in all his inductions, he is laboring under an important error in supposing that morbific and remedial agents exercise their influence only upon certain *immaterial principles* or vital properties.

Can it be supposed, that when *Tartarized Antimony* or *Ipecacuanha* are taken into the stomach, in emetic or diaphoretic doses, they act upon an immaterial property of this viscus, in causing emesis or diaphoresis! Can it be believed, that the diuretics, *Copaibæ*, Cubebs, Turpentine, &c., operate upon the vital properties of the urinary apparatus in producing diuresis, or that *Belladonna*, *Stramonium*, *Strychnia*, *Conia*, *Alcohol*, and the vapors of Ether, or Chloroform, expend their force upon the spiritual properties of the brain and nervous system; or that the preparations of *Mercury*, Iodine, &c., exercise their powerful influence upon the organism, by impressing immaterial, imponderable or vital properties?

We think it is more consistent with known facts and sound logic, to suppose that all such agents exert their influence primarily upon the sentient extremities of the nerves, modifying the functions of those parts which they supply, increasing their susceptibility to the influence of foreign agents, and thus establishing inflammation or a new action.

It has been remarked by Dr. Paine, as well as by other authors, that *Arsenic*, *Antimony*, *Iodine*, *Mercury*, &c., given in certain small and repeated doses in disease, are productive of decisive effects, while the same doses in health, would exert no appreciable influence. For this reason, they assert and would have us believe, that the conditions and properties of diseased parts are so modified and altered *in all* respects, as to be incapable of responding to the action of those medicines which operate specifically in health.

It is quite certain that most medicinal substances may be taken in very *small doses* during health, without any apparent effect, on account of the power which the system then possesses of resisting the aggressions of slight foreign agents: but if the same substances be taken *in large doses*, most decided, powerful, and specific results will follow *in all states of the system.* If taken in still smaller quantities, the effects are yet perceptible, but less strongly marked. These results will be unequal in point of intensity in normal and abnormal states of the organism, according to the amount of disease present; but in all instances, *their specific operations* will be uniform.

Tartarized Antimony and *Ipecacuanha*, in large doses, both in health and disease, exercise a specific influence upon the stomach, lungs, and skin, as is indicated by vomiting and augmented secretions

from the respiratory organs and skin. In doses of one-sixth or one-eighth of a grain, no effect is produced upon the respiratory muscles or stomach, but the influence is yet *visible* upon the skin. If the quantity be diminished still farther, even to an attenuation according to the rules given by Hahnemann, the impression may not be *perceptible*, either upon the stomach, lungs, or skin, yet we find them capable of influencing the extreme nerves in a decided manner. It does not follow, because a patient does not vomit, purge, or sweat, that a medicine has no effect. On the contrary, we know that morbific agents give rise to the most virulent diseases without creating the slightest sensation in the system at the period when the noxious impression is made. The direct and sympathetic effects of such agents are, however, severe and dangerous.

Experience on the most extensive scale has proved in the most conclusive manner, that minute quantities of medicinal agents may produce salutary influences in the same manner; and the law obtains with regard to specific medicines. The effects in these instances may not indeed be sufficient to induce emesis, catharsis, or other *violent* effects in any part of the body; yet from the great sensibility of the minute nervous ramifications, they must receive impressions and be modified in their action, when the trunks or larger branches of nerves, would remain unaffected. Who shall decide *when* the quantity has become too small to produce an effect upon the most sensitive parts of the body? Shall the allopath, because he does not witness vomiting, purging, or sweating; or the homœopath, who from accurate observation in numerous instances, notes from infinitesimal doses, prompt and decisive curative effects?

To illustrate our meaning more fully, we will suppose a certain medicine possessing the power, when given in large doses, during health, of affecting a particular tissue. The same substance, administered in very small doses under the same circumstances, has no apparent influence. If now, the tissue for which it has a specific affinity, *becomes inflamed*, its susceptibility is so acute, that an extremely minute quantity of the specific agent is capable of making potent and salutary impressions.

The other parts of the organism which become disordered through the media of the sympathetic nerves, also acquire an exalted sensibility which renders them highly impressible, and capable of being acted upon by infinitesimal quantities of specific medicinal agents. Homœopathic remedies, as Paine has well observed of medicines generally, act only through these "acquired relations," and their power ceases as soon as these acquired relations have been removed and health re-established.

We shall appreciate, then, the importance of selecting a remedy which shall cover, not only the symptoms resulting directly from the

tissue primarily affected, but which shall embrace all of the remote sympathetic effects. In other words, we must prescribe for the "totality of the symptoms."

"It will now be apparent from what has been said in the preceding section, how it is that remedial agents will call into salutary reaction sympathies in various parts of the body not affected by disease, but whose susceptibilities are increased by morbific sympathies reflected from the seat of absolute disease, and upon which parts the remedial agents might otherwise be inoperative. Whatever, too, may be the complexities of disease, the right remedy will be at least compatible with the whole condition." (*Paine's Institutes of Medicine.*)

"A particular state of one organ, such as inflammation, or a secreting action in it, often causes the production of a similar state of other parts." And "the principle of the balance of sympathy teaches us how we must avoid aggravating the morbid condition of one organ by the means which we apply to another." (*Müller's Physiology.*)

An adherence in all cases to Hahnemann's axiom: "*similia similibus*" in our remedial measures, is the only means by which this last objection can be obviated with any certainty of success.

It is proper here to remark that there are a few apparent, though not real exceptions to the principles which we have advanced. A most remarkable one is observed in the case of *tetanus*, where enormous quantities of *Opium*, both in a crude form and in tincture, may be administered by the stomach or rectum, without producing any marked effect. This fact, however, by no means proves that the susceptibility of the parts for which *Opium* is a specific, is diminished; but it proves only *that absorption is prevented.* If *Opium* is injected into the veins, under these circumstances, it has been found by Magendie, Orfila, and Müller, that it exerts its influence in the same manner and degree as when taken during health.

We suppose, therefore, that in *tetanus* the lacteals and other absorbents, are in a *state of spasm*, and thus mechanically exclude the entrance of all substances from their structure. In this manner, opiates and other drugs are shut out of the circulation, and consequently, cannot be brought into *contact* with those parts of the nervous system upon which they exert their specific force, and where alone they possess the power of producing their legitimate effects.

All cases of this description, are simply apparent exceptions to the general rule, and do not in the slightest degree invalidate the general principles which we have advanced.

The public of Europe and America are fast rendering the same justice to Hahnemann and his doctrines, and the time will ere long arrive, when the united world will rank him by the side of those great men to whom we have just alluded. It is even now conceded by many

eminent allopathic writers, that the hypothetical doctrines of homœopathy are correct.

But when we come to the therapeutical inferences deduced from these opinions, we find a wide and essential difference. The allopath, in summing up his method of treatment, has retained all of the violent and barbarous remedies of antiquity, with very little knowledge of their mode of operation upon the human system, and with as little certainty as to whether they will ameliorate or aggravate the disease.

The homœopathist has pursued a different course. In consideration of the facts that the action of no two medicines upon the economy is the same, that almost every agent exercises a peculiar and specific influence upon certain structures only, and that this specific effect obtains both in health and disease, he institutes a series of accurate experiments during health, in order to arrive at the pure effects of different medicinal substances. The illustrious founder of homœopathy not only tested the operation of medicines upon his own person, but he induced others—men of science and undoubted integrity in different parts of Europe—to make trials of the same substances, without informing them of the results of his own experiments; and when their observations were completed, he instituted comparisons, and found that the effects of the medicines upon the different individuals were almost uniformly the same. Having by extensive experiment ascertained with certainty the pure effects of a number of articles during health, he commenced exhibiting them for the cure of diseases, in accordance with the principle which he had previously conceived to be philosophical and true; and we need not repeat that the results of these experiments were in the highest degree satisfactory.

In the early part of his career, Hahnemann made use of the pure mother-tinctures in ordinary doses, but he observed that the primary effects were too active,—there usually occurring a temporary augmentation of symptoms. This induced him to reduce his doses until he came to make use of *attenuations* and *dilutions:* and he found that, when the medicines were properly prepared, they still had their specification, and that disease was more speedily removed than when cruder preparations were employed.

In the preparation of *Dilutions* and *Attenuations*, Hahnemann mixed one drop of some powerful extract with 99 drops of Alcohol by vigorous shaking. This was the *first* dilution.

One drop of this was again mixed with 99 drops of Alcohol. This was the *second*, and so of other successive dilutions.

In preparing the triturations, he triturated one grain of a metal or mineral with 99 grains of Sugar of Milk, of which one grain was triturated with 99 of Sugar of Milk for the *second* trituration.

The *third* trituration was dissolved and then treated as a fluid substance. He carried this process to the 30th degree.

But the principal objection ever raised against the system of homœopathy is the supposed inefficiency of infinitesimal quantities of medicines when administered as curative agents. Nor is this at all surprising, for it has been customary for three thousand years, when disturbance prevails in the human citadel, to storm it with agents of destruction. Blood is made to flow, the delicate membranes of the stomach and intestines are raked with broadsides of emetics and drastics, the nervous system is shattered by narcotics and stimulants, and the functions of every organ deranged by showers of destructive allopathic missiles with which the enfeebled body is constantly assailed. By these summary means the disturbance is smothered, but the citadel is in decay its resources exhausted, its foundations impaired, and its strength forever diminished.

Homœopathy resorts to a different mode of procedure. In her remedial measures she uses no unnatural violence, nor seriously disturbs the function of any organ: but her remedies are exhibited with a definite object; the affected organ or tissue is acted upon with almost mathematical certainty, and that too without creating disease in healthy parts, or in any way complicating the natural affection. But she usually administers her medicaments in *infinitesimal*, or at least *attenuated doses*, and we now come to the question, whether such minute quantities of matter are capable of producing salutary impressions upon the organism when laboring under disease.

No one will deny, that the human body during health is constantly being acted upon and disturbed by influences or agents so subtle that neither the chemist nor physiologist can analyze or even detect them. The simple application of substances to the surface of the body is sufficient to produce decided and permanent effects. Turnbull says, that "so small a portion as the *one-hundreth part of a grain* of Aconite made into an ointment and rubbed upon the skin, has produced a sensation of heat, pricking and numbness, that has continued a whole day."

A leaf of tobacco applied to the wrist or sole of the foot, will excite the action of the respiratory muscles, blood-vessels, glands and skin, causing nausea, vomiting, &c.

If the leaves of Hyoscyamus or Belladonna be applied to the eye, *an effect will be produced, which will remain for several weeks.* It is asserted by Pereira and Sigmond, that a "dilatation of the pupils may be produced by *only approximating* the leaves of Hyosyamus or Belladonna to the eyes."

It is also well-known, says Paine, that "violent erysipelatous inflammation over the whole surface of the body is often induced from *approaching within a few yards of several species of Rhus.*"

The wild buffalo scents the hunter for a distance of more than a mile, and hastens from the vicinity of danger.

The carniverous bird recognizes the odoriferous particles arising from a dead carcass miles distant in the air, and with hasty wing pounces upon the prey.

The medicinal quality of cod-liver oil (*Ol. Jec. Aselli*) consists of *Iodine* distributed in infinitesimal quantities throughout the oil. According to an analysis made by Falker, the *Iodine* forms only the one-forty-thousandth part of the oil, being about equal to a third or fourth homœopathic attenuation of Iodine. The value of this *naturally* attenuated medicine in the treatment of scrofula and consumption is at the present time generally conceded. The analysis of Stein, De Jongh and Balard fully confirm that of Falker.

The very minutest quantity of the natural poison of certain animals, the virus of hydrophobia, small-pox, kine-pox, syphilis, and gonorrhœa, is sufficient, when placed in contact with an abraded or delicate surface, or otherwise introduced into the system, to give rise to all of their corresponding maladies. Other diseases, like scabies, leprosy, &c., may be communicated by the mere *touch*, or from inhaling the breath of an infected person.

Miasmata, animal exhalations, electricity, magnetism, heat, light, and even mental emotions, are all, under certain circumstances, capable of disturbing the organism and causing dangerous maladies, and yet, as Liebig, in his Animal Chemistry, truly observes, "with all our discoveries, we shall never know what light, electricity, and magnetism are in their essence. We can ascertain, however, the laws which regulate their motion and rest, because these are manifested in phenomena. In like manner the laws of vitality, and of all that disturbs, promotes, or alters it, may certainly be discovered, although we shall never learn what life is."

Let it be ever borne in mind, *that most substances, both in the organic and inorganic kingdoms, possess certain active principles which are latent and unappreciable in the natural state, and are only called forth and developed by some agent or process, which effects a transformation or metamorphosis of the crude material.*

Heat, electricity, and magnetism, become apparent when certain physical substances operate upon each other in such a manner as to disturb or change the original state of cohesion of particles.

Caloric is a property common to all material substances. In the natural state of these substances, this active principle is latent, and can not be appreciated by the senses; but if *friction* be used, this agent is set free, and its power becomes manifest.

Electricity also pervades all material bodies, and only becomes sensible when the natural state of these bodies is disturbed by *friction*.

It is probable, likewise, that iron and other substances contain mag

netism in a *latent* state, and only require the operation of certain influences, to develop in them the phenomena of magnetism. This is evident from the fact, that "the same magnet may successively magnetize any number of steel-bars, without losing any portion of its original virtue; from which it follows, that the magnet communicates nothing to the bars, but only develops, by its influence, *some hidden* principle." (*Beck's Chemistry.*) These forces are all now known to be only *modes of motion.*

Large quantities of vegetable, animal, or mineral substances, may be taken into the stomach in a crude state, with impunity; but if their elementary particles become separated by decomposition, or otherwise, and then introduced into the system, they give rise to the most baneful results. It is a matter of little consequence, whether this minute subdivision of particles is effected by the action of solar heat and moisture, by trituration, or succussion; the ultimate effects are the same. The elements of the substance are separated, the essence or medicinal part is set free from the crude, material, and non-medicinal portions, and reduced to such a state of attenuation as to become readily absorbed, and yet retain all the specific qualities pertaining to the original agent.

Indeed, so minute and subtle are the miasms from vegetable and animal decomposition, the exhalations arising from contagious disorders, &c., that no one has yet been able to appreciate their physical or chemical properties, by the most accurate tests of chemistry or optics. Who, however, for this reason will presume to deny or doubt their tremendous, although mysterious power upon the human system?

When Ether or Chloroform evaporates, the cohesion between the particles of the liquid is destroyed; its elements float in the air, and are capable of impressing the organism in a much more powerful, and in a totally different manner from any impression which could be produced by these constituents in a less attenuated state; as, for example, that of the original liquid. If a large quantity of Ether be swallowed, but slight effects will result; but if an imponderable quantity be introduced into the blood through the lungs, in the form of vapor, it is immediately brought into contact with the brain and nervous system, and the most astonishing effects speedily ensue.

"If the $\frac{1}{1024}$th part of a grain of tartrate of Mercury be diffused through the substance of a mere hard sweet-pea, the beautiful germ of a graceful flowering herb which lies folded up in its horny pericarp, shall never come out and be expanded, though you imbed it in the softest mould, and solicit it by every art."—(*Leuchs.*)

Professor Doppler of the Royal Institute of Prague, in speaking of the *modus operandi* of infinitesimal particles, writes thus: "From the moment in which the substance of the atoms succumbs to the influence of

their surfaces, and apparently independent of the law of gravitation, they move with the greatest facility in every direction, and, as it were, become alive; from that moment only, in my opinion, drugs acquire the capacity of penetrating the organism, and of exciting there a curative effect For if drugs, prepared in this manner, be brought in contact with the invisible extremities of nerves, their hyper-microscopical atoms will enter the organism at the same time with their *superficial electricity*, and will, if the nerves be in a perfectly natural state, be thrown out of the system without impediment, *after having penetrated it in every direction*. But, if a body in state of health be accompanied by an activity of the nervous system perfectly unimpeded and equally free in every direction, we cannot on the other side, but presume, that in a state of imperfect health the power of conduction proper to the nervous substance will be materially diminished, partially and in individual organs, either in consequence of a chemical change, or for some other reasons. But to use rather a material, but nevertheless by no means unfit comparison, as streams deposit the sand and pebbles they carry along, on those spots only where their currents meet with an impediment, and their rapidity seems broken by obstructions, so in a similiar manner, in the diseased organism, may the electric currents, however feeble, *leave* the atoms at the diseased spots, where they, according to their individual properties, exert a curative or detrimental influence."

If, then, *imponderable* substances possess powers so unequivocal and potent upon the healthy subject, when the organs are in high state of vigor, and consequently in a good condition to resist the influence of foreign impressions, why may we not infer, with perfect propriety, that medicinal substances, equally *imponderable*, are capable of impressing the organism during disease, when the affected structures are unusually susceptible to extraneous influences?

Homœopathists suppose that the mode in which their attenuations operate is analogous to that of infection by miasms; that the inert matter of the substance is destroyed, and the active principle set free; and that the smallest quantity of this active principle, triturated with sugar of milk, or diffused in water or alcohol, is capable of communicating to the vehicles its properties, and thus to the organism its peculiar action.

The essential principles of all vegetable substances constitute but a very small proportion of the original crude article, and the more perfectly we separate these *active* from the *inactive* portions, the more pure and powerful will the remedy become. Like caloric, electricity and magnetism, the strength remains latent in their crude state of the substance, and can only be developed by the important agency of heat, friction, or trituration.

Peach-blossoms, the bark of mountain-ash, the kernels of peaches,

cherries and plums, bitter almonds, &c., contain, in a latent condition the active poison known as Prussic-acid, which may readily be obtained from either of these articles by a chemical process.

Ipecacuanha is indebted for its virtues to a principle called *emetine*. Pelletier found, upon analysis, that the brown Ipecacuanha-bark contains only sixteen per cent of impure *emetine*; and the red bark fourteen per cent.

According to Berzelius, the impure emetine possesses only one-third the strength of the pure. We therefore find, that of one-hundred parts of crude Ipecacuanha, only five parts possess the medicinal virtues of the drug. Nor is it all improbable, that farther researches will enable the chemist to free this principle from other impurities, and thus develop a still more potent medicine.

Opium contains but a very small per centage of its narcotic principle, Morphia. The crude substance contains in addition to Morphia, at least fourteen other ingredients, all of which are destitute of any particular virtues. Only about eight or nine per cent of Morphia is obtained from Turkey Opium, and this is quite impure and unfit for use, containing Narcotin, &c. Cinchonia is composed of ten or twelve ingredients, of which, all but Quinia and Cinchona, are inert. Even these last, as usually obtained, are highly adulterated, and do not by any means represent the active principle of Bark in its purity.

The same rule obtains in relation to most other substances. The essential properties are distributed but sparingly throughout ligneous, resinous, and other matters, and it is only by the utmost care and nicety, that we can separate and develop these properties.

Indeed, there are many instances where the skill of the chemist is unable, not only to develop artificially certain principles of vegetable and animal substances, but even to analyze them when they become spontaneously disclosed by the action of heat and moisture. Miasmata and other noxious exhalations are examples of this kind.

It is a fundamental law of therapeutics, that the *active properties* of all medicinal substances can only be manifested from their surfaces; and it follows as a consequence, if we would develop the full powers of drugs, that they must be made to occupy *as great a surface as possible.*

If a compact piece of wood be ignited, but a small blaze can be produced; while, if the same wood be cut into small portions, so as to expose *a large surface*, and then ignited, a large and powerful flame will appear.

Only a limited amount of electricity can be drawn from a given surface of glass; but if the same glass be made to occupy double the space, an additional amount of the fluid may be set free.

If a hole be rapidly made through an ordinary piece of iron, the surface

of each chip so detached will be found to possess magnetic properties; and a singular circumstance connected with this, is the fact, that when the boring is accomplished in a *perpendicular* direction, the chips are more highly magnetized than when it is effected *horizontally*. Here, again, is an instance where *friction* has developed properties entirely unappreciable in the natural state.

A single grain of matter may be made by trituration to pervade every part of one hundred grains of sugar of milk, and each molecule thus separated, may be still farther subdivided into corpuscles, which in their turn may be diffused intimately through additional quantities of the medium. In this manner only, can we call forth all the latent properties of drugs, and reduce them to that state of attenuation which is compatible with absorption, and which enables them to exert those salutary specific influences which the homœopathic practitioner so uniformly observes.

Each atom thus minutely separated, retains the power of exercising its *specific influence* upon the organism. Quantity is of but little consequence, provided, that the substance is properly prepared; for an imponderable quantity in its highest state of development is quite as capable of producing its peculiar effects in certain conditions of the body, as a much larger amount.

It is undoubtedly true, that an atom, either morbific or medicinal, which possesses an affinity for a particular structure, is capable of communicating to such structure its peculiar action, the influence being propagated from one molecule to another, and each acquiring the properties of the original atom, until the influence is expended. Examples of this kind of action are constantly presented to the physician in the form of *continuous sympathy*.

One inhalation of a noxious miasm, under favorable circumstances, is as capable of causing its specific contagion, as a thousand, or more. One thousandth part of a grain of a natural or morbid virus, is as capable of imparting the peculiar action of the poison to all parts of the organism susceptible to its influence, as a larger quantity.

So also, when an atom of a medicine is absorbed into the system and comes *in contact* with an organ or tissue already diseased, upon which it exercises a specific influence, it communicates to the surrounding atoms its peculiar action until the whole tissue is involved, and thus, if the remedy be homœopathic to the malady, it will supersede the primary affection.

La Place and Berthollet have advanced the opinion, that "a molecule, being put in motion, can communicate its motion to others, if in contact with them."

This law is applicable to both animate and inanimate matter, under certain circumstances. Thus, the smallest point of decayed vegetable

or animal matter, if placed *in contact* with healthy vegetable or animal substances for which it has an affinity, will communicate to the latter its own morbid condition.

The smallest point of decay in a tooth, continually propagates its peculiar action to the surrounding parts, until the whole tooth is destroyed, or the diseased portion is removed.

The slightest spark of fire, put *in contact* with a combustible material, communicates its action to all parts susceptible of combustion.

A minute nucleus being once formed in the mineral kingdom, possesses the power of attracting to itself in a regular and uniform arrangement, all of these particles near it, for which it has an affinity, and the different varieties of minerals communicate to these particles their own peculiar action and arrangement.

It is asserted by the supporters of the chemical hypothesis, "that substances in a state of putrefaction, by entering the blood, impart their peculiar action to the constituents of that fluid, and all the substances of the body are induced to undergo a modified putrefaction." (*Paris' Pharmacologia.*)

Liebig affirms that "a body, the atoms of which are in a state of transformation, may impart its peculiar condition to compounds with which it may happen to communicate."

These assertions, however, are not sustained by facts. There is no proof that the blood becomes contaminated by the atoms which enter it in a state of transformation; nor is there any proof that such atoms are capable of "imparting their peculiar conditions," indifferently to other "compounds with which they may happen to communicate."

Every substance in nature, whether morbific or medicinal, possesses its own characteristic and distinct mode of action, and is only able to exercise or communicate this action, in a specific manner to particular structures. Thus, the contagion of scarlatina imparts its peculiar action to the throat and skin. The contagion of scabies acts exclusively upon the skin. The miasms which occasion many kinds of fever, appear to expend their effects upon the nervous system. The virus of gonorrhœa is specific and uniform in its results upon the mucous membrane of the urethra. The virus of syphilis, although more general in its operation, affects only a certain class of structures. All of these poisonous matters are incapable of imparting their peculiar influence, unless they are brought *into contact* with those tissues for which they possess a "*kind of elective affinity.*" There is no reason to suppose, that in any instance we have named, the blood itself is contaminated, but it serves merely as the vehicle which conveys the morbid particles to the different parts of the body.

What we have advanced in regard to the *modus operandi* of morbific, is equally true of medicinal agents. We have before shown,

that most drugs possess well-defined specific actions, which can only be manifested after having been conveyed by the blood to their destined structures.

It will be perceived that the views here advanced, in regard to the mode of operation of morbific and medicinal agents, differ essentially not only from those of the chemical school, but also from those of most writers who have hitherto appeared as advocates of homœopathy. From quotations made at page 106, it will be observed, that Hahnemann himself is a firm advocate of the "vital theory." In common with many distinguished writers of the old school, he supposes all diseases to consist of certain alterations of the "vital properties" of parts, and that medicines cure these diseases by acting upon these (supposed) immaterial properties in such a manner as to restore them to a normal state. In advocating these doctrines, Hahnemann has virtually rejected the theory of absorption, the truth of which has been so ably maintained by Müller, Pereira, Blake, and others, and thus has raised opposition to a portion of his beautiful system.

It may seem impossible, at a first view, that *attenuated* drugs can be *absorbed* into the system, and exert their influence *topically* on the different structures; but in support of this opinion we beg leave to submit the following ideas:—

Medicines, as we have already remarked, are often detected in those structures on which they have exerted their effects. Mercury, Iodine, Sulphur, Nitrate of Silver, the Salts of Lead, Iron, Bismuth, Copper, &c., have all been found in different tissues of the economy; and even Liebig himself advises us, that many of these substances often form "permanent compounds with the different tissues." The same author also remarks, "if by the introduction of a substance certain abnormal conditions are rendered normal, it will be impossible to reject the opinion, that this phenomenon depends on a change in the composition of the constituents of the diseased organism, *a change in which the elements of the remedy take a share.*"

The elements of the remedy do most certainly take a share in this change, but only so far as the disordered organ or tissue is concerned. It matters not, whether the specific agent be imponderable in quantity, administered through the lungs, stomach, or skin, or injected into the veins; it seeks that part for which it has an affinity, and there manifests its force.

I have known persons to become salivated by the use of less than one half of a grain of the first trituration of Corrosive Sublimate given in divided doses. This can be explained in no other way than by supposing that the remedy is rendered innoxious to the absorbed vessels by the peculiar mode of preparation; for so small a quantity of the crude article has never, to our knowledge, been known to produce this

result. By trituration, the crude particles of the mineral are so minutely separated and diffused through the vehicle, that the delicate absorbents admit them into the circulation with facility, while in an unprepared state the remedy would be recognized as an *irritant*, and consequently excluded.

When salivation is produced by large doses of Calomel or Blue-mass, it is highly probable, that *evaporation* occurs from the heat of the stomach and intestines, and that this vapor, impregnating the chyle, is absorbed. It has been said by the opponents of absorption, that the preparations of Mercury cannot be absorbed on account of their *insoluble nature*, and therefore that salivation is caused by an impression which is made upon the "vital properties" of the stomach, and that this impression is reflected to the salivary glands through the sympathetic nerves. But, if the advocates of this doctrine will reflect, that Mercury evaporates at a *common temperature*, and that this vapor, when inhaled, exerts all the specific effects of the mineral, they must admit, that when submitted to the higher temperature of the stomach and bowels, this evaporation and absorption will be augmented. "I believe," says Pereira, "with Buchan, Orfila, and others, that metallic Mercury in the finely divided state in which it must exist as vapor, *is itself poisonous*."

An argument which we deem conclusive upon this point is from the fact, that traces of *Mercury itself* have often been detected in the secretions, excretions, and solids of the body: and if any "vital properties" have reflected the influence, they must have conveyed the solid substance along bodily to the affected glands. &c.

In considering the subject of absorption and the topical action of attenuated drugs, it must be remembered, that the absorbing structures are very delicate and sensitive, so that they are enabled to exclude all crude and irritating substances; and also that the extreme terminations of the nerves in all parts of the body are exquisitely susceptible to the influence of specific foreign agents: and a cause, capable of affecting powerfully these minute filaments, would be entirely without energy and unappreciated, if brought to bear upon the trunk or larger branches of the same nerve.

Another fact, illustrative of the truth of absorption and topical action, is, that substances always exercise their specific effects more promptly and potently when introduced directly into the mass of the blood, than when taken by the stomach. "Medicinal or poisonous agents injected into the blood-vessels exert the same kind of specific influence over the functions of certain organs, as when they are administered in the usual way, but their influence is more potent." (*Pereira.*) Liebig also assures us, that "we can by remedial agents exercise an influence on every part of an organ by substances possessing a well-defined chemical action."

There is a distinct recognition of the principle of the *topical* or *specific* action of remedial agents, although the character of this action is supposed to be chemical. Without entering into any discussion upon this point, or attempting to explain, *how* morbific or remedial agents produce their peculiar effects, we shall remain satisfied with the positions we have before laid down, and simply refer our readers to the numerous instances within their own knowledge, of the *topical* action of substances, both ponderable and imponderable, with the addition of a few examples of the latter, which can be understood and appreciated by all.

1. *Odors.* When odoriferous particles are brought *into contact* with a certain nasal structure, (the schneiderian membrane,) the minute and sensitive nerves of the part, take cognizance of the stimulus, a decided impression is made upon the whole membrane, and an odor, agreeable or otherwise, according to the nature of the exciting cause, is the result. In this instance, *physical*, but *imponderable* particles operate upon the nasal tissue *by absolute contact*, and impart that peculiar action which enables us to appreciate odors.

2. *Light.* According to Sir Isaac Newton, light is a *physical*, but *imponderable* compound, and can only manifest its power when its atoms are in contact with the organ of sight. These particles of light are the natural stimulus of the eye,—*material, imponderable, specific.* When this compound is separated into different primary rays, each particular ray, when brought into contact with the eye, exercises a special and distinct influence, giving rise to the perfect appreciation of the different colors of the prism. Here again we are presented with an example of the specific influences of imponderable atoms upon a certain part of the system. On the dynamic theory the illustration is more forcible.

3. *Heat.* Newton also maintained, that caloric is "*a distinct material substance*, the particles of which repel one another, and are attracted by all their substances."

When caloric is given off by a heated body, its atoms impart to all other atoms with which it comes *in contact*, its own peculiar action, and the sensation of heat, with its attendant phenomena, expansion, &c., is the consequence. Here we are furnished with a still more striking instance of the power of an imponderable substance in altering and modifying the character and properties of all substances upon which it exercises its action. This active principle, present in all bodies, hidden and unappreciable, except when set free by *friction, percussion, mixture, electricity, or combustion*, possesses properties when thus liberated, surpassing in power and influence every other substance in nature; yet it is more subtle and imponderable than the most attenuated medicines of homœopathy.

4. Electricity, galvanism, magnetism, and the various gases, are

all *material* substances and manifest their influence *physically* by contact with the body.

It must not be supposed, that light, heat, electricity, magnetism, &c., are merely *imaginary* properties of matter,—because they can not be weighed, handled and made subservient to all of those conditions which govern more crude substances. Nor must it be supposed of drugs, that they possess no qualities except those which are apparent in the crude state, and can be fully appreciated by their nauseousness of taste, offensiveness of smell, or power of raking the stomach and intestines.

Modern science has demonstrated, that by *friction*, *percussion*, *mixture*, &c., some of the most powerful principles known may be liberated from substances which in a crude state are entirely harmless. It has shown, that the more perfectly we can disencumber these principles from their inactive envelops, the more potent they become. It has been shown that the mass of ligneous, resinous, starchy, fatty extractive, and coloring matters, which surround and enclose the active portions of vegetable substances, instead of possessing medicinal properties, serve only to nauseate and oppress the stomach and bowels, and thus complicate any existing malady.

Pereira, and other authors opposed to our system, have endeavored to cover it with ridicule by entering into a computation respecting the *weight* and *strength* of the different attenuations. They have displayed before us tabular views showing the strength of each attenuation, and then assured us, without the trouble of testing the question practically, that such exceedingly small doses of medicines can produce no effect upon the system, but "that the supposed homœopathic cures are referable to a natural and spontaneous cure, aided, in many cases, by a strict attention to diet and regimen."—*Mater. Med. & Therapeutics.*) This is the principal argument urged against the therapeutical doctrines of Hahnemann.

We beg leave, however, to request those gentlemen who judge of the potency of substances by their *weight* and *dimensions*, to enter into a still further calculation, and inform us which possesses the greatest *weight*, the medicinal particles pertaining to a drop of a thirtieth attenuation of a homœopathic remedy, or the charge of electricity, which lays prostrate and senseless the strongest man,—or the quantity of sulphuretted hydrogen, or carbonic acid-gas, requisite to cause immediate death when inhaled? Which can be most readily detected and appreciated by *analysis*, the atoms of a high attenuation of Hahnemann, or the deleterious miasms which arise from vegetable or animal decomposition?

Which present the greatest difficulties in examination and description, the *physical structure* of the particles of a homœopathic medica-

ment, or that of small-pox virus? Will the respectable Hippocratic, who can not recognize *power* in any material substance, unless it can be *weighed* or *handled*, enter into a computation, and inform us *how much* a poisonous dose of the vapor of Hydrocyanic-acid, Mercury or Lead, *weighs*?

Let it be remembered, that not one atom of matter in the whole universe can be *annihilated;* transformations may be effected—the cohesion of particles may be changed—atoms in their ultimate state of chemical combination may be *physically* divided into molecules, and again subdivided into lesser atoms to such an extent as to baffle detection from the most perfect tests of chemistry or optics—new powers may be developed in these atoms, the exact operation of which we may not at present be able to understand, but in no instance can we destroy one single particle of matter. We may effect an entire metamorphosis of almost any solid substance, and diffuse its elements in such a manner as to occupy and effect a very large amount of space. The elements of a few grains of gun-powder may be made with the aid of the imponderable influence of caloric, to change their form, and impregnate every portion of the atmosphere of a large room. In like manner, a single grain of a vegetable or mineral substance may be transformed, and its atoms diffused throughout large quantities of inert materials, in such a manner as to impregnate them in every part with medicinal properties, but in no instance can a single atom be *annihilated.*

Until we arrive at more accurate knowledge in relation to the laws which govern the chemical and physical action of the minute atoms of substances than we at present possess, let us not deny that they may be endowed with properties and powers (although their modus medendi is a mystery to us), capable of exercising an important influence upon the human organism.

But it may not be possible in the present state of human science to follow the operations of nature through each particular step. It may be that we are not yet in possession all the materials necessary for the erection of a perfect *theory of cure;* and that none of the hypotheses yet advanced are entirely true. On this point we may accept the conclusion reached by a faithful laborer in the field of medical reforms. Dr. Joslin says:

"Many physiological and pathological problems are of such a character as to present to those who may now attempt their solution, elements of uncertainty similar to those encountered by previous medical theorists; so that considered in relation to some of those collateral or auxiliary topics, Reformed Medicine is not destined to be exempt from slow development. Here lie the same rocks on which have been wrecked so many navigators of other times, compelled by their position simultaneously to encounter invisible undercurrents, and unforeseen

shifting winds. The investigator is compelled to grapple with a problem of numerous and uncertain elements." But in our efforts to master the complex problems that rise to meet us as we progress, "our position is different from that of the physiological schools. With them, theories of the functions of the human organism are the foundation of therapeutics. They are working at one unfinished monument; we a another. Their alterations are in a considerable degree, fundamental and cause dilapidations in the superstructure, and necessitate its frequent demolition and reconstruction. We build on an immovable foundation, and every extensive alteration involves progression.

"In proportion to our faith in this, will *cæteris paribus*, be our happiness and activity; for one of the most agreeable and effectual incitements to labor, is the certainty of success."

In regard to the preparation of medicines, there are several points of difference worthy of particular notice, between the old and new schools.

1. Allopathy employs her drugs in a crude and consequently inactive form; while homœopathy makes use only of their pure essential principles, unencumbered by foreign matters.

2. Allopathy employs so great an amount of artificial heat in her pharmaceutical operations, that a large proportion of the active properties of her drugs is expended in evaporation; while homœopathy makes use only of expression, trituration, and succussion, and thus not only retains all of their virtues inherent in the drug, but actually develops powers which would have remained latent under other circumstances.

3. On account of the peculiar mode of preparation, the remedies of allopathy are offensive to the taste, they nauseate the stomach; and, by in their indigestible and irritating qualities, serve directly to induce gastric and intestinal derangement, and other serious medicinal symptoms. The medicines of homœopathy are liable to none of these objections.

4. For the reasons above enumerated, many of the remedies of the old school are excluded by the sensitive absorbents, on account of their irritating qualities, and are thrown off with the fæcal matters as foreign substances; having failed in their passage through the intestinal canal of producing any other effect than an irritation of the gastro-intestinal membrane. The attenuated remedies of homœopathy being innocuous to the lacteals and absorbents, are readily admitted into the circulation, and conveyed to those parts upon which they exert a specific action, thus impressing *directly* the organs or tissues actually diseased. "No substances," says Martyn Paine, "but such as exist in a fluid or very attenuated state, are taken up by the lacteals and absorbents."

So, also, in the therapeutical application of remedies, we claim, as

far as accurate scientific principles and sound philosophy are concerned, that homœopathy is vastly superior to allopathy. We shall briefly reiterate some of the more prominent points of difference in the practice of the two schools.

The system of homœopathy is founded upon rational and scientific principles, inasmuch as its remedies are exhibited with a definite object, and the results can in most cases be predicted with mathematical certainty.

The practice of allopathy must always be indirect, uncertain, and empirical. The violence of the remedies employed, necessarily induces medicinal and sympathetic affections, which, mingling with the symptoms of the natural disease, render it impossible to distinguish between the two classes of symptoms, or to judge whether the malady, or the medicine, or both combined, are killing the patient. The fact that so few allopathic practitioners coincide precisely in regard to the treatment of very many diseases, proves conclusively that their system is one of *guessing*, rather than one founded on scientific knowledge and ascertained facts.

Homœopathic remedies being *specific* and *certain* in their effects, operate only upon those parts, which are actually diseased. Without inflaming healthy structures, debilitating the system, or disturbing the function of any organ, they induce, when judiciously exhibited, a new or alterative action in the part affected, of just sufficient severity to banish the natural malady, while the new or medicinal action subsides speedily and spontaneously.

According to the doctrines of homœopathy, no two diseases or kinds of inflammation can exist in the *same structure* at the *same time;* for whenever two exciting causes act upon the same part, the one possessing the most powerful action, must necessarily banish and supersede the weaker. Therefore, in accordance with the rules of our system, remedial impressions are always made *directly* upon the *organ* or *tissue affected*, and a new kind of action set up, which abolishes the disease and usurps temporarily its place.

According to the strict tenets of the old school, remedies should be exhibited in such a manner as to impress structures which are *healthy* and *remote* from the *organ* or *tissue diseased*, in order that *revulsive*, *derivative*, or *counter-irritating* effects may be produced, and thus serve to attract the fluids from the *natural* affection to the *artificial* one. This plan of treatment originated as we have seen, from the supposition that no two maladies of consequence could exist in *different parts* of the same organism at the *same time*. As this idea is at present universally conceded to be erroneous, we assert that a mode of practice deduced from such false data, must of necessity be unscientific and empirical.

By operating on *healthy structures*, the allopath accomplishes little or nothing towards restoring the impaired capillaries of the affected part to their original condition of strength and resistance, and consequently his system must be entirely inadequate to effect cures. We are, for this reason, forced to the conclusion that the "Modern Celsus," Dr. Forbes, is correct when he asserts that "in a large proportion of the cases treated by allopathic physicians, the disease is cured by nature, and not by them."

It is a fundamental law of medicine, that no inflammation can be created in any part of the body, without giving rise to secondary sympathetic affections in *other* and *distant parts*. It is evident, therefore, that the greater the number of structures affected with inflammation, whether natural or artificial, the greater will be the number of sympathetic symptoms, and consequently the more serious and complicated the malady. Thus we perceive the force of Dr. Forbes' remark, "that in not a small proportion of the cases treated by the physicians of the old school, the disease is cured by nature, in spite of them: in other words, their interference opposing instead of assisting the cure."

We have before shown that organs and tissues become morbidly susceptible to the impressions of specific remedial agents *during inflammation;* therefore it is, that extremely minute quantities of specific medicaments are capable of exercising powerful influences *during disease*, which, under circumstances of health, would be productive of no effects whatever. This is a truth of vast importance in the administration of medicines, and should be thoroughly appreciated by the practitioner who regards the welfare of his patients. Let him remember that these acquired susceptibilities are so great, that even the natural stimuli, food, gastric juice, bile, light, &c., can not be tolerated; and from this fact, take warning lest he inflicts injury and counteracts the efforts of nature by too active medicines.

But as we have so frequently observed, it is not so much our *principle of cure*, at which the shafts of the old school are directed, as to the doctrine of *small doses*. It is not because the adherents of allopathy *cannot* make themselves acquainted with the powers of attenuated drugs, but it is because their inveterate prejudices will not allow them to investigate the facts which are involved. They prefer *to die* of vomiting, purging, and sweating, as their predecessors have done for two-thousand years, rather than to be *cured* quietly under a *new system*. These individuals are not satisfied unless they *feel and see* the poor body writhe and suffer for the sin of being sick. What care they for any interior or invisible action of a medicine, when they can be cut, racked, and tortured, by the lancet, emetics, cathartics, blisters and moxas, and that too, *secundum artem!* To be sure, they were not aware of any *visible effects when the morbid agent* operated upon

their systems to *produce* the disease, but the *curative* part is in their own hands, and they are determined to exercise their privilege of a full and continual appreciation of the whole modus operandi of the remedial process. This part, *nature* has no power to cheat them of, but Hippocrates now reigns, and they are resolved to exercise their ancien reserved rights, and bleed, vomit, purge, sweat, and blister, *ad libitum*.

But why have our opponents dwelt so much upon our doses! Does not every homœopathist aim and intend to give a sufficient quantity of the medicine at a time to effect a speedy cure; and is not this quantity determined by experience of simple facts? We have different *strengths* or *attenuations* of each medicine, from the strongest tincture up to the most minute attenuation, and every homœopathist selects that *strength* or *attenuation* of the drug which most *speedily* and *safely cures his patient*. The great point with him is, to select such a medicine as shall be homœopathic to the symptoms of the disease, and then to administer just enough of it to effect his object in the most safe and speedy manner. He finds by experience—by a mass of facts,—that the tinctures and alkaloids, although often capable of subduing disease, are less prompt, less efficient and less safe than finer preparations of the drug. This easily demonstrated truth, was not the result of theory or hypothesis, but originated with Hahnemann, as we have already seen, through necessity, on discovering that the tinctures which were first employed by him, in accordance with his principle, often produced too violent impressions upon the affected structures. What cared Hahnemann—what care his disciples—whether they use *one* or *twenty* drops of a tincture, or *one* grain of a twentieth attenuation? Were twenty drops of a tincture. or twenty grains of a crude substance more efficient in curing sickness than one drop or one grain of an attenuation, is there any man who supposes that Hahnemann or his followers would not have administered them in this form, in preference to any other? The chief glory of the founder of homœopathy does not consist in the discovery of the efficacy of small doses, but in the demonstration aud practical introduction of the great doctrine of curing maladies by impressing diseased tissues with medicines which operate specifically upon these tissues themselves, rather than on distant parts.

It matters not therefore, in regard to the homœopathic law of cure, whether we use this or that strength, provided the remedy is homœopathic to the disease, and exactly the requisite impression is produced upon the affected parts. The man who cures a Belladonna headache with ten drops of the tincture (if he be successful) adheres to *similia similibus* as much as he who cures with the thirtieth attenuation of the medicine. The only question to be decided is, which strength cures most safely and quickly; and if facts prove, as all homœopaths believe, that a preparation (apparently) weaker than the tincture is by

far the most safe and efficient, then it is our duty to give these preparations the preference. It is found, for example, when repeated doses of tincture of Belladonna are given in acute inflammation of the brain, that the primary symptoms from the drug manifest themselves too violently—that it causes dangerous and protracted medicinal aggravation, and a tardy reaction of the organism; while a dilution of the remedy impresses mildly the diseased structure, causing scarcely perceptible *primary* symptoms, and is speedily followed by its *secondary* or *curative* effects.

We shall conclude this section with a few observations by a distinguished chemist (allopathic) respecting the divisibility of matter, and some of the phenomena witnessed when a high degree of attenuation has been arrived at. These observations may at least show to those whose minds are not already permanently made up, that, not only morbific and medicinal power may exist in infinitesimal atoms of matter, but even *life itself*.

"It has been proved, that gold may be divided into particles of at least $\frac{1}{1,400,000}$ of a square inch, and yet possess the color and all other characteristics of the largest mass. If a grain of copper be dissolved in Nitric-acid, and then in water of Ammonia, it will give a decided violet color to 392 cubic inches of water. Even supposing that each portion of the liquor of the size of a grain of sand, and of which there are a million in a cubic inch, contains only one particle of copper, the grain must have divided itself into 392 million parts. A single drop of a strong solution of indigo, wherein at least 500,000 distinctly visible portions can be shown, colors 1000 cubic inches of water; and as this mass of water contains certainly 500,000 times the bulk of the drop of the indigo solution, the particles of indigo must be smaller than $\frac{1}{2500,000,000}$, the twenty-five hundred millionth of a cubic inch. A rather more distinct experiment is the following: if we dissolve a fragment of silver, of 0.01 of a cubic line in size, in Nitric-acid, it will render distinctly milky 500 cubic inches of a clear solution of common salt. Hence the magnitude of each particle of silver cannot exceed, but must rather fall short of a billionth of a cubic line. To render the idea of this degree of division more distinct than the mere mention of so imperfectly conceivable a number as a billion could affect, it may be added, that a man, to reckon with a watch, counting day and night, a single billion of seconds would require 31,675 years."

According to Doppler, a cubic inch of brimstone, broken into one million equal pieces, a sand grain each in size, is magnified in sensible surface from six square inches to more than six square feet. It is calculated in this way, that, if each trituration of the homœopathist diminishes his drug a hundred times, (an exceedingly moderate allowance) the

sensible surface of a single inch of sulphur, or any other drug, shall be two square miles at the third trituration.

"In the organized kingdoms of nature, even this excessive tenuity of matter is far surpassed. An Irish girl has spun linen yarn, of which a pound was 1432 English miles in length, and of which, consequently, 17 lb 13 ounces would have girt the globe; a distinctly *visible* portion of such thread could not have weighed more than $\frac{1}{167,040,000}$ gr., cotton has been spun so fine that a pound of the thread was 203,000 yards in length, and wool 168,000 yards. And yet these, so far from being ultimate particles of matter, must have contained more than one vegetable or animal fibre: that fibre being of itself of complex organization and built up of an indefinitely great number of more simple forms of matter.

The microscope has, however revealed to us still greater wonders as to the degree of minuteness which even complex bodies are capable of possessing. Each new improvement in our instruments displays to us new *races of animals*, too minute to be observed before, and of which it would require the heaping together of *millions upon millions to be visible to the naked eye.* And yet these animals *live* and *feed*, and have their organs for locomotion and prehension, their appetites to gratify, their dangers to avoid. They possess circulating systems often highly complex, and blood with globules bearing to them by analogy, the same proportion in size, that our blood globules do to us: and yet these globules, themselves organized, possessed of definite structure, lead us merely to a point where all power of distinct conception ceases; where we discover that nothing is great or small but by comparison; and that presented by nature on the one hand with magnitudes infinitely great, and on the other hand with as inconceivable minuteness, it only remains to bow down before the omnipotence of Nature's Lord, and own our inability to understand Him. (*Kane's Chemistry, by Draper*, p. 19.)

It is not by supplying deficient chemical materials to the blood that remedies are to cure disease. It is true, that in various diseases the blood is deficient in phosphates, carbonates, sulphates, lactates, acetates, &c., of soda, lime, or other ingredients of normal tissues; these salts are not, however, furnished to the blood by food, as phosphates and carbonates, &c., but are formed within the organism, and from material whence the chemist must often despair of extracting them. Whatever the absorbents receive, undergoes profound and radical transformations, provided it be not in such excess as to embarrass the functional activity of the organs which dispose of it. A controlling vital force then forms the different compounds as they are needed, instead of delegating certain organs to select them ready made.

Mr. Gundlach, of Cassel, shows experimentally that wax is formed from honey in the body of the bee, although the honey contained apparently no trace of wax. Liebig remarks the absence of fat in the

flesh of the carnivora, which of all animals eat most fat; while the cow extracts butter from herbs and roots, suet from hay and fodder, &c. The sugar of the maple is found not in the roots, but in the woody substance of its trunk, increasing only up to a certain height. Sugar, starch, gum and humic acid, so nearly allied in their composition to plants, are not food for them. Sugar can only be absorbed and appropriated in the tree like any other foreign matter. All the animal viruses and venoms, hydrophobine, and the serpent-poisons are rendered inert by the operation of digestion in the stomach, while the most innocent articles of food received into the stomach of the viper furnish its body with all the elements of its structure and secretions, and are transformed into the deadly venom in the glands which elaborate that fluid.

Lehmann and others have proved that sugar, found in the blood, is not assimilated as sugar from those aliments which most abound in sugar, but from the fibrine and albumen, the proportions of which are reduced in the blood of the hepatic vein, as compared with that of the portal vein. The vital force executes disintegration and reconstruction upon every compound presented to it. Though potash and other salts of alkaline base, Copaiba, Turpentine and *Garlic* may be detected after absorption in the blood, sweat, chyle, gall or splenic veins, they are speedily excreted with the urine.

The patient under treatment has received in general the same kind of food that he took in health, but he fails in assimilative power to extract from the food and appropriate for the uses of the organism the elements essential to his support. Tuberculosis is not the result of a deficiency of phosphates in the food, but of loss of the assimilative power to extract them from it.

The object of the scientific physician is not to furnish the system with some infinitesimal quantity of an ingredient which is deficient in the blood. If iron be deficient in the blood and that agent be found a remedy, it becomes such not by furnishing the wanting ingredient, for the quantity we prescribe is not in any degree sufficient for that, but by enabling the organism to appropriate that which is presented to it in the food. The disease does not arise from deficiency of iron in the aliment, but "the power of digesting, assimilating and forming the food into blood is defective; and it is this power which is to be restored by medicine. The physician who is ignorant of this, and in treating such a case, regards himself as a mere caterer for supplying materials, will naturally conclude that he must administer ferruginous medicine, and that the medicine must be given at least in quantities appreciable by chemical tests.

"Neither of these conclusions has the slightest foundation in reason. The substance which suitably regulates the vital force in this case, will not necessarily or even generally be iron, but some medicine indicated

by the generality of the symptoms present. Again, the immediate object not being chemical but vital, it is not necessary nor desirable to employ a dose appreciable to chemical tests, but to the vital test, which is inconceivably more delicate; the living body can be strongly and durably effected by a dilution, which if concentrated a billion fold would not produce a visible change in any lifeless re-agent. (*Dr. Joslin.**)

The question is asked, how is it possible for a perceptible influence to be exerted by a minute dose of an attenuated medicine "when the same substance, as salt or iron, already exists in the blood and in sufficient quantities without it."

This question will only be asked by persons who "deny that special increase of power called potentization which the homœopathic medicine receives by minute divisions in the different stages of its preparation, and which gives it an efficiency vastly superior to that of the same quantity in the ordinary state." To those who admit nothing and deny everything, it may not be easy to present satisfactory answers to all questions prompted by mere curiosity; and it may not be profitable for us or them to spend much time in abstract reasonings which weak minds do not easily comprehend. The only question in this case is one of fact for an impartial jury to inquire into. A fact well known to many observers is thus stated by Dr. Joslin: The quantity of Natrum-muriaticum, common table-salt, "taken by almost every man, varies by many grains at his different meals. If he receives a few grains more at one meal than at the preceding one, he has no Natrum-muriaticum symptoms as the consequence; and common-sense would teach a physician that if he should administer a few grains of the crude substance, he could produce no effect by it. The intentional increment must be as inoperative as the accidental. But experience teaches that the potentized form of this medicine in a quantity inconceivably small makes a decided impression both on the healthy man and the patient. We are compelled to conclude that it has a power of affecting the system not perceptible in what is chemically the same substance in its ordinary state, or in that state in which it exists in the blood, where it is crude as compared with the form in which it is given by homœopathists. A thousand physicians daily witness the special power of potencies of other medicines, and are thus able to confirm by analogy the preceding conclusion."

ATTENUATIONS OF DRUGS AND REPETITIONS OF DOSES.

In selecting our attenuations for the cure of disease, the following circumstances are to be taken into consideration: 1. the age, sex, temperament, constitution, and habits of life; 2. the condition of the disordered textures; 3. the character of the drug to be employed.

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* American Hom. Review, Vol. II., p. 38.

a. *Age.*—Infants and children of tender years, whose organisms have not become blunted by exposure to the ordinary stimuli of life, by improper food and drinks, and by abuse of cathartics and opiates, are in the most eminent degree impressible and require the highest attenuations. It is at this period that the circulation is most active, the nervous system most delicate, and the tissues most sensitive to the influence of external agencies.

At the middle period of life, when the body has arrived at maturity and all of the organs have acquired their full strength and vigor, the resisting power against both medicinal and morbific agencies is at its maximum. The action of the circulatory vessels is now moderate and stable, the nerves are strong, the structures have become accustomed to all kinds of stimuli, and the mind, which exercises so powerful an influence over the body, acts calmly and judiciously. At this period our lower attenuations will often serve us more efficiently than the higher, especially in acute diseases.

During the decline of life, many circumstances which have a tendency to modify the operation of medicines, are to be considered. Individuals who have passed their lives in intemperance, who have been afflicted with frequent attacks of disease, and whose systems are loaded with the cumulative poisons of drugs, usually acquire a remarkable obtuseness and inactivity of the whole organism, so that the very lowest attenuations are requisite to effect suitable impressions. On the other hand, many old people, upon the verge of the second childhood, become sensitive, irritable, and so intensely impressible, that the higher preparations respond promptly and effectively.

b. *Sex.*—Females are more easily acted upon by medicines than males, for several reasons. Perhaps the most prominent one consists in their superior delicacy of organization; their circulation is more active, their nervous systems more irritable, and their mental powers more acute and quick, although less strong, logical and independent than those of men. J. J. Rousseau asserts that a woman will leap to a conclusion which would require a man hours of severe thought to arrive at. It is this susceptibility and delicacy of organization which renders the female more impressible than the male sex and which should always have no inconsiderable weight in the selection of attenuations.

c. *Temperament.*—Temperament also has an important influence in the operation of medicines. As most morbific and remedial agents produce their effects upon the sentient extremities of the nerves, it follows that a highly susceptible condition of the nervous system is most favorable to the prompt operation of these causes. We therefore infer, that the higher attenuations are better adapted to the *nervous* than to either of the other temperaments.

Next to the nervous temperament, in point of susceptibility, may be

ranked the *sanguine*. Individuals of this temperament are characterized by great activity and energy, and by prominent development and vigor of the vascular system.

Temperaments which are the least susceptible to remedial impressions, are the *bilious* and the *lymphatic*. The former is characterized by large muscular developments, tendency to biliary derangements, frequent turns of melancholy, and great powers of endurance. The latter is distinguished by a predominant activity of the glandular system, by a flabby and relaxed condition of the muscles, and by a feeble and rather obtuse state of the nervous system. These temperaments sometimes require the lowest attenuations, especially in chronic diseases.

Two or more of these temperaments often *unite* in the same person, when we have what is termed a *mixed* temperament. This variety may be considered, upon the whole, the most favorable to health and longevity, since no quality predominates, and the functions of the organism are more equalized.

d. *Constitution.*—Attenuations must also be selected with a due regard to the constitutional peculiarities of each particular case. We know of several persons who cannot take a blue pill, or a pill in which calomel is a constituent, without being violently salivated. There are others in whom Opium produces furious and protracted delirium and catharsis as primary effects; others cannot carry Ipecacuanha about their persons, or inhale the smallest quantity of it, without attacks of asthma; others cannot approach the rhus-plant without being poisoned; others cannot use shell-fish and certain other sorts of food, without being afflicted with urticaria; the smell of hay causes asthma in some, and the delicate fragrance of the rose, syncope in others. On the other hand, there are some organisms which can scarcely be impressed with even large and continued doses of medicines. Constitutions which have been impaired by abuse of stimulants, drugs, tobacco, and licentiousness, and in which there is an abasement of the nervous and physical power, demand low attenuations. In a word, it will be found on rigid examination, that each individual possesses some peculiar trait which it will be necessary to take into consideration, when we decide respecting the strength of a remedy.

e. *Habits of Life.*—We have read of persons who were "*music mad*," but we have often seen those who were "*medicine mad*." The world is full of this class of monomaniacs, who "pass away their time in descanting on their own diseases," and in filling their bodies with all sorts of injurious and nauseous drugs. After pursuing this course a long time, the system, by habit, tolerates enormous quantities of the poisons swallowed, and the structures lose in a measure their susceptibility to medicinal impressions. It is for this reason that the homœopathist ex-

periences so much difficulty in the management of cases of dyspepsia, hypochondria, and constipation, which have been induced by long-continued abuse of cathartics; also in the affections of confirmed Opium-eaters, habitual drunkards, and gourmands. Individuals of these classes, require low attenuations. In the same category may be ranked those operatives who make a breathe-vapor of *Mercury*, the salts of *Lead*, strong acids, and other poisonous substances which evaporate at the ordinary temperature.

Robust persons, who pass much time in active exercise in the open air, will require stronger doses than those of delicate organization and of studious, sedentary habits.

2. *The condition of the disordered textures.*—Those parts of the system which are most amply supplied with nerves, are, all other things being equal, most susceptible to the operation of medicines. Thus the eye is more readily impressed than the arm; the lungs, stomach and intestines, than the limbs, joints, &c. Much also depends upon whether the specific employed, is positive and decided in its operation.

But there is another circumstance of vast moment to be taken into consideration in the choice of our attenuations, and to which we have elsewhere called particular attention. We refer to the *augmented susceptibility to medicinal impressions which inflamed structures acquire.* We have shown that the condition of inflamed tissues becomes entirely changed, and that their acquired susceptibilities become so morbidly increased that even their natural stimuli can not be tolerated, but when allowed to operate, become additional and powerful sources of disease. The natural and healthy stimuli of the eye, the ear, the lungs, the stomach, the bladder, &c., are grateful during the normal state of these organs; but let inflammation occur, and the smallest pencil of light becomes intensely painful to the eye, as noises to the ear, air to the lungs, food and drinks to the stomach, and urine to the bladder.

Nor is this augmented susceptibility confined to the operation of the natural stimuli, but it applies with still greater force to the action of *specific* medicines, up to the termination of inflammatory action, when the sensitive extremities of the nerves succumb from intensity of excitement, and a condition bordering on paralysis or gangrene obtains. It is sometimes difficult to decide when this morbid erethism has arrived at its maximum, and the atonic state commences; but the gradual subsidence of pain, appearances of effusion or ulceration, and diminished sensibility of the affected part, will afford us the best indications upon this point. This fundamental law of homœopathy, not only serves to explain in the clearest possible manner the astonishing effects of infinitestinal doses, but it teaches an important practical fact, at present unappreciated, but incontrovertible, and which stands at the foundation

of our therapeutical applications, viz., *to ascend in our scale of attenuations in proportion to the violence of the inflammation, until we arrive at that point where the nerves of the diseased part have attained their maximum of erethism, after which we must again descend the scale in the same ratio.*

This same law applies with equal force to all irritations of the nervous system, even when entirely unattended with the usual phenomena of inflammation, redness, swelling, heat, and pain. We have often seen this nervous erethism so strongly pronounced—and where there were no signs of vascular excitement—that a single grain of Ipecacuanha, or the twentieth part of a grain of tartarized Antimony, would produce copious vomiting and purging; or a drop of the first dilution of Nux-vomica, induce involuntary contractions of the muscles, especially of those parts which are usually irritable; or a single grain of Jalap, Rheum, Calomel, or even a mental emotion, immediately cause diarrhœa; or a cup of tea or coffee taken in the evening, prevent sleep for a whole night; or the inhalation of a few imponderable particles of Ipecacuanha, give rise to both its primary and secondary specific effects upon the pulmonary organs.

There may be a few *apparent* exceptions to this rule, as in the example already referred to respecting the inefficiency of large quantities of Opium and Laudanum in *tetanus;* but these exceptions are susceptible of ready explanation. In this disease there exists a peculiar preternatural excitement of the nerves which preside over the voluntary motions, and the contractility of the tissues, which induces a *spasmodic* exclusion of those textures of the digestive canal which, in the normal state, permit the absorption of opiates. This is evident from the fact, that if Laudanum *be injected into the veins during tetanus*, the usual effects are manifested. In this disease, therefore, the drug is *not absorbed*, and of course can not exercise its specific effects upon the economy.

It is evident, then, that in the selection of attenuations for chronic diseases, the precise condition of the nerves of the affected parts must always be taken into consideration, since some chronic maladies are characterized by a highly exalted nervous susceptibility, and call for the use of high attenuations; while in other cases, this susceptibility or impressibility remains at a low grade, and consequently will only respond to low attenuations.

Dr. Lobethal, in alluding to this subject, makes use of the following anguage:—"God be praised, the times are passed when we adhered without examination to the prescriptions of Hahnemann, and when we administered the thirtieth dilution in every case, without any regard either to the species of the medicine, or the individuality of the patient. The idea of the greatness or littleness is but relative; we cannot say

in a general manner, that some drops of the mother tincture of a certain medicine will be a strong dose; nor yet perhaps, that the twenty-fourth or thirtieth dynamization of every medicine shall be regarded as a feeble dose. *The dose of each medicine should be strong enough to provoke the necessary reaction of the organism*, and, provided we are careful not to administer a too heavy one, but agreeable to take, and without danger, we should always give a sufficient one.

"I am decidedly convinced, that in order to apply the homœopathic treatment with success, the physician should take cognizance of the whole scale at his disposal, from the actual dose of the old school up to the highest dilutions of which any medicine is susceptible.

"We may establish it as a principle, that the appropriateness of large or small doses is in inverse proportion to the richness in nerves of the individual organism, and the species of diseased organ; that is to say, the more the sentient sphere of the organism, in a given case, shows itself predominant, the more attenuated the dose of the indicated specific medicine should be, and that the more the individual organism, or in a local affection the diseased organ, is poor in nerves, the more the doses should be large." (*Revue Critique et Retrospective de la Matière Medicale Specifique.* Vol. III., 1841.)

Dr. G. H. Gross of Germany, also observes, that "homœopathy, as now accepted, has determined the point, *that the physician must exercise his judgment as to the dose, varying it from the* HIGHEST DILUTION *down to* ONE OR MORE DROPS OF THE UNDILUTED TINCTURE, as individual *cases may demand.*"*

Dr. E. F. Ruckert, of Germany, also writes as follows: "I am satisfied that the system (homœopathy) is still progressive, and has by no means attained perfection. In respect to *doses*, most generally, I make use of the *first dilutions*, and never exceed the twelfth, giving them in increased volume and repeating them frequently. I have been more successful in this course of treatment than formerly in the use of the smaller doses."

Similar views have recently been promulgated upon this subject by *G. Schmid*, *Trinks*, *Griesselich*, *Watzke*, *Madden*, *Bigel*, *Drysdale*, *Russell*, and indeed by a majority of our school, both in Europe and America.

We have not unfrequently been able to cure diseases with a high attenuation, after having failed with the first and second dilutions of the same remedy: but it has been no very uncommon occurrence with us to effect cures with the first attenuation after having been unsuccessful with the higher preparations. No definite rules, therefore,

* Dr. Gross wrote this in 1840; but during several years preceding his death, he was a most decided advocate of the highest dilutions.

can be given which will apply in all cases, but every circumstance connected with each particular case must be duly investigated, and the physician then exercise his own best judgment.

The appropriateness of a particular remedy for a given set of symptoms constitutes one problem, and the choice of the proper attenuation another, both of which are to be separately determined, according to the direction of Hahnemann,* by "pure experiments, careful observation, and correct experience." For practical purposes the rule generally given is, "the more susceptible the organism, the higher the potency, and the finer the doses." The theory upon which the action of high attenuations is to be explained is not yet settled byhomœopathists. It has been proposed to apply for this purpose the law of nature mathematically demonstrated by Maupertuis, called the *law of the least quantity of action*, thus expressed by its discoverer: "*The quantity of action necessary to effect any change in nature is the least possible.*"

"According to this general principle, says one of our own writers,† "the decisive moment is always a minimum, an infinitesimal. Apply this to our therapeutics, and it will be perceived that the least possible dose is the highest potency, and necessarily sufficient to turn the scale, that is to effect the cure—always provided the remedy be homœopathically correct.

"This *law of the least action* appears to be an essential and necessary complement of the *law of homœopathicity*, (*similia similibus*), and co-ordinate with it."

Experience teaches that the strictly homœopathic remedy, selected according to the law *similia similibus curantur*, will produce aggravations when given in large doses. Dr. Verweg of the Hague opposes large doses: 1. as unnecessary, as the power of a remedy lies not merely only in its quantity; 2. because large doses obstruct the digestion and blood crasis, offices which ought to remain untouched in a sick state, in order to carry it to a happy crisis; 3. large doses produce so many secondary effects, that the chief effect will appear modified or more or less obscured. 4. Large doses increase the effect to such a degree that exhaustion ensues after the too powerful irritation, stopping either the beginning amelioration or under less favorable circumstances causing death. 5. Large doses produce as many symptoms as the disease itself, yea, the newly-appearing symptoms of the remedy are often more severe than the symptoms of the disease which we want to cure. 6. Large doses leave after-effects of long duration. 7. Large doses, according to the laws of polarity, have often a contrary effect.

It is a common opinion that the lower potencies agree with acute

* Organon, p. 278.

† Dr. Fincke Amer. Hom. Rev., Apr, 1840, p. 336.

and the higher ones with chronic diseases, the effect of the lower ones being quicker, but coarser and more evanescent, whereas, the higher and highest potencies have a slower effect, but more penetrating and longer enduring. Such general rules are only partially correct.

Diseases which have a chronic character throughout their course, as cholera, croup, &c., are generally though not always treated by low dilutions. The precursory fever of pneumonia is generally broken by low dilutions, whilst the higher are employed to remove the exudations which result from the inflammation. Exanthematous diseases and typhus are treated with high potencies till they localize themselves; but we return to the lower when new complications arise.

In chronic diseases, appearing acute in paroxysms, as whooping cough, migraine, or intermittents, the high dilutions are considered by Mayer most effectual. High dilutions are considered best in chronic catarrhs of mucous membranes, leucorrhœa, nervous and mental diseases, and all blood dyscrasias, new formations, as warts.

The difference between the powers of medium dilutions and those much higher, is not always perceptible. Many use only a few out of the great range afforded us, as 1, 2, 3, 6, 12, 24, 30, 60, 200, &c.

Trinks divides remedies into 1. Those working on the organism with great energy and intensity, yet fleeting in the duration of their action, even when given in large doses; as, Acon., Cham., Camph., Moschus, Igna., Ipec., Hyoscy., Coffea, Stram., Samb., Opium. 2. Those producing effects less strong, but more intense, deeply penetrating the organism and their effects lasting for a long time, such as the mineral remedies; Arsen., Cuprum, Merc., Sulph., Graph., Aur., Argen., the mineral acids and some vegetable remedies.

Medicinal Interference.—It is considered a practical impossibility to exclude all active medicinal and opposing influences from the presence of our patients, and it is asked, how can we expect infinitesimal doses to produce their proper effects when they must come in contact with so many antidoting substances? "The Camphor in a drawing-room cabinet,—the fumes of a smoking-room,—the oil of a mineral lamp, which in spite of washing perfumes the fingers," are supposed to have power to counteract the remedies. In answer, it can at least be said, that homœopathic doses are certainly effectual in curing disease, in spite of antidotes and external influences. The theory may not be satisfactory, but the *fact* is certain. The explanation is attempted by the *Monthly Homœop. Review:* "The curative power of a medicinal substance, homœopathically selected, is necessarily *higher* than the mere antidotal force of an interfering body; and for the following reason: The medicine owes its curative force to the receptivity of the diseased organism to which it happens to be homœopathic; no two drugs have an equal pathogenesis throughout, and therefore the antidote

under no circumstances can exercise a power over the disease equal to the true homœopathic remedy. The *medicine* is aided in its operation by the vital force of a diseased and highly receptive organism, while the *antidote* either acts merely upon the inert medicinal substance to which it is antidotal, or on organs to whose state it has no relation.

"That the force of a remedy may be influenced to some extent by its antidotes is no doubt true; but we believe that a homœopathically-chosen medicine will, in all cases, and even in the presence of crude drugs, exert a certain curative influence upon a diseased, sensitive and highly receptive organism.

The question still remains: What becomes of the impurities which unavoidably exist in the attenuating fluid; and why do not these impurities neutralize the effects of the minute quantity of the medicine employed in the treatment of disease? This question has been well answered by Dr. Joslin, in an essay communicated to the American Institute of Homœopathy, 1858.* He shows, that every time a dissolved medicine is diluted a hundred-fold, it has its minute parts, called molecules, made smaller and more active, *i. e.* potentized. On the other hand, "when a dissolved substance, made a little active by a little division, is brought in contact with the same substance in a still less divided and less active state, it unites with the latter and thus becomes like it, comparatively crude and inert,—it loses its special power;" that is, it becomes *de-potentized.* "I find that this union by cohesion and consequently this depotentization always takes place when one portion of the substance is only a hundreth part more diluted than the other. Thus, a substance that happens to adulterate the alcohol used for potentizing a medicine, is continually combining with and practically nullifying itself, and the high potency of the medicine remains practically pure. In this case, the little parts, molecules of the impurity, never differ much in size and never differ so much in the degree and nature of their activity as to prevent their re-union.

"This statement in regard to the conditions of re-union is not a mere hypothesis. It is not only a necessary inference from the fact of potentization, but is in accordance with observed facts in crystallization. I have witnessed the crystallization of Camphor, as exhibited by the solar microscope, and observed phenomena which have a bearing on this subject." Though no microscope has power to exhibit to the eye the smallest crystals first actually formed, it was observed that "those first visible were in a series of groups, the larger crystals not growing by the addition of invisible ones, but of those smaller ones already formed of others still smaller. The first visible molecules unite with others not too dissimilar in magnitude, frequently after rotating like

* Proceedings of the Fifteenth Annual Meeting.

little magnets; but they do not unite in the first instance with those whose difference of magnitude is very great." *

If then it be asked: Why does not the iron or culinary salt that exists in the blood, "and which is identical in name with a medicine administered, unite with the latter, which would thus become depotentized and inert?"

To this question we answer, that whether we are able to explain the philosophy of the phenomenon or not, the *fact* is abundantly established in the experience of every man who is accustomed to give our remedies in the medium and higher dilutions, that these remedies are active, though administered dissolved in water, which also contains the same substance in name, though in a form more crude. The fact is thus explained:

"That the union of the two, and the consequent depotentization of the medicine does not occur, I attribute to the discrepancy between their degrees of attenuation. The substance in the natural water and the blood, which can be detected by chemical tests, must be crude, compared with the same in our medium and higher potencies, which can not be thus detected. The crystalline affinities of these two kinds of molecules differ so widely, that they may be regarded as on different planes of activity: those in the natural fluid comparatively gross and inert, those in the potency rendered inconceivably minute and active by regular and consecutive attenuations. This activity, so obvious to the physician by the use of the vital test, has not yet attracted the attention of the natural philosopher or chemist, because their tests are not sufficiently delicate."

Adjuvantia.—They are generally permitted: 1. When the special nature of the disease calls for other than medical aid, as surgical cases, the removal of pathological products, toxical cases. 2. When we are not permitted by the friends to rely upon the simple homœopathic remedies, but know that if we abandon the case, it will go into dangerous hands. 3. Where the proper remedies are not at hand, and the circumstances compel us to do something. The occasions that can justify bloodletting even in the minds of old-school men are not very few. Leeches are of use in but few cases and we have better means of managing *them*. Purgatives are homœopathic agents in diarrhœa and dysenteries; in the removal of irritating substances from the bowels they can sometimes be employed.

Derivatives, though not often proper or necessary, may in good hands be directed under the homœopathic law to perform good service, as we shall show in treating of the different forms of disease in which they may be useful. Hahnemann sanctioned their use in proper cases.

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* Am. Hom. Review, Vol. II, p. 40, 41.

(See *Chronic Diseases*, Vol. I., 238.) Poultices may properly be used to soften abscesses; and cold and warm water can be applied with good effects in many cases. Electricity and its allied powers are recommended by Hahnemann. (*Chronic Diseases*, I., 238.) Mild forms of it are the electric bath, the electric wind, and friction through flannel. Zoomagnetism was also employed by him, as acting according to the law of polarity. The water of mineral springs consists only of well-known medicines in dilution. They would be much more successful than they are if they contained still smaller quantities of the drugs to which their virtues are attributed.

Selection of the Proper Remedy.—The rule given by Hahnemann is to choose from the many remedies before us that which presents the principal symptoms found in the individual case of disease. Though it is often difficult to find a remedy which has the *whole* of them, it should always be fairly sought for. The remedy that will *certainly cure*, will be one that exhibits "not only the symptoms of the disease as present, but also the symptoms of the patient's constitutional state." "Many symptoms," says Jahr, "which our school considers as manifestations of the general disease, are considered as independent diseases by beginners, simply because they find particular *names* for individual diseases in the books." "The proper selection of a remedy in chronic, and generally in *acute* diseases depends upon the following three points: 1. The remedy must correspond to the pathognomonic symptoms of the case;—2. To the accidental symptoms which do not seem to be a part of the essential phenomena of the disease;—3. To all other diseases and morbid phenomena which we may be able to discover in the patient. If the patient be afflicted with pneumonia, we would not only record the essential symptoms of pneumonia, but also the symptoms of any other affection which might happen to exist with the inflammation of the lungs; and, moreover, the general morbid phenomena of the organism, no matter whether the books speak of them as symptoms, or as independent diseases."

The formula of Hahnemann, that *like cures like*, has suggested the question, asked by Hering, "*What is the like which cures?*" and also his answer, that "it is that which is *characteristic*." The meaning of both question and answer has been elucidated with sufficient clearness by Dr. Wells of Brooklyn: In the treatment of dysentery, 'What is the like which cures,' and how are we to find it? In other words, what are the characteristics, *i. e.*, of the drug and the disease? It is obvious at the first glance, that there are two classes of these. One, the *generic*, which determines the case you have to treat as belonging to the genus dysentery, belongs alike to all the members of the genus, and without which no case is dysentery. The other, the specific, that which

distinguishes individual members of the genus from all other members.

"It is worthy of remark, that there is in the pathogenesis of all drugs a class of symptoms, which in their relation to the law of cure are very analogous to the generic symptoms of disease. The allusion is to that class of symptoms which rather indicate that the organism revolts against drug-assault, than point out the particular active agent in the assault. For the same reason that generic symptoms of disease can rarely be availed of as guides to the selection of a curative, these are of comparatively little value to the prescriber. The vomiting produced by one irritant poison is so like that of every other, that from this alone it cannot be told what irritant it is. So of the diarrhœa, nausea, thirst, loss of appetite, headache, &c. These of themselves can never be guides to a prescription, though the elements associated with them may be. It is not then to the *generic* symptoms of either drug or disease that we are to direct our attention chiefly, in our search for the "like which cures."

"Where then are we to look for this? Evidently in the list of those symptoms which *individualize* both the *disease* and the *drug*. That which distinguishes the individual case of the disease to be treated, from other members of its class, is to find its resemblance among those effects of the drug which distinguish it from other drugs. This is what we mean when we talk of "*characteristics*" as the great reliance of intelligent practice, and assert that with *these* the law of cure has chiefly to do. It is precisely in this relationship that the law exists. When we say that '*like cures like*,' this is the like we mean." *

The student of homœopathy is always perplexed by finding a dozen remedies enumerated as proper for a certain disease. He sometimes learns to discriminate between them, and finds that every *diseased state* is capable of being covered by a single remedy and none other. Homœopathy is the science of *specifics*, not in the sense that old-school men call Mercury a specific for syphilis, Iodine for scrofula, but in the sense that there are no *diseases*, but only diseased *states;* and every specific remedy, which will alone cover that state and necessarily cure that state. Every prescription based on nosological genera and species is wrong; true therapeutics lies only in the individualism of the Materia Medica.

3. *The Character of the Medicine to be employed.*—Certain substances which are very feeble or even inert in their natural crude state appear to acquire new and potent qualities on trituration. Whether these new properties are communicated to the minutely-divided particles by a chemical combination with the oxygen of the air, for which

* Diarrhœa and Dysentery, P. P. Wells, M.D., New-York, 1862, p. 27; ibid, p. 29.

several, like Carbon, Graphites, Sulphur, Lime, &c., possess a very strong affinity, or whether they arise from the simple subdivision of the atoms of the drug, we are unable to determine. But these are the medicines which have been found especially serviceable when employed in high attenuations.

On the other hand, there is a class of medicines so volatile in their nature, that trituration and exposure to the air and moisture deprive them of their active principles. Amongst these articles may be ranked Camphor, Ammonia, Bromine, Argenti-nitr., the Ethers, the Volatile Salts, &c. Medicines of this kind should always be administered in the lower attenuations.

We must also be governed somewhat by the positive or negative character of the specific employed. Some medicines are very marked and prompt in their specific operation, like tartarized Antimony, Phosphorus, Ipecacuanha, Belladonna, Aconite, Hyoscyamus, Stramonium, Opium, &c., and may ordinarily be used at rather higher attenuations than those whose primary effects are less prompt and strongly pronounced.

The advantages which we obtain from a minute subdivision of crude substances are as follows:

1. We develop every part of the active principle pertaining to the substance by breaking up all natural organization or arrangement between its molecules, and thus exposing a large amount of active surface which would otherwise have remained latent.

2. By distributing these molecules intimately throughout an inert vehicle, (sugar or water,) they are far more readily absorbed by the delicate lacteals and absorbents, than coarse and irritating particles of matter.

3. When these minute atoms have been conveyed by the blood to those parts with which they have an affinity, they penetrate the smallest vessels, impress the minutest sentient nerves, and become productive of results entirely unattainable by drugs in a crude form.

4. During the act of subdivision, it is not improbable that the atoms of drugs sometimes become oxydized, and thus acquire new and increased powers.

In regard to the *repetition of doses*, we are to be guided by the *acute* or *chronic* nature of the malady, the urgency and danger of the symptoms, and the effects produced by the medicine.

In violent and dangerous acute diseases, like cholera, asphyxia, convulsions, phrenitis, pleuritis, gastritis, &c., the remedies should be repeated as often as every fifteen, twenty or thirty minutes—until an aggravation of the symptoms, (that is, some *primary* effect of the drug,) appears, or a perceptible amelioration of the symptoms is apparent when the medicine should be omitted, in the first case, until the *secon-*

dary or *curative* symptoms have appeared, and then expended themselves; and in the latter, so long as amendment continues. If the case demands it, recourse may again be had to the same medicine; or if new symptoms have made their appearance, another appropriate remedy may be selected.

In less urgent cases of acute disease, it will be sufficient to repeat the remedy every four, six, or eight hours, until *primary* symptoms (aggravation) occur, or amelioration of the symptoms evinces the *secondary* or curative effects, when we may rest tranquil until the amendment ceases, and the medicine has expended its curative effect.

In chronic maladies the remedy may be repeated once in twelve or twenty-four hours, until an impression is perceptible, either in the form of primary drug-symptoms, or of amelioration of the morbid condition. When this result obtains, we may with great propriety wait until the full effects of the medicine have subsided, before we repeat the dose. In these cases it is far better to make use of doses sufficiently strong, and repeat them sufficiently often to induce decided primary medicinal symptoms—even if we are obliged now and then to give antidotes—rather than to remain for weeks in doubt as to whether a suitable impression has been produced by a *single* dose. It is very rare that moderate drug-symptoms are productive of unpleasant consequences in chronic diseases, while the reaction thus induced in the diseased tissue usually has the effect to bring about a much more speedy cure. Indeed, we believe it may be set down as a general rule, that the sooner we can produce a moderate, but decided medicinal action in a structure suffering from *chronic* inflammation, the sooner will a *curative reaction* follow, and health result.

"It would, therefore, appear that experience has confirmed the opinion of Hahnemann, that a certain amount of aggravation is essential to the therapeutic process; in the vast majority of cases this does not make itself known in any perceptible degree, but it does occur in a certain, though small amount of cases, sufficient to confirm its existence as an essential phenomenon. The cases in which it occurs with infinitesimal doses are probably only those of excessive or even idiosyncratic susceptibility, and even with these it is a phenomenon of no danger, and only slight inconvenience." Hence we may conclude, that a normal dose of homœopathic medicine, sufficiently small to avoid the liability to aggravation in a certain amount of cases, and yet sufficient to cure best and quickest in the majority of cases, is a mere chimera, and ought not to be sought for; but in seeking for doses the best for the majority of cases we must lay our account for meeting with a certain number of aggravations, but practically these latter are of no importance.

Likewise in the case of collateral symptoms, it is affirmed by Hahnemann, that "we cannot arrange our doses so as to escape the liability

to them in a small and practically unimportant degree."—(*Dr. Drysdale: British Jour. of Homœop.* No. XIII. p. 22.)

In all cases of urgent acute disease, in which we can find no single remedy which corresponds to the symptoms, it is necessary to select a second remedy which shall cover the remaining symptoms, and administer it in alternation with the first. *Pneumonia* is often accompanied by *cerebral* inflammation; *typhus fever*, with serious disorder of the intestinal canal, the lungs, the brain, and nervous system; *intermittent fever*, with enlargement of the liver, jaundice, cough, &c., and other maladies with affections in other parts of the body, which are not strictly connected with the original complaint. In examples of this kind, the alternation of remedies is both proper and necessary; at the same time it must be remembered, that it is far more desirable that a single medicine should be chosen which covers all the symptoms of the disease.

The same rule holds good with respect to giving medicines in *succession*. Whenever the first remedy fails in producing the required impression, or whenever important *new* symptoms arise to which the original drug does not correspond, we may resort to another which corresponds to the totality of the symptoms.

A large proportion of homœopathic physicians, both of Europe and America, now advocate a frequent repetition of doses in acute diseases, and in many instances alternations of the remedies. Some of those who have expressed themselves decidedly upon this point, are, Drs. Gross, Schmid, Rau, Fleischmann, Reiss, Ruckert, Lobethal, Hartmann, Russell, Hull, Neidhard, Gray, Currie, Trinks, Griesselich, Madden, Dudgeon, Quin, &c.

The erroneous ideas which were formerly entertained respecting the alternate employment of remedies, are at present nearly abandoned. So long as the opinion prevailed that our medicines could only operate in a kind of spiritual manner upon certain mysterious appendages of the organism termed "*vital properties*," it was deemed unsafe to administer two remedies in alternation, for fear of creating confusion among these dynamic influences; but since the laws of medicinal action have become better understood, there is no longer hesitation in alternating medicines whenever symptoms appear to require it.

Some remedies continue their action for a very short time, others show a duration of action of thirty-five to forty days. Strong doses act more energetically on both the healthy and diseased organism, and their action continues longer than that of weaker and smaller doses.

In acute diseases all remedies act more energetically, but their effect is more evanescent. They are therefore treated by doses, if not larger, at least given at shorter intervals. In chronic diseases the process of disease is less conspicuously visible, making often great remissions and

intermissions; remedies act more slowly, with less apparent energy, but their effects last much longer.

In robust irritable persons, rich in vital power, the curative effect appears and vanishes quickly, and the time of action is short; in torpid, phlegmatic constitutions, remedies act more slowly, but with more lasting effect. In childhood the primary effect of remedies is evanescent on account of the rapid process of life, and passes quickly to its curative effect. In old age there is a longer primary action, and a relatively short secondary action. The following rules are given by Koch:

1. The more perfectly similar the curative potency the less necessary is a repetition of it; but repetitions in very small doses may be safe, and sometimes necessary to complete the cure. 2. The less perfect the similarity of the curative potency, the more necessary is the repetition. 3. The more intense the diseased action is, the more frequently the dose may be repeated. 4. The more acute the disease the more frequent the repetition. 5. The more completely similar the curative potency to the symptoms of the disease, the more injurious the repetition of large doses.

When a proper remedy has been given and amelioration results, the rule is not to repeat so long as amelioration continues. Repetition is proper: 1. When the amendment has ceased. 2. When the receptivity to the effect has died out, and larger doses are necessary to have effect. 3. When the disease is acute the repetitions may be frequent and thus time is saved, the secondary products of acute inflammation are prevented. 4. In putrid fevers and other adynamic diseases where collapse is threatened. 5. When disease manifests itself in paroxysms, exacerbations, or spasms. In diarrhœa, colic or vomiting, repeat as often as the attack recurs.

On the practice of *alternating remedies*, Jahr says:

It is very common for physicians to prescribe two medicines in alternation, and this at longer or shorter intervals, according to the nature or intensity of the disease. This, though in some cases proper is, perhaps, not generally so. "The custom," says Jahr, "has had its origin in a one-sided view of the nature of disease. If the symptoms of a disease were viewed as they ought to be, as the phenomenal manifestation of an internal state, and if their pathological connection and dependence upon each other were properly known, it would most probably never be necessary to prescribe two remedies at the same time. It is only when symptoms are viewed superficially, without reference to their internal unity, that it seems as though they were disconnected and required more than one remedy at a time.

Though it is proper always to cure the disease by a *single* remedy, it is certain that all prescribers are not capable of *always* selecting

the *true* remedy; such must be permitted to cover the given case by alternating the two articles which, in their view, come nearest to it. If either happen to be the true specific, it will cure in spite of many adverse influences. Another reason for alternating, given by Jahr is, that *different groups* of symptoms are often connected through pathological relations. We take an example from some affection of the pneumogastric nerve.

This is a nerve of *sensation* and also of *motion*. "It is a nerve of sensation simply because it supplies the lining membrane of the respiratory and digestive passages, and it becomes a nerve of motion when it supplies the muscles and muscular coats of the same canals. The pneumogastric nerve supplies branches, on the one hand, to the larynx, the lungs, and the heart; and on the other to the pharynx, the œsophagus, the stomach, and the solar plexus. These different parts could not fulfil their organic functions without the assistance or vitality which they derive from that nerve. The branches of the nerve are essentially the same; the functional differences reside in the structural organization of the parts over which the branches are distributed.

These anatomical facts lead to important practical results in the treatment of disease. Let us suppose for example, a diseased condition of the pneumo-gastric nerve, an acute irritation of this nerve, a *neurosis*, in which the various branches of the pneumo-gastric nerve are principally involved; such a pathological state would necessarily be characterized by the most diversified symptoms, symptoms which would apparently be disconnected, and yet would constitute one identical group; for the irritation would be the same in every branch of the nerve, but the symptoms characterizing the irritation would differ according as the structural organization of the part affected would differ from that of another part. We might have dryness, soreness, and heat in the larynx, with constant tickling, disposition to cough and hawk; stricture across the chest; aching pain or weight in the region of the heart, or palpitation of the heart; loss of appetite, and coated tongue, nausea, oppression of the stomach, sensitiveness and fulness or bloatedness in the region and pit of the stomach, or a hard aching pain in the pit of the stomach; or sensation as of a cold stone in the pit of the stomach; soreness of the bowels, looseness or constipation." &c.

In this apparently disconnected group of symptoms we perceive that each one constitutes one of a unitary group connected together by the various branches of the pneumo-gastric nerve, and if we can find a remedy capable of acting on the pneumo-gastric nerve specifically so as to produce only a portion of these symptoms, we shall by employing it be able to strike at once at the seat of the disease before us. By this single remedy we shall more effectually subdue it than we could hope to do by searching the Materia Medica for a remedy that shall present

all the phenomenal symptoms of the case; and, failing to find them under a single remedy, employing two or three remedies which may between them cover the whole list of symptoms.

OF CHANGING THE REMEDY.

It is very common to change the remedies too often. If a medicine has produced a decided improvement in the symptoms, that is, if the symptoms remain the same, but are less intense, or if only some of them have disappeared and others remain with the same degree of intensity, the original medicine which caused this modification of the primitive group should be continued by all means, for this reason: that such a modification of the original disease is not an evolution of a new group of symptoms, but simply a reduction of the former symptoms to a lesser degree of intensity.

Suppose a case of *inflammatory rheumatism*, with a full and bounding pulse, high fever, pains in the joints and bones, swelling and inflammation of certain parts, or any of the other manifold symptoms which characterize this disease. We prescribe *Aconite*. After the first three or four doses the fever is abated, perhaps is entirely subdued; the pains in the joints and bones are less, and the inflammation is considerably reduced. This change of the symptoms does not constitute a new group requiring a different remedy; on the contrary, the same remedy is still indicated, and if continued, will speedily remove the existing symptoms.

Sometimes we find that by repeating one remedy often, even in increasing doses, the organism becomes habituated to it, and ceases to be affected by it. If then another remedy be substituted as an intermediate or intercurrent remedy, in small dose, we may return again to that originally selected. Griesselich advises: 1. *Change* when the remedy has lost its effect, or has failed to produce that which we had expected. 2. *Alternation*, when two remedies are seen to be appropriate for different portions of the organism; then, one is given at one hour and the other at another. 3. *Successory remedies*: When one remedy is only partially effectual, another may be selected which has a close relation to the first; as a case not satisfactory cured by Calcarea may be finished by Sulphur. Belladonna is often necessary after Aconite.

Antidotes.—An antidote in the homœopathic sense, is not a substance which is capable of neutralizing the curative action of a drug, or of opposing it, as cerebro-spinal sedatives; as Coffee antidotes Opium, or Camphor, Cocculus-indicus;—but which is suited to the removal of symptoms arising from medicinal aggravation by the remedy previously administered. Thus a well selected-medicine may be con

tinued too long, and its own symptoms may be added to those of the natural disease; or an inappropriate remedy may have been selected, producing drug-symptoms, in addition to those previously existing; *then* the homœopathic antidote is the medicine which best covers the totality of the symptoms belonging both to the natural and acquired disease. Its administration, therefore, interrupts the action of the first medicine, because it has, itself, become the most homœopathic of the two.

In this sense Hahnemann employed homœopathic antidotes: "If, however, among the symptoms of the remedy selected, there be none that accurately resemble the distinctive, (characteristic,) peculiar, uncommon symptoms of the case of the disease, and if the remedy correspond to the disease only in general, vaguely described, indefinite states, (nausea, debility, headache, &c.,) and if there be among the known medicines none more homœopathically appropriate, in that case, the physician cannot promise himself any immediate favorable result from the employment of this unhomœopathic medicine. (§ CLXV.)

"Such a case however is *very rare*, owing to the increased number of medicines known, now-a-days, with regard to their pure effects, and the bad effects resulting from it, when it does occur, are diminished whenever a subsequent medicine of more accurate resemblance can be selected. (§ CLXVI.)

"Thus, if there occur, during the use of this imperfectly homœopathic remedy, first employed, accessory symptoms of some moment, then, in the case of acute diseases, we do not allow this first dose to act completely out, nor leave the patient to the full duration of the effects of the remedy, but we investigate afresh the morbid state, in its present altered condition, and add the remainder of the original symptoms to those newly developed, in tracing a new picture of the disease. (*Organon of Medicine*, § CLXVII.)

In his elaborate work on *Syphilis*, published in 1789, Hahnemann dwells at length on the necessity of antidoting the effects of Mercury, when it has been used in excess for the cure of syphilis, and recommends for this purpose the administration of *Hepar-sulphuris*, which he believed was the chemical antidote of Mercury, and of many other metallic poisons. It is curious that in later years he recommends the same Hepar-sulphuris as one of the dynamic antidotes for the inconveniences produced by small doses of Mercury unhomœopathically administered.

In 1798 he wrote an essay on *Antidotes to some powerful vegetable substances*, in which he attempts a classification of antidotes. He says the hurtful substance may be antidoted in one of four different ways:

A. Removed, 1. By evacuation, as vomiting purging, or by excising a poisonous bite; 2. by enveloping, as giving suet where pieces of glass have been swallowed.

B. It may be altered, 1. chemically, as Hepar-sulphuris for Corrosive Sublimate; 2. dynamically (*i. e.* their potential influence on the living fibre removed,) as Coffee for Opium.

Dr. Dudgeon, in his "Lectures on Homœopathy," says, the occasions for the employment of homœopathic antidotes are very rare. "The *rationale* of the administration of Camphor, Sweet Spirits of Nitre Wine, &c. in the case of over-action of a drug seems to be that thereby a stronger but transient and different effect is produced upon the nerves, whereby the feebler impression of the medicine previously given is effaced, and the new action, being evanescent, the nervous system is speedily restored to its former equilibrium—or a dynamic neutralization is effected."

Hahnemann advised the employment of one remedy at a time, not from the fear that one will neutrate the other, but because the result cannot be predicted with the desirable degree of certainty. Thus, the vapor of Kreosotic-oil, in a mineral oil lamp,—or Camphor, floating in the atmosphere, or Musk, may have a homœopathic relation to the disease under treatment, and the practitioner may ascribe his results to the wrong agent. On this subject Hahnemann says: "In no case is it requisite to administer more than *one single and simple* medicinal substance at one time." (§ CCLXXII.) "It is not conceivable, how the slightest dubiety could exist as to whether it was more consistent with nature, and more rational, to prescribe a single, well-known medicine at one time, in a disease, or a mixture of several differently-acting drugs." (§ 273.)

"As the true physician finds in simple medicines administered simply and uncombined, all that he can possibly desire (artificial morbific agents which are able by homœopathic power completely to overpower, extinguish, and permanently cure natural diseases,) he will, mindful of the wise maxim, that it is wrong to attempt to effect anything with compound means that may be effected by simple means, never think of giving any but a single simple medicinal substance." (§ 274.)

We know that the effects of every medicine on the animal organism are either partially or totally annulled by another medicine of which the positive effects are more or less similar to the first one in its symptoms, its local and general tendencies and character. "The remedies perfectly similar in their positive effects annul one another; whereas, those whose positive effects cover only solitary organs or tendencies, annihilate only those symptoms in which the correspondence of similarity holds out." It is allowable to use antidotes: 1. When aggravations have been caused by over-doses of a proper remedy, as well as by one not correctly selected. 2. To relieve symptoms produced on the prover of a remedy. 3. For the cure of medicinal dyscrasias. 4. Related or successory remedies act as antidotes to each other; and the greater is

their similarity in their positive symptoms the more decided are their effects in antidoting each other. When a medicine has been abused to the extent of developing a drug-disease, it may be, after long enough time, removed by a remedy which has some relations of similarity. When we are able to detect too few symptoms in a case to come to a positive choice of a true remedy, we prescribe that which covers such as are visible; and then, when other symptoms appear as called out by the remedy tried, make a new selection, endeavoring to find one that is the similimum of the whole disease.

Mode of Administering Remedies.—The practice of Hahnemann in later years of his life is given by Dr. Croserio, (N. Archiv. 1. 2. p. 31,) who says he often witnessed its success.

"Hahnemann always made use of the well-known small globules, which were generally impregnated with the 30th dilution, both for acute and chronic diseases. Of these globules he directed *one*, or at most *two*, to be dissolved in a caraffe, containing from three to fifteen tablespoonfuls of water, and a half or a whole tablespoonful of French brandy. *One* tablespoonful only of this solution was put in a tumblerful of water, and this last the patient took by teaspoonfuls; on the first day one teaspoonful, on the second two, on the third three, and so on, a spoonful more daily until he felt some effect. He then diminished the dose, or discontinued the medicine entirely. In other cases he caused a spoonful of the first tumbler to be poured into a second tumbler of water, in others, from this last into a third, and so on to a sixth tumbler, and directed a teaspoonful to be taken from the last tumbler only when he had to do with very irritable subjects. The cases were rare in which he allowed a table- or a teaspoonful to be taken daily from the first solution made with from eight to fifteen tablespoonfuls of water. If he gave a powder, to be taken at once in a spoonful of water, that was always only milk-sugar. He never prescribed two different remedies to be taken alternately, or one after the other; he would always first learn the effects of one remedy before he gave another, even in patients who were treated by him at two-hundred leagues distance. Neither did he change the medicines. Even in acute diseases it was rare for him to give more than one spoonful once in the twenty-four hours. But on the other hand, in order to quiet the patient or his friends, he gave frequent doses of plain milk-sugar. Hahnemann appeared in the latter years of his practice to employ his whole dexterity in diminishing the dose more and more. Hence he latterly employed olfaction very frequently. For this end he put *one* or *two* globules in a small medicine phial containing two drachms of Alcohol, mixed with an equal quantity of water, which he caused to be inhaled once or twice with each nostril, never oftener. My own wife was cured by him in this manner of a violent pleurisy in the course of five hours. In chronic

diseases, happen what might, he never allowed this olfaction to be repeated oftener than once a week, and he gave besides for internal use, nothing but plain milk-sugar; and in this manner he effected the most marvellous cures, even in cases in which the rest of us had been able to do nothing."

Homœopathic Notation.—The entire system of potentizing drugs was invented by Hahnemann. He "created potencies out of crude matter, refining the drug into subtile doses, developed the medicinal properties of matter, making them assimilable, and thus specifically curative." He thus taught, practically, how to cure with the least possible dose, unconsciously but surely applying the general law of the least quantity of action, which was discovered and mathematically established by Maupertuis.

The different degrees of potentization have been designated by men each according to his own made of notation,* of which we will only notice those most likely to be generally used.

Our own pharmaceutists have a claim to be understood, and we suppose their systems of notation are generally known. Of these

"Smith numbers his preparations centesimally, but prepares them according to the decimal scale, *i. e.*, with 10 grains of the crude substance he triturates 90 grains of sugar of milk, which he signifies by the fraction $\frac{1}{10}$. Ten grains of this preparation is again incorporated with 90 grains of sugar of milk, which is designated I., making the first Hahnemannian trituration, centesimal. In this way he makes six triturations of an hour each, in preparing what is called the third trituration, which is as high as he carries his triturations generally. They are marked respectively $\frac{1}{10}$, 1, $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3. Expressed in fractions they would be $\frac{1}{10}$, $\frac{1}{100}$, $\frac{1}{1000}$, $\frac{1}{10,000}$, $\frac{1}{100,000}$, $\frac{1}{1,000,000}$. His dilutions are all made centesimally from the tinctures, when the medicine is prepared in that form, or, as with the minerals, from the third trituration. They are all made by hand and receive 400 succussions each. He has also prepared the 200th potency with Alcohol, centesimally on the remaining drop, and with 400 succussions each, by hand. He uses Arabic cyphers for his notation as above stated. For the tinctura fortis, the common sign ϕ is used. Sometimes however, the strength of the tincture is expressed by a fraction, *e. g.*, Acon. $\frac{1}{2}$, Cham. $\frac{1}{8}$, Nux-Vom. $\frac{1}{20}$, Thuja $\frac{1}{3}$. The fraction $\frac{1}{2}$ means that an equal quantity of Alcohol is added to the expressed juice of the plant. The fractions $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{20}$, signify that one part of the drug has been mixed with 8, 16, or 20 parts of Alcohol, (or Alcohol and water as the case may be), which quantity is requisite to insure solution. The fraction $\frac{1}{3}$ is used to denote the mother-tincture, where the fresh plant is resinous; in which case it is first crushed and

* Dr. Fincke, Homœopathic Notation, Amer. Homœop. Rev. Aug. 1860, p. 451.

its weight of Alcohol is added and afterwards expressed; this being the tincture." The system followed by Radde, Hurlbut, and other homœopathic pharmaceutists is essentially the same.

PROVING OF DRUGS.—METHOD OF IMPROVING THE MATERIA MEDICA.

1. In order to obtain an exhaustive proving it seems necessary to employ both dilutions and massive doses.

2. "The proving should be *commenced* with *dilutions;* and *high potencies* should be employed until satisfactory evidence is obtained that the prover is not susceptible to their action. We thus obtain *one* of the unknown quantities of our problem, viz.,—the measure of the susceptibility of the prover.

3. Where a keen susceptibility is found to exist, the greatest care must be exercised to avoid *blunting* or perverting it. With this view, repeated experiments should be made at long intervals, with *high potencies* until no new varieties of symptoms are evoked. Then, after a long period of non-medication, the prover should take lower potencies and then small doses of the crude substance repeated at intervals, and finally after another long period of repose, *large* doses of crude substance. A thorough proving, after this fashion, may require years for its completion,—but it will have an advantage over most of our recent provings, in the fact, that it will be *thorough*, and that it will be of permanent and certain use to the practitioner.

4. In proving with dilutions, as well as with massive doses, a long period of time should be occupied in testing each preparation, in order that the full effect may be seen in the production of the dyscrasias, &c.

5. The greatest care should be exercised in *verifying* symptoms by repeated experiments, in order that "imaginary" symptoms on the one hand and chemical and mechanical symptoms on the other, may be excluded. *Every* sensation felt by the prover during the progress of the experiment is not entitled to be included amongst the symptoms produced by the drug." (*Dunham. Am. Hom. Rev.* 1860.)

If the symptoms of a case are minutely noted, their entire removal under a single remedy tends to verify the pathogenesis, but not in the same degree as would the recurrence of an equal number of symptoms in re-proving by new provers. "The morbific effects of drugs are often observed to be the same on the sick as on the healthy," and they are probably identical even to the minutest particulars. And the principal reason for not relying on symptoms observed on the sick is, that we might be confused by introducing symptoms proper to the *disease* instead of those caused by the remedy." (*Dr. Joslin.*)

"A similar danger attends *therapeutic* verifications, and it is in one

respect greater, viz., in regard to *critical days*. Many accurate observers have noticed certain epochs of decline or termination of diseases, especially those of a febrile character. The more marked of these changes occur on the third, seventh, eleventh, fourteenth, or twenty-first days. Several partial crises are observed in the progress of the same case, each leaving it changed by the somewhat sudden disappearance or mitigation of some of the symptoms. Now, if under a correct treatment each of these changes is, *on the whole*, a favorable one, and the final result happy, the several improvements and the final cure are not attributable merely to nature; and on the other hand, not merely to the medicines given *immediately* before the epochs of the several changes. If others had been previously administered, they may have equal claims as the cause of the improvement or cure. If the physician neglects the observation of critical days, he may draw erroneous conclusions in regard to the curative influence of a drug. The quotidian changes are generally appreciated. The before-mentioned critical days are also, in regard to some symptoms and in some degree, days of exacerbation, and their neglect might vitiate the pathogenetic confirmations, though usually less than the therapeutic."* To prove medicines on the healthy is the great work that devolves on our school.

The mode then of improving our Materia Medica is by the examination of morbific properties, and not by the *direct* observation of curative ones, on which other schools rely. The *advantage* of this mode was demonstrated by Hahnemann; but the *extent* to which it admits of being cultivated has not yet been measured. The first principles of homœopathy are already known to be fixed and eternal; but the extent of our resources is only beginning to be estimated; and an immense amount of labor is yet needed to develop the treasures that are waiting to be called into use in the cure of human diseases.

SEMEIOLOGY.—SYMPTOMS OF DISEASE.

The word Symptom has been defined to consist of "every thing or circumstance happening in the body of a sick person, and capable of being perceived by himself or others, which can be made to assist our judgment concerning the seat or nature of his disease, its probable course and termination, or its proper treatment.† From this definition the purposes for which the symptoms of a case are accurately studied, are,

1. To ascertain the nature and seat of the disease; that is to form a clear and correct *Diagnosis*.

2. To enable us to foretell the probable issue of the disease, or to frame the *Prognosis*.

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* Joslin, Am. Hom. Rev. 1858.—† Watson's Lectures.-Theory and Practice, p. 99.

3. To direct the *Treatment.*

In almost every system of practical medicine the significance and importance of individual symptoms, and the best modes of combatting and removing them, have been *originally* derived from the empirical *effects* of *remedies*, rather than from observations on the nature of diseases. Symptoms have been divided into:

First, Symptoms or combinations of symptoms which distinguish the place and nature of a disease, and called *signs of the disease.*

Secondly, Those symptoms which point out to us what is to be done to ensure a return to health, and are called *Indications of Treatment.*

The word *Symptoms* has been applied to such manifestations of diseased action as are obvious to all persons alike—to the nurse as well as to the physician. *Signs* are deduced from symptoms by arranging and comparing them, and noticing the circumstances under which they occur; thus *signs* are generally intelligible to medical eyes only. Some symptoms are called *direct*, because they point us to the exact seat of the diseased action; others are *indirect* or "declare themselves through the medium of the constitution at large." (*Watson.*) These sympathetic symptoms are compared by Darwin to the arrows shot from the bow of a concealed archer. They prove that there is somewhere an efficient cause and source of diseased action; but a careful investigation may discover it far away from the point which is the seat of the most conspicious and tangible symptoms. With respect to the symptoms which consist of *morbid* changes, they may all be classed under three heads: 1. Uneasy, unnatural or impaired sensations;—2. Disordered, or impeded functions;—and 3. Alterations of structure or appearance, changes of *sensible qualities.* When these last come within the direct cognizance of our senses, they are called *physical signs.*

Of all the uneasy sensations *pain* is the most important. When pain or uneasiness is complained of in any part or organ, our next business should be to inquire whether the *functions* of that part or organ are disturbed or suspended. The functions of the brain and nerves, of the heart and blood-vessels,—of the respiratory apparatus and of the digestive organs,—are all of the highest importance; and the symptoms drawn from the functions belonging to the *circulation* are of such consequence that the pulse is to the physician what the polar-star is to the mariner. Its highly significant changes in frequency, regularity, fullness and force will be fully explained in the appropriate place.

GENERAL DIAGNOSIS.

It is a matter of the highest importance that the homœopath should be perfectly familiar with the most approved methods of diagnosis, in order that he may take advantage of every possible circumstance which

may facilitate for his investigations of disease. Although a patient may be competent in general to indicate the exact seat of his pain, and thus enable the physician to determine what organ or tissue is affected, this is by no means true in all cases.

There are many maladies which are entirely unattended with *pain*, or any other *local sign*, by which the physician can detect the suffering organ. In cases of infants and young children, who are unable to indicate the locality of their sufferings, and in some chronic affections, a knowledge of the external signs is of vast importance. In all such cases a proper skill in diagnosis will prepare the medical man to penetrate the innermost recesses of the organism, and to understand its most profound secrets.

It is a singular and highly interesting fact, that the *pains* of the different parts of the body impart to the countenance certain characteristic and easily understood expressions. As these signs are involuntary and almost uniformly present, all will recognize their importance as diagnostic phenomena.

In forming our diagnosis, it is essential in the first instance to notice accurately every circumstance connected with the patient which is at all peculiar or unnatural. The general expression of countenance, the tone of voice and manner of speaking, the figure, attitude, movements, &c., should be attentively marked. At the same time, age, sex, temperament, hereditary predisposition, occupation, habits of life, whether laboring under the effects of any previous malady, or of Mercury, and whether accustomed to the constant use of Opium, should all be duly considered.

The patient should then be permitted to detail his symptoms after the manner pointed out by Hahnemann in his *Organon* (§ 206,207,209.) In cases of inability on the part of the patient to enter into a description of the case, the friends should be called upon to give all the information in their power in regard to the rise and progress of the disorder. An attentive perusal of Hahnemann's advice upon this subject, is of the utmost importance to the acquisition of a perfect portraiture of every complaint.

Since, however, there are some instances in which neither the patient nor friends are able to afford any information respecting the nature or seat of the affection, it is indispensable to acquire a knowledge of all external and involuntary signs which can in any way illustrate the character of the malady.

Allopathic writers have divided diagnostic signs into those exhibited by *the countenance*, *the attitude*, *the nervous system*, *the digestive organs*, *the circulatory system*, *the respiratory organs*, *the skin*, *the lymphatic system*, *the secretions*.

As the countenance is an excellent index of what is occurring in distant parts of the organism we should note attentively the expression

of the *eyes, nose, mouth and forehead*, and also whether sadness, moroseness, peevishness, despair, fear, grief, or joy is evinced. By heeding carefully these indications, we shall be greatly assisted towards accurate opinions in obscure and complicated cases.

The contraction of the features, rapid dilatation and contraction of the nostrils, dyspnœa, with expression of anxiety, indicate *acute inflammation of the respiratory organs.*

Sharp features and expression of anguish, "forehead wrinkled, brows knit," eyes sunken, countenance pale, hollow cheeks, lips dry and bluish, indicate *pain and severe inflammation of the abdominal viscera.*

General expression of countenance flushed and excited, or dull and stupid; eyes red and brilliant, or dull and heavy; pupils contracted or dilated; protrusion of the eyes with a wild expression; mouth drawn to one side; twitchings of the eyelids and muscles of the face, indicate *inflammation of the cerebral organs.*

Expression anxious; respiration difficult and rapid during inspiration, while expiration is comparatively easy; symptoms worse after assuming the recumbent posture; face swollen and livid, indicate *hydrothorax.*

Face flushed and swollen; lips blue; eyes prominent and unnatural; face cold; sudden startings in sleep; anxious expression; indicate *organic disease of the heart.*

Cheeks pale and blanched; lips white and puffy; a dark circle around the eyelids; expression of languor and debility, indicate *chlorosis.*

Paleness and puffiness of the upper lip indicate *scrofula and verminous affections.*

Eyes and face red; rapid respiration; motions of the nostrils rapid, indicate *simple acute fevers.*

FIGURE AND ATTITUDE.

In order that the organs may perform their functions in a proper manner, it is absolutely indispensable that the body should retain its normal structure and shape, and remain unincumbered by any artificial appliances which tend to impede the circulation or check the free action of the muscles. Unfortunately for mankind, it has been customary both in barbarous and civilized countries, to *distort* artificially certain parts of the body, under the absurd notion that they were improving upon nature, and enhancing the beauty of the figure which the Supreme Architect had formed after his own image.

Among some savage tribes of the Rocky Mountains it has been customary and fashionable for the natives to flatten the forehead by long-continued artificial pressure. This constitutes the ideal of savage beauty, and is their common method of improving upon the works of the Creator.

In other barbarous countries it is customary to slit the ears and nose,

and hang from them large quantities of tin, brass, and other cheap ornaments.

This with the requisite amount of tattooing and painting, illustrates their notions of what the human figure should be.

In China, the semi-barbarous inhabitants compress the feet of their females from birth, in such a manner as to prevent their growth and development; and in this abominable distortion consists their idea of female beauty. This is the Chinese improvement upon nature.

The Turks cram their women with "*pillan*," after the manner of stuffing geese, to cause enlargement of the liver, for "*pate de foi gras*," —that they may become enormously fleshy, and thus present to the admiring eyes of their lords, figures of uniform dimensions in all directions. This is the Moslem's style of female beauty.

In the highly civilized countries of Europe and America, it is not customary to make use of artificial contrivances to flatten the head, prevent the growth and development of the feet, to slit the ears and nose, or cram their women; but, through the instrumentality of those "infernal machines," corsets and stays, the sex deem it indispensable, in order to be *genteel*, to compress entirely from its natural shape the most important and vital part of the organism. These unnatural efforts at distortion are usually commenced at an early period, and continued with perseverance, until the figure has lost its natural symmetry, the lungs are forced upwards, out of their just position, and the abdominal viscera made to accommodate themselves in the *new* situation to which they have been reduced by art.

Many females of the present day, affect to contemn the symmetrical figures which the Creator originally formed, and which the ancient sculptors delighted to represent in marble, and have chosen to "improve" on these old-fashioned notions, by partially cutting off the connection between the upper and lower parts of the body; thus reducing it from the shape of those models of perfection, the Venus di Medici, and the Venus of Milo, to that of a wasp or an hour-glass. We have not only the authority of the ancients in all those master-pieces of art in which they have illustrated their ideas of beauty, but the greatest of modern sculptors, our illustrious countryman Powers in a MS.-letter before us, declines the public exhibition of his exquisite statue of Eve, because he had been compelled by his own sense of harmonious proportion, to present the mother of mankind in the shape which the Creator approved as the ultimate product and most perfect fruit of Divine intelligence and energy. "Eve," says the sculptor, "is an old-fashioned body, and not so well formed and attractive as are her grand-daughters —at least some of them. She wears her hair in a natural and most primitive manner, drawn back from the temples, and hanging loose behind, thus exposing those very ugly features in women. *Her waist is*

quite too large for our modern notions of beauty, and her feet they are so broad and large! And did ever one see such long toes! They have never been wedged into form by the nice and very pretty little shoes worn by her lovely descendants. But Eve is very stiff and unyielding in her disposition; *she will not allow her waist to be reduced by bandaging, because she is far more comfortable as she is, and besides, she has some regard for her health, which might from such restraints upon her lungs, heart, liver, &c., &c., &c.* I could never prevail upon her to wear modern shoes, for she dreads corns, which she says are neither convenient nor ornamental. But some allowance ought to be made for these crude notions of hers, founded as they are in the prejudices and absurdities of *primitive* days. Taking all these things into consideration I think it best she should not be exhibited, as it might subject one to censure and severe criticisms, and these too, without pecuniary reward."

Singular perversion of taste! Wonderful and all-powerful influence of *fashion*, which can induce so many intelligent beings to suffer torture like savages, for the purpose of distorting their bodies, and bringing them into those artificial shapes which civilized nations denominate genteel and graceful!

Suppose a fashionable woman should apply corsets and stays to a favorite monkey, or a pet lap-dog, and so compress its body out of shape, would not the attempt be pronounced heartless, and its author, perhaps be indicted for cruelty to animals? but when the same barbarity is perpetrated upon a human being, it is tolerated, because it is *genteel* and *fashionable!*

Were females the only sufferers from these cruel practices, the sin would not be so great; but their posterity participate deeply in the consequences which result from their criminal perversity. The flat and narrow chests, the stooping gaits, and the pale or sallow faces which greet us at every step, demonstrate the extent of our physical degeneration. Some reform is now visible, but it moves slowly.

But the female sex are not alone censurable. Too great a proportion of the men,—of this country especially,—become round shouldered, crooked and deformed from a want of free muscular exercise, and too close an application to business, in constrained, bent, unnatural positions.

Physical education in latter times has been quite overlooked. Parents have commenced sending to school in infancy, and their embryo minds have been tasked with all kinds of *mental* exercise, while their physical powers have been suffered to languish in heated and ill-ventilated rooms. Thus they have grown up with improved *minds*, but feeble, undeveloped, and perhaps crooked, or mis-shaped *bodies*.

Let it ever be remembered that the mind and body exercise an influence upon each other, and, if we would secure to the former its high-

est development, we must cultivate and perfect the latter. In this respect we may with advantage go back to antiquity and copy after Herodicus, in advancing physical education.

But to return to our subject: as in health the attitude is erect, an those positions are assumed by the body and limbs which indicate mus cular strength, so departures from the normal standard induce cor responding alterations in the position and appearance of the body.

Thus, tremors; position upon the back, with a constant disposition to sink down towards the foot of the bed, indicate extreme *muscular debility.*

Distressing dyspnœa, and sense of suffocation when lying down; constant desire to assume the erect posture; general agitation, cough, and appearance of anxiety indicate *hydrothorax.*

Common position upon the back; rigidity and morbid involuntary contractions of the flexor muscles, usually of the upper extremities, indicate *softening of the brain.*

Position upon the back, with the knees drawn up; head and shoulders a little elevated; dread of motion, indicate *abdominal inflammation with acute pain.*

Position upon the belly; pressure of the abdomen affording relief, and great restlessness, indicate *spasmodic abdominal pains.*

Rigidity and involuntary contraction of the muscles of the neck, back and limbs, indicate *inflammation* or *irritation of the spinal cord.*

In the advanced stages of acute diseases, position upon the back, with the legs drawn up, indicate *retention of urine.*

THE TONGUE.

The following are a few of the diagnostic signs presented by this organ:

A clean, smooth and bright red tongue, indicates *inflammation of the gastric or intestinal mucous membrane.*

A clean and red tongue, with papillæ prominent; or a furred tongue, with red papillæ appearing through the fur, indicates *scarlatina.*

A reddish and tremulous tongue indicates *mania à potu.*

A thick and yellow fur covering the tongue, with bitter taste, indicates *biliary derangement.*

A white fur upon the tongue indicates slight fever.

Acute symptomatic fevers effect but little change in the appearance of the tongue.

A relaxed, dilated, and tremulous tongue, indicates *congestive* or *nervous fevers.*

A pale and flabby tongue, "with large papilla," indicates *gastric debility,*—met with in *chlorosis.*

A sharp and pointed tongue is often observed in *irritation and inflammation of the brain.*

THE NERVOUS SYSTEM.

Tearing, throbbing and aching pains, aggravated by contact, pressure or movement, indicate *inflammatory action.*

Twitchings of the limbs, jerkings and shocks of the tendons, cramps, convulsive movements, violent contortion of the body, pains relieved by pressure, unattended with fever, indicate *spasmodic pains.*

Sharp and darting pains, unaccompanied by swelling, heat, or redness, indicate *neuralgic pains.*

Vague and wandering pains about the ankle often indicate *inflammation of the knee.*

Pains also in other healthy parts sometimes indicate *inflammations in remote structures.*

Wakefulness indicates *irritation of the nervous system.*

Irresistible inclination to sleep, with stertorous breathing, indicates *compression, or serious disturbance of the brain.*

Twitching of the muscles during sleep, and frequent waking from frightful dreams, indicate *organic disease of the heart;* also characteristic of *verminous irritation.*

Sudden, rapid and jerking movements of the head and limbs indicate *cerebral irritation, mania à potu, and some forms of insanity.*

If there be pain with its hidden cause in any one particular spot, it can only be by tracing the nerves *of* and *from* that spot, that we can hope to arrive at the real cause of the symptoms. "It is through the medium of the distribution of the cerebro-spinal nerves of sensation (the fifth being the true cranial sensitive nerve), that we are enabled to explain those pains which are called sympathetic, but which result from the continuity of nerves between the cause and effect, the disease and the symptom. It is impossible to affix too much practical significance to this simple statement. External pain may be considered as an external sign or demonstration of some distinct derangement. Seek its precise position, and see what nerve is the medium of transmitting this perverted sensation, and we probably reach the original or producing cause of the pain; the patient may not judge correctly of the real seat of his disease." (*Hilton,—Lecture on Pain.*)

THE ALIMENTARY CANAL.

The alvine discharges will afford many useful hints to the observing physician.

Thus, light or clay-colored evacuations denote a *lack of bile.*

Mucous and bloody stools indicate *intestinal inflammation;* if ac-

companied with tenesmus, and redness or protrusion of the rectum, we may conclude that the lower part of the canal is affected.

Watery stools, with slight pain, indicate *irritation of the bowels.*

"Glairy, dark-green evacuations, like chopped spinage, are characteristic of *hydrocephalus.*"

Very dry and hard fæces indicate *a relaxed and torpid state of the mucous membrane of the bowels.*

THE RESPIRATORY ORGANS.

Using the abdominal muscles principally in respiration, indicates *inflammation of the lungs.*

Using the intercostal muscles alone, indicates *abdominal inflammation.*

Irregular respiration, with stertorous breathing, indicates *compression of the brain.*

Inspiration difficult, anxious and rapid, while expiration is comparatively easy, is peculiar to *hydrothorax.*

Wheezing, short, panting and anxious respiration, with contraction of the larynx, indicate *asthma.*

Paroxysms of rapid, short, suffocating and spasmodic cough, indicate *pertussis.*

White, tenacious sputa indicate *chronic bronchitis.*

Very thick, yellow, or greenish sputa, which sink in water, are indicative of *disorganization of the lungs.*

THE SKIN.

A yellow skin indicates *a disordered liver.*

A sallow skin occurs in *chlorosis* and *a few other chronic ailments.*

A pale and waxen skin denotes a *deficiency of red globules in the blood.*

A blue or livid skin, in infants, indicates *a pervious foramen ovale.*

A hot and dry skin denotes *fever, and generally inflammation.*

A cold skin, with internal heat, indicates *internal congestion.*

THE URINE.

Urine red and scanty denotes *inflammation.*

Urine, clear, limpid and abundant in *nervous affections.*

Urine depositing a sediment indicates *biliary derangement.*

The above are only a few of the more common and well-known diagnostic signs. Our only object is to direct the attention of the physician to this subject, for there are often many things about the general appearance of a patient which are slight and indescribable in themselves, but which will aid him materially in forming his opinions.

In order then to arrive at a correct diagnosis, it is necessary:—

1. To note all external signs.

2. To ascertain the age, occupation, previous habits, predispositions and peculiarities of the patient.

3. To procure from the patient a spontaneous and minute detail of his sufferings in his own language.

When the patient is unable or incompetent to afford this information, get as accurate a description as possible from those best acquainted with the history of the case.

4. Ask such questions and make such examinations by the touch, pressure, sight, hearing, percussion, auscultation, &c., as may be necessary to perfect the diagnosis.

All true diagnosis is based upon inductions gradually drawn from the facts furnished by observation, pathological investigations and experiments. By careful and repeated observations we have learned to associate certain phenomena observed during life, with particular lesions found after death; and sound principles have advanced in the same proportion as the number of accurate observations have been collected. "In so far as we are able correctly to interpret symptoms, and to trace out in connection with them a real change of structure or function which affords an adequate explanation of their presence, in so far we are prepared to form a correct diagnosis." * In pursuit of this object our especial work is to learn to group symptoms together, and to analyze them separately in such a manner that we may be able to apply to them a scheme already supplied to our hand, which shall in some way account for their existence. A comparison is instituted between the probable results of the supposed malady and those presented by the particular case under investigation, and their correspondence is accepted as a verification of the hypothesis. We gather together the fragmentary evidence furnished by the symptoms, and we apply to the case the known laws of cause and effect as taught by the generally accepted theory of disease.

The correctness of the conclusion must greatly depend on our assigning the true relative value to each portion of the evidence. Though one symptom may be more important than another, many errors are committed by permitting a single symptom to assume undue importance as a "pathognomonic" sign. It is only correct general knowledge of disease that can give precision to our judgment; and the result of the case will generally verify or disprove its accuracy. In general, the more numerous the symptoms which are noted in the case the better is the opportunity for correct diagnosis; a second examination of a case brings to light new symptoms, hitherto overlooked, and compels the physician to throw aside a hypothesis based on insufficient premises; thus, when the conclusion has been reached that inflammation is established in a certain organ, further investigation reveals the character of that inflammation.

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* Barclay. Manual of Diagnosis. 1862.

Temperature of the Body.—The normal temperature in the armpit of all healthy persons is 98½ degrees Fah. In some diseases the temperature is not at first varied; but a higher or lower temperature is always a sign of disease.

The temperature is uninfluenced by hunger, eating, drinking, stimulants, rest, or exercise *so long as health is undisturbed*; but when any of the above influences increase the temperature, this is evidence that disease is impending. If the temperature rises to 102 from any of the above influences, there must be active disease beginning, or relapse of a disease supposed to be cured.

Depressing influences, as loss of blood, sound sleep, evacuations, &c., may induce a brief sinking of the temperature, such sinking lasts only a few hours in a healthy state; if it continue long it shows disease, though the pulse, which is commonly trusted, should not indicate it.

If in the progress of supposed typhus fever the temperature becomes normal, or becomes even transiently normal during the second week, the disease is *not typhus*. When either pneumonia or hæmoptoic infarctus is suspected, the normal temperature decides that the latter is the disease. When hæmorrhage occurs in a tubercular patient, if the temperature be normal it shows that there is no active pneumonia, and that tubercular action is not progressing. In a convalescent patient the normal temperature proves no relapse or new disease progressing. In intermittent fever, if the temperature does not rise at, or even before the time for the paroxysm to begin, it will not come. This occurring a second time shows the return of the paroxysms suspended.

The temperature rises some hours before the feelings of the patient reveal it; also in cases where the paroxysms have left, the exacerbations of temperature continue to recur on successive days, as high as 104°. Typhus may be detected by the thermometer several days before it is seen or felt by any other symptoms. Tuberculosis, if progressing, is known by the thermometer; also new complications are thus detected before they can be in any other manner.

In general, for one degree of the thermometer the pulse rises 10 beats per minute, but the rise of the temperature 99½ degrees, gives more evidence of disease than the rising of the pulse from 70 to 80 per minute. In a *slight* fever the thermometer stands at 101½°; in a *severe* one 104; in violent or dangerous fever at 106½; death is almost certain at 108½.*

The importance of a correct diagnosis can scarcely be over-estimated by the physician, inasmuch as his treatment will always to a great extent be determined by the opinion he may form of the nature of the disease. We have seen remarkable cases of failure as well as of success

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* Dr. Oehme, New-Hamp. Hom. Med. Soc. 1863.

which turned upon correctness or error in judging of the patient's real condition. The following instances of mistakes in diagnosis are given by Dr. O. W. Holmes:

"I saw Velpeau tie one of the carotid arteries for a supposed aneurism, which was only a little harmless tumor, and kill his patient. Mr. Dease, of Dublin, was more fortunate in a case he boldly declared an abscess, while others thought it an aneurism. He thrust a lancet into it, and proved himself in the right. Soon after, he made a similar diagnosis. He thrust in his lancet as before, and out gushed the patient's blood and his life with it. The next morning, Mr. Dease's patient was found dead and floating in his blood. He had divided the femoral artery.

"I have doomed people, and seen others doom them, over and over again, on the strength of physical signs, and they have lived in the most contumacious and scientifically unjustifiable manner as long as they lived, and some are living still. I see two women in the streets very often who were both as good as dead in the opinion of all who saw them in their extremity. People will insist on living sometimes, though manifestly moribund. In Dr. Elder's life of Kane you will find a story of this sort, told by Kane himself. The captain of a ship was dying with scurvy, but the crew mutinied, and he gave up dying for the present to take care of them.

An old lady in this city, near her end, got a little vexed about a proposed change in her will; made up her mind not to die just then; ordered a coach; was driven twenty miles to the house of a relative, and lived four years longer. Cotton Mather tells some good stories which he picked up in his experience, or out of his books, showing the unstable equilibrium of prognosis. Simon Stone was shot in nine places, and as he lay for dead the Indians made two hacks with a hatchet to cut his head off. He got well, however, and was a lusty fellow in Cotton Mather's time. Jacob Musgrave was shot with a bullet that went into his ear and came out of his eye on the other side. A couple of bullets went through his body also. Jacob got well, however, and lived many years. *Per contra*, Col. Rossitor, cracking a plum-stone with his teeth, broke a tooth, and lost his life. We have seen physicians dying, like Spigelius, from a scratch; and a man who had a crowbar shot through his head is alive and well. These extreme cases are warnings. But you can never be too cautious in your prognosis, in view of the great uncertainty of the course of any disease not long watched, and the many unexpected turns it may take."

PATHOLOGY.

A knowledge of general Pathology comprehends, according to Dr. Watson:—"1. A knowledge of the material changes to which the several parts of the living body are subject.

2. A knowledge of the processes or actions by which these changes are wrought.

3. A knowledge of the causes in which these processes originated.

4. A knowledge of the consequences of the same changes, or of the symptoms they occasion.

The solid parts of the animal frame may be altered in bulk, form, consistence, in their intimate texture, and in situation. The fluid parts may be changed in quantity, in quality, and in place." *Lectures*, p. 41.

I. *Alterations of the solid parts in Bulk:*

1. They may become larger than natural,—*Hypertrophy.* This is best illustrated in the muscular system. By constant exercise the muscles acquire preternatural volume, weight and power, according to a law of the animal economy that increase of function leads to increase of bulk; as when one kidney wastes, the other becomes more active and increases in size. The supply of blood to an organ is regulated by the demand for it.

When hypertrophy is unattended by change of texture it is only the result of a more active nutrition, and is not considered as a state of disease. We have it in the hollow contractible organs, as the heart, bladder, and intestines. Increased bulk in the muscular tissue of these organs is not always even a source of disease; Watson regards it as, in most cases, a compensatory change, and one conservative of life. In the voluntary muscles it is generally harmless; but in the involuntary it is often a cause or a consequence of disease. Hypertrophy is generally connected,—1. with certain localities, as in the case of bronchocele; —2. with certain congenital or acquired conditions of the body,—as the hypertrophy of the upper-lip in scrofulous persons, and also the swelling of the long bones;—3. with certain habits of life, as full diet with inactivity of the body; and—4. with the removal of certain parts of the body, as of the testicles in man and the ovaries in the female.

2. *Atrophy.* This is a condition in which parts become smaller than natural without any other alteration of tissue. This depends on a diminished nutrition. The alterations effected by atrophy are not always connected with disease. Some organs of the body are destined only for a temporary purpose; and they disappear or diminish in size when their function is ended: we see this in the thymus gland, the supra-renal capsules, and some parts connected with the fœtal circulation. The deficiencies of hare-lip, fissures of the palate and some malformations of the heart, are rather instances of arrest of development

than of genuine atrophy. But in the muscular system we see atrophy in its truest form. When a limb remains long in a state of inaction, whether from palsy or from pain caused by disease of a joint, there is a deficient supply of arterial blood, and perhaps a change in the innervation of the nerves of the part, which lessens without suspending the circulation. Atrophy is also directly caused by pressure on the large arterial trunks, or on the capillaries, thus lessening without entirely checking the flow of blood to the part. Chronic inflammation sometimes produces wasting of the parts occupied by it. Various other diseases, by interfering with the digestive functions, diminishing the quantity of blood, or impairing its quality, produce atrophy in a greater or less degree.

II. *Alterations in Form.*

III. *Alterations in Consistence.*—1. *Induration, or hardening.* This may arise, without any other alteration of tissue, from over-fulness of the vessels, as in the case of the lungs or liver. Induration of the hollow organs, or of the cellular parts may arise (without change of texture) from undue accumulation of fluids within them, as of the bile in the gall-bladder, urine in its receptacle, of gases in the stomach and intestines, and, lastly, of serosity in the cellular tissue, constituting œdema. Induration in an organ may also be caused by hypertrophy, from the pressing out of its fluid contents, or the pressing together of its soft parts: thus we see the lung rendered more solid by the compression of its solid parts against the spine in cases of effusion into the pleura. We also see the lung solidified and hardened in *hepatization;* in which case the blood, or fluids separated from it, flow into, fill up, and obliterate the interstices of the part, making it solid, or resembling *liver* in consistence. Other instances of induration may be observed in cases in which irregular masses of matter are deposited within the body; of these, tubercle, cancer, and various malignant growths, are entirely different from any of the solids or fluids which enter into the healthy composition of the body.

2. *Softening.* This is a change of consistence to which almost every tissue of the body is liable. It may effect the brain and spinal cord, the cellular tissue, the muscles, the mucous membranes, and even the bones. (See *Mollities Ossium*, *Rachitis*, *&c. Index.*)

The usual causes of softening of the tissues are: Inflammation, diseases of the arteries of the part, causing insufficient substance; altered qualities of the blood; every cause which leads to suspended or defective nutrition. (See *Brain, Ramollissement of.*)

IV. *Transformation of Tissues.* In the place which should be occupied by *one* natural tissue, we sometimes find another, which last is thus unnatural in regard to its situation, but natural in all other respects.

1. The changed or displaced tissue in some cases has had its natural function for a long time suspended; and it then gradually approximates towards cellular tissue, which at length is all that remains of it.

2. In other cases the transformed tissue has been accidentally called on to fulfil a purpose for which it was not originally destined; and it gradually assumes the characters of that other tissue, whose office it has taken up.

In all these cases we see a compliance with all that is known of the laws that govern the progressive development of the human body. In the embryo all the tissues commence by being cellular, and they only assume other forms and characters, each on the condition of its fulfilling some special purpose. This explains, why there should be a tendency in each tissue to revert towards its primitive state, that of cellular tissue. This same law, or one nearly the same, regulates the hypertrophy and atrophy of parts. As the nature of the original function determines in the first instance the nature of the tissue, we can conceive how the nature of a new accidental function imposed upon a tissue may determine the kind of transformation it shall suffer:—thus if a muscle comes to lie around and invest an unreduced joint after a dislocation, assuming the uses of those tissues which naturally inclose the joint, it becomes converted into fibrous or ligamentous tissue. But there is a limit to this transformation: for though nerve, muscle and gland are convertible into other tissues,—other tissues are not convertible into them. Cartilage may be transformed into bone, but never becomes mucous membrane. Mucous membrane may be converted into skin, and skin into mucous membrane; but neither can ever be changed into serous membrane. Besides these transformations of the soft tissues we have ossifications of the arteries, of the cartilages of the ribs, and of the larynx. Such changes are said to be the effects of irritation,—age also has some connexion with them.

V. *Changes of Situation.* These changes chiefly regard the *viscera.* Thus in the chest a whole lung may be displaced, and compressed against the vertebral column by serous or gaseous effusion into the cavity of the plura. The same causes may dislocate the heart, when they operate on the left side of the thorax. In the abdomen and pelvis the various forms of hernia may be adduced as instances of dislocation. *Intus-susception* is also a displacement of a part of the intestine.

Morbid Changes in the Fluids of the Body.—The day is past when discussions need to be carried on between the advocates of exclusive *Humoralism* and those of exclusive *Solidism;* as it is now well settled that no important alteration can occur in the solids of the body which will not soon affect its fluids in some way; and it is also known that every important change in its fluids must lead to or proceed from a corresponding and proportionate modification of its solids.

ANIMAL FLUIDS.

1. The Blood. 2. The Fluids that enter the Blood. 3. The Fluids that proceed from the Blood.

1. *The Blood.* The blood is subject to variations in *quantity*.—It may be too abundant throughout the body, constituting general *plethora*, or *hyperæmia*. When the growth of the body has been completed, the blood may continue to be formed in greater abundance than the wants of the body require. Full living and sedentary life produce plethora and preternatural distension of the entire vascular system. The blood is not only greater in quantity, but richer in fibrine and in red particles than perfect health requires.

Local plethora properly exists only when a single part or organ contains more than its share of red blood; but it may exist when there is no general plethora; and, indeed, local terminations of blood are extremely common in persons in whom the mass of the blood and its nutritive particles have been much diminished by disease. This tendency to unequal distribution of blood in the capillaries under such circumstances is thus explained by Dr. Watson: A due supply of healthy blood is requisite for the performance of the functions of the brain and nerves: and when this supply is defective those functions become deranged, and in their turn disturb the functions of the solids and derange the balance of the circulation. Persons endowed with great sensibility are known to be very liable to partial and irregular congestions of blood. This local congestion may be produced by frictions on the surface of the body, and by various chemical or mechanical means. The congestion thus occasioned is not inflammation, but it is the first step towards it, and is of the sthenic or active character. The arteries have more to do with it than the veins. It is in the capillaries, which are distinct from and interposed between the minute arteries and the veins, that further changes are wrought, when the process advances a stage beyond mere local plethora. (*Lectures*, 1858, p. 62.)

As *active congestion* is the parent of inflammation, so it also often causes hæmorrhage and is relieved by it. The general or local abstraction of blood is a common remedy, but not always a safe one: Irritability of the nervous system may be aggravated by bleeding; and, in proportion as the nervous functions are irregularly performed, the tendency to unequal distribution of blood in the capillary vessels increases.

Mechanical Congestion. In this form the veins alone are concerned; and it is generally purely local, as when the principal vein of a single limb is compressed. If there be disease of the liver to the extent of preventing a free passage of the blood through that organ, congestion takes place in all those parts of the capillary system from which

the blood is conveyed by the veins which ultimately unite to form the vena portæ.

Passive Congestion. This is *the asthenic hyperæmia* of Andral. The capillaries become loaded, and the course of the blood in them is sluggish without any increased velocity of the blood in the arteries, and independently of any mechanical obstacle in the veins. We see instances of this in persons enfeebled by age, or disease, in whom the lower part of the legs, the insteps and ankles, and the skin, which forms the surface of old scars, are often habitually purplish, or violet-colored. In these cases the capillaries appear to have lost their natural elasticity; they readily dilate under the pressure of the blood, which being thus retarded accumulates in the part. This state may occur without any previous irritation acting on the part, or any previous active congestion. There is, however, frequent connexion between these contrasted conditions. Passive often succeeds active congestion: the vessels become dilated under the force of the active hyperæmia, and the irritation ceasing, they do not at once recover their tone, but remain passively distended. In the production of active congestion the arteries are principally concerned; in mechanical congestion the veins, and in passive congestion the capillaries. Internal as well as external parts are subject to passive congestion; thus the lungs are very subject to engorgement of their capillaries. Striking instances of this will be given under the head of *Congestive Fever.* It has been observed that both active and passive congestion are liable *to recur* in persons and organs once attacked.

Passive aud mechanical congestion often exists together. If the capillaries of a part are much enfeebled, the mechanical effect of the gravity of the blood may suffice to bring them into a state of congestion. This explains the occurrence of a gorged condition of the posterior portion of the lungs (evinced by symptoms during life) in persons who have had no previous pulmonary disease, but have been confined for a long time to the supine position. Mechanical congestion, when it reaches a certain point, is the source of hæmorrhage, and the almost constant precursor and immediate cause of several dropsical accumulations. Blood, poor in its materials, though not deficient in quantity, may also occasion dropsies. (*Watson's Lectures*, p. 67.)

2. The blood may be deficient in quantity, or in its essential elements. This state is called *anæmia*, under which title it will be treated of at large. It constitutes the condition opposite to *plethora*, and is characterized by poverty of blood. It may be produced by repeated abstractions of blood, by impoverished food, by various forms of hæmorrhage. In such cases when blood is drawn from a vein, we observe a small clot floating in an abundance of serum. It is remarked that the

red particles require more time for their restoration than the other constituents of the blood.

GENERAL OBSERVATIONS ON THE CAUSES OF DISEASE AND THEIR MODES OF OPERATION.

We hold that it is the province of the physician not only to cure diseases, but to point out the surest methods of preventing them. In order to do this successfully, it is necessary that he appreciate those conditions which constitute health, so as to guard against the numerous causes of its disturbance. In all living bodies, certain states are essential to this condition. The most important of these states are:— 1. a soundness of the organs and tissues; 2. an adequate supply of nutritious food; 3. pure air, that the blood in the lungs may be oxygenated; 4. a calm activity of *mind*, so that the requisite stimulus of the intelligence shall produce its peculiar effects upon all parts of the body; 5. an avoidance of the various causes which debilitate, overtask, or in any way impair the integrity of the nervous or muscular systems; 6. the practice of those means which are calculated to ensure the due performance of all the functions, as exercise, amusements, the cultivation of a cheerful temper, bathing, and moderation and regularity in all the habits of life. Thus will the functions be performed in a certain definite and uniform manner, the requisite equilibrium between the *supply* and *waste* of the body be retained, and that state secured by which health is constituted.

The Causes of Disease are generally divided into: *Determining*, *predisposing*, *exciting* and *proximate*. It is important that these terms should not be confounded with each other; and also that certain conditions of the body, called *predisposition*, be carefully distinguished from the *predisposing cause*, which has produced that state.

1. *Determining Causes.*—These are such as give rise constantly to the same affection; as poisons, asphyxiating gases, and wounding instruments.

Specific Causes produce individually each a particular, peculiar disease; as syphilis, hydrophobia, variola.

2. *Predisposing Causes.*—General predisposing causes are usually diffused in the atmosphere, or arise from local conditions.

Individual local causes embrace the various conditions peculiar to each person, and those external circumstances, such as change of climate, food of bad quality or insufficient quantity, compression by various articles of dress, &c. The word "*predisposition*," says M. Chomel, "includes all that is usually implied in the so-called "diatheses," as the varicose, melanotic, ulcerative, hæmorrhagic, gangrenous, aneurismal or more properly *atheromatous*, purulent. (*Gen. Pathology.*)

3. *Exciting Causes.*—These include the common causes of disease

which excite it in persons already predisposed. They consist of atmospherical changes of temperature, epidemic or other deleterious influences; errors of diet, regimen, &c.

Heat and Cold.—The same overruling Power "that tempers the wind to the shorn lamb," has within certain limits, and those not very narrow, endued man with a power of resisting the extremes of temperature and of becoming "the child of every climate and the tenant of every soil," from the burning sunshine of the tropics to the profound frosts of the polar regions. Persons of feeble constitutions have ailments frequently recurring from the effects of agencies which they have not strength to resist, others pass through life *meeting continually* these same morbific causes, and successfully resisting them. In some parts of India the temperature ranges for a long time together from 30° to 100° and even 110° of Fahrenheit; sometimes it has been said to reach 120°, and yet these tropical climates are thickly peopled. On the other hand, in arctic countries where the sun appears above the horizon for only a short portion of the year, and the thermometer sinks to 40° or even 50° below Zero, we find inhabitants still, though they are few in number. But for a *short time—and under certain circumstances*—man is capable of enduring a very much higher degree of heat than the general atmosphere ever attains in the hottest portions of the earth. It has been ascertained by repeated experiments, that the human body is capable of sustaining a temperature of 240° or 260 degrees without detriment or much inconvenience. The vital resistant power varies in degree at different periods of life: it is feeble in infancy, becomes stronger as years and physical health increase; and then declines as old age advances, till it becomes so weak that slight disturbing causes may stop the current of life.

Effects of high but not excessive degrees of Heat.—It stimulates the organic functions of the body; and the action of the heart is much accelerated. As in the vegetable kingdom we see the influence of increasing warmth in returning summer, in renewing the leaves and flowers, and their decay and fall as cold weather approaches, the same observation applies to man and animals in the expansion or repression of all those functions which they possess in common with plants. Towards the Poles both man and animals are smaller than at the Equator, or in temperate climates. On the other hand, considerable heat, when applied for some time together, has a sedative influence on the animal functions; that is, upon the nervous system, causing languor and lassitude, a disinclination to exertion, both mental and bodily. There are many forms of disease distinctly traceable to heat as their cause. The effect of hot weather in promoting the cutaneous perspiration is well known. Dr. James Johnson first distinctly explained the effects of high temperature on the skin, and indirectly on the liver, through the com-

munication established by the sympathy which exists between these extensive organs. Experience proves that a high temperature, long continued, increasing the quantity of bile secreted, and altering its sensible qualities; and this disturbance of function is often followed by inflammation of the liver itself. (*Johnson on the Liver.*) (See *Liver, Diseases of.—Index.*)

In colder climates we witness the effects of heat in those attacks of vomiting and diarrhœa which are common when hot weather is followed by that which is colder, particularly when warm days are followed by colder nights. The distinction between *predisposing* and *exciting* causes of disease may here be clearly stated: It is well known that a secreting organ is never so likely to be affected by any exciting cause of inflammation as when the process of secretion is going on actively. This undue activity of the hepatic function constitutes a *predisposition* to hepatic inflammation, whilst the hot atmosphere which produces this predisposition holds the place of *predisposing cause* of the inflammation; but the *exciting cause* is exposure to *cold;* one of the most common and best ascertained causes of inflammation in general.

The effects of cold are in many respects directly opposite to those of heat. When the application of moderate cold is long continued, it acts as a sedative on the organic functions of both animals and vegetables. This appears from the shrinking of the external parts; the superficial arteries become unable to transmit the blood in the usual quantity through the integuments. One of the earliest effects of cold is to produce drowsiness. (See the case of Dr. Solander among the hills of Terra del Fuego, in "Cook's Voyages.") In many instances before complete torpor comes on, the action of intense cold blunts the nervous sensation and confuses the intellect, giving the person exposed to it the appearance of one intoxicated.

Sudden vicissitudes of temperature are usually regarded as dangerous; and it is asserted that a *previous hot state of the body* augments the hurtful effects of cold, whether applied externally or internally. This broad proposition, though not quite true, may be the safest general doctrine, as it includes as much truth as the popular mind can generally be induced to receive. But the truth is, that when the heat-evolving power in the body is active and persistent,—if it has not been weakened by debilitating circumstances,—if it be not rapidly subsiding from the evaporation caused by perspiration,—no danger need attend even violent alterations of external temperature. Unusual heat of the body at the time when the cold is applied, so far from implying danger, is really the condition of safety, provided the heat is steady and permanent. The The more correct statement respecting the application of cold is, that it is dangerous,—not when the body is *hot*, but when the body is cooling after having been heated;—and this principle applies whether the cold

be applied externally or internally, to the surface of the body or to the mucous membrane of the stomach. The instances of death from drinking cold water, when the body had been heated by the rays of the sun, or by exercise, are of very common occurrence.

The power of cold in exciting disease, is increased by all the circumstances which debilitate the system and diminish its capability of evolving heat. Fasting, evacuations, fatigue, &c., lessen the vigor of the circulation; and the power of evolving heat is very feeble in old persons, in those newly born, or previously weakened by disease. The bad effects of cold depend partly on the intensity of the sensation it produces, but still more on the *duration* of that sensation. Cold is more likely, other circumstances being equal, to prove injurious when it is applied by a wind, or current of air, and also when it is accompanied by moisture. Certain circumstances have been noticed as counteractive of the effects of exposure to cold, as exercise of the passions, which engage the attention closely to one object; diminished sensibility, as in maniacs; the power of habit.

Among the conditions of the body which diminish its power of resisting cold, sleep has been considered one of the most remarkable. Now, while we sleep, sensation is in a great measure suspended, and this seems to furnish a contradiction to the principle, that the effect of cold on the health depends upon the strength and duration of the sensation excited by it. This difficulty has been disposed of by asserting that the sleeper, who thus suffers, really does feel and is conscious of the sensation of cold.

Influence of the Seasons on Health.—It is well known that the general health of the community fluctuates with the changing seasons. Thus it is noticed that diseases of the chest are most severe in Winter and Spring; abdominal diseases preponderate in Summer and Autumn. The perfection of the power of vital resistance requires prudence and a proper attention to external circumstances; the proper nutrition of the tissues must be supported by pure air, good food, the natural stimulus of the nerves and the healthy play of the different organs. It is reduced or destroyed by whatever lowers the nutrition of any part, rendering it more liable to disease from deleterious influences.

Impurity of Air, as it commonly exists in cities, is a powerful predisposing cause of disease. It may not *generate* continued fever, but it certainly favors its propagation, and increases in a high degree typhoid fever in all its forms, as well as other diseases. (See *Typhoid Fever.*) Impure air is a powerfnl agent in calling *scrofula* into active existence and in aggravating the strumous diathesis. *Malaria* causes intermittent and remittent fevers, with many others, which will be treated of in their appropriate places.

Contagion will be treated of under the head of contagious exanthematic fevers.

Hereditary Tendency.—This subject will be treated in full under the head of *Psora* and *Hereditary Disease.* There can be little doubt that the health and peculiarities of the parents influence the physical characters of their children; it is a matter of daily observation, and one of the best possible illustrations of the fact is to be found in what are called family-likenesses. The transmission of such diseases as *scrofula*, *phthisis*, *gout*, *insanity* and many others are subjects of common observation.

It should be firmly impressed upon the mind, that the important offices of respiration, circulation, digestion, assimilation, absorption, secretion, &c., are dependent upon the chemical action, which is constantly going forward within the body, between the elements of the tissues and the inspired oxygen on one hand, and a uniform supply, through the nerves, of spiritual stimuli on the other. When these elements are supplied in due proportion, from the food and air, and no unnatural or injurious cause acts on the system, health must result.

But if the quantity of oxygen absorbed to unite with the elements of the tissues, is insufficient to generate the natural amount of animal heat and motion, or if the strength of one or more of the tissues becomes from any cause, so impaired as to be incapable of offering the requisite resistance to the oxygen of the blood, *disease* ensues. In the latter case, the impaired state of the diseased structure does not offer sufficient contractile power to prevent the intromission of red globules into those parts which, in the normal state, contain only the ordinary products of the transformations of the tissues. The result is, that the pores are obstructed, the sweat is retained in the system—thus affording additional fuel for combustion, with the oxygen of the blood, and from the unnatural irritation which it causes, giving rise to accelerated respiration, circulation, and the other phenomena of fever. If the resisting power of the tissues continues impaired for a length of time, and the oxygen continues to act as usual, disorganization must follow.

It has been proved that 32½ ounces of oxygen enter the system of an adult daily, the whole of which goes into combination with the elements of the food, and is thrown off through the lungs, and skin in the form of carbonic acid and watery vapor.

The same quantity of carbon and nitrogen is supplied to the blood from the elements of the food to reproduce the material of the organs, which is lost by the waste or exercise of the functions. According to Liebig, "the quantity of oxygen absorbed determines the amount of food necessary to be assimilated."

If then the food be properly digested and assimilated, a due quantity of pure air be respired, and the normal integrity of the organs remain

unimpaired, all the structures will act with uniformity, and a healthy equilibrium will result. To ensure a continuance of such a condition, it is not only necessary to avoid all of those causes which are directly capable of disturbing this complicated series of functions, but to make use of those means which tend to invigorate the system, and aid nature in her operations. In civilized life, these sources of disturbance are almost innumerable; but we shall endeavor to point out some of the more prominent, and show in what manner they operate in causing disease.

In the healthy state of the system, certain structures possess the power of effectually excluding the red globules of the blood; thus preventing a too great change of matter, which an event of this kind would inevitably produce. This power is dependent for its normal action upon the presence of two conditions, viz.: an adequate amount of resisting power in the muscular fibres, which modern writers term *contractility*, and an unimpaired state of the nerves, in order that the *intelligence* may communicate with the extreme parts, and thus afford the muscular fibres an additional stimulus or power of resistance. This *stimulus*, of which the nerves are the conductors, is an agent of immense importance in modifying and altering the functions of the structures. In the normal state, its effects are apparent during the various perceptions and emotions which are constantly agitating us. When these two properties remain unimpaired every office must be duly performed.

It is true that the muscular or the nervous system may be tasked, for a short period, without detriment, provided that a corresponding degree of rest be allowed, for the weakened energies to be restored to their natural state. This is witnessed in severe bodily or mental labor; the immediate effects of which are, fatigue, lassitude, and diminished muscular and nervous energy. If this be succeeded by a due allowance of sleep, the waste of force is repaired, and the body resumes its healthy tone. If, however, this labor be continued beyond a certain point, and the requisite quantity of rest be withheld, the capillaries lose their vital power, become incapable of resisting the entrance of red blood and *inflammation with fever* is the consequence.

Indeed, it may be laid down as a general rule, that most of those causes which are capable of producing disease, act by impairing the muscular and nervous force of the tissues to such an extent as to render them incapable of excluding the red globules. We know that these red globules are charged with oxygen, and that this gas, when in contact with parts of which the elements consist of carbon and hydrogen, must effect chemical changes. It matters not whether these changes are produced within the body or in the air, the results are in both instances the same.

It has been proved by the experiments of Bichat, Buniva, and Philip, that the capillaries of a healthy living animal effectually resist the introduction of fluids, even when a powerful syringe is used; but as the energies of the animal sink, they gradually lose their power of resistance, and allow the fluids to pass into them like "passive and yielding tubes." From these experiments it is evident that the capillaries are the first to lose their vitality, since the large arteries have been observed to retain their contractile power some hours after death. Thus it is that the first manifestations of disturbing causes are upon the surface, in the condition of chills, succeeded in a short time by unnatural heat and inflammation. "Push into the aorta of a living animal by means of a syringe, different fine fluids and you will never see them fill the capillary system or issue by the exhalents; but when the experiment is performed soon after the death of the animal, the fluid will pass readily into the serous capillaries, and pass out by the exhalents, excretory ducts, &c." (*Bichat.*)

From the above facts it is evident, that whenever the integrity of the extreme parts becomes impaired, the introduction of the red globules is permitted, which, according to chemical laws must give rise to increased evolution of heat, inflammation and thickening of the capillaries, and consequent obstruction to the passage of the excretions. The retention of the products of the combustion of the oxygen of the blood and the elements of the food, is an additional source of disturbance.

These irritating substances induce accelerated respirations, in order that sufficient oxygen may be absorbed to neutralize them, and thus cause exaltation of temperature, increased activity of the organs and the phenomena of *fever.*

In all our pathological inquiries, it is of the first importance, that we have a distinct appreciation of the laws which produce and regulate the phenomena of life, and, as far as practicable, of the influence of external agents in modifying these phenomena.

First, the primary source of animal heat and motion, is the chemical action which takes place in the lungs, secondly, when the blood arrives at the extreme vessels, other and important chemical changes occur between the oxygen of the blood and the elements of the tissues, giving rise to a great amount of caloric and motion. Now as the combustion at the lungs is the principal cause of propelling the blood through the arteries into the capillaries—so it is probable that the combustion which occurs between the oxygen of the red globules, and the elements of the changed tissues at the extreme vessels, is the principal source of the motive power which forces the blood back through the veins to the heart and lungs. There can be no chemical change without the evolution of heat, no heat without expansion, and no expansion without developing *motive power.* We are obliged to reject the doctrine that

the blood is brought back through the veins to the heart, by a kind of *suction*, which this organ exercises on account of the vacuum which constantly occurs within its walls; for if this motive force is all located at the heart, there is no way of accounting for the expenditure of the large amount of motive power constantly generated at the extreme points. We see two parts of the body where combustion is constantly occurring, viz., the *lungs*, and the *extreme vessels;* and when we remember that the laws which govern chemical action, whether in the body or the air, are similar, we can appreciate the probable force which must be produced at these extremities.

Since then, the animal heat, motive force, &c., are generated principally at the lungs, and in the capillaries, it is evident that any cause which can disturb the healthy operation of either of these important parts, must produce immediate and serious disturbance throughout the whole system.

The agents capable of inducing disease here, are numerous and dissimilar. In hot climates, the atmosphere being highly rarefied, a less volume of oxygen is absorbed at each inspiration, and consequently a less quantity afforded to enter into combination with the carbon of the system.

On this account we observe a greater prevalence of liver and bilious affections in torrid than in temperate latitudes. Unless extreme care be taken to avoid animal food, liquors, and other articles which produce a large amount of carbon, this element will so abound, and the rarefied air which is inhaled will be wholly inadequate to effect those changes which serve to retain the equilibrium between the supply and the waste from the transformation of tissues. Here a greater quantity of the elements of nutrition are usually assimilated than the inspired oxygen can decompose. This excess of carbon and hydrogen being retained, the nervous and muscular force of the tissues become relaxed and enfeebled, so that from slight exciting causes, diseases of a bilious or congestive character are originated.

We have said that the same quantity of carbon and hydrogen should be supplied to the blood from the elements of the food, to reproduce the disintegrated portion of the organs which is lost by the waste or exercise of the functions. That which is not acted upon by the oxygen in the lungs and at the skin, is taken up by the veins and carried to the liver, which separates those substances, (carbon, soda, &c.) incapable of reproducing the tissues, and finally depositing them in the gall-bladder in the form of bile. When the amount of bile exceeds the retentive capacity of the gall-bladder, the surplus must run over, and a large portion of it be conveyed into the system, thus impairing the integrity of tissues, and laying the foundation of those diseases incident to warm and tropical latitudes.

In cold climates, a state of things the reverse of this ensues. Here the air being highly condensed, a large volume of oxygen is taken into the lungs at each inspiration to combine with the carbon of the system, and thus generate sufficient caloric to compensate for that which is abstracted by external cold. For this condition, all causes which can impair the normal state of the digestive organs must be avoided, in order that a sufficient amount of carbon, &c., may be assimilated, to combine with the oxygen and secure the healthy equilibrium. The greater the exposure to external cold, the larger must be the supply of food and oxygen to make up for the loss of heat.

Cold, acting unduly upon the external parts of the body, produces a train of symptoms similar to those caused by miasmata and other noxious exhalations when inhaled. The first effects in either instance, are to impair the energy of the extreme vessels, inducing constriction and chills, to be succeeded by diminished resisting power, and other phenomena which characterize inflammation.

The increased action of the circulatory vessels which usually follows the chills, has been referred by some writers to the stimulus of a greater volume of blood being thrown upon these organs than is natural, and the increased heat which accompanies this exaltation as a result of the action itself. No greater error than this could be promulgated, for the entire source of animal heat is chemical action, and all of the involuntary motions must bear a direct ratio to this evolution of heat. If the skin, lungs, brain, or any other part, becomes from any cause incapable of affording the normal resistance to the oxygen which is constantly brought into contact with it, an augmented chemical action must occur in it, with the invariable concomitants, increased heat, congestion, and fever.

"If a given part of the body is acted upon by continued and intense cold, while the other parts retain their natural temperature, there occurs, after a time, in consequence of the loss of heat, an accelerated change of matter in the cooled parts. The momentum of the force of the vitality, in the parts which are not cooled, is expended, as before, in mechanical motion; but the whole action of the inspired oxygen is exerted on the cooled part. In the cooled part of the body, the living tissues offer a less resistance to the chemical action of the inspired oxygen; the power of the oxygen to unite with the elements of the tissues, is, at this part exalted. In the cooled part, the change of matter, and with it the disengagement of heat, increases; while in other parts of the body, the change of matter and the liberation of heat, decrease. But when the cooled part by the union of the oxygen with the elements of the metamorphosed tissues, has recovered its original temperature, the resistance of its living parts to the oxygen conveyed to them again increases, as the resistance of other parts is now diminished,

a more rapid change of matter now occurs in them, their temperature rises, and along with this, if the cause of the change of matter continues to operate, a larger amount of vital force becomes available for mechanical purposes. If the heat is abstracted from the whole surface of the body, the whole action of the oxygen will be directed to the skin, and in a short time the change of matter must increase throughout the body." (*Liebig.*)

From these facts we are led to conclude that a large amount of those articles which abound in carbon and hydrogen should be consumed in cold climates, in order that sufficient materials may be constantly furnished to the tissues, to afford the requisite amount of resistance to the inspired oxygen. This is the only means by which the animal temperature can be kept up sufficiently to counteract the loss of heat which is constantly occasioned by external cold. Disease must always occur, when cold so intense and protracted as to impair the normal resisting force of the tissues, is applied to the body, in such a manner as to induce atony in the capillary vessels, chills, lassitude, pain, and other symptoms of inflammation, one of the most prolific causes of disease in cold climates, is generally active from without, in the form of sudden changes of temperature, excessive exposure to cold when the body is enfeebled, and in going from heated rooms into the cold air while perspiring. In these instances the effects produced are, debility and constriction of the extreme vessels, (chills), lassitude, and pains in limbs and head, followed, as soon as reaction comes on, by accelerated respiration, circulation, and other symptoms which constitute fever. In regard to the part or organ affected, much will depend upon the predispositions and constitution of the patient. As a general rule, however, the greatest impression is usually made, and the force of the disease expended upon the most enfeebled part. If the lungs are predisposed to disease, the exciting cause will develop pneumonia. If the brain or digestive organs have been debilitated by excessive exercise, phrenitis or gastritis will ensue. The same principle holds true with regard to the other organs and structures of the economy. If the whole system be in a normal and sound state, atmospheric vicissitudes will commonly merely predispose the organs to a disordered action from whatever farther exciting cause may occur. But repeated exposure to sudden changes of temperature, even in a sound state of the organs may produce actual disease.

The immediate effect of the above enumerated, as well as of almost all other causes of disease, is to impair the integrity of the capillaries to such an extent as to render them incapable of excluding the red globules. The intromission of these "carriers of oxygen," must of necessity give rise to an increased and unnatural change of matter, with its concomitants, augmented heat and motion. This inflammation of

parts produces obstruction to the passage of the excretions, causing them to be retained within the system to serve as an additional source of disturbance. The nature and activity of the exciting cause, the part affected, and the constitution of the patient will determine the violence and danger of the disease. It may then be assumed with safety, that the chief influences which predispose to disease in all countries, are, extremes of heat and cold, and abrupt changes of temperature.

In cold latitudes, those affections prevail which are induced by undue exposure to cold, and from the condensed state of the air respired. Hence pneumonic and other diseases of a purely inflammatory character.

In hot regions, where the respired air is highly rarefied, we observe those disorders which proceed from a deficiency of oxygen to neutralize the elements of the food, and from exposure to the burning rays of a torrid sun. Liver-complaints, yellow and congestive fevers, and those diseases which an excess of carbon, circulating in the blood, would produce, are here found in abundance.

The diseases of moderate latitudes are of a more mixed character milder and more subservient to the power of remedies. Here frequent and sudden atmospheric changes exert the greatest influence in disturbing the healthy equilibrium, and in inducing disease.

Every living body possesses a certain definite and limited capacity of resistance. This capacity can only be taxed to a fixed point, without deranging some of the functions and causing disease. We have seen that the first and most essential requisite to ensure health, is a due proportion between the elements of the food and the inspired oxygen. Now, if moderation and regularity be exercised in all the duties and habits of life, a sound state of the organs and a due performance of all the functions will follow.

Among the parts of which the normal action is highly essential to the well-being of the individual, and upon which disturbing causes usually act, are the digestive and respiratory organs, the skin and nervous system. Of these, the lungs and skin are far the most frequently affected. Exposed incessantly to noxious exhalations, impure air, extremes of heat and cold, and sudden changes of temperature, it is not a matter of surprise, that most of the exciting causes of disease operate primarily upon one or both of these important portions of the general system.

Almost all inflammations of important organs are ushered in with feelings of general lassitude, pains in different parts of the body, irregular respirations, and chills. It matters not whether the first impression has been made by atmospheric changes,—extremes of heat or cold,—or undue mental or corporeal exertion: one important phenomenon is witnessed in nearly all instances, that is a spasmodic or

constricted state of the extreme vessels. This constriction of the capillaries is always attended with more or less debility, which prevents them, when reaction comes on, from resisting the intromission of red blood. Thus result obstruction to the excretions and accelerated changing of matter in these parts, and the other phenomena of inflammation and fever. Now, whatever organ or structure is most predisposed to diseased action, must receive the greatest detriment from the retained secretions, and the exalted and unnatural action which pervades the system.

According to many authors the causes of inflammation may be either *predisposing* or *exciting*. If two individuals, one robust and regular in his habits, and the other delicate and irregular, be exposed to the same morbific influence, the former will escape, while the latter will receive injury; or, if the exciting cause be still more active, an impression will be made upon the first, which will predispose his system to disordered action, while in the latter the same influence will cause actual disease. If the morbific agent be very virulent, actual disease may be induced in both instances, but in different degrees of severity.

It is true, it may be asked, why it is that in hot climates the robust are more liable to be attacked with fevers than those of a feeble appearance? The reason is obvious. The system of the vigorous man abounds with those elements which, when properly decomposed by oxygen, generate the vital activity and produce strength and health. Now, if he indulges his appetite as usual, while he inhales a highly rarefied atmosphere, disease must of necessity result; for unless the amount of oxygen absorbed into the system be proportionate to the elements of the food assimilated, much of the latter must remain unacted upon, and thus serve to contaminate the blood and derange the functions of the organs. Here a cause of disease exists, to which the feeble man is but little exposed. His system is characterized by a deficiency rather than an excess of carbon; his digestive organs being so weak that no more of the elements of nutrition are assimilated than the inspired oxygen can neutralize. Thus, in his case, the equilibrium between the supply and waste of matter is retained, and the organs remain healthy.

In the first example, a strict abstinence from animal food, liquors, and other articles abounding in carbon, with care that the healthy function of the skin be not disturbed, will secure as great freedom from disease as in the other instance. It is not that the robust man is necessarily more prone to disease than the other, but because, either from ignorance or imprudence, he often exposes himself uselessly to an exciting cause to which the latter is not liable.

We contend that the man of a stout frame and vigorous constitution is better able to resist diseases in all climates than one of a more feeble

organization, provided, that he adapts himself by his habits and dietetic regulations to the climate in which he resides. The grand essential consists in keeping up a due proportion between the elements of the food and the inspired oxygen. So long as this proportion is preserved, a vast amount of exposure can be sustained in any climate without detriment.

In northern latitudes, those who are feebly organized, or of nervous or sanguine temperaments, suffer far more than the robust and bilious. In such cases it is necessary that the amount of carbon and hydrogen assimilated to repair the waste of the tissues, be very large, in order to supply the system with sufficient material to resist the action of the absorbent oxygen. Let it be remembered, that disease ensues whenever any part of the body becomes incapable of affording a definite amount of resistance to the action of this gas. The principal source of this resistance is the carbon and hydrogen of the changed tissues; and if no unusual or deleterious causes operate to depress the system, all will be well. If, however, the digestive organs become disordered, and assimilation checked—the body being at the same time exposed to excessive cold.—The oxygen will act upon the debilitated structures themselves, in order to find sufficient fuel for combustion, so that the animal temperature may be retained.

The phenomena of life depend upon the constant operation of two antagonistic elements. Their presence and activity, in suitable proportions, impart heat, strength and life, while the absence of one makes the other an active agent in causing disorganization and death. According to Lavoisier, a quantity of oxygen is constantly being inspired by the healthy adult equal to 32½ oz., or 46,037 cubic inches, daily, the tendency of which is to neutralize and destroy the elements of the body. To counteract this destructive agent, the elements of the food are constantly assimilated, and are finally brought into contact with it. In this manner, so long as the proportion between these agents is equal, those chemical changes take place which generate the animal heat, corporeal vigor, and motive power, serving to keep in operation the whole machine, and ensure the normal action of every organ. The immense importance, then, of fully comprehending and appreciating the mutual influence and dependence of the respiratory and digestive organs upon each other will be understood by all.

Extreme cold produces disease by permitting more oxygen to be absorbed by the blood than can be decomposed by the products of the metamorphosed tissues. Those parts of the body possessing the least vitality must then be acted upon, and inflammation and extreme disorganization ensue.

Extreme heat generates disease from causes directly the opposite, viz., a deficiency of oxygen, to neutralize the assimilated carbon and

hydrogen. In both instances the *nervous* and *muscular* force of the capillaries is so impaired as to render them incapable of excluding from their structure the red globules. Obstruction is thus caused, a large amount of heat is evolved, and the redness, swelling and pain, which characterize inflammation, is present.

The *primary* cause of most inflammations is a disproportion between the action of the oxygen of the blood and the elements of the changed tissues. The cause of this disproportion—acting upon those parts of the body most susceptible to its influence—gives rise immediately to an impaired state of the nerves and muscular fibres of the extreme vessels, rendering them incapable of preventing the intromission of the red blood. The *first effect* upon these vessels is *stimulant*, indicated by *contraction*, or *spasm* and *chills*. This is soon followed by the *secondary* or *atonic stage*, which is indicated by distention or congestion of the capillaries with red blood, heat, redness, and other symptoms, which show that the small vessels have lost their power of resisting the entrance of the destructive "carriers of oxygen." The *immediate* cause of the disturbance and disorganization which results in inflamed parts, is dependent solely upon the *chemical action* of the oxygen of the red globules upon the elements of the affected structure. If this is the case, it will be asked, why, then, disturbance and inflammation do not take place from the red globules in the act of *blushing*, or from friction? Because in these instances, the nervous and muscular force of the capillaries remains unimpaired, and they are thus enabled speedily to throw off this temporary accession of red blood, and resume their normal resistance to its further entrance. It is only by impairing the resisting force of these vessels in such a manner that the arterial blood continues to enter them, that inflammation can occur.

Even in the act of *blushing*, a perceptible increase of *heat* is apparent, and when the emotion acts intensely, and for a considerable period, phenomena similar to those which occur in very slight superficial inflammations, are observed; as uneasy sensations, fulness, perspiration, &c.

The virulence of the morbific influence acting upon the extreme vessels and the extent to which their resisting power is impaired will determine the violence and danger of the inflammation.

It has been ascertained by Wilson Philip, and others, "that where the inflammation of a part is greatest, the vessels are more distended, and the motion of the blood is slowest." This is owing, undoubtedly, to the *diminished contractile power* of the capillaries; and it is probable, in inflammations of a congestive character, that this contractile or resisting power is almost entirely destroyed. This fact is important, in a therapeutical point of view, inasmuch as it directs us to apply our

remedies in such a manner as to restore the loss of tone of the extreme vessels, as the most direct method of cure.

The most important doctrines of modern pathology in regard to inflammation are briefly presented by Dr. Richard Hughes.* "Inflammation is merely a perverted nutrition. Let us consider what takes place when an irritation is applied to the web of the frog's foot. The blood-vessels are seen first to contract and then to dilate beyond their normal calibre, thus admitting a larger quantity of blood to the part. This is *congestion*. If the irritation was not severe or prolonged, this condition gradually passes off without leaving morbid effects behind. Now in this case we have a direct excitation of the blood-vessels, causing their contraction, and a secondary paralytic dilatation, probably from exhaustion of their irritability.† But the hyperæmia thus produced does not go on to true inflammation, if the vital powers of the part or of the whole body be not otherwise impaired. In healthy animals on which the division of the cervical sympathetic has been practiced, no inflammation results from the increased afflux of blood to the corresponding side of the head and face. But Claude Bernard has found that if animals have been starved for a few days before the operation, and then the vaso-motor nerves,—say those of the plura—are divided, intense inflammation going on even to suppuration is set up in the part.

"On the other hand, let a more intense and prolonged irritation be applied to the web. Here also we shall have the primary contraction and secondary dilatation of the arteries; but further phenomena will also result. There will be increased activity of circulation all about the part, and stagnation of the blood-current within it; and exudation of liquor-sanguinis will take place. This is true *inflammation*. In this case the irritation has affected, not merely the vessels but the tissues of the part itself, which by its abnormal action has perverted nutrition into inflammation.

"Upon one or other of these principles we can explain well-nigh every form of inflammation. The latter mode corresponds to all cases arising from external irritants; from morbid poisons conveyed to the blood to the tissues they affect,—as the endo-carditis from the lactic acid of rheumatism (*Richardson*), and arthritis from the uric-acid of gout, (*Garrod*); and from the effects of drugs, as the gastritis of Arsenic, the nephritis of Cantharis, &c. It is in this manner, also, as we shall see, that sympathetic or reflex inflammations are produced, in this case through an irritation of the tissue nerves. On the other hand, the mode in which Claude Bernard excited pleurisy in animals seems to

* The Nervous System of the Human Body. London, 1861.

† Aconite, Belladonna, and Ergot will produce these phenomena, as well as irritants in general.

give the rationale of the numerous cases of inflammation caused by exposure to cold. If this agent be applied locally, we have first coldness and paleness from contraction of the arteries, and then,—if its application be discontinued—warmth and redness from their secondary dilatation. Here the sequence of phenomena ends. But if the cold has been severe and prolonged—as for instance, in frost-bitten parts—the reaction will go on to inflammation, and even to gangrene. This is on account of the vital depression of the tissues, as in the animals under Bernard condemned to starvation." So again, six persons shall be exposed to cold: two shall escape all injurious consequences, two shall have simple catarrh; but the fifth shall be laid up with pneumonia, and the sixth with nephritis. Now, in all these persons the cold will have produced throughout the frame the contraction and dilatation of the arteries characteristic of its local action. But in the first two cases, the high state of the general health has caused the process to stop here. The third and fourth, not being quite up to the mark, suffered from a sub-acute inflammation of the upper respiratory mucous membrane which is most exposed to the air. The fifth, being in still poorer health had a pneumonia—the seat of the inflammation being again determined by local reasons; while in the sixth the kidneys were already, from local or other causes, in a state of impaired vitality, and thus inflammation is set up in them. This subject will be more fully illustrated when we come to treat of inflammatory diseases.

INFLUENCE OF DRESS IN CAUSING OR PREVENTING DISEASE.

The radiating power of an article of dress becomes an important quality in our selecting or rejecting it for a given purpose. It is well-known that, in general, the worst conductors of heat are the best radiators. Those who have not made the trial would be surprized to learn that a polished metallic vessel, filled with hot water may be made to cool more rapidly by giving it a covering of flannel. This radiating power of flannel, in addition to its bad conducting quality and its power of absorbing moisture from the skin or the atmosphere renders it of all articles of clothing the safest for the invalid. While it holds the heat of the body from passing too rapidly off, it absorbs the extra moisture, with evolution of heat. It is therefore not by "warming and heating at the same time" that it becomes as conservator of health, but by *regulating the temperature.**

The different degrees of inflammability of the silk, wool and flax, the common articles of dress are easily shown by the simplest experiments. If a slip of each, in a woven state, is placed on a support of platinum foil, and held over the flame of a candle, the silk and wool will become

* British and Foreign Medico-Chir. Review for April, 1859.

charred without inflaming, whilst the cotton and linen will take fire and consume with flame; but of the two latter, the cotton more readily and rapidly than the linen. Further, if slips of each be wound round a copper, wire of $\frac{1}{3}$th of an inch in diameter, and used as a taper, the cotton brought to the lighted candle, will inflame readily, and, held perpendicularly will burn to the bottom, leaving only a trace of white ash; the linen will do the same, but more slowly, leaving a similar ash; but not so the woolen and silk,—these hardly break into flame; the flame, when it occurs, lasts only for a moment, and leaves a coal, which burns with difficulty and soon goes out. The application of such results as these to dress, especially to women's dress, who are so much exposed to danger from the taking fire of their clothes, is easily seen.

Fitness of Clothing Materials for Washing.—The only point worthy of notice here relates to wool. The structure of its fibre, not smooth like that of silk, cotton and flax, but having minute processes or offshoots, is subject to entanglement or felting, giving rise to a shrinking of superfices with increase of thickness; but this peculiarity can be almost entirely overcome by the necessary skill in washing and drying.

The chief obstacle to comfort in the use of linen and cotton arises from the use or abuse of starch, which by hardening and stiffening collars and handkerchiefs, it even renders them more cumbrous, and less convenient and agreeable. Its universal use can be seen by testing the different articles with Iodine.

Influence of Color in Dress.—Experiments show that, other circumstances being equal, dark colored bodies become soonest and most heated on exposure to the sun; and the degrees of intensity of heat are variable according to the degrees of intensity of color, the extremes of the scale being black and white. It is also proved that when the sun's rays are absorbed by a dark surface, the heat evolved ceases to be radiant, in a great measure; and then it loses, consequently, its peculiar powers, one of which is that of exciting inflammation as witnessed in sun-burn.

These facts tend to show that the fullest protection in hot climates against the heat of the sun is attained by using two colors at the same time, white in the outer garments exposed to the sun's rays, black in the inner clothing to prevent these rays from acting injuriously on the skin. In the African, with a black skin, there is a strong taste for white clothing; in the Arab horse of purest breed, the hair is white, the skin black; and universally it is observed that though the sun's rays bleach the hair, they equally darken the skin. The child that plays bareheaded in the sun has his hair bleached to a purer white, at the same time that his skin becomes tawny or nut-brown. It has even been proposed to make umbrellas of two colors,—white outside and black beneath. To illustrate this point more fully: five vials of the

same form and size filled with a prepared mixture of weak mucilage and a little nitrate of silver, were placed in the sun's rays: No. 1 was left uncovered; No. 2 was covered with white silk; No. 3 with black silk; No. 4, white silk over black silk; No. 5 with tin foil. Examined after three hours, the fluid in No. 1 had become almost black, its tem perature 75°; No. 2 dark-brown, temperature 68°; No. 3 just per ceptibly colored, temperature 75°; No. 4 just perceptibly colored, tem perature 69°; No. 5 just perceptibly colored (the tin foil had some minute holes, allowing the passage of some rays) its temperature was 71°. The air at the time was 61°; water in a vial, without the addition of mucilage and nitrate of silver, was 64°.

The power of the human constitution to resist the causes of disease is under many circumstances astonishingly great. The utmost extent to which this power may with impunity be tested has perhaps been correctly measured by the trials and privations to which the explorers of the polar regions have been subjected. During the recent efforts of American navigators in search of Sir John Franklin it has been ascer-tained that the power of seamen to endure fatigue may be thus measured: the maximum weight per man proper to be carried is two hundred and twenty pounds. Of this weight three pounds per day will be consumed for food and fuel, thus: one pound of bread, one of meat; the other pound comprise his tea, cocoa, sugar, fuel for cooking and other necessaries. It was found that upon this estimate the men could march ten miles per day for one hundred days, and endure with impunity a temperature of fifty to sixty degrees below the freezing point. (*Dr. Hays.—Narrative*, &c., 1861.)

PATHOLOGY AND THERAPEUTICS OF DIFFERENT PERIODS OF LIFE.

I. Period.—*Infancy.*—From birth to the completion of the first dentition.

II. *Childhood.*—From completion of the first to the completion of the second dentition.

III. *Youth.—Boyhood.—Girlhood.*—From the age of seven or eight years to commencement of puberty.

IV. *Adolescence.*—From commencement of puberty to adult age.

V. *Adult age.*—Virility and mature age.

VI. *Declining age.*

VII. *Old age.*

I. Period.—*Infancy*, (*Infantia*, from privation of speech,) extends from birth to about the end of the second year, or completion of the first dentition. 1. Preceding the sixth or seventh month all the struc-tures are in the course of development. The bones are in process of ossification, the functions acquire strength and activity; the movements

are little under the control of the will; the perceptive powers are imperfect; the attitudes are without variety, the countenance is capable of expressing little more than pleasure or pain to the spectator; though the experienced eye of the physician may read in it the character and probable course of obscure diseases; aided by observations of the motions and positions of the limbs, the tones of the voice; the changes of countenance, the states of the eyes and eyelids, the openness and contraction of the eyebrows, the appearance of the lips, nostrils, mouth, gums, and tongue, he may generally discriminate between the various forms of infantile diseases.

Diet of Infancy.—Nature seems to have furnished the milk of the mother as the only suitable food; the digestive powers of the infant are little suited to digest anything else; and, although substitutes for it have to be in many cases tried, not more than one in six or seven live to pass through childhood. (*See Infancy.—Index.*)

Peculiarities of Infantile Diseases.—The infantile system is extremely susceptible of external impressions, which very often excite disease in the lungs, suspend the action of the skin, or derange the digestive organs. Having passed the first stage of its existence in a condition of uniform temperature, the infant can but slowly accommodate itself to the vicissitudes of cold and heat in the external world; and the surface of the body and the organs of respiration require the most careful protection from atmospherical vicissitudes. The digestive mucous surface is equally susceptible to the effects of all unsuitable kinds of food, and easily irritated or inflamed; but nature has provided for a redress of many evils by a copious secretion of mucus from the internal surface of the stomach and bowels to shield that delicate surface from substances too harsh, or to lubricate the way for their speedy expulsion.

The skin is also peculiarly susceptible to the effects of irritants and stimuli in infancy; and the intimate sympathy between it and the digestive canal gives nature the means of relieving the internal organs from many serious invasions of disease by throwing an exanthematous eruption on the surface. The brain at the same epoch of life is in process of development; and during the first months of life vascular action is rapid in perfecting the organization of the organ. An extra quantity of blood is sent to the brain, and various external causes conspire to excite its easily disturbed circulation; its substance or its membranes are, therefore, frequently the seat of congestions, inflammations, or effusions into the cavities between the membranes.

The infantile organism is also frequently injured by medicines or other influences which affect the nervous system. Opium, which is most commonly given to children to quiet their complaints excited by pain of any kind, has the most deleterious influence on the brain, in-

creasing its vascular action, and afterwards favoring congestion. Drastic cathartics are also often used, and are always injurious. In general, the clothing should be soft and warm; the head should be exposed to the mild and equable temperature of a well-ventilated room; and the skin, generally, subjected to frequent ablutions with water, warm at first, but as the strength of the infant increases, the water may be gradually diminished in temperature, remembering always that the sensation of cold can not be endured for more than one or two minutes by a child without endangering the vital functions, producing injurious depression, checking the healthy action of the skin, causing catarrh or other disease.

The period of the first dentition is attended by all the peculiarities of infantile health and to these are now added the dangers of *teething*, *weaning;* and the development of the powers of speech and voluntary locomotion, the farther manifestation of instinctive desires and emotions.

Teething is not necessarily a cause of serious disordered health, except in children originally feeble, imbued with hereditary or psoric disease, and weakened by bad food and impure air. In such cases it frequently excites the most dangerous maladies. In the early stages of the process, itching and irritation of the gums become a source of excitement which extends to the salivary glands as well as pancreas, producing a flow of viscid saliva. The itching alone becomes a source of distress, and the child presses between them whatever it may find within its reach. The nervous system generally becomes excited by the local irritation, fever and deranged digestion follow; and sometimes they excite inflammation of the brain or of the digestive mucous surface. The irritation extends the whole length of the intestinal tube; food is imperfectly digested, and becomes, with the acrid secretions a new source of diarrhœa, dysentery or sympathetic convulsions. In the general febrile condition the lungs become involved also; and we frequently find inflammatory irritation of the digestive and respiratory surfaces associated in the same case; and it is only by judicious treatment that the brain or its membranes can be saved from participating in the same morbid action. (*See Dentition.*)

Weaning.—As soon as a few teeth have made their way through the gums the infant begins to be capable of subsisting on other food besides the milk of the mother. As early as the ninth month both mother and child will generally be benefitted by separating them entirely, or at least suspending the process of *lactation* which should never be excluded beyond the fifteenth month. As this period approaches the child should be gradually accustomed to take other food, increasing the quantity and the frequency of taking it. Animal diet in some form will be necessary after the mother's milk has been cut off. It should at first be in small quantity, of pure quality, easily digested, and increased

in proportion as the age of the child advances: it should be combined with or alternated with pure, bland and nutritious materials from the vegetable kingdom, varying in quality as well as quantity, and given at intervals varying with the advancing age and growth.

During this whole period of lactation and dentition the infant continues liable to all the diseases of infantile life, with the addition of those that arise from the irritation of the teeth, and defects in the milk dependent on the health of the mother or nurse. At this age also infectious and exanthematous disorders are common; the mucous surfaces, the lymphatic glands of the abdomen and thorax are liable to disease; worms, and changes in the infant's food, cause depraved or imperfect digestion and assimilation and conspire to originate some of the many diseases of infancy; among them are aphthæ, rickets, tubercles, marasmus, tabes mesenterica, infantile remittent fever, scrofula, and numerous cutaneous eruptions, all of which will be treated of under their respective heads.

Of the general treatment of the diseases of infancy it may here be said that the greatest care is always required in distinguishing the real source of the febrile irritation which is usually present. The head should always be guarded from the vascular excitement to which it is liable. The gums should always be examined; the child should be permitted to relieve the itching by biting on a ring of ivory, hard gum-elastic, or, still better, a gold ring. As soon as the gums are much swollen they should be relieved by lancing them. Other remedies must be employed with care, according to the indications pointed out under the separate diseases.

II. *Period. Childhood.*—This extends from the completion of the first to the completion of the second dentition or to the eighth year. During this period the different textures and organs are rapidly developed, their functions are more perfect, the intellectual and moral faculties are expanded. The different textures become more solid, acquiring firmness, elasticity, and strength. The powers of resisting external influences have increased, but disease when excited is more disposed to a *sthenic* inflammatory character, effusing coagulable lymph, particularly on the serous surfaces. There is great susceptibility to infectious diseases, to pneumonia, bronchitis, inflammations of the brain, or membranes, stomach or other abdominal visera; glandular obstructions, chorea, verminous diseases, epilepsy, angina, croup, &c.

At this period of life more active treatment can be borne than would be appropriate in younger children. There is a tendency to accumulations in the bowels which furnish a nidus for the generation of worms, and produce irritation of the digestive mucous surface, as well as of the nerves that proceed from it. These accumulations should be removed, or more wisely, prevented. Wholesome nourishment, active

exercise in the fresh air, ventilation of school-rooms and sleeping apartments are of the highest importance. The mental faculties should rather be exercised in ways of amusement and the gratification of curiosity than exerted in close attention to book-studies; but the moral emotions, particularly those connected with temper and disposition should be moderated, restrained, or judiciously directed. Children should not be allowed to sleep with persons in bad health or advanced age. (*Copland's Dict.* Vol. 1, p. 49.)

III. *Period. Youth.—Boyhood.—Girlhood.*—From the age of seven or eight years to the commencement of puberty. At this period the structures of the body and the powers of the mind are undergoing progressive improvement. There is in constitutions free from scrofulous or hereditary taint, a sthenic diathesis, a predominance of the sanguineo-nervous temperament; greater liability to idiopathic continued fever, with scrofulous enlargements and inflammations, affections of the lymphatic glands, with various nervous affections, as epilepsy, convulsions, chorea; also cutaneous eruptions; inflammations of the throat and air passages; tubercles of the lungs or alimentary canal, curvatures of the spine, intestinal worms, &c. The nervous system is highly impressible to physical and moral impressions; inflammatory action is strongly disposed to give rise to new formations; and in the advanced stages of eruptive or infectious fevers, inflammation is peculiarly liable to terminate in serous or sero-albuminous effusions.

In the diseases of this period the same leading considerations apply as in those of earlier childhood. Active exercise in a pure and wholesome air is indispensable to full growth and permanent health. In cities too many persons occupy the same room; the young and the old are crowded into small and unventilated apartments; and academies and boarding-schools generally admit the same prolific source of broken constitutions within their walls. The mental powers are now capable of a further degree of improvement and growth; and habits of life should be formed and encouraged which may promote future health, happiness and usefulness.

IV. *Period. Adolescence.*—From the commencement of puberty to adult age, or to about the twentieth year in females and the twenty-fourth in males. The age at which puberty appears varies from twelve or fourteen in females to sixteen; and from fourteen or sixteen in males. In northern climates it is later than in southern in both sexes; and in sanguine and plethoric constitutions puberty is hastened by luxurious habits, sleeping in crowded apartments, lying on feathers, indolence, the extra-excitements of modern society, the associations of boarding-school-life, &c.

At this epoch in human life the mental and physical distinction which exists between the sexes are developed to their fullest extent;

and with these organs and faculties the whole body and mind expand to their most perfect condition, except in those mental powers which grow and strengthen by the struggles and experiences of life. The organs of respiration reach now their full growth, the muscles acquire their size and due proportions. The spine, and the whole nervous system become completely organized; intellectual power displays its full supremacy over the physical and brute creation; the observing faculties are actively employed in observations of the varied and wonderful phenomena of external physical nature; the treasured wisdom of past ages is eagerly grasped by the mind of the aspiring student; and the reasoning powers, gathering new strength from every trial, trace effects back to their remote causes, generalize and reduce to clear principles the facts already known, and advance through the known and the probable to the unknown, the possible, and finally to the wonderful, the certain, *the true.*

PERIODICITY IN THE ACTIONS OF THE ANIMAL ECONOMY.

The different periods of the day are marked by certain fluctuations in the vital movements of the animal economy, which have long received a share of the attention of scientific men. The following general facts on the subjects seem to be generally acknowledged. Vitality expands during the day and concentrates during the night. 1. The morning is the period corresponding to youth and spring, to growth and reproduction. There is a higher manifestation of external life. Man in health feels renovated and re-invigorated by rest. As the day advances our external senses become more acute, the memory and ideas more precise. Those desires manifest themselves that are the evidences of strength, of exuberant health. Spontaneous seminal emissions take place in the morning or in the second sleep. The greater number of long-lived persons have been early risers.

The *internal* organs, especially in persons in whom the functions are not nicely balanced, are more feeble in the morning. We have gastrodynia, anorexia, colics, nausea, as in pregnant women; bitter taste in the mouth, &c., denoting debility of the viscera; evacuations are more frequent, as in diarrhœas, cholera, salivary discharges, and expectorations.

Second Period. From 9 *A. M. to* 3 *P. M.*—Excitement is at its highest, and diseases of excitement exacerbate. This extreme expanse of vitality gives the highest thoughts, and the fiercest passions; genius shines in all her splendor; the sentiments are developed in their fullest energy. The chylopoetic viscera and hepatic system, are agitated; bilious diseases are increased; stimulants are more hurtful; the mucous membrane of the stomach is in an irritable state. In hot climates

a short sleep is required, hence comes the *siesta* of the Spaniards. 'Tis now that

> "Amid his subjects safe,
> Slumbers the monarch swain."

Third Period. From 3 *to* 9 *P. M.*—At this time too large a meal may not digest well, as the vital powers are so much drawn to the surface. The various diseases of excitement have raised the pulse from ten to twelve beats. (*Swancke, Hæmatologie.* p. 96.) The limbs swell; the menstrual and hæmorrhoidal flow commonly begin, from being long in the erect position, or from venous plethora. The laborers of many countries have made their principal meal at sunset. The old Romans and Chinese did so. This is the hour which calls for amusements to dissipate the ideas of death, which arise in the mind when the body is exhausted. Melancholy is aggravated. Persons who sleep late become nervous and serious.

Fourth Period. From 9 *P. M. to* 3 *A. M.—Influence of Night.* Horizontal position increases the blood in the brain. The diseases from cold, dampness, and debility increase, almost all spasms cease.

In natural sleep the pulse is slower, and there is a general remission in the animal functions. Towards 2 or 3 A. M. the pulse rises; a peculiar shock is felt by some gouty, hypochondriacal or asthmatic subjects; even epilepsy and various critical paroxysms occur at this period. The second sleep is lighter from the coolness of the air. At this time are felt other irregular actions in the diurnal circle, as the shocks felt by rheumatics, headaches, pain in old luxations, announcing almost every atmospheric change, as rain, hailstorms or dry weather. The symptoms affect differently according to the time of life. In infancy the head is the weakest point, as the throat and chest are most vulnerable in youth, the stomach and liver in the adult, the bowels, urinary organs and hæmorrhoidal vessels in old age.

The day calls into activity the life of relation; the night increases the force of the organic, the nutritive life; cutaneous transpiration is double what it was in the day. (*Bell on Periodicity.*) Great sleepers, says Darwin, "become fat and fair skinned." Sleep is but the result of the inaction of all the apparatus which compose the machinery of the external functions; and the human body could now be excited to many different actions at the same time, with benefit to all. The soft whisperings of ambition may prompt the aspiring student to encroach upon the hours allotted to sleep, but it will always be done at the expense of indigestion, irregular circulation and respiration, and other departures from true health. Respiration and circulation are performed with energy in proportion to the numbers of organs in action; thus long sleep chills the body, diminishes the circulation, and the fre-

quency of the pulse. When digestion is completed, the increase of fluids thrown into the circulation, excites the heart and lungs to greater action; but if digestion and secretion be retarded they react by sympathy on the heart and lungs and precipitate their movements. If we go to sleep with a tranquil condition of the system generally, and digestion has been imperfect, on waking in a few hours we find the heart beating strongly, the chest full, and the skin hot. Respiration and circulation are performed more slowly in the first part of the night. About two or three hours after midnight the external senses begin to awake and these two important functions are aroused also. Hence parturition generally takes place in the night and the morning.

Influence of the Diurnal Revolution on Disease. Morning.—Most diseases *remit* in the morning. In mucous and intermittent fevers, persons who had been in agony during the night have strength enough in the morning to go about. Insensible perspiration is more abundant, hence dropsies and œdemas are diminished. Hectic fever ceases at this time only. There is remission in spasmodic diseases, and phlegmasias; asthenic diseases are milder.

But this same morning amelioration with increased general vigor becomes the cause of the invasion of several sthenic diseases. Angina, vernal agues, and simple synocha increase the first hours of the day. Ophthalmia is more acute; hæmoptysis in young persons more generally commences. The sweat of pthisical patients, hysteric swellings, pyrosis, and the irritation of worms are increased; in typhus the morning exacerbation is more violent than that of the evening. Wounds, ulcers, gangrene, carcinoma and phlegmons are increased in intensity.

Influence of Mid-day.—Solar mania only comes on in the heat of the day and disappears at night. One woman became deranged precisely at one P. M. The phrenitic become violent towards two or three P. M. with chills and remarkable exacerbations. An acute arthritic cephalalgia came on daily at noon. (*Sauvages.*) The eruption of distinct small-pox commences at this hour. Coma, vigil, typhomania, the violent delirium of complicated intermittents of warm climates causing tetanus, trismus, erysipelas, sun-stroke, are all more severe during the heat of the day.

Influence of Evening.—All quartans come on in the afternoon; quotidians at early morning, and tertians toward mid-day. All catarrhal or heavy phlegmonic affections, inflammations of the organs of animal life or of the external relations are aggravated in the evening. Sick headaches are increased, comatose affections and apoplexies strike in the evening or the night; lethargies, palsies, faintings, sudden attacks of hypochondriasis and hysteria, slow nervous fever, the oppression from dropsy, articular and rheumatic pains are aggravated in the evening and night.

An intermitting febrile hemiplegia commenced at four P. M., ceased at six A. M. and was cured by Bark; and a periodical cough beginning at seven P. M. was broken by Opium. Suppurative fever comes on with the wounded, restlessness and jactitation of nervous lesions are especially prominent at this period. In consumption with Vomica there is an insupportable anxiety at this time of the day. Itch, herpes and chilblains are worse in the evening. Hectic fever is worse then, though the patient sleeps during the day. Diseases of the throat when inflammatory are worse in the evening.

Diseases of the spleen, mesentery, obstructions of the viscera, hæmorrhoids, gout, dysentery, and affections of the urinary organs in the aged are aggravated in the evening. (*Bell on Periodicity.*)

Influence of Night.—Sthenic diseases remit in the night, others that are milder during the day, as furious phlegmasias, catarrhs, croups, lymphatic disease, dropsy, cachexia, asthenic diseases increase in the night. But the living body is in this respect like a living clock wound up by nature and kept going by the rapid movements of our planet and the sun. A countess at Madrid lost her voice at sunset and only recovered it at early dawn. This paralysis of the recurrent nerve of the eighth pair ceased when she arrived at Naples, but returned when she reached Rome. (*Humboldt.*) Other cases of nocturnal paralysis, delirium and vertigo, beginning at the same hour have been noticed. A tavern-keeper at Tarentum was rational during the day and became insane every evening as night approached. (*Aristotle.*) Persons affected with hemeralopia can see during the day, but lose their sight in the evening, all objects appearing as if covered with an ash-colored veil. (*Scarpa.*) Those who have nyctalopia can see little or nothing during the day, but can see quite well at night with small light. Some headaches begin at night, others cease at that time. A woman became insensible at sunset, and recovered her powers in the morning. Incubus or night-mare comes on during the first sleep of night.

Toward two or three in the morning when the pulse has risen, actions of another sort begin. Sydenham was surprised that gout, and Floyer that asthma should always begin at this time. Dropsical spasms, violent palpitations which wake the alarmed hypochondriac, or frightful dreams are then experienced. The somnambulist rises and moves about. Aged persons and others in slow fever are troubled with restless wakefulness. After this state of spasm there is a condition of excitation; the consumptive sweats and hectic increases; aphthæ and miliary eruptions of children effloresce, critical sweats in mucous fevers, different eruptions, as tinea and others begin to appear. The dyspeptic wakes at midnight, and finds his tongue moist; at early morning his mouth is parched, rough and loaded. In 1691 there was an epidemic in which the sick after sunset were in a state of extreme depression

and almost dying during the night. In 1743 an epidemic prevailed in the English Army in Flanders in which there was entire remission during the day, and the pulse little accelerated; but, on the approach of night, without any chill, the fever rose suddenly and the patient was delirious; in the morning it had all passed away, and there appeared no danger during the day.

Influence of the Diurnal Revolution on Mortality.—The greatest number of deaths happen at early morning or after sunrise; more die during the day than the night by one sixth. In the evening the greatest mortality is upon the approach of night.

Comparative mortality of the present with former times. According to the Registrar General's Report (England).

For every 100,000 persons living there were

	in 1679	in 1859
deaths by small-pox	357,	42.
" " fever	749,	59.
" " childbirth	86,	17.
" " dysentery	753,	8.
" " cholera	130,	7.
" " scurvy and purpura	142,	2.
" " syphilis	21,	12.
" " dropsy	298,	26.
" " consumption	1079,	611.
" " diseases of digestion	146,	95.
" " children by convulsions	1175,	136.

The statistics make the average duration of human life in England 42 years; in France 40; Germany 37; Holland 38; Naples 36; showing an increase for each country of about 6 years since 1679.

M. Flourens asserts that "*the duration of life* is in proportion to the duration of growth; the duration of growth to that of gestation; and the duration of gestation to the height of the animal." He further declares that his researches show that: "the duration of growth is limited by the union of the bones with their epiphyses, and that in all animals which he has subjected to his observation, the duration of life is five times that of their growth. This union of the epiphyses takes place in man at twenty years, and hence he concludes that the normal duration of life must be one hundred years. Nature then demands that the average duration of human life shall be extended up to this point."

The comparative muscular power of man at different ages has been approximated by M. Quetelet in "experiments" on this subject. His conclusions drawn from experiments on sea-faring men are:

1. Muscular force increases up to forty years.

2. The strength of back, or renal force begins to diminish at an earlier age than muscular force.

3. The renal force of a seaman at fifty is no more than that of a novice of sixteen years old.

4. Those *little advanced* in age, and those *fully advanced*, are equal to each other in the development of muscular force.

5. Renal force, or strength of back, doubles between the age of eleven and fifteen years, triples between fifteen and forty; and after that age decreases. Manual force in its augmentation and decrease follows an analogous course.

Food is taken into the stomach for the purpose of supplying the body with material to rebuild the physical structures which are in the perpetual process of dilapidation through the *wear and tear* of life. Its value as food is estimated first by *the time it requires* for its conversion into assimilable material, 2. the *quantity of blood* it will make, and, 3. the *quality* or specific nature of the blood after it is formed.

1. *Digestibility of Food.*—Authors on this point have generally considered *solution* as the *whole* of the process of *digestion*. The following general principles are derived by Moleschott from chemical reasoning:

"As all the secretions concerned in digestion contain a considerable proportion of water, *the simple alimentary principles must, as a general rule, be the more digestible, the more soluble they are in water*. The chlorides and alkaline salts pass more easily into blood than earths; and the organic acids than dextrin, sugar, starch, cellulose, or fat; soluble albumen or legumin easier than the coagulated vegetable albumen or fibrin." It is also laid down as a further law, "*that alimentary principles are digestible in the ratio of the nearness of the relation in which they stand to the last link of the series of allied forms.* (*Handbuch der Diätetik.*)

The influence of *cookery* on food is of great importance in promoting its digestibility. In the common process of *roasting* meat, the outer layer of albumen becomes coagulated, and thus it prevents the exit of that which is still fluid within. The cellulose tissue, which unites the muscular fibres, is converted by gradual heat into gelatine, and is retained in the centre of the mass in a form ready for solution. At the same time the fibrin and albumen take on a form more highly oxydized and more capable of solution in water. The fat also is melted out of the fat-cells, and is directly combined with the alkali from the serum of the blood. (Mülder.) Thus the external layer of albumen forms a sort of box which keeps together the important parts of the aliment till they have undergone the desired modification by slow heat. Rapid boiling may produce the external solidification of the albumen, but it also dissapates the acetic acid, hardens the interior albumen and muscular fibre, and renders them less digestible.

PHYSIOLOGICAL AND CHEMICAL CLASSIFICATION OF NUTRITIVE SUBSTANCES.

Substances employed as Food for the Support of the Human Organism,
TO BE INCORPORATED INTO THE TISSUES AND ORGANIZABLE FLUIDS,
Are divided into,

			COMPOSITION.
I. **Direct Nutrients,** Consisting of Albuminoid, proteinaceous, Nitrogenized or histogenetic compounds of Carbon, Oxygen, Hydrogen, and Nitrogen, with a minute trace of Sulphur and Phosphorus. They exist in two forms: 1. Soluble. 2. Insoluble.		1. *Albumen.*—Its use is to minister to the textural repairs of the organism. It enters into the cell wall or periplast, which with its nuclei and nucleoli, represents an organ employed both in structural repair and reproduction. From the blood plasma it constructs and reproduces all the minute cell germs revealed by microscopic anatomy,	C_{216} N_{169} N_{27} S_2 O_{68}
		2. *Fibrin.*—It perhaps owes its origin to albumen. In exudations it forms the nidus for development of tissues and adventitious growths,	[Protein $C_{40}H_{32}$ N_5O_{12}] C_{216} H_{169} N_{27} S_2 O_{68}
		3. *Gelatine.*—Not assimilable, and is thrown off in the urine,	C_{13} H_{10} N_2 O_5
		4. *Casein.*—This only appears in the female after puberty,	C_{288} H_{288} N_{36} S_2 O_{90}
		5. *Osteine.*—United with Carb. lime in the bones and white fibrous tissue. It replaces cartilagine as bone replaces cartilage.	
		6. Elasticine, globuline, crystalline, Musculine. In muscular tissue,—Contractile, soluble in water and Mur.-acid. Osterine, Cartilagine, Keratine. Mucosine, Melanine, Urosacine. Pepsine. Hæmatine. Biliverdine. Pancreatine.	
II. **Indirect Nutrients.** Non-Nitrogenized or Proximate, Immediate principles. In a crude state they are capable of becoming part of the typical fluids or solids. When triturated or dynamyzed they become capable of acting on the organism as remedies.	*A.* Those whose chemical identity is preserved in the organism. We find them in the bones, the cartilage, the ligaments, and in the blood.	1. *Water* constitutes from 75 to 90 per-cent of the body. It is fixed in the composition of Osteine, Muscaline, &c., and is in a gaseous state in the halitus from the lungs	H O
		2. *Chloride of Sodium.* Found in the blood, serum, and all the tissues, except the enamel. It holds the albumen in solution, and regulates endesmosis and exosmosis.	Na Cl
		3. *Chloride of Potash.* Found in the blood-cell.	
		4. *Phos. Lime.* With Osteine and water it forms more than half the bone structure. Phosphates of Magnesia, soda, and potash.	
		Carbonate of Calcium gives firmness and solidity to the bones. An important remedy,	Ca O CO_2
		Carb. Potassium,	K O CO_2 + H O CO_2
		" Sodium,	Na O CO_2 + 10Aq.
		" Magnesium,	Mg O CO_2
	B. Those which in the body undergo chemical transformation. They are non-Nitrogenized, consisting of Carbon, Oxygen, Hydrogen.	*Starch.* Changed into sugar by the action of saliva and pancreatic juice,	C_{12} H_{10} O_{10}
		Sugar. Changed into lactic acid which dissolves phosphate of lime. Found also in the liver; and it undergoes the transformation in the blood called *catalysis.* Glucose (grape sugar),	C_{12} H_{11} O_{11} C_{12} H_{14} O_{14}
		Fat or Oil, including Oleine, Margarine, stearine, cholesterine, (bile-fat,) serolin. By oxidation they contribute to animal heat, facilitate absorption and assimilation of food, and upbuilding of the bodily textures. In the body they exist as adipose tissue enclosed in cells, in chemical combination with other elements, and as oil-drops or fat-globules entering into most of the solids. Glycerine or the sweet principle of Oils,	C_6 H_7 O_5 + Aq.
	C. Those which act by preventing an excessive tissue-waste or metamorphosis.	*Alcohol.* Not assimilable in the body. Injurious when food is sufficient. When food is deficient, or of improper quality, Alcohol may lessen the too rapid waste of tissue material.	C_4 H_6 O_2
		Tea.	
		Coffee,	Caffeine. C_{16} N_4 H_{16} O

ARRANGEMENT AND CLASSIFICATION OF DISEASES.

Diseases may be arranged under two grand divisions: acute and chronic.

The first division, or *acute diseases*, consist of rapid operations of the vital power in conditions more or less differing from those of the same organs in health. They terminate in a shorter or longer period of time, but are always of moderate duration.

2. *Chronic Diseases* are less distinct, often almost imperceptible on their first appearance. They "seize upon the organism, each according to its own peculiar manner, and remove it by degrees so far from the state of health, that the automatic vital energy which is destined to support the latter, and which is called the vital power, can not resist but in a useless and imperfect manner; and not being potent enough to extinguish them herself, she is compelled to allow them to grow until, in the end, they destroy the organism." These slowly-operating diseases are usually dependent on some constitutional infection or miasm.

Acute disease are distinguished under two heads.

1. *Sporadic.*—They attack single individuals, and arise from some pernicious cause to which the patient has been exposed: Eating or drinking too much or too little, violent impressions of physical agents, as cold, heat, fatigue, or mental excitement. But there is also an aggravation of the latent psoric affection, which is commonly only lulled by the treatment which is called successful.

2. *Epidemics.*—These begin to attack individuals here and there (*sporadically*) under some meteoric or telluric influence of whose action but few persons are at the time susceptible. But the true epidemics attack many individuals at the same time; the cases begin from similar causes, exhibit analogous symptoms; and the diseases usually become *contagious* when they act upon close and compact masses of human beings. These different maladies are of a distinct nature; the individual cases of each disease being all of the same origin; the patients pass through the same conditions, run an acute course and terminate speedily in recovery or death.

The whole number of deviations from a state of perfect health can scarcely be estimated; and it may not be possible to make any systematic arrangement of them into separate diseases specifically distinguish-

able from each other, as individual specimens of *Natural History* have been classified and described. But inasmuch as no subject of scientific inquiry can be successfully prosecuted without methodical arrangement of its most important facts and principles according to *some* system, we shall proceed to distribute the principal branches of the great subject of Practical Medicine into a series of *natural groups* of diseased manifestations, without claiming that any classification of diseases can ever be devised that shall be free from defects, or that a more perfect arrangement could in any considerable degree facilitate the successful application of remedies in the cure of those diseases. It is not in this day believed, that the proper treatment of a given case can ever be determined from its systematic name or position in the nosological catalogue of diseases; it is not even pretended that truly correct or expressive names can ever be given to each of the vast assemblages of symptoms that we meet with in individual cases of disease. But we still find that the purposes of study and conveniences for reference to special subjects of research are facilitated by some *arrangement*, (which *may not* be the most symmetrical that human genius might devise,) and by giving *names* to those groups of symptoms which are most likely to be found together. By the name of a disease in this work we do not mean a specific entity which like a bird or a plant will always be found to present the same precise characteristics. The name is simply meant to announce a *group of phenomena*, which are so generally found in company that they may be supposed to have some relationship with each other, and which, taken together, present a *picture* easily recognized.

"In such classifications," says Lord Brougham, "we should be guided by views of convenience rather than by any desire to attain perfect symmetry; and that arrangement may be best suited to a particular purpose, which plants the same things in one order, and separates them and unites them in one way, when an arrangement which should dispose those things differently might be preferable, if we had another purpose to serve."

Our classification of diseased conditions will be derived from that classification of functions in a state of health, which is most obvious to the senses as exhibited in normal human physiology. We prefer this arrangement, because it is already familiar to every student of physiology, and because it presents a sufficient range for subdivisions.

Class I. *Diseases of the Digestive Function.*—Derangement of organs employed in receiving, preparing and appropriating food for physical support of the body.

Class II. *Diseases of the Respiratory Function.*—Derangement of the apparatus employed in exposing the blood to the influence of the atmospheric air.

CLASS III. *Diseases of the Circulatory Function.*—Disordered action of the apparatus employed in the mechanical circulation of the blood throughout the body.

CLASS IV. *Diseases of the Nervous Function.*—Disordered action of the apparatus for regulating the movements and feelings of the body.

CLASS V. *Diseases of the Reproductive Function.*—Deranged action of the apparatus designed for the continuance of the species.

CLASS VI. *Diseases of the Secernent Function.*—Deranged action of the organs designed to carry off impurities and to remove superfluous and effete materials.

CLASS I.

DISEASES OF THE DIGESTIVE FUNCTION.

OUTLINE OF THE PROCESS OF DIGESTION.

In all animals we find some organ that answers the purpose of a STOMACH, which seems the most important and indispensable of all the animal structures; and there are some of the lower animals that consist of scarcely anything else. "A stomach," says Jones in his Natural History, "is absolutely all that is required. A stomach, provided it can live, is an animal." In man we see the most perfect and complicated arrangement of organs for the accomplishment of the process of digestion. The apparatus by which the materials for the nutrition of the body are furnished in a form available for the purposes of maintaining the life of the individual provides for: 1. The *taking* of food; 2. *Mastication* or mechanical division of it, including its mixture with the saliva; 3. *Deglutition* or its conveyance to the stomach; 4. *Chymification* or the solution and reduction of the food preparatory to its being brought into a condition favorable for absorption; 5. *Chylification* or the separation of the portions of the food which contain the chief nutritive principles in a condensed form, and freed from the coarser and useless parts which are left in the lower portion of the intestinal tube to be expelled from the system.

1. The food, consisting of animal, vegetable or mineral substances, is presented to the lips in which the powers of sensation are so perfect that the quality of the food is perceived before it has touched the teeth.

2. *Mastication.* The *incisor*, or front teeth begin by cutting up the food at the same time that the finer parts pass to the tongue, while the harder pass to the molar teeth at the sides of the tongue to be ground by their broader surfaces. As the teeth differ in size and in position, their power and mode of action are different; and the juices pressed

out at different parts of the mouth are applied to the surface which is fitted by nature to receive and transmit to the brain the impression made upon the sense of taste at the same time that the nutrient juices are met and blended with the living fluid called the saliva. This fluid had begun to flow from the salivary glands before the food was taken into the mouth, and now, the movements of mastication, the pleasant taste and the suctional power of the tongue, continue to draw the saliva from the glands on every side, and to blend it with the food which it assists in dissolving, and thus fitting it for more perfect digestion in the stomach.

The saliva secreted by the different glands differs widely in its characters and quantity; that of the parotid is the more watery and abundant, and is secreted principally during the act of mastication; that of the submaxillary is more scanty, but more viscous, and is more plentifully secreted during excitation of the nerves of taste; that of the sublingual and buccal glands being the most scanty, but excessively glutinous, facilitating the act of deglutition; the viscous element is called ptyalin. The reaction of the saliva is very alkaline. The secretion is not constantly the same in quantity, but is intermittent, depending on the presence or absence of its exciting causes. It is increased by dry and pungent foods, lessened in amount by moist and sapid food.

The saliva exerts no influence on albuminoid and fatty matters; but it has long been known that it possesses the property of converting starch into sugar; this has been attributed to a certain special substance contained in it called salivary diastase. It is observed that this property is more conspicuous in morbid saliva, as that of salivation; complete putrefaction destroys it: The presence of acids also arrests decomposition and prevents the further action of saliva on the starch. The sole action of insalivation on alimentary matters is to convert starch into dextrine and glucose or grape sugar.*

From the pleasing and instantaneous effect produced by the sapid bodies on the tongue it is believed, though it can not be proved, that the most refined elements of savory food are in some way transmitted to the sensorium through the tongue, or by absorption from the sides and pores of the variously formed prominences of the papillæ of the tongue. It is known that the bodily and nervous powers are sometimes rapidly recruited by the taking of food which there has been no time to digest, and by wine or other stimulants which have been only held in the mouth. If the finer essences of the food are absorbed before the mass leaves the mouth, then the stomach only receives it to complete a process already commenced. The higher attenuations of homœopathic medicines often produce their most striking effects when applied to the tongue in quantities too minute to be swallowed. Like the

* See Bernard. Leçons de Physiol. Vol. II., 1856.

"*Quintessences*" of the old alchemists they produce their effects on a principle which is above the comprehension of the materialist.

3. The act of swallowing is effected by the rolling of the masticated food back into the pharynx, or the chamber between the mouth and the œsophagus. (*Wilkinson.*) The pharynx contracts on the soft mass and forces it into the œsophagus, which gives way to receive the food, and then contracting behind it, forces it onwards to the stomach. The passage for the food, having been lubricated by the saliva, and moistened by all the fluids taken into the mouth, the transmission to the entrance of the stomach in easily effected; and the action appears to be voluntary, though all the parts of the process of deglutition are completely beyond the voluntary control of the will.

4. *Chymification.*—The stomach is a vaulted chamber consisting of three walls or coats which extend throughout the whole of the intestinal tube. Its inner wall or coat is made up of a series of small compartments placed side by side, and which open into its cavity. They differ in construction in different parts, and are pervaded by the most delicate nerves and blood-vessels. The inside of the stomach consists of a kind of honey-comb surface, crowded with little mouths, which, when the organ is aroused are red and turgid with blood. At the same time also, numerous little points or papillæ on the surface of the membrane are awakened to action, and bring forth a dissolvent liquid called the gastric juice. These honey-comb structures are the inferior or substomachs, which form the natural components of the organ.

The muscular coat of the stomach forms its middle wall. Its fibres run "circularly, spirally, and vertically;" and, by their systematic and various contractions, they agitate the food.

Process by which Chymification is effected.—The earliest theory of the process of digestion, given by Hippocrates was, that the food was reduced to a proper state for the support of the body by *putrefaction.* Galen thought the effect was brought about by heat; Van Helmont thought it the result of the vital energy of the soul which resided in the stomach. Boerhaave attributed much to the grinding action performed by that organ. Pringle and MacBride considered the process of digestion to be one of FERMENTATION. At last Cheselden happened to conjecture that the food was dissolved "by some unknown menstruum." This hypothesis guided Spallanzini and Reaumer who first proved the solvent power of the gastric fluid. The present theory of digestion was more distinctly set forth by Dr. Beaumont in 1834, and has been variously modified by other observers.

A young man named St. Martin was accidentally wounded by the discharge of a gun in 1822. The charge of powder and duck-shot entered his left side, passed obliquely forward and inward, "blowing off integuments of the size of a man's hand, fracturing and carrying away

the anterior half of the sixth rib, fracturing the fifth, lacerating the lower portion of the left lobe of the lungs, the diaphragm, and perforating the stomach." After some weeks of fever, inflammation, and suppuration the sides of the protruded portions of the stomach formed adhesions to the pleura costalis, and, the external wound being still unclosed, an aperture remained through which the communication could at any time be had with the cavity of the stomach. After the lapse of one year from the accident the aperture in the stomach remained two-and-a-half inches in circumference, and was ordinarily covered by a compress and bandage. After a few months more, a fold or doubling of the coats of the stomach formed a covering for closing the aperture, preventing the escape of the contents of the stomach, though it could be easily depressed with the finger. Three years after the injury was received Dr. Beaumont of the U. S. Army commenced a series of experiments on the process of digestion and the nature of the gastric fluid. They were continued with some intermissions up to 1833. They have since been resumed by Prof. Sewall, and the results of further experiments are given in the Amer. Jour. of Med. Sciences, 1857.

As soon as the food swallowed enters the stomach it becomes mixed with the gastric juice, a fluid strongly acid from the presence of lactic, or perhaps hydrochloric acid, and containing the animal principle, pepsine.

The Gastric Fluid.—Its Properties, Origin, and Mode of Action. The pure gastric fluid when taken directly from the stomach of a healthy adult, and mixed only with the portion of mucus of the stomach, with which it is almost always combined, is a clear transparent fluid, inodorous, a little saltish, and very perceptibly acid. Its taste when applied to the tongue, is similar to thin mucilaginous water, slightly acidulated with muriatic acid. It is readily diffusible in wine, water, or alcohol; it effervesces slightly with alkalis, and is an effectual solvent of all substances proper for food. It coagulates albumen, is powerfully antiseptic; checking the putrefaction of meat, and effectually restoring to healthy action old fœtid sores and foul ulcerating surfaces, when externally applied. (*Beaumont.*)

The mucus mixed with the gastric juice may be separated from it by filtering the mixture through fine linen or cambric; the mucus and frothy part of the saliva, when retained, the mucus gives the fluid a ropiness which may gradually subside to the bottom in loose flocculi. Saliva imparts to the gastric juice an azure tinge and frothy appearance; and, when in large proportion, renders it fœtid in a few days; whereas the pure gastric juice will keep unchanged for many months. Professor Silliman says it may be kept for years.

The secretion of the gastric fluid is affected through what is called a *reflex* action, which is ordinarily excited by the impression of food upon

the nerves of the stomach. The nervous influence thus excited causes the sudden and rapid pouring out of this fluid, just as the nervous influence called into action by mechanical irritation of the conjunctiva produces a flow of tears. The same secretion may also be excited by irritating the mucus membrane of the nostril.

"The gastric fluid appears to be secreted from numberless vessels, which are distinct and separate from the mucous follicles. These vessels, when viewed with a microscope appear in the shape of small lucid points or very fine papillæ, situated in the interstices of the follicles. They discharge their fluid only when solicited to do so, by the presence of aliment or by mechanical irritation. Beaumont says when the coats of the stomach were seen perfectly clean and healthy and no fluid was in the stomach, the irritation of an elastic tube in the cavity excited a sensible flow of acid liquid which flowed from the tube drop by drop. On giving a piece of bread to eat the flow increased. (*See Budd*, p. 19.) The pure fluid never accumulates in the stomach until the presence of alimentary matter excites the secretory vessels to pour out their contents. It then begins to exude from the surface of the stomach, in quantity proportioned to the quantity of food received or required. On abstracting the contents of the stomach after the bread was eaten it was found partly mixed with saliva and mucus and tinged with bile, yellow or clear limpid fluid then spread over the surface, trickling down the sides of the cavity; and after slight exercise more fluid, a very clear gastric juice was collected, in all about five drachms. A definite proportion of aliment only can be digested in a given quantity of the fluid. "When the fluid becomes saturated, it refuses to dissolve any more," and when an excess of food is taken, it remains undigested in the stomach or passes into the bowels in a crude state, where it causes irritation, pain or nervous symptoms in other sympathizing organs. Though varying in physical properties from the changing condition of the stomach, and from the different other fluids mixed with it, the gastric fluid is believed to be always essentially the same substance. Derangements of the digestive organs, slight febrile excitement, fright, or other sudden affection of the passions, over-eating, and many other causes may produce acidity or even rancidity in the contents of the stomach, and lessen the solvent power of the gastric juice; and general febrile irritation seems entirely to suspend its secretion, at the same time rendering the villous coat dry, red, and irritable. Fear and anger check the due secretion of the fluid, the latter causing an influx of bile into the stomach, which produces nausea or vomiting according to its quantity. (*Budd.—Diseases of the Stomach.*)

Recent researches have led to the inference that the *amount of the gastric juice* and consequently the amount of materials needed for its supply, is much greater than has been hitherto imagined. Lehmann

estimates that not less than four pounds of gastric juice is secreted daily by a man in health. (*Lehmann's "Physiological Chemistry." Day's translation.* Vol. II. p. 53.)

The researches of Dr. Prout led him to consider muriatic acid as the proper acid of the gastric juice. When acid is vomited, when a gall-stone is passing the renal duct, and when the stomach is empty and containing no other acids, the acid vomited is the muriatic. (*Budd*, p. 155.)

Phenomena of the Process of Chymification.—When the food is first received into the stomach this organ is stimulated to contract and embrace firmly the substances presented to it. The orifice at which the aliment entered contracts closely, to prevent its return, and the pyloric orifice is still more firmly constricted, to prevent its escape until it shall be softened and changed into chyme. The muscular fibres of the stomach towards the cardiac end persist in a firm and steady contraction, which slowly pushes the mass towards the pylorus. Towards the pyloric aperture the movements of the fibres resemble those called the vermicular contractions of the muscular fibres of the intestines, clasping and pressing forwards the yielding material, which the vigilant pylorus refuses to admit so long as the softening mass contains portions imperfectly dissolved, or capable of irritating its excitable fibres to contraction.

During the process of digestion "there is a perfect admixture of gastric juice and food—the particles of food are constantly changing their relations with each other, and they are mixed with a quantity of fluid consisting of the gastric juice and the fluids taken during the meal." Beaumont, having often observed a large quantity of fluid in the stomach when little had been taken into it, suspected that water was synthetically formed during the process of digestion. It is more probably secreted as mucus in an unusually fluid state. The mixture of food and the solvent fluids is "perfectly heterogenous at first;" but the "churning motions of the stomach" and the active powers of the gastric juice change its appearance very rapidly. If the contents of the stomach be taken out in from thirty to sixty minutes after eating, a mixture of perfectly formed chyme and particles of unchanged food will be found blended together in various proportions, according to the condition of the stomach and the quantity of food taken.

It has been supposed that the gastric fluid was only secreted at the moment of its expulsion from its secreting vessels, inasmuch as no such fluid is found in the stomach when empty or unexcited by irritants of any kind. But it is more probable that the gastric fluid accumulates in its own proper vessels during some time preceding the taking of food.

"On applying aliment to the internal coat of the stomach, which in

health is merely lubricated with mucus, innumerable minute papillæ, the orifices, undoubtedly, of the gastric vessels, immediately throw out a quantity of the fluid which mixes with the food. The effect is too sudden and the secretion is too copious to be accounted for on the ordinary principles and laws governing secreting surfaces. The quiescence and relief," says Beaumont, "from the unpleasant sensation which is experienced as soon as the vessels are emptied, furnish additional proofs that the fluid was already secreted, and only discharged from the secreting vessels when their mouths were excited by the stimulus of food."

The precise nature of the changes effected by the process of digestion on the various substances used as food has never been perfectly explained. Within a few years the opinion has become prevalent that digestion consists in a "peculiar fermentative process." Ure says "the gastric fluid is a genuine ferment." And many efforts have been made to furnish by chemical combinations a substitute for the digestive fluid when deficient in quantity or defective in quality. Tiedemann, Gmelin, and Prout have shown "that the gastric fluid contains muriatic acid:" and Eberli has made experiments "on the digestion of food out of the body with water containing a few drops of the same acid." The fluid used by him needed a minute quantity of the mucous secretion of the stomach. Schwann and Vogel have produced this digestive principle in a pure state and called it *pepsine*. Rennet, with which milk is congulated in making cheese, is of nearly the same nature as pepsine. But the simplest digesting liquor is the following: "If 10,000 parts of water by weight be mixed with six parts of ordinary muriatic acid and a little rennet, a liquor is obtained capable of dissolving hard-boiled white of egg, beef, gluten, &c., into a transparent jelly in a few hours." (*Ure's Dict. Arts.* &c., Sup. p. 94.)

The gastric fluid has no influence on living bodies, as is shown by the experiments of Spallanzini and others. If the legs and feet of a living frog be thrust down into the stomach of a lizard, and be confined in that situation, the gastric juice has no action upon them so long as the frog lives; but if the frog be killed and be replaced in this situation, they are digested to a pulp in a few hours.

When a living frog in a state of magnetic torpor is swallowed by a serpent the gastric fluid does not commence digesting the skin of the frog while the latter continues alive. After remaining some days in the stomach the imprisoned victim may be liberated, and he will return to his place in the neighboring brook, and join his comrades in a song. In one instance of this kind we observed the frog's skin entire, though it showed evidence of long maceration; and the whole body and limbs were reduced to the most extreme degree of emaciation.

On fatty matters the gastric juice exerts no influence; the fat is

simply liquefied and left to float in the mixture known as chyme. This fluid has no effect on starch or sugar; but the action of the saliva on the starch becomes arrested as soon as the saliva becomes acidulated by the gastric juice. But albuminous and gelatinous substances are dissolved by the gastric juice, and their properties are so modified that, although previously not transmissible through an animal membrane they become capable of permeating it readily; "they become more easily soluble, less coagulable, gelatin ceases to gelatinize; they lose the property of forming insoluble combinations with most metallic salts, but they are so precipitated by Tannic-acid, Chloride of Mercury, and Acetate of Lead when mixed with Ammonia."

In addition to the gastric juice the stomach secretes ordinary mucus, and this sometimes in such large quantities as to interfere with the action of the gastric juice upon the food: containing more or less excrementitial matter, this mucus often becomes the exciter of fermentation.

Atmospheric air and carbonic acid are often conveyed into the stomach, and from its surface they and other gases are readily absorbed.

The pancreatic juice is a highly albuminous alkaline secretion formed in the pancreatic gland under the stomach. Its office, according to Bernard, is to redissolve albuminous matters after they have been precipitated by the bile, from their state of solution in the gastric juice. Others suppose "that fat is absorbed as neutral fat, emulsified by means of the pancreatic secretion, or divided into small particles each of which is surrounded by an albuminous envelop."

The Bile is one the most important fluids engaged in the proccss of digestion. Its precise office has not been well settled. It is supposed "to assist somewhat in emulsifying fat; it probably possesses decided antiseptic properties; and may precipitate albuminous matters from their state of solution. Its water serves as a means of transit of biliary matters from the blood, and of nutriment and of other soluble matters from the intestinal tube back again in the blood stream."

Other glands, opening on the inner surface of the duodenum, jejunum, ilium, and cœcum, furnish still further supplies of fluids for the solution, elaboration and absorption of nutritive matter; and the venous radicles, originating at all points of the intestinal tube, collect the absorbed food and pour it by the vena portarum into the liver.

"As a summary, then we may state, that albuminous matter, whether vegetable or animal, is absorbed as albumen, gelatinous matter as gelatin, these being both modified by other fluids. Starch and saccharine matters are absorbed as grape-sugar and dextrin, and fat principally as neutral fat, a small portion of fatty or other acids being formed." *†

* Dr. Teed, Animal Chemistry, &c Amer. Jour. Med. Sci. July 1860.

† Moleschott on Food. Zurich.

Absorption of nutritious matters prepared for supplying the waste of the different structures of the body.—Every part of the digestive apparatus is furnished with absorbing vessels which possess the faculty of taking up from the fluid mass, called the chyme, the purer portions fitted to replenish the blood with the elements necessary for the support of life. The absorbing vessels of different parts of the intestinal surface select different materials suited for the wants of organs or functions with which they are respectively connected. The principle of "series," says Wilkinson, "governs here as elsewhere; what is renounced as useless in the first cavity becomes the especial food of the next;" and the material rejected in the second chamber is welcomed to the third. As the entrance to the mouth is guarded by muscles and teeth, a muscular guard is placed at the cardiac orifice or entrance of the stomach. When this cavity has assimilated its portion of the food it has no longer any affinity for the substances which have become unwelcome. The muscular coat contracts upon the mass and it passes into the next chamber, where it undergoes a new digestion, and is again pressed forwards to the next compartment of the digestive tube.

In each of these portions of the alimentary canal solvent and appropriate fluids are poured out to dilute, soften, and dissolve the food. They draw out its essences, alter them into suitable forms, sheathe the sides of the delicate conducting passages, and enable the extracted nutrient particles to glide smoothly to their destination. After the saliva and the gastric-fluid have done their work in the stomach, the descending pultaceous mass enters the duodenum, where it meets the more powerful salivas of the bile from the liver, and the secretion from the pancreas. These fluids complete the process of chymification, and, when that work is over, they stimulate the intestines to carry forwards, and expel the exhausted materials which are to be rejected from the system.

If it be true that the finest essences of the food have, speedily after being taken into the mouth, found their way into the blood, or in some way made their impression on the sensorium, we need not doubt that much of the grosser food is directly assimilated in the stomach and absorbed into the general circulation directly from the stomach. "The little veins which stand open throated on every portion of the distinctly ventriculated surface carry crowds of these slower individual particles into the bosom of the general circulation. The possibility of an immediate reception of the food by the blood, appears for the most part to end with the stomach." (*Wilkinson.*)—A large portion of all the fluids received into the stomach is directly absorbed from its surface, especially water, spirituous, weak saline, saccharine and albuminous solutions.

Beyond the stomach a lower order of vessels than the veins receives the nutritious particles of the food; these are the *lacteals.* The fluid

absorbed by them is in an intermediate form between that in which it was received into the stomach and the blood to which it is going. The lacteals arise from the inner surface of the alimentary tube, decreasing in number towards the lower parts. They converge from their origin to the receptacle for the chyle, called the *thoracic duct*, a fine pipe-like vessel seated in front of the vertebra. It extends all the way to the left side of the neck, where it empties its contents into the left subclavian vein, from which it flows directly to the heart. In the thoracic duct the new materials for the ever-changing blood come in contact with some of the old materials of the ever-changing body, the LYMPH which is composed of the matters absorbed by the lymphatics, and collected from every part of the body. It is represented as "the old spirit of the blood serving to inaugurate the new body, and thus is the last of the salivas, which digests and introduces the chyle itself, as the salivary fluids digest and alter the food."

The chyle, as it passes through the lacteals, bears but little resemblance to the blood; but, as it advances slowly through the vessels, the mesenteric glands and the thoracic duct, its similarity in properties to the perfect blood becomes more and more marked; and, by the time it reaches the heart, it is intimately mixed with the venous blood.

THE BLOOD. *Physical properties.*—Arterial blood is of a red vermillion color, whilst the blood of the veins is of a deeper and darker hue. Its temperature in the vessels is equal to that of the body; its mean specific gravity is 1.055, and its quantity according to Valentin, in weight to that of the whole body as 1 to 4.25. When drawn from from the vessels its consistency changes; it becomes solid or coagulated. From this state it goes on contracting until the clot floats in the surrounding serous fluid.

Sanguification.—The regeneration of the blood is chiefly effected by the flowing into the blood-vessels of the lymph collected by the absorbents, and chyle from the stomach and intestines.

The lymph appears in two forms; the one which is less perfect takes its origin from the blood which has transuded through the vascular parietes, and has not served for nutrition; returning from all parts of the body, it has to pass through the lymphatic glands before it can reach the blood. The other species of lymph is the chief product of what are called the sanguineous glands. The lymph passes immediately into the blood, excepting that portion of it which mixes first with the chyle.

The lymph and chyle (the white blood of some writers) having reached the heart, undergo some chemical change, and are immediately conveyed to the lungs, where they reject carbonic-acid gas and take in oxygen. From the lungs the blood is returned to the heart from which it is thrown out by the AORTA to every part of the body.

In passing through the different secreting organs the blood furnishes the materials for the various secretions. Some of the fluids separated from the blood are thrown off from the body entirely; others as the saliva, pancreatic and gastric juices, return in part to the common reservoir the blood. (*Mandl.*)

The blood thus formed consists of many ingredients, of which the most important are: 1. The mature blood-cells, or red blood globules, and the colorless or young blood-cells. They derive their nourishment from the plasma, and give off the residua of their nutrition, and the results of their destruction to be separated by the eliminating organs. Those molecules which under any form have been used in the processes of life, having once passed through their stage of vitality, are no more capable of again entering into the formation of animal principles of the same, or of a higher order, but are immediately eliminated by the excretory organs; thus the iron particles which have once entered into blood corpuscles which have lived their day and are being broken up, are no more taken into the new corpuscles; and their place must be supplied with fresh iron from without. No particle that has become effete will be assimilated again, but must be expelled; "and the organ chiefly containing these residua—as the spleen (and sometimes the liver)—forms an article of food of very indifferent quality, and frequently causes great intestinal disturbance. In the case of the liver other effete matters may be also concerned. An excessive destruction, a diminished supply, or a faulty assimilation, will therefore have the same ultimate effects, and a condition of anæmia or of chlorosis will be the the result. In some cases an increased supply remedies the mischief, in others the destruction must be checked, and again in others the powers of assimilation must be increased."*

2. In addition to the water, sugar, albumen, and fat, the blood contains saline matters combined with the nitrogenous principles. These become separated when the albumen suffers decomposition, and then they obey the general laws of excrementitious matter. Sulphur, Phosphorus, Iron, Lime, and Magnesia are seldom used as dietetic articles, but they are very generally found in the blood in varying quantities; common salt is more constantly taken in with the food, and is always found there.

3. The blood also contains the residua of nutrition on their way towards the excretory outlets through which they are to be expelled from the body; other unassimilable or unnecessary substances which have been absorbed during the process of digestion are also found in the blood stream till they are expelled by excreting organs. The chief of these are carbonic-acid, urea, uric, phosphoric, sulphuric, hippuric, lactic, and oxalic-acids, creatine, creatinine, biliary coloring matter, extractive, &c.

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* Dr. Teed, Amer. Med. Jour. July, 1860. p. 73.

NUTRITION.—"The idea of LIFE, or vital action, obviously involves that of change. We do not consider any being as alive which is not undergoing some continual alteration perceptible to the senses." Thus the plant grows from a germ to a fabric of great size; a bud or a seed grows to an immense tree. It is seen as an organized structure containing within it many organic compounds. It multiplies its species by the production of germs similar to that from which it originated; and seems to perform all these complex operations without feeling or thinking—without consciousness or will. Such are the functions of *organic or vegetative* life. These functions are divided into those which maintain the structure of the individual, or *nutrition*, and those which are employed in the reproduction of the species.

In the animal body a large number of the operations are of the same character with those of vegetable life. The processes of nutrition in animals are essentially the same as those of plants, but, on the whole, much more active, in consequence of the great law impressed upon organic beings, that all vital action causes a waste or disintegration of the instruments or organs employed. It has been known from very early periods of the world that there is a perpetual change in the molecules of which the body is composed; and there can be no doubt that this destructive process is not confined to the muscles, of which organic chemistry treats, but also occurs in the nervous and all other tissues, even the most dense, as the granules of the bone and ivory of the teeth. It was upon this incessant change of the nervous tissue that Butler (in his "Analogy,") founded one of his strongest arguments for the continuance of the soul in a state of separate and conscious existence after the whole of the material body shall have been entirely abandoned.

It is now generally admitted that the process of nutrition mainly consists in the growth of the individual cells composing the fabric; and that these derive their support from the organic compounds with which they are supplied by the blood, just as the cells composing the simplest plants derive theirs from the inorganic elements which surround them: "and as different species of the latter select and combine these in such modes and proportions as to give rise to organisms of very diversified forms and proportions: so is it easy to understand how the different parts of the fabric of the highest animals should exercise a similar selective power, in regard to the materials with which the blood supplies them. The structure comprising every separate portion of the body has a *special affinity* for some particular constituents of the blood, causing it to abstract from that fluid, and to convert into its own substance certain of its elements. This conversion is termed *Assimilation*. (*Carpenter's Physiology*, p. 487.)

"As the first act of nutrition consists of an interchange between the cells and vessels, of portions holding certain matters in solution, it is of

necessity, that the molecular changes occur in the cell-fluid and cell-walls and not in the vessel-fluids. The parts to be nourished consist chiefly of C, H, N, O; their elements being no longer used in up-building tissues, but entering a course of descending transitions, are finally expelled by the system; the matters given off by the cells undergo a splitting into two portions or classes, of which one is rich in nitrogen, the other containing little or none of that element. This latter under the influence of oxygen forms C O_2 and H O, and thus generating heat. Hence nitrogenous food is absolutely essential to nutrition *in proportion sufficient to cover this loss*, while carbo-hydrates chiefly serve the purposes of animal heat. Where a due supply of nutriment is not afforded, the matters dissolved in the exosmosing fluids cannot be fully replaced from the vessel-fluids; and this decrease continues side by side in the cell-fluids and in the vessel-fluids, the latter always retaining the predominance as long as any nutrient matter remains capable of being assimilated; and when an osmotic balance is reached, the cells neither give off nor receive; life is, therefore, extinguished, and, after death, they are found pale and shrunken, but they are not dissolved, nor is there any trace that a single cell has been removed, from a muscle for instance, it is only the cell contents that have disappeared, *that is* their nitrogenous matters held in solution, a larger portion of the water still remaining and the muscles are said to be watery." *

"As soon, therefore, as osmose ceases, the maintainance of animal heat ceases, because after the carbo-hydrates and fat have been consumed, nothing remains but this splitting of nitrogenous matters; and as soon as this is suspended, although there may be still inspiration of oxygen and absorption of it into the circulating fluid, there is no material on which it can act, as its action is neither on the nutrient fluid nor on the tissues, but on the matter given off from the tissues, which matter is replaced from the nutrient fluid. When, therefore, osmose ceases, the matter ceases to be given off, the action of the oxygen ceases from want of matter on which to act, heat ceases to be developed, and with this is the cessation of life."†

The quantity of food necessary for the support of the human body in a state of health can only be settled by repeated observations. Sir John Sinclair says: In the British naval service each seaman is allowed 26 ounces of dry nutritious vegetable food per day, to which is added from five to nine and a half ounces of meat; the latter if salt is extended to nine ounces, if fresh to only four and a half. Sugar and cocoa are also given. A soldier is allowed a pound of bread and three-fourths of a pound of meat. In the London Hospitals convalescent

* Virchow's Archiv. Vol. XVIII., p, 174.—† Teed op. cit.

patients receive a pound of meat with twelve or fourteen ounces of bread, half a pound of potatoes, a pint of milk, and sometimes a pint of beer, or a half pint of porter. In the prisons in England a prisoner confined for three months at hard labor has a daily allowance of about thirty-six ounces of food, of which not more than four ounces given at four different meals in the week, consist of meat. In the work-houses, where many of the poor seek little more than a shelter, a diet somewhat lighter is given; the hard labor, the restraint, and mental depression which confinement produce, demand for the criminal a larger amount of nutriment than is needed by the man who labors and suffers less. In general terms it may be said that between twenty-five and thirty-five ounces is sufficient to support health. Of this, one-fourth or a fifth should consist of animal food. If more than this be taken it furnishes material for disease; if a less proportion is from the animal kingdom, the blood will be poorer, the cohesive powers of the tissues will be lessened, and diseases of a different character will result.*

The following is the allowance for a soldier in the U. S. service, as directed by the Surgeon General, Nov. 1862: *Full Diet.*—Meat 16 oz. avoirdupois; bread 18 oz.; potatoes 8 oz.; other vegetables 8 oz.; rice, hominy, or Indian meal 1.60 oz.; salt 0.16 gill; coffee 0.80 oz.; tea 0.12 oz.; sugar 2.40 oz.; milk 8 oz; butter 1 oz.; flour 0.25 oz.; molasses, gill, 0.32; vinegar 0.32 gill.

Low Diet.—Meat 8 oz.; bread 14 oz.; salt 0.16 gill; tea 0.240 oz.; sugar 2.4 oz.; milk 8 oz.; butter 1 oz.; rice, farina, corn starch, or bread made into pudding 2 oz.

ORDER I.—AFFECTING THE ALIMENTARY CANAL.

I. Diseases of the Teeth and Maxillary Bones.

1. DENTITION.

Teething.—The teeth are divided into three classes; namely: incisors or cutting teeth, canine or dog teeth, and molars or grinding teeth. The first set, called the *milk* teeth, are twenty in number, consisting of eight cutting teeth in front, four canine, and eight grinding teeth. They are smaller and narrower than those of the permanent set, and generally appear in the following order: the two cutting teeth in the middle of the lower jaw pierce the gums about the end of the sixth month, and are followed in a few weeks by the two corresponding teeth of the upper jaw. After another similar interval, the two lateral cutting teeth in each jaw appear; sometimes the upper, and sometimes the lower appearing first. Four of the grinders pierce the gums towards the end of the twelfth month, the canine teeth (first

* Todd and Bowman's Physiology. Vol. 1. p. 519.

the lower and then the upper) about the end of the second year, and lastly the remaining four grinders at the beginning of the third year.

The process of teething generally takes place regularly and without much distress provided the child possesses an organism ordinarily healthy, has been accustomed to breathing the open air, has been fully nourished by the mother's milk, herself being in good health. The only symptoms observable as the fifth and sixth months are passing, are, slight pain and tension in the gums, with increased flow of saliva, a slight diarrhœa, with some evidence of increased sensibility and irritability of the nervous system. In children of less favorable constitutions the natural process of dentition is liable to be variously deranged.

The complicated apparatus by which the teeth are to be formed consists of a vascular and nervous pulp, covered by a very delicate membrane, and these again are invested by a fibrous membrane of very firm texture composed of two distinct layers. The body part of the tooth is secreted by the fine membrane of the pulp; and, as the ossification advances from within outwards, the cavity occupied by the pulp is contracted, until reduced to the dimensions of the hollow of the perfect tooth. As soon as the ossification is completed, the inner surface of the fibrous coat takes on the office of secretion, and furnishes the tooth with its covering enamel; and, as soon as this is completed, the fibrous membrane is no longer of any use, and must be removed to give way to permit the tooth to advance above the gum. The removal of the investing membrane is accomplished by the action of the absorbent vessels; and the increased flow of saliva, and the increased flow of mucus from the bowels carry off the effects of increased excitement. Thus, in a state of health, the process of dentition consist in a progressive growth of the tooth, and absorption of the membrane; and the two operations are going on at the same time, the latter progressing just fast enough to remove the investing membrane out of the way of the advancing tooth. In a state of disease this does not occur, and the growth of the tooth may be irregular, imperfect, or entirely suspended. Pressing against the investing membrane, it excites irritation and then inflammation. The gums become red, tumid, painful and ulcerated. From this focus of irritation a similar state of excitement extends down the prima-via to the stomach and bowels; and is also conveyed to the brain, and thence, by reflex action through the nerves transmitted to distant parts of the alimentary canal, producing the symptomatic vomiting, follicular diarrhœa, fever and convulsions which are so common and so fatal to children who encounter the dangers of the "second summer."

Thus almost any disease of infantile life may be excited by the irritation of dentition, and almost any symptoms of any of these diseases may be excited or augmented by this cause. Children seldom acquire

their teeth without some local irritation and constitutional derangement. In most cases the gums become red, enlarged and painful; fever with unhealthy action of the liver and digestive organs follow.

In these cases the local irritation often furnishes its own remedy by exciting the salivary glands to greater action, secreting an unusual quantity of saliva, which diminishes the febrile action and thus gives relief.

When the irritation is higher the constitutional excitement becomes more alarming. There is then diarrhœa attended with severe griping, fæces discolored and fœtid, sometimes of clayey consistence with large quantities of viscid mucus; urine turbid, discolored, in small quantities, and sometimes accompanied with purulent matter, and excoriating pain in passing it. Skin dry, hot; pulse rapid and fluttering, respiration quick and labored, countenance marked with extreme anxiety and pain. Every symptom of pneumonia is often present, the child being subject to taking cold as well as the usual other causes of disease.

Continued moving of the head indicates the existence of affection of the brain. There are then, distressing moaning; dilated pupils; spasms of the muscles, increasing to alarming convulsions, which sometimes end in death. In this case, in a robust child, there is a real hyperæmia or overcharged condition of the vessels of the brain.

Treatment.—So long as the febrile excitement is not excessive and the gums are not extensively swollen, the child may be expected to pass through the process of teething without danger. If medical treatment be considered necessary, the following remedies may be consulted:

Chamomilla.—When the discharges are greenish or fœtid.

Mercurius.—There is much ptyalism and diarrhœa; discharges slimy, watery, bloody, and thrown off with spasmodic force of the irritable intestine.

Pulsatilla.—Cough with oppression of the chest, stomach disordered by rich food.

Ipecac.—Nausea, vomiting and diarrhœa.

Aconite.—Fever and restlessness; the patient starts up from sleep: skin flushed, hot and dry.

Belladonna, after Aconite, when the head and hands are hot, and the face is flushed.

Calcarea-carb.—In children who progress too slowly: imperfect development, tendency to rickets.

Coffea.—Not unfrequently an irritable condition of the nervous system is induced by dentition, causing the child to be fretful, slightly feverish, and sleepless. Convulsions with grating of the teeth. Coffea removes this group of symptoms.

Hyoscyamus.—In strongly marked nervous temperaments when the child is irritable, there is spasmodic motion of the eyes, restless, sleep-

less, inclined to cry much, grasps at things in the air, and about the bed, starts during sleep and smiles; this remedy will usually afford relief.

Cannabis-indica.—Is indicated, when the face often flushes suddenly, when the head and extremities become hot during the night, when the child often starts and screams as if frightened, and there is an evident determination of the symptoms towards the brain.

Ignatia.—Will be required in spasmodic twitchings, tendency to throw the head back when put to bed, with a persistently irritable and intractable mood. Diarrhœa of bloody mucus, with prolapsus of the rectum, ascarides, convulsive twitching of the corners of the mouth; nausea, vomiting, abdominal spasms; face red or blue: spasmodic constriction of the chest.

When dentition is progressing too slowly and the gums are much swollen, it is often necessary to cut the gum through with a sharp lancet. This should only be done when other remedies are failing, or where violent symptoms are threatening, or when the tooth is seen to be nearly through.

A common case is that of a child which, for a day or two, has been in great distress with the general fever, diarrhœa, or constipation and determination to the brain. The gums are in a state of high inflammation, stomach and liver deranged; tongue furred, pulse rapid. The gums are slightly incised with a sharp lancet; they, bleed freely: There is immediate relief. Aconite reduces the general fever still further; and the digestive organs are corrected also, whether diarrhœa or constipation has been present. In more severe or more advanced cases further treatment is required.

In every case of disease of the stomach or bowels, of the brain, or of general fever occurring during the period in which dentition should take place, the gums should be carefully examined; and when the gum is swollen and inflamed, it should be so lanced as to take off the tension of the membrane, permitting a single drop of blood from each tooth, though giving little or no pain. The objections made by ignorant people to this simple operation are always overcome by an explicit statement of the principle on which it generally gives early relief, and at least lessens the danger, without ever doing harm when judiciously performed.

The inflammation excited by the evolution of the wisdom-tooth sometimes extends to the establishment of *ostosis*, *periostosis*, *neurosis*, or *abscesses* which by burrowing into the sub-clavicular region have proved fatal.

It may also be the cause of enlarged tonsils, or of the velum palati or uvula. In one case it caused hypertrophied uvula, with anorexia and vomiting. Fistulous ulcers from this cause are often overlooked,

as ordinary examination of the teeth shows them all to be sound. The fistula is slightly depressed, the skin around it is plaited or wrinkled, and, when the lower jaw is involved adheres to the bone. In one case cited by M. Robert, (*Gaz. des Hopit.*), a second molar tooth was extracted without relief, a sinus was then found and traced back to the concealed wisdom-tooth; this was extracted and gave full relief. We have met with no cases in which free lancing of the swollen gum failed to relieve the swelling and permit the tooth to appear. These teeth generally decay early, and, having a short root, are then better extracted.

2. TOOTH-ACHE.—ODONTIA DOLOROSO.

CARIES.—This most common disease of the teeth has received the name caries by common consent, though perhaps Bell was more correct in saying that gangene would be a more proper name.

Caries generally begins immediately under the enamel, either on the grinding surface or the side.

Causes.—Predisposing.—The predisposing remote causes are: 1. hereditary predisposition. The tendency to caries of the teeth has often existed in a whole family, where one of the parents was similarly affected; in other families, however, though the parents lost the teeth the children kept theirs to the age of forty or fifty years.

The Teeth are affected in a peculiar manner by the sycotic poison The most obstinate algias, loosening of the teeth, degeneration of the gums, with sponginess and flat ulcers are the consequence. Thuja alone is a remedy for this condition.

2. Many diseases of infancy, especially inflammatory diseases operating on the pulp of the teeth are more disastrous to the young and tender texture than any other cause of caries, except Mercury. If the bony structure of the teeth, like other bones, would admit of re-union we would not despair of similar recoveries. If bones be broken they unite so as to become stronger than before. If they become diseased and dead, new bony matter is deposited around the dead bone, and in time the latter is removed by the absorbents. Not so with the teeth. When they are injured by fracture, inflammation or Mercury, no such provision is made for them. A tooth is a bone within a bone; its vessels are few and minute, but interspersed in a membranous substance which is liable to be injured by slight causes, even by a sudden change of temperature. Thus inflammation of the pulp of the tooth must produce injurious effects, as the tooth has not the means of a complete recovery.

Teeth generally decay in pairs; a fact which shows them to be capable of becoming diseased from internal causes. Thus the pulp of

each tooth of the pair, though on opposite sides, must be in the same stage of advancement at the time they are attacked by inflammation; they are therefore liable to decay together.

Mr. Tomes* says, vitiated secretions of buccal mucus, generally connected with dyspepsia are the chief cause of destruction of the teeth. The morbid mucus clings round the teeth, in other cases the saliva is perverted.

Exciting Causes.—The disease is developed and rendered sensible in a greater or less degree by various exciting causes:

1. *Hot Drinks.*—Any fluid warmer than the blood is destructive to the teeth; cold drinks beyond a certain degree are no doubt injurious but not equally so. The teeth of men and animals are chemically the same, yet the former suffer much from diseases of the teeth, while the latter seldom if ever have caries or pain in the teeth. Savages are clear of this disease. Two cannibals brought by Capitain Cook from the South Sea Islands never heard of tooth-ache till they came on board of his vessel. The American Indians knew little or nothing of it in their uncivilized state. Domestic animals fed according to their natural habits have no diseases of the teeth; but it is developed by feeding them with hot food from the distilleries. It has been said that persons employed in surveying in the Western woods for several months and subsisting on dried meat and hard bread, noticed that their teeth became white without the use of the brush or the least care; and persons who live on cold food never lose a tooth or suffer from tooth-ache. Slaves on tropical plantations seldom complain of it, except they be employed as cooks and drink hot coffee or tea.

The teeth of man are the last part to decay after death, resisting all chemical agencies and destructive gases of the grave, they remain sound for a century. The teeth of the Celtic chieftain exhumed at the gate of Paris, in 1859, had preserved their texture and enamel of perfect whiteness through the twenty-five centuries during which he had occupied that tomb.

While the body lives, the teeth are the first part of the body to decay. If they were foreign bodies independent of all connection with the system, the agents that now act upon them would be harmless. But when they become foreign bodies their beauty decays, they become dark in color, and decomposition follows.

The texture of the teeth varies in different persons. Some contain more carbon in the enamel than is found in others. In some the enamel is thick, in others thin. Some teeth are yellowish in color, others blue mixed with pearly white. These last are very frail and decay in early life, the bone of the teeth and the enamel in such cases are not so firmly united, hence they are more liable to be injured by heat.

* System of Dental Surgery.

Prevention of Caries.—1. Avoid all the exciting and remote causes. In infancy all inflammatory diseases should be immediately arrested, scarlet fever or other febrile disease should be treated with care: but inflammation from diseased state of the deciduous teeth should be noticed; as in some cases these teeth are decayed as soon as they are cut through the gums; this is commonly due to the effect of Mercury. Some think it corrodes the teeth by coming in contact with them when given; but it destroys the chance for good permanent teeth in many cases in which it does not produce ptyalism. In some children before all the first set are through they inflame, become loose and are removed. In these children the succeeding teeth are sure to decay early, even before they are fully grown. When the first teeth must be removed it should be done before suppuration takes place.

Treatment of Caries or Gangrene of the Teeth.—Remove the dead portion from the living; and, if practicable, the cavity should be filled with gold, so as to exclude air and water. If the gangrene is superficial it should be removed in the same way, and the bony part polished. If the bone is extremely sensitive beyond endurance, the cautery or caustic should be passed over its surface.

Tooth-ache is a natural consequence of gangrene of the teeth. When they are decayed so as to expose the inner membrane, it would be strange if it did not produce pain, especially in a sanguine or nervous temperament. The pain is generally the effect of inflammation in the inner or outer membrane. When it is slight some application may relieve it. But if it involves the outer as well as the inner membrane, the relief becomes more difficult, and extraction is the common resource. In all teeth that have antagonists which meet and press upon them, the continued pressure keeps up the inflammation, and common "tooth-ache" specifics prove to be only a piece of quackery.

The temporary teeth should not be removed too early. If they are painful and decayed, remove them, as other teeth would be. If the permanent teeth begin to protrude in wrong positions from their places being occupied by the infantile teeth, the latter should be removed to make way for them to come in their proper places.

The effect of heat and cold on inert bodies is to expand and contract them. On living bodies like the teeth it is the same. Iron begins to expand at 120° or 130° of the thermometer; the enamel of the teeth is much harder, more compact and more liable to crack by pressure; and the location of the teeth is such, that the least expansion must produce injury. They are firmly fixed in the jaw-bone which surrounds them, and on each root is a membrane containing minute blood-vessels and nerves, in which consists its life. Heat expands the tooth and presses these delicate parts between two bones—the most certain way to destroy them. When the vitality of any part is destroyed we expect it to de-

cay and enter into decomposition. The enamel is fractured by this expansion of the teeth which are firmly in contact with each other.

The effect of cold within certain degrees is less injurious to the teeth; and, if the change be not too sudden from great heat, and if it only extends from blood heat to 60° or 70° no injury can result from it. It is even supposed to be beneficial.

Derangements of Digestion always exert a deleterious influence on the teeth. Disease of the liver is often followed by speedy decay of the teeth.

The use of acids, whether given in the treatment of fevers or eaten in sour fruits are destructive to the teeth. The mineral acids are the worst.

Negligence in the proper care of the teeth, leaving fragments of food between them. Lavater, the physiognomist, says, there is one point on which the admirer of his art cannot possibly be mistaken: "Whoever neglects his teeth, suffering them to go to decay through indolence or contempt of public opinion, may be safely pronounced an unhappy character, with many evil propensities."

Injuries by Violence.—If the teeth are loosened by a blow or a fall they should be immediately placed accurately in the sockets and secured by ligatures; the gums should be allowed to bleed freely; and Arnica or Calendula in dilution should be employed till the inflammation subsides.

The effects of Mercury.—This deadly mineral is the most destructive of all the causes of diseases of the teeth. We have an immense collection of cases before us which at this day need not be transcribed. One author describes a case of a female under its use aged 27. "A few of her front lower incisors remain, but they are loose and can be removed by the fingers. A portion of the frontal and parietal bones have been removed, about two and a half inches square. Ulcerations cover nearly one half the head; the integuments which protect the brain appear soft and spongy. At first view it would appear to be a case of syphilis, but the attending physician assured me that it is the effect of Calomel. And strange indeed! he was trying to cure it with *corrosive sublimate!*" externally applied.

Another case from the same author.—"A young lady of nineteen had been long confined with fever. I found the molar and bicuspid teeth just ready to drop out of the lower and part of the upper jaw. The alveoli nearly absorbed, as if the teeth had been extracted six months before; the teeth covered with a black oxyd of Mercury. The medicine had been administered when she was lying on her left side, a blister being on the right; it had remained long in contact with the teeth and gums.*"

* Dr. Crane, U. States Med. and Surg. Jour. Apr. 1836. p. 334.

The *New-York Med. Times* (Sept. 1863,) complains of the popular prejudice against calomel and steel when prescribed in "occasional and appropriate doses" to cachectic children. The writer admits "that calomel if given in excessive quantity will cause salivation, and that in profuse salivation teeth are apt to be lost;" but he still maintains "that these teeth are not necessarily unsound. Often they are not decayed at all." They only drop out from "actual destruction of gum substance." We think such arguments will not lessen the growing prejudice against the allopathic use of mercurials.

Symptoms of Mercurius.—Tearing, shooting pains in the carious teeth or in the roots of the teeth of the whole affected side; pains in the head and face extending to the ear; painful swelling of the cheek and submaxillary glands; salivation; pain worse in the evening or night; aggravated by warmth of the bed, cool-damp air, or drinking any thing cold; "teeth on edge;" they feel loose and too long, gums swelled, blanched, ulcerated, discolored, readily bleeding; itching, burning pain as from excoriation; nightly perspiration, vertigo, rheumatic pains in the limbs; peevish contradictory humor; tendency to shed tears; shivering, with redness of the cheeks.

In a case of caries occurring after small-pox, Hecker used various medicinal compounds with success. Fortunately, says Hahnemann, "a portion of Mercury was contained in each of these mixtures, to which it may be imagined that this malady will yield (homœopathically), because Mercury is one of the few medicinal agents which can produce caries, as proved by the many excessive mercurial courses used for the cure of syphilis, and even of other diseases." This metal which becomes so formidable when its use is prolonged, on account of the caries of which it then becomes the exciting cause, exercises, notwithstanding, a very salutary homœopathic influence in the caries which follows mechanical injuries of the bones, some very remarkable instances of which have been given us by J. Schlegel, Jördêns, and J. M. Müller. Another kind of caries (but not venereal) has been cured with Mercury by J. F. G. Neu, and J. D. Metzger.

Belladonna.—Pain of neuralgic character in one side of the face; the gums feel as if ulcerated; drawing, tearing, shooting, excessive sadness, tendency to shed tears, cutting pain in the teeth, face, and ears, worse in the evening after lying down; congestion of the head and teeth; gums hot and swelled, and teeth bleed on sucking them; erysipelatous swelling of the cheek; salivation or dryness of the mouth; thirst; aggravation in the open air, or on touching food, cold or warm, to the tooth, which feels elongated; heat and redness of the face; pulsations in the head or cheeks; worse at night; burning redness of the eyes; pain appears to be in several teeth; glandular swellings; spasms and convulsions; delirium in children teething.

Anguish and inquietude which compel constant change of place; pain in gums and teeth as if ulcerated; boring in the carious tooth as from congestion, itching vesicles, and burning; renewal of the pains by mental labor, or after eating; heat and redness or the face; pulsations in the head or cheeks.

Chamomilla.—Tooth-ache caused by abuse of coffee; the patient is irascible, and sheds tears during the pain, which is violent, jerking, drawing or pulsative and shooting; worse at night when warm in bed; hot swelling redness of the cheek; gums shining, swelled; submaxillary glands enlarged; pain occupying the whole of one side of the jaw, not fixed to a single tooth; semilateral, shooting or pulsative pain in the affected side of the head, ear and face; pain aggravated by hot or cold drink, especially coffee; pain, heat and redness of one cheek; hot perspiration; agitation and tossing; weakness and fainting; teething, with watery, greenish fœtid diarrhœa; spasmodic symptoms.

Staphysagria.—The pains proceed from decayed teeth or from stumps; it extends to the head and ears; the cheek is swollen but not hot; pain excited by inspiring cold air or by cold drinks; worse during or after eating, on touching the tooth, or only after midnight; the teeth become black and decay, exhibiting exfoliation; there are tubercles or painful excrescences on the gums which are liable to bleed. It corresponds in some respects with Sulphur.

Sulphur.—Chronic tooth-ache; tearing, jerking, boring, stitching, with or without swelling of the cheeks. The teeth feel loose and elongated. Aggravation at night: the gums detached and diseased; they bleed freely; cutaneous eruptions have in these cases been suppressed by ointments or washes.

Pulsatilla.—The patient is of a mild, quiet, timid character; the pain accompanied with otalgia and pain in one side by the head; it is tearing, drawing, shooting, jerking, pulsative, or gnawing, with pricking in the gums; pains extend to the face and head, or eye and ear; face pale, head hot; some shivering; dyspnœa; pain worse in the evening when warm in bed; or after midnight; pain relieved in some by cold water, aggravated in others.

Hyoscyamus.—Violent tearing pulsative pain extending from the cheek to the forehead; swelling of the gums; pulsation in the tooth; pain worse in cold weather, in the morning. Congestion of blood in the head, with redness and heat of the face; spasms in the throat, convulsive jerkings of the fingers and hands or arms; nervous excitability, redness and brilliancy of the eyes.

Aconite.—When the disease is excited by recent cold; there is fever, and the pain is extremely severe; lancinating shocks or pulsative pains with congestion of blood to the head, heat in the face, redness of the cheek, and great agitation. When the patient is subject to rheumatism,

Colchicum and Rhus are successful alone or in alteration with Aconite.

Other remedies, are Iodine, Kali-hydriod., Nitric-acid, Phosphorus, and Silicea: Iodine, and Kali-hydr. in scrofulous subjects who have taken much Mercury:—Nitric-acid in cases connected with syphilis in the second and third stages:—Phosphorus and Silicea, in cachectic and rachitic individuals.

Local Remedies.—*Creosote.*—Caries of the teeth, commencing by a small dark spot immediately under the enamel, which breaks down from losing support; the central cavity and the contained vessels become exposed. The only effective treatment here consists in the reiterated application of some highly stimulating specific. Camphorated spirit has generally been relied upon; Nitrate of Silver sometimes answers well, mineral acids would do better but they act upon the surrounding bone, destroy the teeth. Here Creosote alone will often be found specific. It may be tried in cases of pure tooth-ache from exposure of the internal membrane without inflammation of the periosteum. It will generally answer to apply a small piece of cotton wet with Creosote to the cavity, permitting none of the fluid to escape outside of the tooth, as the caustic liquid causes a true *burn* wherever it touches the cheek or gums. It is more easily applied to the lower than to upper teeth. The Creosote does not exert any curative power over the destructive caries of the teeth. It only alleviates the present symptoms. (*London, Med. Gaz., July* 1838.)

Arsenic.—This is still more effectual than Creosote. It was formerly my habit to wet a minute quantity of cotton on the point of a small hook, and lay upon one side of the cotton a small portion of white oxide of Arsenic. On inserting the cotton in the cavity of the tooth I generally found the pain almost immediately arrested. Of later years, noticing that the Creosote is likely to burn the mouth, I use the Arsenic as before, but instead of the Creosote I use some other less corrosive fluid to wet the cotton. Tincture of Camphor, Aconite, Belladonna, and various other fluids have been tried with success. The Arsenious Acid or White Oxide of Arsenic is the best application I have found, and has saved from extraction many a condemned tooth.

Nitrate of Silver.—When the tooth-ache is caused by a carious tooth it may very frequently be cured by a piece of solid Nitrate of Silver, as large as a pin's head, inserted into the cavity. It is immediately dissolved by the moisture it finds in the tooth, it immediately destroys the diseased nerve and the pain ceases. (*Bulletin de Therap.*, 1860.) Both of the two last named remedies are strictly homœopathic in their action. When the pain is confined to a single tooth, the application to the gum by friction with the finger, a saturated solution of cochineal, will usually arrest the pain immediately.

The treatment of tooth-ache has always been empirical, but it may be remarked that no remedy has ever given relief that did not act on the homœopathic principle. All the local applications are of this character, and only act by exciting a new and *similar* action in the nerve of the decayed tooth to that which had been excited by some other cause. Thus relief which was sometimes permanent has been given by a drop of Arnica, Aconite or Belladonna tincture applied in the cavity of the aching tooth. Oil of Cloves, Camphor and Oleum-carophylli, Gum-mastich dissolved in Oleum-terebinthinæ, have often succeeded. Boerhaave employed Camphor, Ol.-carophyl., and Alcohol on Cotton. Better than these things is strong Nitrous-acid, diluted with three or four times its weight of Alcohol. Camphor dissolved in Aqua-ammonia or Ether will often succeed, but none of these agents are reliable.

Minor Operations on the Teeth.—*Extraction of the temporary Teeth.*—When the temporary teeth are diseased they should not be unnecessarily removed. If, however, the child is four or five years old, and there is much pain or inflammation the ulcers threatening to injure the other teeth, the diseased tooth may be carefully extracted with the forceps.

Cutting the Gums to facilitate Dentition.—Make the incision towards the external alveoli so as to avoid injuring the membrane and sacs of the permanent teeth, particularly those of the incisores and cuspidati. Those of the bicuspides are more easily avoided being broader on the surface. (*Blake on the Teeth.*)

Filing and Sawing the Teeth.—None of the purposes for which the operations are performed can be effected by them. In place of these instruments it is now recommended to use small crooked knives or other cutting instruments which may be used with less injury to the teeth.

Plugging the Teeth when carious.—This process may in some persons preserve the teeth from ten to forty years; it may be done with little trouble or pain. Pure tin is softer and may be worn better than gold. But both tin and lead are corroded by acids. Gold is therefore preferable and, is not changed by any food or medicine except Mercury when long continued.

Bleeding of the Gums after the Extraction of Teeth.—First wash the mouth in cold water, holding it for a minute in the mouth. If this fails to stop the bleeding try a solution of Tannin, or other common astringent, as Sugar-of-lead.

Tincture of Hammamelis, or Witch Hazel, or any other preparation of Hammamelis that may be at hand, will almost certainly succeed. Pond's extract can generally be obtained where others can not.

Dry flour of Wheat has often succeeded, when the hæmorrhage was

excessive, owing to some hæmorrhagic idiosyncracy. It may be packed down dry into the cavity from which the tooth has been extracted, and permitted to remain there. *Soot water*, mentioned under *wounds*, may be used with success where nothing better is at hand. For pain and swelling, following the extraction of teeth, give Arnica, or Aconite and Belladonna in alternation.

Hyoscyamus.—For throbbing pain in the bone extremely severe.

Silicea.—For swelling of the jaw followed by tedious suppuration. It may be taken often, if given in low dilution; if higher, a dose a week is sufficient in a chronic case.

Local Anæsthetics.—Dr. Fournier, of Paris, lately communicated to the French Academy of Sciences a mode of producing local anæsthesia, consisting in what he calls *chloracetization*. He says: "If in an apartment, the temperature of which marks more than 63° Fahrenheit, the orifice of a thin glass phial, containing a quantity of pure crystallizable acetic-acid, equal to one-fourth of its capacity, and an equal quantity of chloroform be exactly applied to a healthy clean skin, not deprived of its epidermis; and if this phial be constantly maintained at the temperature of the hand, a complete insensibility of that part, and some of the deeper ones, will be obtained in five minutes, and at the cost of a very slight sensation of pain. The vapors of acetic-acid and chloroform mixed together and applied with a glass retort to a part which it is intended to render insensible, the adjoining parts being protected by a diachylon plaster from the action of these vapors, may be employed as anæsthetics in all operations of low surgery, and in many of the higher branches, in all cases where general anæsthesia may be considered dangerous, or declined by the patient."

Mr. Richardson says, "immerse the affected part in chloroform, and include in the part immersed as much of the adjacent structures as may be required; the plan consists in preventing the escape of chloroform by covering it with a cup, and thus intensifying its local effect."

The cup is about half filled with cotton-wool, which is then saturated with a sufficient quantity of chloroform, generally from ten to fifteen drops. The time within which local insensibility is produced varies from seven minutes to fifteen. The local anæsthesia is not in all cases complete; but even where pain occurs, the remedy will be found to moderate it to a point within which it becomes perfectly tolerable, and has lost the distressing agony of tooth extraction. As soon as insensibility of the part ensues the cup should be removed, and the extraction immediately performed. Of sixty cases the remedy only failed in two to mitigate the pain. In ten cases the local insensibility during the extraction was complete.

Galvanism and electro-magnetism have been successfully employed

in this city as local anæsthetics, both for the cure of tooth-ache, and for the purpose of extracting teeth without pain.

3. TOOTH EDGE.—ODONTIA STUPORIS.

Darwin says, this disease is only an imaginary one, "first caused by our biting the edge of the glass or porcelain cup in infancy, and afterwards is re-excited by imagination alone." He says, to "think of it strongly or to see it in another, excites real pain in my teeth." This depends upon the reiterated motions in these nerves, that were formerly disagreeably affected. The influence of the association of ideas in recalling disagreeable feelings formerly existing is illustrated in the case of Baron Van Swieten, who once saw a putrid carcase of a dog explode with putrefaction, and was sickened by it; he says, that several years after he travelled the same road, and the mere recollection of it threw him into the same sickness and vomiting.

Tooth-edge generally caused by allopathic use of Mercury, or the eating of acid fruits.

The following remedies have been recommended for this affection: Berberis; Capsicum; Lachesis; Mercurius; Mezereum; Silicia; Spongia; Sulphur; Sulphuric-acid; Tartaric-acid; Oxide of Zinc. Of these, Mercury and the acids are perhaps most directly homœopathic.

The teeth feel dull. Phos. Sep. Zinc.-m.*

The teeth feel dull as from acids. Mez. Phos.-acid.

The teeth are dull, painful when chewing. Sulph.

Dull teeth, afterwards stinging pains in the same. Ran., Scel.

The teeth are set on edge. Acon.

The molares feel dull. Aur.

Teeth set on edge and insensible. Dulc.

4. ODONTIA INCRUSTANS.—TARTAR.

Tartar has generally been regarded as an accumulation of earthy matter from the saliva. Its quantity depends on the natural or constitutional state of the fluids of the mouth. In all cases its influence on health as well as on the teeth is highly injurious. On its first formation it is soft, and may be easily removed by a soft brush; but it soon assumes a strong hardness, increasing in quantity on the necks of the teeth; the gums are irritated and inflamed, the sockets and neck of the teeth are next destroyed; and the teeth, being left without support, are pushed out by the tongue and lips. In children it sometimes increases so much as to cause separation of portions of the jaw, the temporary teeth, and sometimes portions of the permanent ones.

Microscopic observation has shown that tartar is produced in the

* Jahr, Repertory. p. 417.

same manner as *coral* by animalculæ, resembling the *Medreposa oculata*. By aid of a solar microscope of strong power, we have seen them, says Mr. Le Baume, "in a very lively state;" and from the cellular organization of the tartar we have no doubt of the correctness of this theory, which is confirmed by observations of Mr. Cooper of London. Le Baume thinks that after the tartar, which like coral is a mere *nidus*, adheres firmly to the teeth, the animalculæ burrow in the teeth; and, by insinuating themselves between the teeth and gum, occasion disease in both. But the secretion from them is often so offensive as to contaminate the breath.

Treatment.—Many efforts have been made to find some acid, mineral or vegetable, or other compound that will destroy the animalculæ and their habitation, but without satisfactory results. Le Baume thinks that the *true vinegar*, (not the pyroligneous-acid sold for it,) the most effective. It promptly killed the animals and decomposed the concretions, so that they were easily removed by a brush. The more powerful acids did not answer. Let the true vinegar (Acidum Aceticum Verum) diluted with rose-water, be applied to destroy the animalculæ. Afterwards the local use of powder of the Areca-nut is better than charcoal to prevent their re-formation.

Removal.—If it has become hard, cutting instruments must be employed to scrape it carefully off, in such a manner as to avoid injuring the enamel or gums. To prevent its return, use daily a stiff brush with pure water, occasionally salt and water, tincture of Bark and rose-water. The brush should be as stiff as will not injure the gums, should be used every morning and generally after eating. There is no danger of injuring the enamel by brushing. Tooth powders when used should contain nothing that can act on the teeth, and should be completely washed off. Artificial teeth need as much washing and brushing as the natural ones or more.

Dr. Bowditch of Boston, after making microscopical observations with tartar or animalcular deposit upon the teeth, found that soaps and dentifrices generally failed to destroy it; but the bland soap sold as "Babbitt's Cytherean Cream" was effectual in dissolving it.

5. AFFECTIONS OF THE GUMS.—GUM-BOILS.

This name is wrongly applied to abscesses of the alveoli and cellular substance. *Causes.* Nearly always caused by the irritation of decayed stumps, though Dr. Bell says, they occasionally occur "on the periosteum of sound teeth." The disease commences with inflammation of the periosteum, which becomes thickened, and, of course, raises the root from its socket so that it becomes loose and feels too long. The inflammation then rapidly extends to the surrounding parts, causing swelling

of the face with severe pain, and soon progressing to suppuration, which is announced by occasional sharp shooting pains through the part.

TREATMENT.—Remove the cause. Generally the root or diseased tooth that caused the irritation is a foreign substance, the removal of which in the early stage will effect a cure. If matter be already formed it must be removed by a free incision near the stump that caused the mischief. If the gums remain inflamed and spongy it indicates the presence of *tartar*, which should be removed, allowing the gums to bleed freely at intervals till they are entirely healed.

Bleeding of the Gums.—Carb.-v., Merc., Natr.-mur., Nitric-acid, Phos., Phos.-ac., Sil., Staph., Sulph.

Ulceration of the Gums.—Alum., Carb.-v., Kal., Lycop., Mercury, Natr.-mur., Staph., Sulph.-ac.

Excrescent Gums.—Staph., Chlor-potash.

Scorbutic affections of the Gums.—Caps., Carb.-v., Natr.-mur., Nitr.-ac., Staph., Sulph., Arsen., Bry., Caust., Chlor.-potash, Creos., Mur.-ac., Sep.

Affections of the Gums caused by Mercury.—Carb.-v., Chin., Hepar., Nitr.-ac., Staph.

Affections of the Gums caused by excessive use of COMMON SALT Carb.-v., Spir.-nitr.

For persons who lead a SEDENTARY LIFE, or who are PHLEGMATIC or PLETHORIC, Capsicum.

For persons who are LEAN and of a lively temperament: N.-vom.

II. Diseases of the Maxillary Bones.

The mucous membrane lining the large cavity in the middle of the superior maxillary bones, is liable to several morbid affections. The most important of these are: 1. Inflammation and secretion of pus. This a true abscess which is commonly caused by irritation and ulceration excited by the penetration into this membrane of disease originating in a decayed tooth. The original cause of the disease in the tooth may have been a blow on its surface; a fracture, or the pressure of a plug upon the nerve; the irritation of food or other foreign bodies in the cavity, or extreme degrees of heat or cold.

1. *Abscess of the Antrum Maxillare.*—When the pus formed in the body of the tooth escapes outwardly, no effect is produced in the maxillary antrum. But if the outlet from the tooth be obstructed, the matter "oozes through the extremity of the fang, where the nerves and vessels entered, and, coming in contact with the periosteum, it separates it from the fang and a sac is formed precisely at the foramen." This sac now continually enlarges until it bursts. "If the fang penetrates

the antrum, the membrane of this cavity being always continuous over the fangs, the pus is effused between the membrane and the bone, thus forming a *true* abscess in the antrum. The pus now accumulates by secretion from the surrounding parts until the distended membrane bursts, and the pus escapes from the antrum through the duct into the nose."—(*Dr. Hullihen. West. Med. Jour.* Jan. 1837. p. 335.)

When the fang containing pus terminates in the cells of the alveoli, the distension of the sac produces great pressure on the surrounding parts, the external, or thinner plate is absorbed, the sac enlarges and then bursts, effusing the pus between the alveoli and the periosteum, and forming an "alveolar abscess." A fistulous opening thus established, remains as long as the discharge continues to be furnished from the highly vascular membrane, which lines the cavity of the offending tooth; and a similar discharge is kept up into the antrum, which continues to irritate its lining membrane, which becomes more extensively diseased. A constant discharge from the antrum into the nose may thus be kept up for years; the functions of the membrane are destroyed, and ulceration of the membrane gives rise to small fungous granulations, which may in time produce fungous tumors of the antrum maxillare.

Besides the irritation of decayed teeth, abscesses of the antrum may originate from violent blows on the cheek; inflammatory affections of the adjacent parts, and especially of the pituitary membrane lining the nostrils; exposure to damp and cold air; a blow on the under jaw, driving the molar teeth upwards, may cause a fang to penetrate the antrum. (See *Cooper, Surg. Dict.* p. 151.—*Boyer, Traite des Mal. Chir.* tom. 6. p. 131.—*Jourdain, Abenethy, Gibson, &c.*)

The first symptom of maxillary abscess is a pain which is at first imagined to be a tooth-ache, and usually referred to a carious tooth with which it may seem to be connected. The pain, however, extends more into the nose than that caused by a tooth; and it affects more or less the orbit, the eye, and the frontal sinuses. The pain if not extremely severe is more obstinate in its persistence; and its seat is soon occupied by an elevated circumscribed hard tumor below the malar bone. In some cases this is not visible, in others it extends over the whole cheek, and ends in suppuration. In some again it communicates with abscess within the antrum, and in others the matter makes its way towards the palate, causing the palate bones to swell, and rendering them carious. It may also be discharged between the fangs or alveoli of the teeth, or through the nostril of the same side, when the patient lies with the head in a low position and turned towards the opposite side. This discharge of the abscess usually takes place in three or four days from its commencement.

Purulent Secretion of the Antrum Maxillare.—This disease origin-

ates in an inflammation and closure of the nasal duct, which, by retaining the mucous secretion of the lining membrane of the antrum within its cavity, irritates the membrane and causes it to secrete a purulent fluid. The usual exciting causes are, a blow on the nose, a wound in the nostril, polypi of the nose, severe colds and ulcerations of the pituitary membrane. "When the duct first closes no pain whatever is experienced in the antrum, and indeed not until it becomes *filled* with mucus; then the following are the most common symptoms: a slight uneasiness in the antrum, sensation of great weight or pressure, after which a dull deep-seated pain supervenes, followed by an acute pain darting into the ear, over the eye, and in the direction of the frontal sinus, accompanied by a greater or less degree of tumefaction of the cheek." After the walls of the antrum have been for about one or two months pressed upon by the accumulating secretion they give way and the purulent matter escapes. This fluid is of a dark color, a slimy consistency and the most offensive fœtor. The disease progresses rapidly along the bony parietes of the maxillary sinus, rendering the bones carious, and resisting the treatment, which might be sufficient for the cure of ordinary abscess.

Treatment.—The treatment of abscess of the antrum maxillare consists usually in little more than in extracting one of the molar teeth from the affected side, and perforating the floor of the antrum to permit the escape of the accumulating fluid. The sinus may then be thoroughly washed out occasionally with some mild astringent or alterant solution to restore the parts to healthy action; and the ordinary means for the removal of local, inflammatory and ulcerative disease may be employed.

The treatment of purulent secretion of the antrum is much more difficult. The discharge of the puriform matter is not effected by the extraction of the teeth which seem most diseased; the destructive caries of the bone demands a surgical operation to remove the whole of the offending part of the upper maxillary bone, and the general treatment given under the section on *Necrosis*. (See *Bones, Diseases of*.)

Fungous Tumors of the Antrum originate from ulceration of the lining membrane of the antrum maxillare, as described under abscess of that cavity. The ulceration, says Dr. Hullihen, (*West. Jour. Med. Sci.* 1837. p. 339,) generally occurs in patches over the surface of the membrane, and in time occasions a lesion of its vessels. At this stage coagulations of a bright red color may be discovered in the fluid discharged, intermixed with pus of thicker consistency. Small fungosities now sprout up from the ulcers, which, in some states of health may remain for months without perceptible increase. "But when once these morbid affections become confined, should the slightest irritation occur, their mushroom-like growth is astonishing. When

the antrum becomes filled with a fungous growth the cheek begins to enlarge, and the symptoms resemble those of purulent secretion; but it may be distinguished from that disease by discharge through the nose and by the fœtor peculiar to fungous affections.

Treatment.—Extermination is the common remedy for fungous tumors of the antrum; and the whole morbid growth should be removed at the first operation. The difficulty is greater in a second attempt than in the first. The fungus will grow up again and again if the extirpation be not thorough and complete. Homœopathy has cured some bad cases.

The mode of performing the operation recommended by Desault was to "remove the molar teeth and their alveolar processes, corresponding with the floor of the antrum, by a tooth-key or by two or three strokes of a chisel and mallet." (See *Gibson's Surgery*. vol. 2. p. 16.) The process devised by Dr. Hullihen is to perforate the floor of the antrum through the alveolar cell left by a tooth previously removed. Through the small opening made by the trochar, the tumor was found to fill the antrum in one case; and was so sensitive that fainting and convulsions were excited by touching it. After some days delay, during which a decoction of poppy leaves was repeatedly injected, the operation was continued. The gums were removed by a scalpel, and the alveoli and floor of the antrum were sawed out by means of a small saw. The cavity of the antrum was thus exposed from the second bicuspid tooth to the last molaris, the tumors were removed by scalpels prepared for the purpose, and the hæmorrhage was checked by the application of the actual cautery to all the parts where the fungus was visible. In this case the general health was bad, the fungus repeatedly grew up and was repressed by successive applications of the actual cautery. When it had ceased to grow, the cavity was frequently washed out with fine soap and astringent injections; in four weeks the cavity was entirely lined with a new membrane. In another case the fungus was permanently destroyed by the first application of the cautery. (For Medical Treatment see *Fungus Hæmatodes*.)

3. Lower Jaw.—This bone is said to resemble a horse-shoe and is the largest bone that enters into the structure of the face. It consists of the chin between the anterior foramina, the sides between these holes and the angles, the angles and the rami or branches ascending from them. It has five processes; the *two condyloid* at the extremity of the rami, placed obliquely transverse, separated by a cervix and adapted to the glenoid cavity of the temporal bone with which it forms a double arthrodial joint; the *two coronoid* processes (from their resemblance to the beak of a crow) projecting upwards about one inch on the front of the condyloid; being thin its use is for the attachment of strong muscles; lastly, the *alveolar arch* extending from the base of one coronoid process to the base of the other, being broader behind

than before, and serving to give insertion to the teeth. In each socket for the teeth is seen a great number of small holes for transmitting the vessels to the alveolar periosteum, which is a membrane, common to the fangs of the teeth and their sockets. We find one transverse ridge called the symphisis menti, and some other small eminences within and without the bone.

No trace of suture is found in the alveolar arches, either in man or animals. An important fact to be remembered when we speak of the simultaneous growth of these processes with the teeth. This bone is liable to be broken in preternatural labors, fractured by blows or falls, but never by the extraction of the teeth, even of children; for in them the roots are much shorter, and the proportions which the sockets bear to the jaw is so small that no dangerous power can be exerted over it, in the performance of the operation. In accidents of this kind, two more teeth are often thrown half out of the socket.*

The inferior maxillary bone varies in shape at different periods. In childhood the angles are scarcely perceptible, and the rami nearly on a line with the body of the bone. With the increase of the body and augmentation of the bone, teeth are added, until that period arrives at which decomposition equals deposition or when the nutritive matters no longer exceed the excrementitious. Now the body stops growth, and the bone has its full size.

The bone does not retain its full size to the age of decrepitude, but returns slowly towards the form it had in childhood. It shrinks to one half its size; the coronoid processes fall back; the bone appears to increase in length; the chin projects more forward, the sockets begin to perish by a new action; and the teeth, no longer supported, are necessarily thrust out. It is vain, therefore, to think that the teeth might be kept to old age. On observing the jaw-bone of an old man we see that the absorbent vessels have had the ascendancy and conquered the depositing or secretory vessels. It thus seems that nature has declared that the food of the declining man shall be the same as that of the child.*

The temporo-maxillary joint is composed of ligaments, cartilages, fibro-cartilages, synovial membrane. These condyles are covered with cartilage, so also are the glenoid cavities lined with them, and interposed we find the fibro-cartilage which serves as a friction wheel. These surfaces are kept together by three ligaments, the temporo-maxillary, the external, and the internal. There is no connection between the upper lining cartilage which is developed downwards over the upper surface of the intermediate cartilage and the lower one which invests its lower surface and attaches to the condyle. unless the fibro-cartilage is so worn as to have a hole in its middle.

* Dr. Stout, U. S. Med. Surg. Jour.

The posterior surface of the fibro-cartilages hang very loosely at their back parts and are full of holes for the transmission of vascular twigs. The lining cartilages are connected to the entire articular, and the whole are covered and kept in situ by the temporo-maxillary which covers them as a cap, and is hence called the capsular ligament. On the inner side of this ligament are attached two small glands which secrete the synovia to lubricate the joint, and which is forced out in great abundance during its action by the pressure exerted on them.

The natural motions of this joint are: elevation and depression, projection and retraction, and lateral action. In the carnivora, as the lion or tiger, the action is confined to opening and shutting; the locking of their huge teeth preventing any other motion. In the rodentia, as the rat or the beaver, we find the action limited to projection of the lower jaw forward and retracting it backwards. In the herbivira, those which chew the cud, the grinding is provided for by large pterygoid muscles. In man, who is truly omniverous, we find the combined action of the three classes.

Diseases of the Lower Jaw.—4. The articulation is liable to disease from *inflammation*, caused by the use of Mercury in scarlatina; and it often ends in permanent immobility of the joint.

The treatment consists in opening the mouth forcibly and dividing the cicatrices; the patient must then exercise the jaw by feeding on hard biscuit. Ineffectual attempts have been made by surgeons to introduce instruments to force open the jaw after sawing off most of the teeth which had to be replaced by an artificial set.

5. *Luxation of the Lower Jaw.—Partial* luxation of the joint.—In this case the jaw is thrown to one side by exerting great power in extracting a tooth: one of the condyles thus becomes engaged and thrown forward on the temporal ridge. The accident is rather rare: the mode of reduction is the same as in

Dislocation or *Perfect Luxation.*—This occurs in persons of lax muscular fibre, and sometimes from gaping, or blows; when it happens the chin projects; the teeth of the under jaw are in advance of the upper teeth: the saliva dribbles, and the patient is unable to speak.

Treatment.—Press the rami downward and backward, and elevate the chin. Another method is to insert a stick between the teeth and then knock the chin upwards. Mr. Fox says he succeeded with an ordinary ruler.

6. *Fracture of the Lower Jaw.*—The existence of fracture is rendered evident by the *crepitus* heard and felt by gently rubbing the broken ends of the bone together. To remedy the accident, keep the teeth of the two jaws asunder by inserting a piece of cork which will enable the patient to be fed. Then co-aptate the parts and apply an appropriate bandage. The teeth should be re-placed and the patient

confined to a fluid diet, then wait four weeks for union. If the bone is broken in two places, after fixing the cork, wet a piece of paste-board, place it externally, and apply the bandage; and if inflammation occurs about the teeth, give Acon., and bathe with Arnica.

7. *Caries of the Maxilla Inferior.*—Dr. Markwick gives* the case of a clerk aged twenty-three, who had suffered nine years ago from tooth-ache and swelling of the gums; in after years the cheek swelled and abscesses formed, bursting sometimes externally, and not healing perfectly. On Jan. 18th 1860, there was "on the right cheek corresponding to the bicuspids of the lower jaw of that side a red shining spot which had become adherent to the jaw, with a fistulous opening in its centre; and through this a thin whitish matter and sometimes saliva was discharged. Within, the cheek was firmly united to the bone of the jaw. Pain in the cheek and in the corresponding teeth, which are decayed." Merc. sol 6, is given three times per day.

After twelve days the discharge had ceased, but the opening was not healed, though he was free from pain. Mer. 12, twice a day.

Fourteen days after the fistulous opening had healed; the patient was quite cheerful. Gave Sulphur 30, one dose at bed time.

A week later there had been a burning pain in the cheek. Arsenicum 12. This relieved the burning. A fleshy painful growth now occupied the fistulous opening. Merc. 6.

A week later, there was suppuration, fluctuation, burning and itching in the part. Phosphorus 6.

After two weeks the ulcer had healed. He had two teeth extracted, and for three days he had offensive rusty discharge from the alveola, tasting like iron. From this the ulcer healed and he continued well for five months. At the end of which, or

Oct. 20th, the pain returned, the cheek indurated and adherent. There was suppuration again, after which, while using Silicea 12, it was better, Silicea 18, was continued for about three weeks, then Silicea 30. Under this he attained to good health.

Case by Dr. Helmuth:—A child, aged nine months, presented an opening immediately under the left eye, with a sinus running on the outer face of the superior maxillary bone and opening beneath the upper lip a few lines from the frænum; on passing a probe through the opening, it distinctly felt carious bone, and it was proposed to lay open the cheek by an incision, take away the diseased mass with a scoop or chisel, and afterwards prescribe the usual medicines. The parents objected, and medicines were prescribed. Aurum-mur. 6, one powder every night for a week, then omit all medicine for one week: follow this by Calcarea-carb. 2, a powder every night for a week. So

* Brit. Journ. Homœop., 1861, p. 523.

continuing in alternation, allowing seven days between the administration of the different medicines. This course was pursued for about three months; in which the child was perfectly cured.

III. PTYALISM.

1. *Acute Ptyalism.* (Greek *Ptyalismus*, to spit.) Salivation or increased flow of saliva from the salivary glands. It is seldom seen as a natural disease; and then it is easily cured by the following remedies, which have so often caused a similar state:

2. *From Mercury.*—Salivation, or ptyalism, is regarded as a local indication that the system is under the influence of Mercury. The name salivation refers to the most common symptom of this state, increased flow of saliva. The following is the description of an extremely severe case, one which has been quite common within a few years past: "tumefaction and ulceration of the gums, the tongue swollen to such an extent as to hang out of the patient's mouth, and incapacitate him from either eating or speaking; the salivary glands enlarged, very painful and inflamed, and from four to five pounds of saliva dribbling away in twenty-four hours; the breath horribly fœtid; the inside of the cheeks, the fauces, palate, and tongue ulcerated and even gangrenous; the alveolar processes attacked by necrosis, with exfoliation of dead bone and loss of teeth, leaving the patient, if life is spared, a hideously mangled spectacle. In this group of symptoms several diseases are portrayed: Inflammation of the salivary glands, or *mumps;* ulceration of the cheeks going on to grangrene, or gangrenopsis, ulceration of the throat, and those fearful cases of inveterate syphilis, in which the bones become affected, Dr. Wood recommends Mercury in chronic cases of mumps. (*Pract. Med.* Vol. 22, p. 469.) Dr. Churchhill quotes Dr. Duncan, to show that great benefit follows the use of Mercury and chalk, in gangrene of the mouth. (*Diseases of Children. Churchhill*, p. 489.) In secondary ulceration of the fauces, tongue, &c., of a venereal character, Mercury, in one form or other, is recommended by the majority of surgical writers.

Iodide of Potassium produces salivation very similar to Mercury. Iodine has been employed as a remedy in mercurial salivation.

3. *Chronic Ptyalism.*—Dispensary Case.—A man, aged 30, has suffered greatly from soreness of the gums and salivation for several months. He has not been under Mercury at any time to his knowledge. He has taken some remedies without benefit. He was cured in a few days with Merc. Cor. 3°.

The local use of Mercurius-corros., is very effectual in curing spontaneous ptyalism. Dissolve two grains of the second trituration in a pint of water simply taken in small quantities as a wash for the mouth,

will cure obstinate cases which had resisted long courses of treatment.

Tartar-emetic produces inflammation of the mouth and of the mucous membrane of the tongue, and buccal surface, violent salivation, dysphagia. The lips are swollen and in places excoriated.

Dr. Maxwell advises Tartar-emetic in cases of ptyalism to be given in repeated doses in warm water, so as to keep the system fully under its influence, and the action to be assisted by warm diluent drinks.

It is also appropriate in vesicular and pustular eruptions within and around the mouth, and in swellings and excoriations of the lips. High dilutions should be given in such cases.

Nitric-acid.—Beddoes and other English physicians found *Nitric-acid* of great utility in salivation and ulceration of the mouth occasioned by the use of Mercury. Hahnemann says, "it never could be useful in such cases if it did not of itself excite salivation and ulceration of the mouth. To produce these effects it is only necessary to bathe the surface of the body with it, as Scott and Blair observed.

Iodide of Potassium.—This article is known to be capable of causing salivation similar to that of Mercury; and it has even been employed in the old school as a remedy for the latter affection.

Other remedies are: Bell., Calc., Canth., Colch., Dulc., Euphorb., Hepar., Iod., Lach., Nitric-acid, Op., Sulph.

Nitro-muriatic-acid increases the salivary flow, but does not like Mercury cause mortification of the gums, except it be applied in full strength and in large quantity. In dilutions it cures excessive flow of saliva, tenderness of the gums, contaminated breath. It has been thought to owe its properties to the chlorine only.

4. *Morbid Saliva.*—Alumina.—Case by Dr. Schleistcher.—Mrs. S., over 90 years old, a thin, but hale old lady, after a severe altercation, got a salty taste in her mouth, not relieved by anything she tried. I found the lips pale red, the mucous membrane of the mouth and tongue grayish white, as if macerated in vinegar, fauces pale and dry, saliva tough, inspissated, in small quantity and of salty taste. Chewing and speaking increased the secretion of saliva; water, kept in the mouth, got the salty taste right off. Deglutition was difficult. Appetite good, but food had no relish. Thirst great for cold water, Bowels moved every four or five days, hard, lumpy; sleep restless, and head disturbed for want of sleep; pulse fifty-eight and small. Carbo 6, brought no relief, but Alumina 6, five pillets every four hours, cured her entirely in about two weeks.

5. *Fœtid Odor of the Mouth.*—This is commonly a symptom of some disease which must be cured before this symptom will cease. When its origin is obscure, we may give as constitutional remedies: Sulph., Arsen., Cinnabar, Nux-vomica, Puls., Sepia.

When there has been abuse of Mercury, the best remedies are: Nitric-acid, Aur., Carbo-veg., Sulph., Lach., Arnica, Hepar, Iod.-mer.

Bad smell of the mouth with fœtid taste: Agar.

Fetid smell from the mouth like old cheese, Aur.-fol., Kali-carb. Kal-chlor.

Smell sometimes like garlic, sometimes putrid. Petrol.

Smell of mouth as of pitch or cedar. Canth.

Metallic smell of the mouth. Berb.-v.

Smell as of clayey earth. Mang.*

6. *Salivary Fistula.*—This is generally found in the neighborhood of the duct of the parotid: the course and termination of this canal should, therefore, be carefully studied. *Horner's Operation:* "The fistulous orifice should be first slightly elongated by a simple incision made in the line of the *zygomaticus major* muscle: then the patient's head being firmly supported by an assistant, who also holds a broad wooden spatula against the inside of the cheek opposite the fistula, a sharp-edged punch, like that used by saddlers, and large enough to excise the whole fistula, is pressed firmly against the cheek, so as to remove the diseased portion entirely, and at the same time to open the duct afresh, and afford a new avenue for the escape of the saliva into the mouth. The external edges of the wound are now to be accurately closed by the twisted suture, and the cold-water dressing is to be applied, and union is accomplished."

7. *Salivary Concretions within Stenson's Duct.*—These are white friable, and either round, oblong, cylindrical, or ovoid, in size varying from that of a millet-seed or a pea, to that of a hazelnut. They may be single or very numerous, (twenty or more.) They are composed of phosphate and carbonate of lime, held together by animal matter, and give rise to obliteration of the ducts and great dilatation, consequent upon the accumulation of the secretion. (*Rokitansky*, Vol. 2, p. 142.)

Bilious Derangements of the Stomach.—The principal remedies are: Bryonia, Nux-vom., China, Coloc., Puls., Sulph., Arnica, Arsen.

General Remedies for Affections of the Mouth.—*Arsenicum.* Aphthæ; tongue *black, brown, blue* or *red;* boring pain; cancer of the tongue; tongue white, coated, cracked; *dryness of the mouth and tongue*, with thirst; inflammation of the tongue and mouth ending in gangrene; numbness of the tongue; paralysis of organs of speech: *accumulation of saliva* altered in quality to bitter, bloody; offensive *smell from the mouth;* speech affected by inflammation of the organs; slowness or rapidity of speech; swelling, ulcers of the tongue.

Mercurius.—The tongue feels as if burnt: white, black or slimy thick coating on it; mouth dry, bleeding; tongue swelled, hanging out, sup-

* Jahr, Reper., p. 447.

purating; hard, inflamed, moved with difficulty; feels numb and rough; ptyalism; ranulu; saliva altered, acrid, fœtid; saltish taste; offensive smell from the mouth; putrid smell; palate, tongue and gums sore; swelled, ulcerated; speech altered, hurried, stammering.

Mercury, Abuse of.—Aurum, *Bar.-m.*, *Bell.*, Calc., Lach., Sil.

Lachesis.—Abuse of Mercury; difficulty of speech; he is liable to bite his tongue; tongue shining, black or brown, burning; rigid; cancer-like pain; mouth and tongue dry, with thirst; froth at the mouth; tongue swelled, hanging out; inflamed tongue and palate; accumulation of saliva and mucus: paralysis of the organs of speech, tongue, &c. Ptyalism after Mercury; mouth and palate sore; speech difficult, indistinct, confined to single words, suppressed, or hurried stammering; according to the degree of inflammation or paralysis of the organs; ulcers on the palate.

Belladonna.—Cracked tongue; white, slimy coating on the tongue; it feels cold, or dry, heavy, inflamed; mouth dry, with thirst; froth at the mouth; bleeding; palate swelled, velum enlarged; abuse of Mercury; ptyalism; the tongue moves with difficulty; accumulation of mucus, speech suppressed by paralysis or swelling of tongue, &c.; tongue red, rough, saliva accumulated; tenacious; thick, viscid smell from the mouth; sore mouth; dumbness, or hurried altered speech nasal twang, &c., caused by inflammation or spasm of the organs stammering.

Aconite.—Spitting of blood; burning in the tongue; dryness of the mouth and tongue, with thirst; inflammation of the mouth, palate, velum palati, tongue; accumulation of saliva; defects of speech from inflammation of organs; stammering; stinging in the tongue.

Nux-vomica.—Aphthæ: tongue black, blistered, brown, burning, thick coated, slimy, white, or yellowish, cracked, dry, heavy, red on the margins, sore, swelled, ulcerated.

Palate blistered, sore, swelled, ulcerated.

Mouth dry early in the morning or at night, without thirst; bleeding from the mouth; inflammation of mouth, palate, velum palati, opening the mouth with difficulty.

Mucus, accumulation of; smell from the mouth after eating.

Paralysis of organs of speech; ptyalism at night; accumulation of saliva, altered in character; speech difficult from paralysis and inflammation; stammering.

Sulphur.—Aphthæ: blisters; spitting of blood; bad smell from the mouth.

Tongue brown, burning, coated white or brown, slimy, thick; cracked, dry in the morning; margins rough.

Mouth dry in the morning, with thirst; peeling off of the skin;

ptyalism after abuse of Mercury; accumulation of saliva; frothy, salt, or sour.

Defects of speech, difficult, organs of speech inflamed; stammering.

Remedies in Affections of the Fauces in general.—Alum, Bell., Carb.-veg., Ignatia, Lachesis, Merc., Nux-vom., Phos., Puls., Sulph.

IV. DYSPHAGIA.

(From Greek, *dys*, with difficulty, and *phago*, to eat.) Difficulty of deglutition. Five different forms of this disease have been described. We will collect some observations of value on the following:

1. *Dysphagia from mechanical Injury of the Œsophagus.*—The effort to swallow hard and imperfectly masticated food, may result in injury to the texture of the œsophagus. This tube is composed of inter-twined fibres plaited together in a way that permits considerable distention; but distention carried too far and too often repeated causes disease of the œsophagus, and this is attended by many symptoms common to dyspepsia. A prominent one is pain in the centre of the back and of the chest, which is distressing among the other anomalous symptoms felt by dyspeptics. This repeated swallowing of hard ill-masticated masses of food may cause in unhealthy cachectic persons a thickening of the lining membrane of the œsophagus, which often ends in permanent stricture and difficulty of swallowing. Dysphagia, when proceeding to its ultimate result, produces death by inanition, the passage to the stomach becoming closed. When disease had proceeded to a dangerous extent, Dr. Epps in one case condemned the effort to force down solid food. He advised to "let it alone, subdue the excitement and anxiety; the œsophagus will not unlikely act upon the food, and if not digested, it will so far act upon it as to dislodge it" or enable it to pass gradually into the stomach, with the aid of pressure of soft food. (*Constipation*, &c., p. 29.)

The effort to force foreign bodies down the œsophagus into the stomach induces perpetually-recurring spasmodic action of this muscular structure; and this contraction is only overcome by force, for which an instrument is used. The forcing efforts persisted in, often cause closure of the œsophagus, a condition ending in starvation.

Case by Dr. Epps.—An intelligent lady swallowed a fish-bone, which she felt only half-way down to the stomach. A surgeon made persistent efforts to push it down. Her countenance indicated intelligence, but the eye had an anxious brightness, indicative of fearful changes going on in the system, caused by the deficient supply of food. The lady died from the injury of the œsophagus, occasioned by the efforts to force the hard substance into the stomach.

Foreign Bodies in the Throat.—When the effort is made to swallow

substances too large or solid, and it lodges in the throat or œsophagus, it is desirable to learn what the substance is. The effort first is to compel the patient to throw it out by beating him on the spine between the shoulders, or by tickling the throat with a feather, or by putting snuff on the tongue. If the object has passed too far down to be seized with forceps, and its nature is known, it may be pushed down into the stomach. A small gum-elastic tube, oiled, may be passed back into the throat; its presence near the glottis excites it to close, at the same time the patient makes an effort to swallow and the end of the tube passes at once into the œsophagus. It can now be gently pushed downward, giving no uneasiness till it touches the foreign body. If this be soft or smooth or soluble it is easily disposed of; if it is hard or rough it may still go down slowly, if aided by the swallowing of oil or butter. After it has passed into the stomach there is sometimes a feeling of something sticking there, but this soon subsides.*

When the pain is violent, with retching, great anguish or spasms, immediate efforts must be made to bring up the irritating substance. A violin string, or a fine wire may be bent at the middle into a loop. This may be pushed down with the end of a whalebone probang made perfectly smooth, or with the smooth gum-elastic tube. If it get below the point of obstruction it may bring the object up when it is withdrawn.

2. *Dysphagia from Nervous Irritation.*—This disease generally occurs in "young women of an excitable nervous system, with leucorrhœa, or painful menstruation and impaired digestion." The strongest language was used by these patients to express their inability to swallow, and they showed the greatest unwillingness even to attempt it.†

Diagnosis.—This is made out from the general symptoms and history of the case. There is, in cases purely nervous, *no emaciation;* the attack comes on suddenly from slight cause, as a "nervous shock or slight catarrh;" there is considerable nervous excitement but no pain. In cases dependent on serious organic lesion there is progressive emaciation from an early period till the termination of the case.

A case is reported by Dr. B. F. Joslin, jr., which commenced with symptoms of a purely nervous character; but which afterwards proceeded to a fatal termination after a regular course of emaciation and protracted suffering. This patient at first (1856) complained of "choking in the throat," gastric irritation and a feeling of nervousness; there was difficulty of swallowing, partially by Nux 6, Mercurius, Pulsatilla, Ignatia, Belladonna, and Natrum-muriaticum. After death which occurred after three years of suffering, dissection revealed a tumor

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* Hering.

† Diseases of the Alimentary Canal, by Dr. Habershon.

an inch in length, "hard and solid with numerous spiculæ of bone projecting from it. It was situated just above the bifurcation of the trachea, inclining to the right side." Connected with the tumor was "a cardiac branch of the *pneumogastric nerve*. The tumor had caused the difficulty of deglutition, not by pressing on the œsophagus, but by interfering with the functions of this nerve."*

Dysphagia from Spasmodic Constriction of the Pharynx.—Hyoscyamus.—Several authors observed it to produce *spasmodic constriction of the throat with inability to swallow*, in a very high degree. A similar case was cured by Withering with this article. (*Edinb. Med. Com.*, Dec. 11, b. VI., p. 263.)

Cocculus.—Case by Dr. Helmuth.—A woman had been unable to swallow either food or drink for some time and was absolutely in a state of starvation. Partly deserted, and partly given over by former physicians. There was stricture of the upper part of the œsophagus; and she was near dying from exhaustion. I dilated the stricture sufficiently to allow the passage of a flexible tube into the stomach and injected about a pint of weak chicken broth into the viscus. This was several times repeated, at intervals. She immediately revived, and each day I introduced a larger probang. For several days the dilators were continued without finding dilation more easy. As soon as she could swallow at all I administered Cocculus and Nux-vom., and occasionally Arsenicum, Cal.-carb. The results produced by these medicines were surprising. The administration of the Cocculus in particular was always followed by the best results.†

Dysphagia is sometimes a cause of apoplexy. Food does not descend instantly to the stomach, but is gradually and slowly carried downward by "a kind of spiral gyre-like action of the gullet itself. The diameter of the œsophagus gradually lessens as it nears the stomach:" It is important also to note that "the aorta lies close to the gullet, and this explains why apoplexy so often follows upon the taking rapidly of large quantities of food at public dinners." Swallowing in haste, there is not time for the œsophagus to empty itself, and it becomes distended; a pressure on the surrounding parts takes place; the flow of blood through the aorta is impeded; this impediment causes the vessels in the overworked and weakened part of the brain to become ruptured; effusion of blood takes place; and, after some hours of stertorous breathing, the patient dies. The case is regarded as one of death from apoplexy, though it is really death from over-distention of the œsophagus, and might have been averted by eating more slowly." (*Dr. Epps.*)

General Remedies for difficult Deglutition.—Acon., Alum., Ambr.,

* Amer. Hom. Rev., Vol. 2, p. 314.

† American Hom. Review, Vol. 2, p. 114.

Ammon., Argent., Arsen., Aur.-m., Baryt., BELL., Brom., Bry., Canth., Carb.-v., *Caus.*, Cham., Chinin, Cic., Con., Cupr., Dros., Fluor-ac., Hep., HYOS., IGN., Ip., *Lach.*, *Nux-vom.*, Puls., Rhus., Sepia, STRAM., *Teucr.*, *Tart.-em.*

Dysphagia often remains for weeks and even months as an effect of diphtheria. Not unfrequently the muscles of deglutition and of articulation become paralyzed during the progress of the malady, and the patience of both patient and physician is severaly tried before recovery takes place.

IV. MORBID THIRST.

Thirst is rather a symptom of many diseases than a disease itself. It is only when it becomes excessive that it is regarded as a manifestation of disease. The desire to drink at reasonable intervals and in sufficient quantities to supply the body with the necessary amount of fluids is rather an accompaniment of health than of disease.

Symptoms.—Thirst consists of a feeling of dryness, heat, and constriction, in the back part of the mouth, pharynx, œsophagus, and sometimes the stomach. When thirst has continued for a short time, these parts swell, become red: the mucous secretion ceases almost entirely; that of the follicles changes, becomes thick and tenacious, the flowing of the saliva diminishes and its viscosity is sensibly augmented; there is now inquietude, general heat; the eyes become red, the mind is troubled, the circulation is quickened; respiration is laborious; the mouth is opened wide, in order to bring the external air into contact with the irritated parts, thus producing momentary ease.

1. The causes of the development of thirst in an inordinate degree are such as have diminished the amount of watery fluid in the blood; when the atmosphere is peculiarly dry; when the body has been losing undue quantities of fluid; excessive fatigue; eating of salt food; all other causes of febrile disease. Some persons have had such extreme thirst as to drink from forty to sixty pints of liquid in twenty-four hours.

Ali Bey in his travels through the deserts of Morocco thus describes the

Symptoms of Excessive Thirst.—"An attack of excessive thirst is perceived suddenly by extreme aridity of the skin; the eyes appear to be bloody; the tongue, and mouth, both within and without covered with a crust about the thickness of a crown piece; this crust is of a dark yellow color, of an insipid taste, and of a consistence like the soft wax from a bee-hive. A faintness and languor takes away all power to move. A kind of knot is felt in the throat, and a stricture in the diaphragm, attended with great pain which interrupts respiration. Some

wandering tears escape from the eyes; and, at last the sufferer drops down to the earth, and in a few moments becomes unconscious of his situation and of all around him. These were the symptoms I witnessed in my fellow travellers, and which I experienced in myself."*

The following Remedies have relation to excessive thirst.

Desire for cold water. Arsen., China., Eup.-per., Lobel.-card., Ruta., Sabad., Zinc.-m.

Great desire for cold drinks. Angus., Dulc., Euphorb., Ledum-pal.

Thirst for cold drinks, particularly water. Merc.-sol.

Great thirst for cold water, with heat and dryness of throat. Carb.-am.

Great thirst for cold drinks in the evening, without heat. Bism.

Unquenchable thirst, particularly for cold drinks. Verat.

Great desire for cold drinks without heat. Bell.

2. *Loss of Thirst.*—Arsen., Bell., Ferr.-acet., Ledum.-pal., Puls., Sep., Sassap., Tab.

No thirst for many days. Mang.
No thirst. Lycopod., Natr., Sulph.
No thirst for four days. Cycl.
He drinks less than usual. Staph.
No thirst or else it is excessive. Camph.
Absence of thirst, with heat in the whole body. Hydroc.-ac.

V. DERANGEMENTS OF DIGESTION.—LIMOSIS.

1. ANOREXIA.—Want of Appetite. See *Dyspepsia.*

2. BULIMIA.—*Fames Canina. Morbid Appetite.*

A disease in which the patient is affected with insatiable and perpetual desire of eating, beyond the wants of the system. It sometimes amounts to simple indulgence in excessive quantities of food. It may be attended with apparent good health, but it ultimately leads to plethora, disorder of the secreting functions, apoplexy or paralysis. It is often a symptom only of certain morbid states of the digestive organs.

Causes.—1. *Remote:* Hereditary predisposition; the habit of eating too much and without mastication. The American Indians frequently excite it in this way; chronic debility from obstruction of the mesenteric glands, liver, &c., suppression of chronic eruptions, old ulcers, &c.

2. *Immediate:* Concentration of vital energy in the stomach; the nerves becoming more sensible and muscular coats more irritable; and leading to increased secretion of the gastric-fluid; this causes the sensation of extreme hunger; and the food taken into the stomach is rapidly dissolved, and pressed forward into the duodenum. The concentration and expenditure of vital energy is followed by torpor, debi-

* Wonders of the World, by C. C. Clark, p. 251.

lity, and a sense of faintness; abstraction of vital influence from the brain and heart; imperfect assimilation; irritation of the digestive surface; impure state of the blood. (*Copland*, vol. I. 121.) Exhaustion from habitual discharges, the state of pregnancy, rapid growth; onanism, &c.

Pathology.—Inordinate distention of the stomach and duodenum; vascular, corrugated state of the mucous surface; hypertrophy of this organ, or flabby, softened state of its coats; dilatation of the œsophagus. We have seen one case in which the degree of emaciation was equal to that in the last stage of phthisis; though very large quantities of food were demanded. A stricture of the œsophagus near its lower extremity prevented substances swallowed from reaching the stomach and the œsophagus became distended to a large size. When about two quarts of solid and liquid food had been forced into the œsophagus the patient poured down after it a quart or two more of water; and, by some peculiar muscular efforts, so far relaxed the stricture as to enable the contents of the distended œsophagus to pass down into the stomach. On dissection the œsophagus was found about four inches in diameter; all its coats being hypertrophied, thickened, irritated and in parts inflamed and ulcerated.

In some cases of bulimia *tænia* or *lumbrici* exist in the intestines stomach or duodenum; in others there is structural disease of the liver pylorus, duodenum, or organic changes in the mesentery, its glands, or other abdominal organs; it often exists in connection with epilepsy and other cerebral disease.

Treatment.—It is usual to begin the treatment by restricting the amount of food; but this can seldom be done, as the patients can never be trusted to govern themselves. One case is given in which three-hundred and seventy-nine pounds of meat and drinks were swallowed in the space of six days; and yet the patient lost flesh rapidly. He was cured by taking food boiled to a jelly, in small quantities often repeated. (*Mem. Med.* Soc. London. Vol. 3.) Copland saw a child seven years old who seized upon an uncooked rabbit, half a pound of candles and some butter and devoured them in quick succession, and who ordinarily ate more than six other persons. This case and a similar one were cured by an active course of nauseating purgatives, chiefly Castor-oil and Oil of Turpentine. In one case the remedies caused an eruption over the body resembling porrigo favosa, accompanied by the sudden disappearance of the disease. On suspending the treatment the eruption receded and the bulimia returned; and it was finally cured by Mercurials, Purgatives, Turpentine, external use of Tartar-emetic, Ointment and strict diet. There is no case of this disease that will not yield to a judicious homœopathic treatment.

In one case given by Dr. Crane, (*Lond. Med. Repos.* vol. 17. p. 293.)

the eating of large quantities of food was followed by vomiting. This case was cured by compelling almost total abstinence from food for several weeks; the only aliment allowed being portable soup made into pills. When the stomach has been inordinately distended by extraordinary quantities of food, it is better to reduce it gradually, relying much at the same time on an active course of anti-psoric remedies as Kali-carb., Pod., Iod., Sulph., exercise, and constant mental as well as physical employments. In some cases stimulants in small doses have changed the action of the stomach. In others the morbid sensibility has been subdued by Opium; and M. Rostan recommends small pieces of ice to be swallowed at regular intervals.

In some of the most remarkable cases recorded, no course of treatment was persistently tried. Domery, the Polish soldier in Admiral Warren's fleet in 1799, inherited the disease, and began to eat in large quantities at the age of thirteen. He would devour live cats, rats, and dogs, also tallow candles and the entrails of animals. In one day when aged twenty-one (1799) he ate four pounds of raw cow's udder in the morning; at half past nine A. M. he commenced on five pounds of raw beef and one pound of tallow candles, with one bottle of porter; one o'clock, P. M. the same quantity of these articles were repeated, with three bottles of porter. His room being guarded to see that nothing was thrown away, he was found at two o'clock in good spirits, the skin cool, pulse regular, having had no evacuations of any kind. At a quarter past six he had devoured the whole, and declared he could eat more; but, being told that experiments were being made upon him, he desisted. (*Johnson, Medical and Phys. Jour.* vol. 3.—*Brit. Encycl.* vol. 3.)

3. ABSTINENCE.—*Abstinentia.*

I. *As a Remedy in the Treatment of Disease.*—The great power of abstinence in both health and disease render all its symptoms important. The influence of fasting was almost as well known to Hippocrates and Sydenham as it is now; and it forms a part of the popular knowledge of the people of different climates. Dr. Edward Miller says the French and Spaniards who emigrate to the West Indies escape the violent diseases peculiar to the tropical climates by avoiding the strong diet and stimulating drinks which the English and Americans are too much disposed to use in all climates. (*N.-Y. Med. Repos.* I. p. 194.)

When abstinence is relied on as a remedy it must, says Marshall Hall, be carried much farther than is usually prescribed as a part of the antiphlogistic regimen, and must be severe in proportion to the severity of the disease and the rapidity with which it is progressing. It may be especially important in gastritis, hepatitis, dropsy, cancer, plethora, apoplexy. (*Dr. C. A. Lee. Copland.* vol. 1. p. 31.) Corpulent per-

sons and those suffering from febrile or inflammatory affections endure abstinence to an extent that would be quickly fatal to one in health; and the middle aged sustain life longer without food than the young or those far advanced in life. (See *Remarks at pages* in 190—192.)

II. *Effects of protracted Abstinence on health.*—The sensations first excited by prolonged fasting vary according to the degree of mental and physical power of the individual. The sensation of hunger is generally strong, and every substance within reach is ravenously devoured to appease it. Every animal, the most loathsome reptiles, are welcome. In a disastrous voyage to Brazil, Lerius says, "a mouse was more valued in the ship than an ox had been ashore."

The native Australians composed a paste of ants and worms with the bark of trees to appease hunger; and the people of New Caledonia swallow lumps of earth for the same purpose, and tie ligatures, continually increasing in tightness, around the abdomen. As the sensation of hunger increases the mind begins to become savage and brutal. Men become wild and ferocious, quarrelsome, turbulent and reckless, resembling beasts of prey. Of one hundred and fifty persons who in 1816 attempted to save themselves on a raft made from the wreck of the Medusa, West of Africa, some became delirious and deliberately walked into the sea; some sank into a state of drowsiness and passed hours in delightful visions. Others bade adieu to their comrades, saying, "fear nothing, I am going to get you assistance, and will soon return." In the midst of the general madness some rushed on their companions sword in hand, demanding something to appease the hunger that was consuming them. Many believed they were still on board the Medusa, and saw ships, harbors, and an elegant city in the distance. M. Carreard thought he was travelling through beautiful fields, when an officer said to him "fear nothing. I am going to write to the governor; and in a few hours we shall be saved." Confused cries of the starving people roused them from their visions. After a night in which painful dreams could not be distinguished from dreadful realities these friends awoke and asked each other if they had not heard cries of combats and groans of despair; and every man believed he had been deceived by the illusions of some terrible dream. Around was a scene of horrors. Over sixty persons had died of starvation during the night or drowned themselves in despair; and the deepest dejection was spread on every face; some sat down in sadness, bitterly complaining of their hard fate, and the remaining wretches cut up the bodies of the dead to eat.

In some cases the suffering from starvation, appears not to be so great. Captain Inglefield, who survived the wreck of the Centaur in 1782, saw some die; others hung twenty-three days in the shrouds and were saved. Captain Kennedy did not taste food or drink for eight

days, and yet felt none of the sensations of hunger or thirst. In these cases, as in many others, life was prolonged by the absorption of sea-water from the surface of the body.

The length of time that entire abstinence can be endured varies in different persons. Hippocrates fixed the utmost limit at seven days. This has in various modern instances been exceeded. In 1784 Thomas Travers remained buried in a coal-pit two hundred and seventy feet deep seven days and was living when extricated, and could raise his head; but his hands and feet were cold, and pulsation was almost extinct. He only lived till the next morning after food was given him. In 1783 two girls were buried in the ruins of a house destroyed by the earth-quake that desolated Sicily and Calabria. One of these girls lived eleven days without food and the other six days; both recovered.

Symptoms produced by entire Abstinence.—Paleness and languor of countenance; muscular debility and emaciation; weak small pulse; thirst; quickness of intellect, constipation, flaccidity of the muscles; increased frequency of the pulse; palpitations, leipothymia, or full syncope; head-ache, delirium; flushes of light before the eyes; tinnitus aurium; slight amaurosis; dryness of the throat; pains in the stomach; wakefulness, followed by delirium, mild or furious; coldness of the surface and extremities; morbid sensiblity of the organs of sense; depressed temperature, followed by insensibility, stupor or coma, terminating in death; symptoms resembling these are often caused by rigid adherence to the antiphlogistic treatment. (*Copland*, vol. 1. p. 32.)

Pathology.—Emaciation and absorption of every particle of fatty matter; paleness flabbiness, softening and emaciation of the muscles and heart; paleness of all the viscera; slight atrophy of the liver and spleen; diminished size of the stomach and colon; increased vascularity of the brain, and sometimes of its membranes, a large proportion of the blood being sent to the brain to the very last. This is effected by the pressure of the atmosphere on the surface of the body generally, whilst the brain is guarded by the unyielding walls of the cranium. A limpid serous effusion is also found in the ventricles or between the membranes. (*Copland.*) Magendie says, abstinence increases the proportion of the albumen as the quantity of blood diminishes. The quantity of lymph is considerable during the first third of the period of abstinence; and it increases the longer the animal fasts; after this or during the other two-thirds of the time it diminishes, and before death there is but little lymph in the thoracic canal. (*Jour. de Phys.* 8. 1861.)

The instances in which life has been prolonged for an incredible space of time by a very small amount of aliment daily given are numerous and well attested. The negro couriers, who traverse the deserts of the Western coast of Africa, perform long and fatiguing journeys on about

four ounces of food daily. The Moors often subsist eight days on three ounces of gum daily, without sensible injury. A caravan of one thousand persons subsisted on gum a part of the journey from Abyssinia to Cairo in Egypt, and gum-water is often depended on to sustain life when other food is exhausted. An American Indian can travel long journeys, carrying with him only a small quantity of parched corn. Shipwrecked sailors have been kept alive for many days on a small part of a ship's biscuit per day to each man. Captain Bligh of the ship Bounty, having been placed by the mutineers in an open boat, with eighteen men, sailed about 3600 miles in the South Pacific Ocean, allowing to each man only an ounce and a quarter of biscuit per day. Religious visionaries have often tested the utmost powers of the human constitution. In 1789 Caleb Elliott attempted to fast forty days, and died at the end of the sixteenth of starvation. Two convicts lived in the jail of Edinburgh fourteen days without food, receiving liquids only. A Scotchman confined in the tower of London fasted sixty days and was liberated. Morgagni says, a woman refused all sustenance except twice in fifty days. Dr. Willan says a visionary in 1786 refused all solid food and drank only a half pint or pint of water acidulated with orange juice, for sixty days. He was now reduced to the appearance of a skeleton on which the flesh had been dried, though the lustre of his eyes remained and his voice was entire. He was treated by Dr. Willan, but he died in a state of imbecility on the seventy-eighth day. An insane man took nothing but a pint and a half of water daily, and stood in one position thirty-eight days. He then lay down and lived nine days longer. Janet McLeod of Scotland, after epilepsy and fever remained five years in bed, receiving food only by constraint. In efforts to force her mouth open two of her teeth were broken. Liquids forced into her mouth were rejected. With her head drawn down on her breast she slept much, and continued to live for four years, taking no food but water. She afterwards gradually revived, and took a few crumbs of bread with milk and water, sucked from the palm of her hand; but she perhaps, never entirely recovered. (See *Gentleman's Mag.* 1789.—*Annu. Regis.* 1768.—*Encyc. Amer.* vol. 13. p. 451.)

A young man confined in a coal-pit for twelve days, subsisted on only a little water collected in the hollow of his hand. Dr. J. W. Francis says, a negro woman lived seven weeks supported only by two cups of water slightly medicated with wine. (*N.-Y. Med. & Phys. Jour.* 1823.) Professor McNaughton reports the case of a young man who confined himself chiefly to his room for three years, and in 1829, May, began to refuse taking any sustenance but water. For fifty-three days he lived on water alone. A few days before he died Professor Willoughby found his skin very cold, respiration feeble and slow; effluvia from the breath and skin offensive; discharge from the lungs of

foul reddish matter; pulse slow and feeble; arteries extremely contracted, the radial artery communicating a wiry feel; alvine evacuations infrequent; urine more natural. At the end of fifty-three days he died. On dissection the gall bladder was distended with muddy looking bile; stomach, mesentery and intestines thin and transparent; no fat in the omentum. (*Transac. Albany Institute.* vol. 1.—*Lee's Edit. Copland.* 1. 31.)

The case of Mrs. Hays of Chester, Warren Co., N.-Y., attracted much attention. She was injured by a fall in 1854. Confined to bed for eight months, she was next affected with spasms lasting three or four days. During one year she took little food; and from the 20th Feb. 1857 it was alleged that she took neither food nor drink. The persons employed to watch her day and night for a month declared that she neither ate nor drank; and that on food, tobacco or ardent spirits being brought into the room, concealed in the pockets of disinterested visitors, convulsions were always excited by any of them. Being in a state of almost constant spasm, deglutition was impossible; and the approach of persons who had touched bread caused violent retching. All action of the kidneys and bowels ceased after June, 1856. (*Account by A. D. Milne*, p. 48.—*Amer. Hom. Review*, 1858.)

Treatment.—The only treatment generally required is the gradual and cautious administration of nutritious but unirritating food Begin with bland, farinaceous articles which are easily digested; let the quantity be small, often repeated, and very slowly increased. When animal food is considered safe, light broths and soups may be tried before milk, which requires good digestive power after it is coagulated. Sweet cream, diluted with water is more easily digested. The usual diet of convalescents from states of great debility will be by degrees allowed. Of medicinal measures few will be needed. External warmth, gentle frictions, mild stimulants, and mild sedative tonics will generally be all that will be required. The supporting, cheering, invigorating powers of hot coffee render it peculiarly serviceable in all cases of this kind. Febrile excitement will be controlled by Aconite, and determination to the brain by Belladonna.

In nearly all cases of slight gastric disturbance, and consequent head-ache, nausea, lassitude, and general feelings of *malaise*, entire abstinence from food for two or three days, will allow the stomach to recuperate and resume its healthy function. Unfortunately, as a general rule in such cases, both the patient and the physician regard medical interference necessary, and thus add to the irritation by cathartics, alteratives, tonics, &c. In this manner a simple gastric irritation, or relaxation, from over-eating, drinking, irregularities in diet, or improper food, which a proper abstinence of a couple of days would

cure, is often converted into troublesome disease of weeks or even months duration.

III. *Inanition, as a Cause of Disease.*—The morbid effects of a deficient supply of food are generally encountered in connexion with other deleterious agents. Thus in badly managed public institutions, and in the homes of the poor we meet with the consequences of cold, insufficient clothing, excessive labor, damp or impure atmosphere, mental depression, &c. From the combined influence of such causes we may have scurvy; purpura hæmorrhagica; scorbutic dysentery, or diarrhœa; typhoid fever, nervous or cerebral affections; emaciation; chronic ulcerations. A few years ago the convicts of the Miltbank Penitentiary (which is situated in a marsh and lower than the river adjoining), with all the above cases of disease around them, were restricted to a diet almost entirely vegetable, with no animal food but a very weak soup. The effects were: pale color, loss of flesh and strength; diarrhœa, dysenteries, scorbutic dysentery, scurvy, ataxic fevers, headaches, vertigo, convulsions, delirium, mania, apoplexy, &c., inability to bear the smallest loss of blood; though dissections showed the brain in a highly vascular state; also frequent effusions of fluid in the ventricles or between the membranes.

Dr. Lee (in *N.-Y. Jour. of Med.* vol. 3. p. 53) says, ophthalmia in the Orphan Asylums and Long Island Farms School owed its origin to defective nutriment, and its propagation to want of cleanliness and ventilation, and they disappeared when these abuses were reformed. In 1840 an epidemic diarrhœa appeared among the children at the L. I. Farms School, attended with mortification of different parts of the body; ulceration and consequent destruction of the eyes, thin, dissolved state of the blood; offensive odor from the skin. It was caused by a diet of poor bread and tea, sweetened with molasses, the water in which coarse vegetables had been boiled, and the beef of which soup had been previously made, on alternate days. The effects, says Dr. Morrell, of this defective food were: loss of *embonpoint*, dulness, inactivity; the eyes lacked lustre; the skins exhaled an offensive odor, and medicines failed in their accustomed effect. These symptoms were followed by cholera morbus, incurable diarrhœa followed by mortification. The latter commenced generally near the junction of the mucous membrane and skin, with a dark spot which spread rapidly, and involved the parts in one mass of putridity. When the mortification was arrested at one extremity of the alimentary canal, it immediately commenced at the other. Ulcerations generally commenced in the cornea by a pearl white speck near its junction with the sclerotica; this spread over half the pupil, penetrated the iris and left it protruding. And thus one or both eyes were commonly lost before death. During the prevalence of the epidemic, scarlatina always terminated fatally, and every trifling wound progressed to gangrene.

The insufficient supply of food furnished to the inmates of prisons and poor-houses causes derangement of the stomach and bowels, want of appetite, from defective secretion of the gastric-fluid. Chossat says, birds fed with too little corn, but plentifully supplied with water, fail to digest what they take; it is thrown up by vomiting, carried off by diarrhœa, or retained undigested. (*Recher. Exper. sur l'Inanition.* Paris, 1843.)

In cotton factories the hurried manner in which the children eat, and the meagre quantity of food allowed them, prevents their physical development and shortens their lives. "The greater part of the time allotted them for dinner, and often the whole of it" is occupied by the children in cleaning the machinery; "no time," says one author, "was allowed for the breakfast or afternoon meals, which were snatched in mouthfuls during the progress of uninterrupted labor; the refreshments not unfrequently remaining untouched till they became cold, and covered with dust and dirt from the cotton flyings." The temperature of many mills is "uniformly 80, 85 or 90 degrees." As a specimen of the results of this system it was shown before a committee of Parliament that the number of operatives who reach the age of forty is incredibly small.

In 1831 of 1665 persons who "struck" for wages, and whose ages ranged from fifteen to sixty, 1584 were below forty-five, three only had attained the age of between fifty-five and sixty; and not more than fifty-one between forty-five and fifty were counted fit to work. Macnish says, that of 1600 men in the factories of Lanark and Renfrew, no more than ten had reached the age of forty-five. Before this age they are too infirm to do the required amount of work, their eye-sight fails, and they are turned off to make room for younger men. (*Lee's Edit. Copland's Dict.* vol. 1. p. 141.)

IV. *Appetite, vitiated, or depraved.*—An appetite for substances in their nature unfit for food is common among pregnant, hysterical, and chlorotic females, especially at the age of puberty. It is considered the result of an altered state of the nerves or a perverted state of the secretions of the stomach, connected with imperfect action of the digestive organs, uterus or brain.

A form of this disease is of frequent occurrence in the Southern states, where it is called by common people "cachexia." I have seen many cases of it, generally in young females. They all show an irresistible propensity to eat certain kinds of loam or clay, which probably allays the painful sensations produced in the stomach by acidity. The appetite for clay and other earthy substances among the negroes in the West Indies was described by John Hunter, and is there considered endemic. In some cases the inordinate craving of the stomach is only assuaged for a very short time by clay; and other substances, often the

most disgusting, are taken: "cinders, spiders, lice, insects, toads, serpents, wood, hair, paper, cotton, earth, chalk, thread, sand, vinegar, and other things still more revolting are often swallowed with the strangest voracity; and many continue till near the end of life to conceal from physicians and friends the cause of their numerous complaints, and their "clay color." Copland saw a seaman who would occasionally devour a whole wine-glass without injury, having previously crushed it to pieces with his teeth. (*Lond. Med. Repos.* vol. 17.)

A case of swallowing glass with impunity is given by *Camerarius.* (*Memoral. Cent.* V.) In 1826 M. Orfila and others reported to the Royal Academy of Medicine, that glass had been taken into the stomach in many instances in even large quantities, without bad consequences. (*Lond. Med. Repos.* Nov. 1826.) It must still be admitted that the sharp cutting edges of broken glass cannot be safely taken into the stomach. Even pulverized glass is popularly regarded as a certain cause of death, and a woman was executed at Maysville, Kentucky, in 1830, who confessed that she caused the death of several children by giving them powdered glass.

In cases of depraved appetite in which bulimia is also present the most incredible feats are said to have been performed. Fournier gives a case in *Dict. des Sci. Med.* (*Art. Cas. Rares,*) of an insane galley slave whose stomach had been enlarged into an oblong square shape, extending over most of the abdomen and reaching into the pelvis. It was found on dissection to contain a piece of stave nineteen inches long, and half an inch in diameter; a piece of broomstick six inches long and another eight; twenty-two other pieces of wood of three, four or five inches long; a wooden spoon; a pipe of an iron funnel; a pewter spoon; a piece of iron weighing nearly two ounces; with various other pieces of nails, buckles, horns, knives, &c., the whole weighing twenty-four ounces, avoirdupois. (*Copland, Dict.* vol. 1. p. 124.)

In many marvellous cases unusual substances have been swallowed, merely to excite the wonder of spectators. Some persons have swallowed knives, bullets, billiard-balls, gold watches and pieces of money. In June, 1822, a man in New-York, who had previously swallowed and passed through the intestines a gold watch, chain, and seals, made his last effort; in the course of one day he swallowed fourteen knives. Two months afterwards he died, and one of the knives was found in the œsophagus, eleven were still in the stomach; the remaining two had traversed the whole line of the intestines and been discharged. (*New-York Med. Repos.* Oct. 1822.)

In one case reported in the *Boston Med. & Surg. Jour.* vol. 25, a girl, aged seventeen, died from the effect of eating slate-stone. In another case of inordinate appetite nine gallons of urine was discharged in twenty-four hours. (*Ibid.* vol. 27. p. 173.)

TREATMENT.—In ordinary cases the appropriate homœopathic specifics are the principal reliance in the treatment of depraved appetite when it appears as an idiopathic disease. The propensity to eat earths and other indigestible substances must be overcome by moral means united with treatment directed to the digestive, uterine, and other functions. See *Chlorosis.*

Dr. Stevenson cured a lady, forty-five years old, of the clay-eating cachexia with small doses of finely pulverized charcoal, given regularly at short intervals. (*Pittsburgh Med. Soc. Rep.* 1826.)

Depraved appetites, not acquired by the abuse of naturally noxious substances, indicate a lack of some normal constituent of the body—acid, alkali, or some other chemical ingredient of the fluids; and the "instinct of the stomach," as Hahnemann has well termed it, calls for the missing element. Thus in the chlorotic female who craves alkalies in the form of chalk, lime, slate-pencils, &c., there is a deficiency of alkaline principles in the system; and when this want is obviated the morbid appetite ceases. In these cases the cure cannot be accomplished chemically, by throwing into the system alkalies in order to restore the proper equilibrium; but those homœopathic medicines must be given which will place the organs in such a condition as to enable them to re-establish the normal alkaline secretions.

This can always be readily done by selecting and administering such remedies as correspond to the morbid group of symptoms. Among these remedies may be cited China, Sulphur, Calcarea-carb., Ferrum., Phos., Carbo.-veg., Cantharis.

V. *Cardialgia.—Heart-pain.*—"*Heartburn.*"—This term is improperly applied to a pain in the stomach which is generally a symptom of dyspepsia. There is a feeling of anxiety, heat more or less violent; some oppression, faintness, inclination to vomit, or a plentiful discharge of clear lymph-like saliva. The pain may arise from different causes; as, flatus, acrid or rancid substances in the stomach; the irritation of the coats of the stomach by worms, acrid or pungent food, spices or aromatics; the free use of tea, coffee, fermented or alcoholic drinks; surfeits, rheumatic, gouty diathesis, &c. The nature of this affection and its proper treatment will be seen under *Dyspepsia.* When *neuralgic* in its character, its nature will be seen under *Gastralgia.* See *Index.*

Pyrosis is generally is only another form of cardialgia. There is a burning pain in the stomach attended with copious eructation, generally of a watery insipid fluid. See p. 267.

VI. *Flatulency.—Flatus* in the stomach.—This affection is only a symptom of indigestion or dyspepsia. See also *Catarrh of the Stomach. Index.*

Flatulency of the Abdomen.—Abundant formation of gas in the bowels.

Symptoms.—Fulness and tension of the abdomen; rumbling in the bowels; severe pain; accumulation; or copious discharge of wind.

Causes.—Indigestion; errors of diet; free use of sugar, candies, &c. exposure to cold.

General Treatment.—Regulate the diet, rendering it plain, and moderate in quantity; restrict the quantity of sugar; avoid exposure to cold; keep the feet warm; rub the stomach with the warm hand or flannel.

Medicinal Treatment.—*Nux-vomica.*—For common cases; symptoms as given under dyspepsia; accumulation of flatus in the stomach or hypochondrium; a sense of great anguish; worse in the morning; after drinking; flatus incarcerated.

Ipecacuanha.—Flatulency caused by over-feeding, accompanied by nausea and vomiting; bitter taste, nausea; empty retching; violent distress at the pit of the stomach; flatulent colic.

Pulsatilla.—In cases in which there is diarrhœa and shivering; or where Ipecacuanha has failed; eructations, with nausea; taste as of putrid meat.

China.—Much weakness; derangement caused by eating sour fruit; flatulency persistent, gas formed in large quantity; eructations tasting of the ingesta; heartburn; pressure at the stomach.

Chamomilla.—When there is much pain or diarrhœa; aching pain at pit of the stomach; sour eructations; flatulent colic, with compression of the bowels.

Carbo-vegetabilis may follow the above remedies to prevent a relapse.

Colocynth.—Great pain in the abdomen from incarcerated flatus.

Carminatives.—As wind is generated in the intestines, and as such generation is dependent upon a diseased state of the lining membrane of the intestines, it is plainly useless to use remedies to expel the wind mechanically. If these medicines do in some cases expel the wind, and this in a very imperfect manner, they certainly do not alter the diseased state in which production of the wind depends. Many fatal cases of flatulent disease of the bowels have been traced back to the use of ginger and other carminatives or stimulants for the expulsion of wind, which had accumulated in the bowels and even in the stomach.

VII. *Pyrosis.*— *Water-brash.*—Diagnosis.—Fits of burning sensation at the pit of the stomach; burning extending up to the fauces; followed by eructation of a thin colorless liquid, which seems to be forced into the mouth by a kind of reversed or ruminating action of the stomach and œsophagus.

Causes.—It may result from some irritation in the stomach itself

or in some other organ which can affect it through sympathy It often occurs in organic diseases of the stomach, especially cancer and simple ulcer. It is common in pregnancy, and among people who live on unwholesome food. Linnæus found it very prevalent in Lapland, in 1732; it is described as endemic in many parts of Scotland, Wales, England, &c. It is ascribed to the common causes of dyspepsia. These are, coarse and innutritious food; sedentary life, intemperance; cold and damp climate; excessive labor; large losses of animal fluids; constipation; mental depression; pregnancy, and all other conditions and influences which may interfere with the function of digestion, rendering the secretions unhealthy and irritating.

Treatment.—The power of homœopathic remedies over this as well as other derangements of the digestive organs will be sufficiently displayed under the head of dyspepsia. It is only necessary here to mention a few remedies.

Nux-vomica.—This article was prescribed by Linnæus among the Laplanders, and is now known to homœopathists as one of the best remedies.

Pulsatilla.—Bryonia.—Sulphuric-acid.—For symptoms, see these articles, under the head of Dyspepsia.

VIII. Gastrodynia. *See Gastrodynia.—Index.*

IX. *Nausea and Vomiting.*—Nausea.—Sickness at the Stomach.—An inclination to vomit without effecting it; also a disgust of food approaching to vomiting. It is an attendant on cardialgia and various other disorders, occasioning an aversion for food, an increase of saliva, disgusting ideas at the sight of various objects, loss of appetite, debility, &c.

Vomiting—consists in a spasmodic contraction of the diaphragm and abdominal muscles, followed by a rapid discharge of the contents of the stomach by the mouth.

Causes.—Intemperance; indigestible food; indigestion and various other disorders of the stomach; mental emotions; extremes of temperature; fatigue.

Nausea and vomiting are best illustrated by the operation of those poisons called emetics. As these agents produce the disease called emesis or vomiting, and also furnish us with remedies for curing it, however it may be induced, we will examine their mode of operation, and the pathology of vomiting. In the operation of an emetic we may discover a series of actions, which may be thus described. The emetic makes at first an impression on the sentient extremities of the nerves of the stomach. This sensation is referred to the brain; the natural energies of the brain are now diminished by the prostrating influence of the nausea; and we observe a languor of both the mental and bodily powers. The peculiar excitement in the brain produces the sensation,

which is felt in the irritated organ, and the sensation of nausea is the immediate and necessary result of the diminished and peculiar excitement of the brain referred to the stomach. That this is the case is demonstrated by the vomiting and nausea sometimes excited at the sight, smell, taste, or even thought of a disgusting object.

But why does this certain degree of nausea produce contractions of the coats of the stomach, &c.? Here it may be sufficient to remark that spasmodic contraction in the muscles, &c., is generally the result of debility.

The first effect of an emetic is an uneasy sensation at the stomach, which is followed by nausea; this increases till the pulse becomes feeble, frequent and irregular; the face turns pale, the skin becomes cold and shrunk. Vomiting at last comes on, during which the face is red and turgid with blood. On the cessation of the vomiting, the sickness goes off, leaving the system in a state of temporary languor from which it soon recovers.

It is an important fact, that any extraordinary stimulus applied to the stomach, instead of *increasing* its motions, as it would in other instances, inverts them. The wisdom of such a provision will appear when we consider that it is intended to prevent the intrusion of food into the duodenum before it has undergone those necessary changes in the stomach, by which it is prepared for the more elaborate process of chylification.

The act of vomiting is not an act of the stomach alone; the brain is an important accessory. Magendie attributes the operation of vomiting exclusively to the agency of the brain upon the abdominal muscles, and regards the stomach as a mere passive instrument in the act. The influence of the nervous system is indispensable to the production of the act of vomiting; and we accordingly find that vomiting can not take place as an effect of any emetic in a case in which the nervous energy is suspended,—as in profound intoxication, violent wounds and contusions of the head; while, if the brain be only partially influenced, as by incipient intoxication or by a less violent blow on the head,—irritability is increased instead of being paralysed, and vomiting, under such circumstances, is excited by the slightest causes. This fact is curious and instructive.

Perhaps the best view of the subject of *emesis* is that given by Dr. Richard Harrison, in his Gulstonian Lecture, before the Royal College of physicians. He observes that although the experiments of Magendie sufficiently demonstrate the importance of the pressure of the abdominal muscles upon the stomach in the act of vomiting, and which can only be explained by the influence of the nervous system, yet Magendie attributed too much to their agency. He gives then, the following explanation of the phenomena of vomiting:

"The irritation of the stomach makes a call upon the brain for the aid of the diaphragm and abdominal muscles in order to expel its contents: the diaphragm then becomes contracted and fixed, the ribs drawn down, and abdominal muscles drawn inwards, so that the stomach is pressed on all sides by voluntary muscles, which together with its own contractions expel the contents."

Now it must be obvious that where the brain from oppression or injury is unable to transmit its influence to these muscles, and disregards the call of the stomach, vomiting can only be excited with difficulty or not at all. Thus, in the same manner, persons may die of suffocation from injury of the brain: the respiratory muscles not receiving nervous influence, can not keep up respiration.

General Treatment.—When vomiting has been excited by taking too much food, it should be regarded as an effort of nature to free the stomach from an over-load which would do injury if retained; and free drinks of warm water should be given to promote the free cleansing of the stomach. After free evacuation of the stomach, a tablespoonful of coffee will often restore healthy action.

Medicinal Treatment.—*Pulsatilla.*—When after violent vomiting there remain loathing, nausea, and retchings; vomiting caused by greasy food or pastry; also sea-sickness.

Chamomilla.—Vomiting caused by passion; bitter bilious risings; bitter taste in the mouth; vomiting of green, bilious, acrid matters; fulness and pressive pain in the stomach; weakness; loss of appetite; anxiety; dry heat; thirst; giddiness; semilateral headache. When caused by the state of the nerves of the stomach. Ipecac.

Cocculus.—Sea-sickness; cardialgia after a meal; nausea when riding; vomiting worse when raising the head.

Sickness of pregnancy. Cocculus.

Alumina. Creosote. Agaricus-musc., Veratrum-vir. Secali.

Antimonium-crudum.—Eructations tasting of the ingesta; nausea, vomiting of bile and mucus (also Ipecac. and Puls.) cardialgia; derangements caused by overloading the stomach.

Arsenicum.—Violent vomiting of ingesta and liquids; also of brown or black substances; aversion to farinaceous food; burning pains in the stomach relieved for a short time by warm drinks; Asiatic cholera, last stage, with cold breath.

Camphor.—Vomiting with coldness of the surface, sudden prostration of strength; anxiety, and burning in the stomach, cramps in the nuscles of the limbs; pit of the stomach painful to the touch.

Dispensary Cases.—1. A girl aged six years, has vomited frequently for twelve hours, has considerable fever. Cured by Ipecac.

2. A child aged eight years. Has vomited several times during the day. Cured by Ipecac 3°.

3. A girl aged ten years. Nausea and vomiting, commencing at school; she looks pale and feeble. Cured by Ipecac.

Murray, (whom I select from numerous other authorities) informs us, as does also daily experience, that among the symptoms produced by the use of *tobacco*, those of *vertigo*, *nausea*, and *anxiety* are the principal. Now Diemerbrœck, when attacked with those very symptoms of vertigo, nausea, and anxiety, in the course of his close attendance on the victims of epidemic diseases in Holland, removed them by smoking *tobacco*. (*Hahnemann.*)

X. *Vomiting of Blood.—See Hæmatemesis.—Index.*

XI. DYSPEPSIA is an affection of the digestive organs, in which one or more of the several processes by which the aliment is converted into blood, &c. are imperfectly performed. In attempting to cure it we find it complicated in its nature, and involving, not only the stomach, but all the organs and distant outposts of the physical as well as the mental organism. In every well-established case the symptoms are extremely numerous, ranging through all the structures and tissues of the body, involving nearly all of them in endless chains of sympathies and reflex actions.

General Symptoms of Deranged Digestion.—Loss of appetite, nausea, languor; aching, tenderness and distension of the epigastrium, acidity, flatulency, eructations, sense of weight and fulness in the stomach after eating; also quick breathing, sensitiveness at the pit of the stomach from pressure, light clothing, &c.; pyrosis, vertigo, giddiness, sensation when walking, as if the pavement were rising up immediately in front; constipation, pressure in the stomach and epigastrium, hæmorrhoids, sallow or yellow complexion, distention of the abdomen with flatus, loss of ambition and energy, sad, desponding, dread and apprehension respecting the future, frequent inclination to commit suicide, nights restless and disturbed by unpleasant dreams. In the advanced stages of indigestion there often supervenes a troublesome cough attended with occasional pains in the chest, and mucous or muco-purulent expectoration, which some writers have termed dyspeptic phthisis. It is probable, in these cases, that the disease is confined to the mucous membranes of the respiratory organs, being a continuation or extension of the gastric disturbance to the pulmonary tissues.

II. DYSPEPSIA FROM DEFICIENT SECRETION OF THE GASTRIC JUICE, WITH INORDINATE SENSIBILITY OF THE NERVES OF THE STOMACH.

In health the stomach contains no gastric-juice, except at those times when food has just been taken, and, by its contact with the surface of the mucous membrane excites the secreting organs to pour out the gastric fluid in the needed quantity. The process by which this

mysterious secretion is thus called into existence precisely at the very time and in the quantity wanted, displays a beautiful physiological phenomenon, and points to the solution of practical problems of the highest importance. The impression made by the food on the organs of taste, and on the surface of the stomach is first transmitted by the nerves to the nervous centres, and thence reflected to the secreting apparatus, upon which devolves the duty of forming the gastric-juice. If this apparatus is in a healthy state the quantity formed will be just sufficient for healthy digestion; if it is not in a healthy state, the gastric-juice secreted may be either deficient in quantity or vitiated in quality. (See p. 215.)

Diagnosis.—The intimate relation existing between the stomach and other organs associated with it by reflex nervous action renders every form of indigestion a complicated disease. The liver and the stomach react upon each other; the gastric fluid and the bile become deficient in quantity or vitiated in character, and become additional agents of irritation; and in every functional derangement of any of the digestive organs a "disordered condition of the gastric and intestinal nerves" is gradually developed, in which all "natural sensibilities are changed, becoming morbidly acute, obtuse, torpid or perverted." This condition is never absent in dyspepsia when fully established, and it forms the connecting link between the disorders of the stomach and of other and far distant parts.

Symptoms characteristic of this combination of Gastric and Hepatic Disorder. Appetite ravenous, annihilated or whimsical; unpleasant feelings after eating; pain in the stomach and duodenum, imperfectly relieved by the action of purgatives, which always ultimately increase the bad symptoms. The patients who have been subjected to the common purgative treatment become more subject to constipation, and the result of their antipathic practice is found to become constantly less satisfactory. The large intestines become laden with solid and irritating matters, which continue in some cases to accumulate for months. "Even during the action of successive daily cathartics," says Dr. James Johnson,* "scybala may remain long in the cells of the colon; substances eaten two or three months ago, sometimes come away in round balls, enveloped with layers of inspissated secretions. These scybala keep up a degree of irritation, generally without pain, but producing, in distant parts, the most strange and anomalous sensations. It might be supposed that repeated cathartics had carried off every vestige of the contents of the large intestines; but this is never accomplished by purgatives, however frequently administered." A passage of small calibre, says Dr. Ware,† is indeed generally kept

* "On the Morbid Sensibility of the Stomach and Bowels."

† On Purgatives, &c.

open, and through it small quantities of fæces, partially fluid, may almost daily find their way. But these matters are generally composed of the substances more recently taken into the stomach, and mixed with unhealthy secretions. Very often the hardened accumulations of months continue to distend the cells of the colon, irritating the nerves which convey morbid impressions to remote parts, and they furnish "the most vitiated materials to the absorbent vessels, which pour their contents into the portal circulation" to be employed by the liver in the secretion of bile. These facts furnished by allopathic observation and amply confirmed by our own experience we can cheerfully accept as true; and we repudiate the purgatives, usually trusted to by them, only because they give such transient relief and then increase the disease,—and, also because we possess better resources. (*See Constipation.—Index.*)

Liver.—Always irregular in its action, generally torpid, as manifested by paleness or want of the characteristic color of bile in the evacuations. In some cases the liver occasionally pours out a quantity of tenacious viscid bile, which adheres to the inner surface of the bowels, keeping up a high degree of irritation of the intestinal nerves, and causing various uneasy sensations in distant parts of the body, with fits of irritability and despondency of mind, which surpass in hopeless wretchedness all physical sufferings. When the irritation falls on the physical sensibilities, bilious colic and excruciating pains and spasms of the stomach and bowels are caused by it. When the nervous system has been much harassed by great mental anxiety and other real misfortunes, the mind, instead of the body, may be the principal sufferer. "It becomes," says Dr. Johnson, (who knew all about it from sad experience,) "suddenly overcast as with a cloud; some dreadful imaginary or *real* evil is magnified into terrific proportions, with a train of disastrous consequences from which the soul turns with dismay. This state of utter misery may continue for twenty-four, thirty-six, or forty-eight hours, when a change is effected by a discharge of viscid acrid bile, with the most horrible fœtor; and the passing off of the poisonous secretion from the sentient extremities of the intestinal nerves at once dissolves the spell, which has power to weigh down the strongest mind to earth." It is under the influence of such paroxysms of despair as this, that the most melancholy suicides occur. In many of these we know that there is no *moral* cause for weariness of life; the real cause for temporary hallucination of mind is a *physical* one, operating on the mind through its sympathy with the organs of digestion.

Tongue.—Furred in the middle, and at its root; when the stomach and duodenum are irritated by food, undergoing slow and imperfect di-

gestion, the papillæ are elevated, the edges and tips red, and there is a peculiar constriction at the base of the tongue arising from sympathy with the stomach. When the mucous membrane is highly irritated, or in some degree inflamed, the tongue resembles beef-steak or cleanly dissected muscle.

Eyes.—Sometimes tinged with yellow, muddy or "lack-lustre" expression, showing languor or irritability. Vision is sometimes remarkably good in dyspeptics who have reached the age of declining sight.

Urine.—Turbid, scanty, high-colored, depositing a thick or white sediment; sometimes limpid and clear, though exciting more irritation in the bladder and urethra than when highly colored.

Skin.—Dry, contracted; occasional partial perspiration, alternating with chilliness followed by heat especially of the palms of the hands and soles of the feet; complexion sallow, dark, or yellowish, commonly described as "bilious," showing the reflex nervous influence of the stomach, liver, and alimentary canal on the surface of the body. *Emaciation* is a marked feature of dyspepsia, progressing most rapidly when the disease of the liver is extensive.

Loss of Strength.—This is proportioned to the degree of nervous disorder or irritation in the sentient nerves of the stomach and bowels. It is a distressing *feeling* of debility, rather than *actual* debility. The slightest muscular exertion made while digestion is going on, depresses the spirits and produces an intolerable feeling of exhaustion and utter feebleness. The same amount of exercise may be taken at another hour without such depressing results, showing that the debility is a sympathetic suffering from irritation of the alimentary canal; and it is always aggravated by the use of stimulants and tonics.

Tenderness of the Epigastrium.—This exists in some degree, in every case, and is no evidence of organic disease, as the tenderness is greater in functional disease of the stomach and duodenum, than in actual scirrhus; it is increased by antiphlogistic measures, and is often diminished by good diet and even by tonics, though not generally so.

Pain in the Stomach.—This is common, and varies in degree from the slightest uneasiness to the most excruciating gastralgia, and is always most severe when gastritis is not present.

Fulness of the Epigastrium.—This, when it exists, depends more frequently on flatulence than organic enlargement. Permanent enlargement and hardness are often caused by chronic disease of the liver.

The Pulse.—This may vary with almost every emotion of the mind. It is generally more variable in dyspepsia, and even more rapid, than in cases of actual inflammation of the same mucous surfaces. The action of the heart is so much under the influence of the stomach, that little dependence can be placed upon its frequency. In dyspepsia, it is usually quicker during digestion, and also during the passage of the

chyle along the intestines. The pulse may be eighty or ninety per minute during the day; and later in the evening, if the patient has not eaten recently, it may be reduced to sixty or less. Persons in whom the mind is active but who are physically feeble, have the pulse generally quicker in the evening, whatever be their relative state of health. The real dyspeptic always feels worse for some hours after eating; and a late supper renders him miserable for the night and the early part of the next day.

The effect of slowness of digestion is, that the food continues too long in the stomach. Instead of being perfectly dissolved and passed forwards to the duodenum in two or three hours, it sometimes lies imperfectly digested for ten or twelve hours, and even in rare cases many days. While thus remaining in the stomach, the partially digested mass produces a sense of weight or uneasiness at the pit of the stomach, which only subsides as the task of digestion is completed and the stomach emptied. Sometimes a portion of some solid article remains undigested, and excites distressing spasmodic pain at the pyloric orifice of the stomach several hours after eating. In this case the pylorus is too irritable to permit any solid to pass, and it closes spasmodically when its inner surface is irritated. When Dr. Beaumont was experimenting on St. Martin's stomach, he on one occasion introduced the thermometer through the fistulous opening into the stomach, and permitted the bulb to pass into the pylorus. There was immediate contraction on the instrument accompanied with pain and distress. After several trials of the experiment, a sense of soreness remained till the next day. The same kind of soreness is often caused by hard or imperfectly digested portions of solid food remaining many hours in the stomach; they irritate its lining membrane, causing head-ache, furred tongue, depraved gastric secretion, sallow complexion, and imperfect sleep. (See p. 215.)

The Brain is affected through the reflex action transmitted by the nerves of the stomach: as a result of this sympathy, confusion of thought, unsteadiness and irritability of temper, are more common than pain in the head, dimness of sight or vertigo. The former often rise to temporary alienation, and sometimes terminate in suicide. Besides these symptoms, neuralgic pains in every form and situation may be induced by this morbid sensibility of the stomach and bowels, and the irritability of nerves to which it gives rise.

Imperfect Nutrition.—When dyspepsia continues long, it causes imperfection in the process of nutrition in all parts of the body. The blood becomes deficient in globules, the circulation is feeble, the extremities are frequently cold, the spirits depressed, and all the vital powers decline, till the patient becomes incapable of any considerable mental or physical exertion.

DISTINCTION BETWEEN FUNCTIONAL AND MALIGNANT STRUCTURAL DISEASE.

Functional Dyspepsia.	Malignant Structural Disease.
Complexion and General Appearance.	
Color of the skin yellowish, from an irritated state of the gastric and duodenal mucous membrane.	Dingy, sallow, ex-sanguine, but opaque appearance of the skin.
The countenance is "pinched," and expressive of dissatisfaction rather than of thought and anxiety.	The eyes sunken, adnata pearly: the countenance expresses care and depression, not dissatisfaction, but introverted thought and peevishness.
Emaciation and Loss of Strength.	
Loss of flesh not great, and is speedily followed by restoration, with increased strength when the more distressing symptoms subside.	In structural disease of the cardia and œsophagus, emaciation proceeds to a degree not seen in any other disease, while the loss of strength is not in proportion to the loss of flesh. When a cancerous disease exists in any other situation, the emaciation is seen, but not to the same extreme degree. When in the stomach or external to it, the prostration of strength is greater than would be expected from the violence of the other symptoms.
Pain.	
Much pain; diffused, intermitting, and better or worse according to the stage of digestion, but seldom of that extreme, lancinating character that belongs to cancer, and is relieved by alkalies in solution.	Pain not always present, at least in the early stages, even when disorganization is insidiously progressing; but it becomes severe in latter stages, is of a peculiar lancinating, grinding kind, and usually confined to a particular spot. In the structural form, pain is more acute and more defined than in the areolar or colloid.
Vomiting.	
The cause of the vomiting is generally obvious; the stomach contains food of bad quality, imperfectly digested, vitiated secretions; and is always a manageable symptom.	This usually occurs in some stage of structural disease. In the latter stages, the action of the muscular coat becomes imperfect, and the act of vomiting is a mere regurgitation.

Functional Dyspepsia.	Malignant Structural Disease.
The Fluids vomited.	
The fluids ejected in functional disease never possess this peculiar dark color.	The fluid is usually dark colored, having much the appearance of venous blood.
Constipation.	
There are generally large collections in the arch of the colon: the relief obtained by purgatives, though only temporary, is usually accepted for the time as satisfactory.	Always present in structural disease. When in the latter stages the disease spreads to the colon, dysenteric symptoms supervene. The discharges are covered with blood, or resemble the washings of flesh. When the seat of the accumulations is the cœcum, relief from purgatives is very transient and imperfect.
Tongue.	
Foul and covered with fur: no aphthæ, but the acid eructations from the stomach cause occasional slight ulcerations.	It generally continues clean to an advanced period of the disease, when there may be aphthæ on its surface, caused always by failure of power, as in other chronic diseases.
Flatulence.	
It is a common symptom, but is less oppressive than in structural disease: its escape gives relief.	The gas is continually rising, is fœtid in character, and affords little or no relief.
Appetite.	
Is imperfect; can generally digest animal food as well or better than things considered as lighter.	Always imperfect; the patient can only take farinaceous and vegetable food.
Examination by the Touch.	
The slightest pressure anywhere over the stomach and upper part of the abdomen produces pain: dread of being touched; pain chiefly caused by inflation of the stomach and from gases: percussion reveals its nature; morbid sensibility of gastric and enteric nerves.	Pressure only gives pain when made on the precise seat of the carcinomatous deposit, but then gives severe and lasting pain in that particular spot. When this is within the stomach the pain resembles that which precedes vomiting. When the liver is the seat of disease, the pain is felt on pressure, unless the tumors be raised above the convex surface and are vascular, in which case, when the

Functional Dyspepsia.	Malignant Structural Disease.
	patient is thin, they can be felt through the parietes.

Progress of the Disease.

The symptoms of indigestion force themselves very early on the attention. The patient regards his symptoms as evidence of important and extensive disease; and dwells minutely on the circumstances of his case.	The disease comes on insidiously, and its history is imperfectly ascertained; indeed considerable disorganization often takes place before any train of appreciable symptoms can be observed.

Nerves employed in Digestion.—In the nervous system we distinguish two great classes of nerves. Those that take their origin from the brain; and those that arise from the spinal marrow; and also those which constitute the ganglionic system of nerves.

The nerves which originate in the brain transmit sensations to the sensorium, and nervous influence to the voluntary muscles. The nerves which proceed from the spinal marrow regulate the functions of various vital organs, as the stomach, heart, liver, &c.

Of the nerves of the first division we notice that each has its peculiar sensibility in health, but when inflamed or diseased they become exquisitely sensible to impressions which in health they would not have felt. Common food swallowed ceases to be felt as soon as it reaches the stomach; but a tea-spoonful of tincture of Capsicum produces a burning heat in the same surface by inflaming its nerves.

"Here arises," says Johnson, "one of the most useful precepts in the art of preserving health. Whenever we call forth conscious sensation in the stomach, whether of a pleasurable or painful kind we offer a violence to that organ; the injury may be slight but it is real. When food of the right quality, and in the right *quantity* is taken into the healthy stomach no sensation whatever is felt; but when a full meal is taken which includes some stimulating article, a *sensible* impression is made on the nerves of the stomach. When this sensation is a pleasurable one, when a general exhilaration is produced, the pulse is quickened, the face flushed, the mind more active, and the flow of ideas more free. But this exhilaration is transient and partial. In proportion as the ganglionic system of nerves is excited, the voluntary nerves and muscles are disqualified for action. These nerves of the ganglionic system convey the vital power from the nervous centres to those organs which continue their action independent of the will, as the lungs or heart. In a state of health pleasurable sensations are diffused over the body as well as to the mind by the presence of food in the stomach

without any conscious sensations being perceived by it. Now, if these same nerves in a state of health can diffuse over the system these feelings of comfort it is not strange that when in a disordered state they are equally capable of exciting the most gloomy thoughts in the mind and the most painful sensations in the body by the application of the same stimulants, whether with or without any unpleasant sensation in the stomach itself.* See p. 218, 281.

Thus wine in a state of health produces a pleasurable glow over the whole system; if Tartar-emetic or Digitalis be added to it, the peculiar distressing effects peculiar to these substances are produced on both body and mind. From these facts we may conclude

1. That from the stomach a diffusive energy and pleasurable feeling may be extended to all other parts of the body, including the brain, which is the organ of the mind, *without any distinct pleasurable sensation in the stomach itself.* And

2. That from the stomach may be diffused over the whole system, intellectual and corporeal, a train of morbid feelings of the most distressing kind, *with or without* any distinct sensation of pain or uneasiness of the organs of digestion.

Causes of deficient gastric Secretion.—When the eighth pair of nerves are divided in the neck in experiments on animals, food taken into the stomach remains undigested; and after death, the coats of the stomach are not found dissolved by the gastric-juice, as they often are when death has suddenly occurred at a time when the stomach contains a large quantity of gastric-fluid. It is, therefore, proved that the division of the nerves, together with general injury and shock given by the operation, arrests the secretion of gastric-juice for the time.

2. Feebleness of digestive power is produced by excessive fatigue, great mental excitement, long-continued watchfulness, the depressing passions of fear and anger. Men who overstrain the intellect in the pursuit of wealth, or whose labors are mental rather than physical, are liable to dyspepsia, even when their general habits of life are not the worst. Victorious on every field where they encountered only physical evils, votaries of literature and business are vanquished by that sterner enemy—Care. When business becomes his only pleasure, and weary anxious thought his only recreation, the man who is the slave of reputation, wealth, or poverty, soon learns to read in his own care-worn features the manifestations of that "Wear and Tear Malady" that embitters life to so many mental laborers in every walk of city-life.

3. Congestion of the gastric-mucous membrane, or inflammation in a slight degree, as well as inflammation of other organs exciting general fever.

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* On Morbid Sensibility of the Stomach and Bowels.

4. Indolent sedentary habits.

5. Habitual indulgence in eating too much. In some conditions the wants of the system are large, as in day-laborers and nursing women. In diabetes, though the stomach has sometimes an increased power of dissolving food, a large portion of it undergoes only imperfect digestion; and instead of being converted into healthy chyle, it is only changed into the low form of saccharine matter, which passes off by the urine without nourishing the body. This leaves the different organs of the body but poorly nourished, though the mucous membrane of the stomach may become hypertrophied from the constant irritation of its contents; and the hunger of the system is expressed in a craving for food, which all the nutriment swallowed cannot satisfy. But whether the quantity of nutritive matter taken be that which health demands or far exceeds that quantity, the stomach can only dissolve, in the process of healthy digestion, a certain amount of food. The gastric-fluid then becomes saturated and can dissolve no more. See p. 217.

6. The stomach is in some persons constitutionally weak, or has been rendered so by the intemperate use of stimulants, the abuse of irritating drugs, the effects of epidemic cholera, or of other diseases. In all of these cases, as well as in those forms of atrophy of the gland-structure, elucidated by the microscopic researches of Dr. Handfield Jones,* the the supply of gastric-fluid is generally deficient.

Such are a few of the causes of ordinary cases of imperfect digestion; but the stomach is so intimately associated with almost every other organ of the body, that its condition is influenced by disorder located in any one of them.

Spallanzini excited his own stomach to secrete gastric-juice by irritating or tickling the fauces in the morning when it was entirely empty. He then caused it to expel the pure digestive fluid by vomiting, and found that this fluid had the power to dissolve meat and prevent its putrefaction. The mode by which this secretory action of the stomach was excited is now understood, and we are, therefore, enabled to account for the various sympathetic affections in which the stomach sympathizes with other organs, and also to see how it transmits to distant parts the morbid influences that originate in its own diseased conditions. (See *Reflex Action.—Index.*)

The exciting causes of dyspepsia are generally such as follow:

Protracted depression of spirits, whether occasioned by want of occupation, deprivation of the accustomed mental and physical exercise, pecuniary misfortune, loss of friends, disappointment, or mortification, is a prominent cause of dyspepsia. This cause is very general and extended in its operation, affecting not only the mucous structure of the

* "On the Morbid Conditions of the Stomach."

stomach, but the liver, the bowels, the cardiac nerves, and in some instances the whole nervous system. It is to this variety of indigestion that we should attribute many of those hypochondriacal affections, which are often referred exclusively to disorder of the liver.

Next in importance to the above may be named the abuse of rich and highly seasoned food, stimulating drinks, coffee, tea, tobacco, irregular eating hours, and inattention to the daily fæcal evacuations.

In a state of health the sensations of the stomach are always depended on to give the proper warning when sufficient food has been taken. But, in that degree of soundness which exists in ordinary persons, the feeling of *satisfaction* or *satiety* is never perceived till the stomach is so far loaded that its sentient nerves are beginning to be irritated. "There appears," says Beaumont, "to be a sense of perfect intelligence conveyed from the stomach to the brain, which, in health, invariably dictates what quantity of aliment, (responding to the sense of hunger and its due satisfaction,) is naturally required for the purpose of life; and which, if noticed and properly attended to, would prove the most salutary monitor of health, and effectual preventive of, and restorative from disease. It is not the sense of *satiety* for this is beyond the point of healthful indulgence, and is nature's earliest indication of an *abuse* and *overburthen* of her powers to replenish the system." When the *needed* quantity of food is taken into the stomach there is "a pleasurable sensation of perfect *satisfaction*, ease and acquiescence of body and mind." But this elysium of the reasonable epicure is not reached except after due attention to the preliminary processes of mastication, and deliberate deglutition which are always indispensable.

Effects of Eating too much.—First Grade of Indigestion.—The symptoms which follow upon taking too much food of a highly seasoned character are: a sense of distention occasioned by the swelling of substances in the stomach which the gastric-fluid cannot dissolve. This distention, with the presence of the irritating mass of fermenting food, causes a feeling of uneasiness, prevents sound sleep, or occasions a paroxysm of night-mare; in the morning it is followed by headache, confused intellect, furred tongue, unstrung nerves, and deranged secretions. A case of this kind, says Johnson, is not properly one of indigestion, but of intemperance. It is only when such irregularities in diet have been often repeated, and are joined to other causes which have the power of arousing new trains of diseased sensibilities, and when the nervous system, the liver, and the skin begin to react upon the stomach and the gastric-fluid, that, this disease of many horrors, called *Dyspepsia*, begins to be recognized.

The gastric-fluid is so much under the influence of the nervous system that it is only secreted in its perfect state when the nervous system is also in its best condition; and the liver, skin, and stomach are

in such direct communication through the nerves that they all become involved in the long train of morbid sensibilities, vitiated secretions and complicated sympathies which unitedly form this protean disease. (*Johnson.*)

Thus the habit of eating too much, too fast, and too carelessly, is seen to be one of the principal causes of that terrible derangement of the digestive organs, which soon involves the mental and spiritual powers and destroys the energies of both mind and body. Indiscretions in eating are said to have paralysed the spirit of the first Napoleon on some of the most critical occasions of his life. At the battles of Leipzig and Borodino he might, by his accustomed decision in pushing unfavorable events, have converted them into victories. At Dresden also, it is asserted by Hoffmann that he would have done much more than he did, but for the unhappy "effects of a shoulder of mutton stuffed with onions." (*London Quar. Review.* 1852.)

The influence of *mental emotions* in breaking down health and preventing its restoration has never been sufficiently appreciated. "If a patient dies," says M. Reveille-Parise, "we open his body, and rummage among the viscera, or scrutinize most narrowly all the organs and tissues, in the hope of discovering lesions of one sort or another." One thing only escapes the attention of the anatomist; he is looking for *organic* effects, "forgetting all the while that he must mount higher to discover their causes. These organic alterations are observed, perhaps, in the body of a person who has suffered deeply from mental distress and anxiety; these have been the energetic cause of his decay, but they cannot be studied in the dissecting-room." Many physicians of extensive experience are destitute of the ability to search out and understood the causes of disease; "they cannot read the book of the heart; and yet it is in this book that are inscribed day by day, and hour by hour, all the griefs and all the miseries, and all the vanities, and all the fears, and all the joys of man, and in which will be found the most active and incessantly operating source of that frightful series of organic changes which constitute pathology."

II. FERMENTATION OF THE CONTENTS OF THE STOMACH FROM DEFICIENT SECRETION OF GASTRIC JUICE.

That the gastric juice in its perfect state prevents the putrefaction of meat, and even arrests it when already begun, was first shown by Spallanzini. It is also known to prevent the acetic, lactic, and alcoholic fermentations; but, when the vital powers fail—when the gastric fluid is deficient in quantity or quality, and chemical affinities overpower vital forces, some of these changes may occur in the contents of the stomach. In these cases Lehmann regards the *ferment* as an

unhealthy mucus, which is much disposed to fermentation, and already in a state of decomposition. In many cases, food undergoes the ordinary putrefactive changes, in which sulphuretted hydrogen gas is evolved. This gas accumulates in the stomach, distending it painfully hence efforts to relieve it by eructations of sulphuretted hydrogen, having the odor of rotten eggs; symptomatic of this is severe frontal headache and chilliness, followed by febrile excitement.

Causes.—1. *Over-eating.*—Eating too much, previous to severe exercise.—Delicate persons, who feel exhausted and weak, often eat freely for a temporary invigoration, and immediately engage in active exercise. The vital powers being thus withdrawn from the stomach, the food remains undigested, and what is called "a surfeit" occurs.

2. *Carious Teeth.*—When many decayed teeth exist, offensive saliva imbued with the elements of that peculiar "gangrene" on which caries depends, passes into the stomach. *

3. *Structural Disease of the Stomach.*—In cancer of the stomach, morbid secretions are formed in that organ, which have little power to digest the food taken. At the same time, there may be stricture or morbid irritability of the pylorus, or impediment to the muscular motions of the stomach. Any of these conditions may detain the food, prevent its full digestion, and facilitate chemical decomposition.

4. *Food of Improper Quality.*—Vegetables, fruits, new bread, ill-fermented malt liquors, or new wines, pass rapidly into a fermentation by which carbonic-acid gas is evolved; the stomach becomes distended by the accumulated gases, and is only temporarily relieved by repeated eructations. Dr. Beaumont says, that on one occasion, when St. Martin had been in the woods all day, and had eaten no food but whortleberries, from, eleven A. M. to eight in the evening, the stomach was examined through the aperture in its side. He found it "full of berries and chimifying aliment, frothing and foaming like fermenting beer or cider."

When food already fermenting is ingested, the chemical action continues; the gas evolved is belched up, if no impediment exist at the cardiac orifice, and the fermentation subsides when its material is exhausted. But when this aperture is obstructed or spasmodically closed, the gas evolved distends the stomach, and this may even destroy life. Cattle, eating more clover than the stomach can digest, suffer much distention; and, in consequence of the peculiar structure of ths stomach, these gases can not escape through the œsophagus. They then cause enormous distention of the organ, in some cases even to bursting.†

5. *Flatulence and Distention of the Stomach from Imperfect*

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* Koecker's Principles of Dental Surgery.

† Dr Budd. Diseases of the Stomach, p. 177.

Digestion.—This is commonly felt an hour or two after the principal meals, when the lighter form of indigestion has become chronic. Fermentation in the stomach gives rise to products which when absorbed into the blood, have an injurious influence on the general health. The food taken is only partially digested, the body is imperfectly nourished, the spirits depressed and all the mental and physical energies are enfeebled. When amid the products of unhealthy digestion, oxalic acid is formed, crystals of oxalate of lime may be discovered in the urine.

Treatment.—In every form of dyspepsia we begin the treatment by regulating the diet, restricting it to a moderate quantity of nutritious but easily digested food. Every dyspeptic should avoid new bread, tough meats, all alcoholic or fermented liquors, extreme bodily fatigue, and nervous exhaustion from all other causes. But he should take much active exercise in the open air, and should keep the mind habitually and cheerfully employed.

The earlier homœopathists insisted much upon a *strict diet;* and the belief has become common, that the fine preparations we employ will be neutralized by antidotal substances in the food or in the atmosphere, If this were true we might indeed despair of success in a city, in which few ever breathe uncontaminated air. The truth is, that a *proper* diet should always be prescribed; but we do injustice to our remedies, if we admit that they have so little power that they can be turned aside by a breath of impure gas, or the vapor of Camphor or Vinegar. "If," says Dr. Espanet of Algeria, "our infinitesimals are truly independent, insusceptible of combination and imponderable, they must exercise their special dynamic action, in spite of drugs, gases, or whatever substances may be present." "If this be not so, then, all infinitesimal doses are an illusion, for long before entering the body they must have entered into some new combination." What are the facts witnessed by every homœopathist? One patient has been treated for days by ponderous doses of Mercury, Opium, or Quinine. We give a proper attenuated remedy and witness curative results in spite of the unfavorable conditions and surroundings. Another patient is laboring under profound functional disturbance: "He is full of fluids, abdominal gases, odors, and chemical principles in abundance; his tongue is thickly furred, and yet a few globules penetrate the midst of this infected mass and remove the whole disease."* It is indeed necessary to regulate the patient's diet, not because wrong food is incompatible with proper remedies, but because it would injure the patient, if he were taking *no* medicine.

It has been fully proved that quite as much depends on the quantity of food as on its quality. There appears, says Dr. Beaumont, "to be a

* Espanet, Jour. de la Soc. Gallicane, 1852. 360.

sense of perfect intelligence conveyed from the stomach to the brain centre, which, in health, invariably decides what quantity of aliment (responding to the sense of hunger and to its due satisfaction), is naturally required for the purposes of life, which, if noticed and properly attended to, after thorough mastication and moderate and slow deglutition, would prove the most salutary monitor of health." It is not the sense of satiety, for this is beyond the point of healthful indulgence, and is nature's earliest indication of an abuse and over-burden of her powers to replenish the system. It occurs immediately previous to this, and may be known by the pleasurable sensation of perfect satisfaction, ease and quiescence of body and mind. The quantity of food required by a person in full health, varies according to the perfection of the digestive power, and also to the degree of exercise taken, and to the age and habits of the individual. Dr. Southwood Smith weighed eight men engaged in feeding the fires of a London gas company, and found that in one hour one of the men lost two pounds eight ounces and another lost four pounds three ounces by perspiration. The general result was, that the men employed in that work lost from two pounds to five pounds weight twice a day by perspiration alone.* It is plain that those who exercise little must perspire less, and consequently need less food.

As the sensation of hunger depends on the condition of the brain, its impulses are not always correct. A voracious appetite is often a precursor of fever; and in a state of debility the stomach may crave a large amount of food, which, instead of being digested, is frequently retained twenty-four hours or more, causing the most distressing symptoms, particularly in children, amounting in some cases to convulsions and even death. In a state of fever, little or no gastric fluid is secreted. Dr. Beaumont examined the stomach of St. Martin at one time when the villous membrane was red and dry. He complained of headache, pain and distress at the pit of the stomach, lassitude and loss of appetite. On making the effort to extract gastric juice from the stomach in this state, nothing could be obtained but a little acrid and frothy mucus, showing why food cannot promote strength in fever; and it has been often seen that undigested food remaining in the stomach produces all the phenomena of fever. The gastric juice not being able to act upon the undigested food, the stomach is irritated, just as if food had been introduced into the stomach, when the system was in a febrile state.

In the treatment of chronic dyspepsia, independent of temporary inflammation or fever, the selection of appropriate food has long been regarded as an object of primary importance; but, in nearly all that we have read on this subject one essential principle has been entirely

* Philosophy of Health. p. 399. Vol. 2.

overlooked. To this point it is necessary to call particular attention. In nearly all invalid conditions, especially where evidences of impaired digestive power occur, there exists in the constitution *a susceptibility to the poisonous properties of all fermented or otherwise deteriorated articles of food.* In many cases susceptibility to occult poisons of the ferment and putrefactive order exists as a veiled idiosyncracy under a variety of chronic disease-tendencies, between the varying manifestations of which, the patient but oscillates in different forms and degrees of suffering.

In other cases this susceptibility may be a state temporarily induced by impairment of the vital powers from whatever cause. An almost invariable index of *poisoning* from impurities of this kind, may be found in a sour or copper taste in the mouth, particularly on waking in the morning; also itching and smarting about the margins of the eyelids, with derangements of the digestion, including the whole train of dyspeptic symptoms, I have found most frequently and directly traceable to this cause. Prominent among these, are offensive breath; faint and gnawing sensations in the stomach; acidity, morbid appetite, and more or less constant and insupportable gastralgic pains, &c.

It is a common but extreme mistake to suppose that if the stomach is not evidently disordered by what is eaten, no fault may be attached to the food: it is on the contrary most true, that the ferment and its kindred poisons being taken up into the blood, are active agencies in stirring up, if not in originating a great variety of diseases through their deteriorating qualities. I have known herpetic humor of the most inveterate character, and which had resisted all medication, subside entirely on the *persistent* use of a *pure diet*, and again be recalled into activity on any deviation from the same, even to the extent of eating one piece of fermented bread and butter, as ordinarily made. And to what extent many diseases may be referrable to this class of poisons alone, I do not pretend to decide. The subject at least merits a greater degree of attention than it has hitherto received from the medical profession.

As suggesting a few of the common liabilities to poisonous impurities in diet, I instance some kinds of food, or management of it, to be avoided.

Bread made by any process in which it has *stood to rise* previous to baking, contains incipiently the elements of putrefaction. Cryptogamic growths of the fungus order are developed in the fermentive process, which is cause sufficient for its pernicious effects upon many persons, if not upon all who make use of it.

Butter made from soured milk, or kept, till ever so slightly deteriorated, is pervaded by a "*butyric ferment*, which is composed of infusoria or animalcule shaped like a cylindrical wand," as demonstrated by

the late highly interesting and important researches in these subjects by M. Pasteur. (See *N. A. Jour. Homœop.* Feb. 1859, p. 307.)

Flour or meal too long ground, or kept in places not most dry and airy, contract *must* in a poisonous degree before its existence may be discernible to taste or smell. Vegetables and fruits as usually kept in cellars and close places, contain similar health-forbidding properties.

Cheese is an article so surcharged with the mould poison in some stage of development that few persons can be found proof against ill effects from its use. Cured or smoked meats and fish are almost invariably *tainted* to a poisonous extent. Cooked food and other things, "kept over," as cold potatoes are most likely to have acquired the same pernicious properties. Therefore, if fit for anybody to eat, they are in no wise allowable to persons not in the most robust health.

From many experiences I am aware of the difficulties in the way of obtaining and enforcing a thus rectified and *pure* diet; but where the case demands it, and hopeless suffering only is the alternative, *it can be done.* In some constitutions the susceptibility to poisoning from deteriorated food is so innate, that from infancy, health can only be maintained in the degree that they are *avoided entirely.*

And there are multitudes who swell the list of habitual invalidism and suffering till a premature end, to whom suggestions of a *true dietetic principle* had been the most invaluable of medical advice.

While for the invalid, food should be selected with all reference to other qualities of fitness, let it be essentially *pure* from every principle of *decay,* which in its own nature belongs, *not* to the life and health, but to *the death side* of things; nor is it strange, that if we would build up a *healthy organism,* we should be required to draw from the life and health department in our *nutritive* material.

By what law or consistency of principle, we may reasonably inquire, shall a given organism be susceptible in a life and death degree, to the potencies of homeopathic remedies—and at same time—keep closed doors against the *actually poisonous qualities of food?*

In constitutions in which the *health power* is in the ascendant, a great degree of *positiveness* to *all* disease-producing agencies exists; but our concern and effort is in behalf of the large proportion of our humanity, in whom that health-power has proved insufficient for its contest with the deleterious influences it has had to meet. And to withdraw and abate these by every renovating and sanitary measure, is the most worthful labor of the true physician.

In the field here indicated, radical and extensive is the principle of dietetic reform urged; and it may be long before our truer insights shall cease to be pained by even the most common spectacle of a delicate child endeavoring to maintain its hold upon physical existence through a piece of *stale bread* and *rancid butter!*

Exercise.—When the due amount of exercise has been long neglected, the nervous system becomes enfeebled and irritable; the muscles lose their tone and become more slender and flabby, and all the functions of assimilation and nutrition are imperfectly performed. When the muscles remain too long inactive, physical energy is lost; the calibre of the capillary vessels is diminished, a deficiency of exhalation in the synovial membranes causes rigidity, and finally immobility of the joints; obstructions of the capillary circulation lead to organic disease, and inactivity of the absorbents causes the accumulation of fat, so common in indolent persons. This condition requires other measures than treatment by drugs, as these can never, unaided, restore to healthy action the organs that have long remained in a state of inertia from deficient exercise.

Exercise of each organ induces an afflux of fluids on which its growth depends. Neglect of exercise enfeebles the nervous and muscular systems, causing inordinate sensibility and irritability of the former, and a flabbiness and want of tone of the latter, in which every organ sympathizes; it lessens the supply of nervous energy, the activity of assimilation and nutrition. When muscular repose continues a long time, motion becomes impossible; the muscles are debilitated, and the calibre of the vessels diminished.

The effects of inactivity are manifested in the brain, abdominal and thoracic viscera, and on all the assimilative organs. The circulation, absorption and nutrition languish; obstructions in the capillaries lead to organic disease; and the abundant accumulation of fat in indolent persons only shows debility in the absorbent function, which in a healthy person should preserve a proper balance between the different tissues and structures. In such cases the bulk of the body may be enormously increased; but the texture of the organs is less solid; the muscular tissue is soft, and locomotion is difficult and painful. The corpulence of the butcher, who eats too much animal food and exercises too little, furnishes no indication of firm health and long life; butchers as a class are much exposed to inflammatory diseases, fevers or apoplexy, &c. There is a certain amount of excitability furnished by the brain and nervous system to every organ and structure of the body, designed for expenditure in the discharge of the functions of the various parts; and if it is not expended in exercise, it accumulates to a degree that predisposes to disease; melancholy, hysteria, or mania may result.

"The languid eye, the cheek
Deserted of its bloom; the flaccid, shrunk,
And withered muscle, and the vapid soul,
Reproach their owner with his love of rest."—Cowper.

MEDICAL TREATMENT.—An essential condition in the treatment of dyspepsia consists in the maintenance on the part of the patient, of a healthy, active, and cheerful state of mind. Unless this be accomplished, our remedies will either be of only temporary service, or entirely unavailing. Next in importance, is a course of rigid dietetic regulations. In proposing a bill of fare for the dyspeptic, much must depend upon the circumstances of each particular case. If the patient is of a highly bilious temperament, a much more simple diet will be requisite, than for one who is nervous or sanguine. As a general rule, an intelligent person will be able to select a suitable diet for himself by observing attentively the effects which different articles exert on the constitution. See p. 286, 287.

Another equally important condition in the treatment of this disease, is perfect regularity in all the habits of life, as eating, sleeping, alvine evacuations, exercise, &c. First, sufficient sleep should be allowed to enable the system to recover entirely from the fatigues of the preceding day; second, moderate and agreeable exercise should be taken for an hour or more previous to breakfast, bearing in mind that exercise, in order to be beneficial, must not be undertaken and performed as a task, but as a pleasant recreation; third, in partaking of our food, we should never forget, while we are thus repairing the waste of the body from the exercise of the functions, &c., that this also was intended by our Creator to be a source of pleasure to us. Let the rational man therefore, especially the dyspeptic, never eat with disordered rapidity but slowly, so that, masticated properly, his food may be taken into the stomach in a fit condition for the processes of digestion. This is the true philosophy of eating.. Finally, at a certain hour every day, perhaps after breakfast, an evacuation from the bowels should be solicited. It matters not whether the inclination be uniformly present, let the patient never fail in his readiness, and the bowels will soon form the habit of responding. So much are we the creatures of *habit*, that we can train our bodies, our organs, our appetites, tastes, &c., to almost anything we desire by a steady persistence in our object.

The most approved remedies for the different grades of indigestion, are:

Nux-vomica, Sulph., Pulsatilla, Bry., Lycopod., Calcar., Carb., Sepia, Graph., Ignatia, China, Antimonium-crud., Corn.-circ. Ferrum., Phos.

Nux-vomica.—Defective or capricious appetite in persons subject to hæmorrhoids; craving for stimulants or acid drinks; sour or bitter taste in the mouth, insipidity of food; nausea, sour eructions, regurgitations, waterbrash, accumulation of water or mucus in the mouth, vomiting of food; drinks, epecially acids, cause suffering, griping, aching pain in the stomach; colic, pinching contractions, bewilderment or destruction of

mind, head-ache, vertigo, general uneasiness or hypochondriacal tendencies; oppression of breathing, chills, lassitude, indolence, drowsiness, feeling of fatigue and sleep; heaviness of the head, unfitness for intellectual labor in an impaired constitution; vertigo, anxiety, paroxysms of fainting. Epigastrium distended; it feels tense and excessively tender, and burning when touched; and the clothes feel too tight. When there is general gastric derangement, the tongue is dry and white, or yellowish towards the root; there is no thirst, and too little water is habitually taken, at other times, there is burning thirst and heartburn, or cardialgia.

Heat and flushings of the face common in persons who have been intemperate; plethoric habit; general disposition restless, choleric, irascible, irritable, disposed to dispute or command; violent passion, paroxysms of suffering caused by late hours; complexion yellowish, earthy; deficiency of the secretions generally; bilious constitution; bowels constipated, evacuations hard and expelled with difficulty; disease caused by sedentary habits or intense study.

Nux-vomica is well adapted to the cases which occur in sanguine or bilious temperaments, and which have been induced by "high living," sedentary habits, undue mental exertion, irregularity in eating, sleeping, &c. *The indications* for *Nux* are, florid or pale, sallow or yellow complexion; general expression of countenance, anxious and sad, care worn; tongue dry, or covered with a whitish coat; occasional fulness in the region of the stomach and bowels; craving for stimulants or acid drinks; sour or bitter taste in the mouth; insipidity of food.

Distress at the stomach after eating; nausea, and vomiting of food; eructations and regurgitations; pyrosis; distressing sense of debility; accumulation of water or mucus in the mouth; irritability of the nervous system, with constant inclination to roam about; symptoms worse after meals and in the evening; constipation; hæmorrhoids; tenderness at the pit of the stomach on pressure; drinks especially cause suffering; griping, aching pain in the stomach; vertigo; dizziness or swimming in the head, headache, particularly when rising in the morning, or walking about, bewilderment or distraction of mind; cramp-like pains at the pit of the stomach, sometimes extending upwards to the diaphragm and œsophagus; colic, pinching contractions.

Confirmed hypochondria; constant dread of approaching misfortune.

When the dyspepsia consists simply of impaired activity of the nerves of the stomach, from the causes just named, *Nux* is without doubt the appropriate specific; but it is almost an invariable occurrence, that this condition of the stomach is attended with more or less derangement of the nervous system, manifested by loss of animation and energy; depressing of spirits; an invincible tendency to look on the dark side of affairs; trifles are exaggerated into matters of im-

portance; there is an indefinable sense of dissatisfaction, dread, and uneasiness, which impairs the appetite, disturbs the sleep, and almost unfits the individual for the ordinary duties of life, and often causes an urgent inclination to commit suicide; excessive nervous irritability. When this condition of the nervous system has existed for a considerable time, it receives the name of hypochondria. For this complication, Nux alone is insufficient, but one or more of the medicines hereafter enumerated will be required.

Administration.—In cases of this description, we usually prescribe *Nux-vomica* from the third to the sixth potency; a dose to be given each night, *as long* as may be necessary.

Sulphur.—In most cases of chronic dyspepsia, at the beginning of the treatment; in persons addicted to alcoholic drinks, and debilitated, nervous and irritable persons. Acid, putrid, or sweetish taste in the mouth; nausea, water-brash; smell from the mouth acid or fœtid, especially on rising in the morning; vomiting of food; taste chiefly acid or bitter; insipidity or too salt taste of food; repugnance to meat, bread, fat and milk, and craving for acids and wine; feeling of trembling within the body; restlessness, such as makes long sitting very uncomfortable.

Sulphur is peculiarly adapted to the treatment of cases occurring in persons of a scrofulous dyscrasia, and to cases in which dyspeptic symptoms supervene upon the disappearance of erysipelatous and other eruptions from the surface, also from the sudden suppression of long-continued hæmorrhoidal discharges. In many cases of this kind *Sulphur* will be found to be a valuable remedy.

The *external marks* which indicate this medicine are: pale or sallow countenance; light hair; blue eyes; thin skin; white teeth; glandular swellings; eruptions; weak eyes, and other signs of scrofulous diathesis; distention and distress of the stomach after eating; nausea; vomiting; pyrosis; frequent eructations, acid or bitter; the symptoms occurring, for the most part, on the disappearance of these eruptions or discharges.

Pulsatilla, at the third potency, is a valuable remedy in dyspepsia occurring in females, especially when the malady is complicated with deranged menstruation. If the disorder has arisen from excessive use of greasy and indigestible food, wine, &c., it will also prove a suitable remedy.

Slight exertion in conversation causes prostration; fatigue causes dyspnœa; the patient is melancholy, despairing, and feels disgusted with life; sad, hypochondriacal, morose, irascible humor; abdomen tender on pressure, as if the whole inner surface was raw.

Head-ache, thirst, chest oppressed, chiefly after a meal; disposition to an over-secretion of mucus in the principal organs; inertia, and a

feeling of constriction in the abdomen, as from incarcerated flatus worse toward morning, and in the left side; difficulty in digesting animal food; milk sours in the stomach; unpleasant effects from acids, or farinaceous food sweetened; pains in the stomach, regurgitation or vomiting of food, lassitude, shivering, and frequent eructations after a meal; eyes slightly sore as if from sand in them.

Sense of great fatigue, shivering, confusion and pain in the head or in the face; burning heat in the hands; flow of water from the mouth.

Mental and Moral Symptoms.—Sadness; irritability; moroseness.

Administration.—This medicine may be administered at the third attenuation in the morning and middle of the afternoon.

Lycopodium, *Calcarea-carb.* and *Sepia* may be given in mild cases of indigestion, occurring in weakly females and children, and persons of a lymphatic or scrofulous constitution. They may be exhibited at the third attenuation, a dose each day, as long as may be necessary. In cases where the above remedies are indicated, a highly nutritive regimen may be enjoined with great advantage, also the constant employment of all those means which tend to invigorate the system, like active exercise, sea-air, and bathing; frequent amusement for mind and body, &c.

Graphites is valuable in dyspeptic symptoms which appear to be connected with scrofulous or arthritic affections. It will be found particularly serviceable when they supervene upon the sudden disappearance of eruptions from the skin, or the sudden suppression of old discharges, or the drying up of old sores.

Administration, same as *Lycopodium.*

Bryonia.—Dyspepsia occurring in, or worse in hot or damp-warm weather. Loss of appetite and great aversion to food, alternating with morbid craving for improper articles, as wine, strong coffee, and acids; eructations of wind when the stomach is empty; or after eating, the eructations are sour or bitter; feeling of pressure and distention of the epigastrium; regurgitation or vomiting of food; water-brash; the epigastrium is tender to touch; bowels constipated; the temper restless and irascible.

Bryonia, at the third attenuation or higher, is well adapted to persons of a bilious temperament, with black hair, dark complexions and black eyes. The particular indications for its employment are: yellowness of the skin and eyes; tongue covered with a yellowish fur; bitter taste; vomiting or regurgitation of food soon after eating; sensation of fulness and burning in the stomach after meals; fulness and pains in the region of the liver; urine high-colored; head confused and giddy; pressure in the head; loss of memory; inability to transact business; great despondency; frequent inclination to commit suicide; constant sighing; sleepless nights, or sleep disturbed by unpleasant dreams.

Bilious derangements, skin yellowish, dry, hot at intervals, particularly the palms of the hands and soles of the feet; slight perspiration towards morning; strength variable, easily exhausted.

Lobelia-inflata.—Sphere of Action.—Noack (*Hygea*, 1841. vol 15) concluded from his experiments that Lobelia acts specifically upon the *pneumogastric nerve.* (*Jeanes, Amer. Instit. Homœop.* vol 1.) Its most important symptoms are those displayed on the functions of respiration and digestion.

Digestive Function.—Disagreeable taste in the mouth like that left by corrosive sublimate; pungent taste in the mouth; flow of slimy saliva; soreness of the throat; dryness of the mouth. Burning in the throat; dryness of the fauces; frequent spitting; dryness of the throat; tough mucus in the fauces, causing frequent hawking; pricking in the throat.

Burning prickling in the throat, increased secretion of viscid saliva; nausea and eructations; burning sensation rising up from the stomach; unpleasant sensation in the upper and back part of the pharynx; feeling as if the œsophagus contracted itself from below upward; feeling of pressure as from a foreign body in the whole course of the œsophagus, moving down with a vermicular motion; drawing pain in the right side of the throat extending up to the ear; feeling of a lump in the pit of the throat.

Loss of appetite; cough often repeated; flatulent eructations with with flow of water in the mouth; acidity and heat of the stomach, rising into the mouth with burning sensation; nausea with shivering of the upper part of the body; pain, heat and oppression of the stomach, feeling of excessive uneasiness of stomach, affecting the respiration; uneasiness of stomach, followed by vomiting, then cold perspiration of the face; nausea and perspiration; free vomiting, great prostration of strength; good appetite shortly afterwards; weakness of the stomach from the præcordium to the chest and downward to the umbilicus; weight and fulness of the stomach, worse on pressure; pain from back part of the stomach through to the spine; painful constriction in the region of the præcordia; warmth in the stomach; burning heartburn; running of water in the stomach, of long duration; distention of the abdomen with shortness of breath; flatulence.

Pulsatilla.—Particularly suitable for females and persons of mild disposition, lymphatic temperament, pale complexion, blue eyes, light hair, who weep easily, are innocent, affectionate, peevish, and much disposed to seek for sympathy; with disposition to an over-secretion of mucus, or to heartburn. Dyspepsia originating in the abuse of Mercury, Cinchona, fat, pork, wine; also in fright.

The tongue feels as if burned, is covered with a thick, grayish, whitish or yellowish coating; the taste of meat is putrid, sweetish, or bitter

in the mouth; want of appetite, or greediness, with gnawing pain in the stomach; repugnance to hot food, with craving for acids and highly seasoned things, wine, spirits; want of thirst; thirst deficient or extreme; longing for spirituous, spiced or acidulated drinks.

Pulsations in the epigastrium; vomiting of greenish, slimy or bilious bitter or acid substances; vomiting of food or blood, with dyspnœa sadness and melancholy after eating; sufferings from eating bread; bitter or sour eructations, tasting of food recently taken, sensation of burning in the throat and œsophagus; water-brash, hiccough; borborygmi and colic; cramps in the stomach and præcordial region after a meal; melancholy, great anxiety and anguish; temper excitable; dread of death or of appoplexy; buzzing in the ears; head easily fatigued by intellectual toil; dyspepsia, alternating with diarrhœa, from exposure to cold and dampness.

Calcarea-carbonica.—Sympathetic or scrofulous constitution, feeble in body or mind, precocious or morbidly active; wide awake to suspect ill motives in others.

The head feels as if compressed in a vice; pulsative or shooting pains in the head, with sensation of coldness; pain increased by alcoholic drinks or mental exertion, extending to the cheeks; nausea, eructations or expectoration of acid secretions; vesicles in the mouth and on the tongue; bitter, sour, or metallic taste in the morning; clamminess or dryness of the mouth; want of appetite and occasional hunger after a meal; heat or swelling of the abdomen, with constant thirst, and little appetite; craving of wine or acid stimulant drinks; flow of water from the mouth, water-brash after every meal; acid regurgitations; pinching, cutting pains in the epigastrium; tension of the hypochondria; sour regurgitations after drinking milk; inclination to sleep after eating. Constipation; stools hard, small, often consisting of undigested matter passed only the second, third, or fourth day; urine blood red or brown; general debility in a plethoric, full constitution.

Hepar-sulphuris.—Chronic dyspepsia, following the abuse of Mercury; paroxysms of indigestion provoked by slight causes, with craving for wine, or sharp acid and stimulating drinks; nausea in the morning; eructations, or vomiting of sour, bilious or mucous substances; much mucus in the throat; pain in the abdomen; hard, dry, and difficult evacuations; pressure, distention and heaviness in the epigastrium; bitter taste in the mouth, and of the food while eating; aversion to fat; great thirst; pressure on the abdomen gives uneasiness.

Ignatia.—We have witnessed much benefit from the use of this medicine in indigestion afflicting persons of a *nervous* temperament. It covers the following symptoms, viz.: countenance pale or sallow; eyes constantly in motion; general expression indicative of anguish and despair; frequent sighing; constant inclination to move about; confusion

of ideas; loss of memory; pressure and other bad feelings in the head; distress at the stomach after eating; appetite variable; tongue covered with a thin white fur; entire despair of recovery; feels as if getting worse every day; dread of misfortune, coming want, &c.; frequent inclination to commit suicide; disinclination to see or converse with friends or acquaintances; seeks solitude, and broods over imaginary troubles.

This medicine may be given at the third attenuation—or higher,—a drop once in twelve hours, until an impression is made upon the malady.

In cases where the nervous system is so much involved that the patient desires to die, and continually contemptates *suicide*, rather than suffer longer from his morbid and unfounded imaginings, and the wretchedness and anguish which tortures him day and night, *Aurum-muriat.* at the first or second or third trituration, will be found a remedy of the utmost importance. One grain may be given twice daily until an amendment occurs.

Cedron.—Sensation of heat and fulness in the stomach; distention and disposition to nausea; generally aggravated by rest, but relieved by walking and eating.

Case.—A gentleman, aged fifty, sanguine temperament, sedentary habits; uncomfortable feeling of the stomach which compelled him to lie down; great sensitiveness of the præcordial region; pulse small and hard; mouth and fauces dry; depressed spirits and inquietude; relieved by taking food. These symptoms appeared every day from ten to eleven, A. M., lasting from one to two hours, after which there was prostration of body and mind for an hour or two. The disease had lasted for eleven months. All the symptoms disappeared after taking two grains of Cedron first (decimal) trituration, during the apyrexia, every day for three days.

The occasional use of mild *aperients* in certain cases of dyspepsia as well as in convulsions, diarrhœa, &c., caused by the presence of indigestible food in the stomach and bowels, may be advisable for the same reason that paracentesis is recommended in urgent cases of abdominal or throracic drospy. By evacuating the unnatural accumulations, we not only place the disordered parts in a more favorable condition to recover their lost energy, but we also secure a much better state of things for the operation of our remedies. In obstinate constipation, for example, the indurated and impacted fæcal matter sometimes induces so great inactivity of the muscular and nervous structure of the intestinal canal as to amount almost to paralysis. In these cases, both high and low attenuations now and then prove inefficient; and it is here that mild aperients and injections will sometimes prove serviceable, *not, however, as curative agents, but by speedily removing a*

cause of disease, and thus placing the affected parts in the best possible condition to ensure the proper action of a homœopathic medicine.

On this subject, Dr. Madden, of Brighton, makes the following observations: "It not unfrequently happens that the benefit gained by an immediate unloading of the bowels more than compensates for the subsequent increased tendency to constipation. This is acknowledged by all in the case of poisoning. No homœopathist hesitates to give emetics and purgatives when a person has swallowed a substance which, if not speedily removed, will cause death; but does not the same hold good with an indigestible meal? It is no doubt true that our remedies are often sufficient of themselves to overcome the evil influence of an occasional excess at table; yet I am convinced that it not unfrequently happens, especially in childhood, that a judicious aperient would at once remove a state of things, which, if treated otherwise, would entail an illness requiring several days to overcome. There is much unreasonable prejudice among homœopathic practitioners on this point; they will unhesitatingly condemn the use of the mildest medicinal aperient, and yet will order their patients to eat prunes, figs, roasted apples, green vegetables, brown bread, &c., in the hopes of producing the same result. But where is the difference? A dose of Castor-oil, for example produces an increased action of the bowels, in virtue of its being an indigestible oil, which passes through the whole intestinal tube unchanged, and perhaps exerting some slight irritating effect on the mucous membrane; whereas the aliments above named produce the same results, in virtue of their having either a large indigestible residuum which irritates by its presence, or by their containing vegetable acids, which directly and specifically irritate the mucous membrane. The result, therefore, is similar in both cases."—(*British Jour. of Homœop.* No. XXIX. p. 311.)

In conclusion, we deem it proper to observe that aperients should never be employed except in very urgent cases, or in those where our attenuations have failed of producing the required effect. In all instances such measures must be looked upon as merely temporary expedients.

Treatment of Fermentation of the Contents of the Stomach. 1. Restrict the quantity of food, while attending to its quality. Insist upon due exercise in the open air. Bad teeth should be removed; and when this is not assented to, the carious parts, particularly when there are large and offensive cavities, should be cauterized by Creosote and Arsenic; thus: wet a small quantity of cotton in Creosote, and place on one side of it a minute quantity of Arsenic (white oxide of Arsenic as usually sold), place this cotton in the tooth, pressing the Arsenic carefully down to the diseased nerve. A momentary pain is felt

but entirely unlike toothache; the tooth then ceases to be painful or to cause serious trouble. Such teeth may be filled and do good service for years. When neatly performed the operation is generally painless.

2. *Water.*—Cold water should be the common drink of dyspeptics. I have often seen its prohibition prove injurious. "Water," says Pereira, "repairs the aqueous parts of the blood expended in secretion and exhalation. It is a solvent of various alimentary substances, and assists the stomach in the act of digestion, though if taken in *very large quantities, it may have an opposite effect*, by diluting the gastric juice." This caution, though properly given, is seldom necessary, as it is much more common to err on the side of drinking too little. Bad effects from drinking too much cold water are caused by:

1. Previous over-heating, from which sudden death has often resulted. General Bruat, who in the Italian campaign of 1859 was leading the first division of the French army over the top of Mount Cenis, was over-heated by exertion and drank a glass of snow water. He suddenly fell as if stricken down by a cannon ball, and immediately died.

2. Emptiness of the stomach at the time of swallowing.

3. Excessive quantity of water taken.

4. Extreme coldness of the water.

When taken freely under the precautions suggested by the above considerations, cold water assists digestion, promotes the action of the kidneys, skin and all the secernent and excreting organs. It soothes morbid irritability of the stomach, promotes the gastric secretion; and enters into the living structure, forming three-fourths of the entire body.

If a glass of pure water be taken a short time before eating, it acts as a real tonic, soothing that morbid craving which deceives those who habitually eat too much, and who have vainly tried to goad the secreting vessels to furnish gastric juice enough to dissolve all that a false appetite may demand. The water is also digested and thus furnishes the system with hydrogen and oxygen. The best effect will be obtained by taking the water at 50° to 60° Fahrenheit. When too cold its chill is followed by too much reaction, increased afflux of blood, secretion and absorption. Several glasses should be taken in the course of the day, and the quantity may be gradually increased, so long as there is no excessive perspiration, and when the body has not been previously over-heated. The surface should be kept sufficiently warm to promote the action of the skin, as, when the skin is cool, the water is carried off too rapidly by the kidneys. For the first few days at least, remarks Graham, the urine is limpid, colorless, highly stimulating, inodorous, and apparently without urea; but after the system becomes more accustomed to it, the excess of water finds its way through the skin and lungs. When taken up in large quantities by the intestinal absorbents

it passes, by the *vena portarum*, through the liver, increasing largely the secretion of bile, which returns into the intestines to dissolve and expel their accumulated sordes.

The power of water, when taken in unusual quantities to increase the transformation of organic matter or hasten the *metamorphosis* of the old tissues has been long acknowledged, but has been no where acted upon, except by sojourners at mineral springs or water-cures. Mosler, in a prize essay in 1857, communicated some experiments made with the purest water he was able to obtain, containing only $2\frac{3}{4}$ grains of solid substances, and $1\frac{1}{10}$ grains of Carbonic-acid in the gallon. He obtained the following general results:

Abstinence from water diminished the secretions and excretions, principally those of the kidneys. Although the specific gravity of the urine was much increased, the actual total amount of solids excreted within a certain period was considerably diminished. This diminution was most remarkable in the urea, next in the chloride of Sodium and the Phosphoric and Sulphuric-acids. Excretion through the skin and lungs was also decreased, though in a less degree. The bowels were constipated, the tongue rather dry, the appetite defective.

The effects of drinking an *excess* of water, observed by Mosler, were: acceleration of the total metamorphosis of matter, with hyper-excretion from the skin, kidneys, liver, &c. The urine contained a greater quantity of solid constituents; most of urea, next of chloride of Sodium, then of Phosphoric and Sulphuric-acids. The body lost in weight; but on the days following the increased ingestion of water, the excretions were diminished and the body gained in weight.

These experiments are important in showing the scientific basis of an old practice which has fallen too much into disuse. The dyspeptic drinks less water, than a man in health; and, although all his secretions are of a more acrid character, containing an undue amount of solid matter in proportion to their bulk, every congested, torpid, indurated, or hypertrophied organ is gorged with effete matter, which, for true health, should have long ago been superseded by new matter. Complete restoration depends, not on a supply of good food imperfectly digested by an imperfect solvent fluid secreted from a stomach over stimulated, but on *complete removal* of the effete matter in advance of new deposition; and no remedies quicken absorption without the co-operation of that universal solvent pure water. This agent has often succeeded in diseases that had resisted all medical treatment. In some cases of mercurial paralysis, Mr. Piorry attempted to purge the system of all poisonous matters by water alone. After various measures had been tried in vain, the patients were directed to drink as much water in the course of every day as could be borne without inconvenience. Even three gallons per day seemed to produce no other effect than a

rapid washing away of the old particles of the diseased body, and a substitution of new-matter through a more healthy nutrition. By this treatment, aided by long-continued baths, with friction, one case was convalescent in forty-eight hours, and four others in from three to five days. They all remained in the hospital, two or three weeks, without a relapse in any case.

Medical Treatment.—*Sanguinaria-canadensis.*—I have for many years employed this remedy in some forms of dyspepsia, as well as in many other affections of the stomach, throat, liver, lungs, &c. It is especially useful in deficient gastric secretion, with loss of appetite, and periodical nausea; heartburn, nausea, and irregular chills; torpid state of the liver; dyspeptic headache, terminating by regurgitation and vomiting of greenish bitter fluids; soreness of the abdomen, increased by eating; feeling of heat in the stomach, chronic gastritis; red tongue, which burns as if from the contact of something hot; lips red and dry, throat hot and dry; tickling at the entrance of the larynx which excites cough; cough peculiarly severe, not relieved by expectoration, with pain in the chest and redness of the cheeks. All these symptoms, when caused by cold and damp weather, in consumptive patients with hective symptoms—as quick pulse, burning in the palms of the hands or soles of the feet at night, I have often removed with this remedy. When the cold especially affects the frontal sinuses, nose, and tonsils, I have always succeeded in curing it with this agent alone.

When digestion is imperfect from deficiency of the true gastric fluid; when the food undergoes chemical decomposition, and gas is evolved in large quantities, Sanguinaria will generally change the action of the stomach, and digestion will become more complete. When the mucous membrane is congested, the flatus formed by fermentation is retained by a spasmodic constriction of the cardia. Its irritation is reflected through the pneumogastric nerve upon the lungs, exciting a feeling of tickling" in the entrance of the trachea, with *sympathetic cough.* See *Gastric Catarrh. Index.*—This peculiar dry cough will neither yield to the expectorants of the old school or to the usual specifics of the new; it often persists for hours, and is only relieved by eructations of gas from the stomach. Aromatics and stimulants fail to expel the gas: they only increase the erethism of the coats of the stomach. The Sanguinaria affords a better resource. It only relaxes the constricted cardia, permitting the flatus to escape, but excites a specific homœopathic reaction on the whole surface of the fauces, œsophagus and stomach, superseding the morbid state by a healthy one.

Phosphorus.—We have found this remedy more successful than any other for this gastric cough. It generally occurs in persons predisposed to consumption, and corresponds to Phosphorus in all its principal

symptoms. It is always excited by the same causes that produce a common catarrhal fever, and Phosphorus cures it as hereafter described under catarrh of the stomach.

Pepsine.—M. Bondault of Paris has endeavored to prepare a substitute for natural gastric juice from the *Pepsine* of the sheep's stomach; adding to it a small quantity of starch and lactic-acid, he formed what he calls "*poudre nutrimentative.*" It is only a very imperfect substitute for the natural secretion. The gastric fluid formed in the stomach of a healthy animal is introduced with the food into the human stomach; and is found to act there as it does out of the body, under the same conditions of heat and motion. In either situation it digests and dissolves the food, and in so doing suspends putrefaction. The quantity the Pepsine can dissolve is not large; "but," says Dr. Chambers,* of St. Mary's Hospital, London, "by its aid, a small quantity of solid food can be relished and digested; the fœtor of the evacuations changes, flatulence and distressing eructations cease, there is renewed strength and power of assimilation, sleep becomes more natural, night sweats and hectic fever diminish; dyspnœa, cough, &c. are mitigated." Though all this be true it is only temporarily so. Our own well-known remedies are far better.

Ipecacuanha.—Aching pain in the head, particularly in the temple, over one eye; painful burning sensation of the mouth; smarting on the edge of the tongue, with yellowish white coating; sense of spasmodic contraction in the throat and in the chest; nausea, eructations of air or bitter fluid; distress from taking cold drink; vomiting, preceded by pain in the head—the matter thrown up consisting of green jelly-like or dark and tenacious substances; sensation of emptiness and weakness of the stomach, followed by spasmodic pain; flatulent colic, alleviated by rest.

Nux-vomica.—Hypochondriac mood, and apprehensions of misfortune and death. Excessive sensitiveness to external impressions. All ordinary dyspeptic symptoms develop themselves in succession, from the ordinary causes; but a great many *Nux* symptoms, are strongly marked. Among them are: putrid taste of the mouth; appetite capricious or entirely wanting; heat in the forehead; dizziness and cloud over the eyes, while eating, or immediately after, then nausea and vomiting of acid or fermenting mucus occurs periodically. The stomach is sensitive to the slightest pressure, and for some hours after eating has the sense of something solid or hard; tension and cramps of the stomach; cardialgia, from the abuse of coffee; chronic gastritis, simulating scirrhus or incipient cancer; pressure as from incarcerated flatus under the left side of the chest; stitches under the region of the liver; chronic hepatis, &c.

* Braithwaite's Retros., July, 1858, p. 78.

Nux-vomica combats the dyspeptic symptoms preceding the stage of fermentation rather than corrects its consequences.

Nux-vomica is directed by M. Trousseau in dyspepsias to re-establish the activity of the digestive functions, especially when there is constipation. "It excites the contractility of the muscular fibres of the digestive apparatus." He prescribed Nux-vomica in a case of hysterical tympanitis, with constipation, crampy pains in the stomach, aggravated after meals by coffee, or late and early, with nausea, vomiting, water-brash, hypochondriac humor. (*Gaz. des Hôpit.* 1859. p. 36.)

In dyspepsia with diarrhœa, M. Trousseau employs Belladonna, remarking at the same time, the common property of the Solanaceæ, to to relax the bowels. He adds, however, that it would be wrong to neglect Belladonna in diarrhœas dependent on an exaggerated excitability of the intestinal muscular fibre.

Muriatic-acid.—In dyspepsias with excessive secretion of acids, M. Trousseau advises acids, especially the Muriatic, one to three drops in water, after meals, and cites several remarkable cures by this method. Concerning alkaline drugs and mineral waters in acid eructations he remarks that their use is not chemical, but altogether vital, in modifying the secretions. On the benefits of a thermal alkaline treatment of malarial cachexias, with visceral engorgements, he says: "What can be, however, more contrary to chemical theories, than to use, in a state of the blood so plastic as often to occasion dropsies, a medication reputed by chemical theorists the solvent *par excellence* of the blood?"

The development of that fermenting mucus which decomposes into fœtid gases, may be prevented by any treatment that improves digestion. Among the best remedies are: *Bryonia*, *Sulphur*, *Cinnabar*, *Mer.-corros.*, *Nitro-muriatic-acid*, *hypo-sulphite of Soda*. These and many others will be found useful, but they need to be assisted by active exercise, judicious selection of food, and mental employments consistent with habitual cheerfulness.

Hypo-phosphite of Lime.—For Symptoms, generally, see *Calcarea*.

Alcohol as a Remedy and as a nutritious Substance.—The special use of Alcohol is to "arrest destructive assimilation—to stop the over-active processes of life in their effects upon the organism; so that, for a certain period, during the stay of Alcohol in the system, less urea, less phosphates—less water are excreted by the kidneys, less Carbonic-acid by the lungs, and less digestion goes on in the alimentary canal, showing that the muscles, bones, nerves, &c., are not getting rid of their effete tissue, but retaining it and making use of it as far as possible."

2. "But at the same time they give rise in the body to defensive *reaction*, which is prominent first, immediately after taking the dose, and then gives place to the special action, and on this ceasing, is again manifested to greater extent."

3. "So that if a suitable quantity be taken, and both action and reaction are allowed to exhaust themselves before the dose be repeated, more manifestations of life, represented by more excretion and more consequent renewal of the body takes place in a given time with the alcoholic drink than without. There has been a positive gain in vitality, but if such a large quantity is taken at once that the reaction is overpowered, or if it is arrested by a continuous repetition of the dose the manifestation of life is kept down; the body is not renewed, because its effete particles are not removed and the amount of vitality must certainly be reckoned at a loss."

Combinations of Alcohol presenting peculiar Advantages.—In some of the finer wines Alcohol exists in combination with sugar, extractive, vegetable essential oils, and ethers, which constitute the aroma, or *Bouquet*, and give to each its peculiar flavor. It is supposed that some of the favorite wines possess these elements in peculiarly happy proportions, which give to each its especial merits, and render it applicable to peculiar conditions. It is claimed that the Carbonic-acid gas, protoxide of nitrogen or "laughing gas" and certain exhilarating ethers, which according to Liebig, exist in sparkling champaigne, render this wine capable of producing a higher and yet less injurious stimulation than the same amount of Alcohol in any other form.

With this view of its action, Dr. Cotton admits the use of wine and even beer. Turnbull condemns them in general, but employs them as a "great solace to the patient in the advanced stage." (p. 56.)

When wine is given to promote nutrition it should always be given in small quantities largely diluted, and in combination with other nutritious and easily assimilated substances; of these the sugar contained in good wines is shown by Dr. Becker's experiments to have a special effect in limiting the destruction of tissues containing phosphates, as the bones and nerves, and the ethers may possess a similar power.

The acids and extractive matter of wines lessen the injurious effects which the Alcohol alone, though diluted, exerts on the mucous membrane. It is important when Alcohol in any form is used for the purpose of arresting the metamorphosis of tissue, that constant stimulation, even in slight degree should not be too long persisted in. Some intervals must be permitted during which its effect may subside, and give the system time to "recover its metamorphosis, so that the effete tissues may be duly eliminated and expelled."*

If brandy or some other alcoholic fluid be preferred in a given case to wine, it should always be diluted with a large proportion of water. In any degree of dilution they can only aid in developing adipose, never

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* Batilliat on the Wines of France.

* British and Foreign Medico Chir. Review.

of muscular tissue. They do little then towards the furnishing of muscular strength; what they can do can best be done in a highly attenuated form. Troy was taken by heroes who drank their wine forty times diluted with water; it was wine *un*diluted that subverted both the mental and physical powers of the Macedonian conqueror.

III. FERMENTATION OF THE CONTENTS OF THE STOMACH, WITH DEVELOPMENT OF ORGANIC PRODUCTS.—SARCINÆ.

This form of disease from gastric fermentation was first noticed by Mr. John Goodsir in 1842.* A young man, aged nineteen, had suffered for four months from gastric disease, which resisted all ordinary treatment. On examining with the microscope some of the fluid ejected from the stomach, he found in it some peculiar organized living products to which he gave the name of *Sarcinæ;* they have since been observed by others.

Diagnosis.—Distention of the stomach on waking in the morning, partially or entirely relieved by spontaneous regurgitation and expulsion of a large quantity of a transparent or light brown fluid, which has the odor of fermenting *wort*, and is sometimes acid. After standing a few hours, it is covered with a mass of froth like that on a pot of porter, and a glairy, ropy, granular matter is deposited. There is sometimes but little complaint of indigestion, and the pulse is undisturbed; in one bad case it was from fifty-six to eighty per minute. Sleep is disturbed more or less according to the quantity of fermenting matter contained in the stomach. There is sometimes perceptible enlargement at the epigastrium, deficiency of appetite, constipation, pain or burning in the region of the stomach, which is distended with gases, and the feeling of distress increases until it is relieved by vomiting. The microscope reveals the organized sarcinæ in a square or slightly oblong plate, one-eighth as thick as one of its sides is long, and divided into four equal squares by lines crossing in the centre.

Each quarter is subdivided by similar lines, more faintly marked, and the whole is like a brownish or yellow packet $\frac{1}{800}$ or $\frac{1}{1000}$ of an inch in length, bound with cords crossing at right angles. The fluid ejected from the stomach contains some lactic-acid and a trace of muriatic-acid. No Alcohol was found by Mr. Hardwick, though it had probably existed at an earlier stage of the fermentation. With *sarcinæ*, sometimes occur small bodies resembling the *torulæ* of yeast. There is seldom fever, but sleep is disturbed by distention of the stomach.† Professor Graham found the fluid to contain free Muriatic-acid, Acetic-

* Edinb. Med. and Surg. Jour. Vol. 57. p. 430.

† Busk, Microscop. Jour. Vol. 2. p. 321.

acid, Alcohol, and Sugar, while Carbonic-acid was not disengaged.* When the fluid ejected is alkaline, and not acid, no sarcinæ have been found in it. The urine is generally clear, containing no albumen, and is of a specific gravity of 1022 to 1011, revealing under the microscope, crystals of oxalate of lime. The saliva is slightly acid, the appetite good; but free indulgence in eating is followed by distention of the stomach, with burning uneasiness, or agonizing pain, if the stomach be ulcerated. In less severe cases, the heartburn or other uneasiness subsides with the absorption or expulsion of the gastric contents. When the disease is more fully developed, the distress continues till relieved by vomiting, or by the eructation of a clear sour fermenting fluid. When it has continued long, the patient become emaciated, has a dry skin, slow pulse, and that peculiar anxious expression of countenance observed in persons suffering from organic disease of the stomach.

Causes.—1. *Organic Injury.* In a case given by Mr. Busk, the diaphragm of a man, previously in good health, was ruptured, and the whole stomach, with portions of the other abdominal viscera, passed through the aperture into the left pleura. From this injury resulted the long train of symptoms peculiar to obstruction, detention and fermentation of the contents of the stomach, and formation of sarcinæ, though the stomach itself was perfectly sound. In a second case, the spine was fractured by a fall into the hold of a ship. The vomiting of a fluid containing sarcinæ occurred but once, and was followed by a return to perfect digestion, though paralysis, from injury of the spine, remained. In another case, it was attendant upon the progress of a pleurisy, in a boy with disease of the hip-joint. Sarcinæ were expelled from the stomach by vomiting, and after death were found in the stomach, but in no other portion of the intestinal canal. (*Busk.*)—Dr. Budd says, a laborer, on whom a bank of earth fell, was thrown violently on some pieces of board; he was in consequence affected with this species of stomach derangement, with palpitation and shortness of breath.

Pathology.—The development of the fungi called sarcinæ with fermentation of the contents of the stomach, is generally associated with some local injury or with structural disease of the pylorus; frequently with that induration of the pyloric cellular tissue caused by spirit drinking. In one case the pyloric stricture was so complete that a probe could scarcely be passed. Though the patient had taken bicarbonate of soda from ¾ to one pound per week for months together, to relieve the acidity, there was found, after death, no thickening of the coats of the stomach, nor other indication of malignant disease.†

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* Dr. Jenner, Med. Times. Aug. 1851.

† Budd on Diseases of the Stomach, p. 199.

The disease under consideration then presents the following peculiarities: 1. a secretion of abnormal fluids by the stomach: 2. a specific fermentation in these fluids and in the food imperfectly digested, "with the evolution of carbonic-acid and the production of *torulæ and sarcinæ*, leading to the formation of acetic-acid." The essential pathological feature consists in a structural change in the stomach, which prevents this organ from fully discharging its contents, and causes an abnormal secretion of fluid which rapidly ferments. *Alcoholic* fermentation may be the first step; but the alcohol is rapidly decomposed, no symptom of intoxication occurs, and the process ends in the formation of acetic-acid. Though much of the acid in the fluids vomited is formed by fermentation after their expulsion, still the quantity formed within the stomach, together with its distention by the gas, greatly increases the sufferings of the patient.

Treatment.—Allopathic clinical experience has not yet led to any satisfactory system of treatment. Dr. Budd says, one patient already mentioned after being dug out of the embankment of earth, insensible, was treated two years afterwards for the dyspeptic fermentation. After being restricted to a diet of lean meat and bread for five weeks, and taking two minims of Creosote in pills, three times a day the general symptoms abated; but the pain in the epigastrium, flatulence, and occasional vomiting of acid eructations remained. In a second case, that of a spirit drinker, the disease had lasted nearly a year, and was treated with Creosote pills like the preceding. Colocynth and aloetic pills were also occasionally given.

But slight improvement followed this treatment, and other measures were ineffectually tried. On resuming the first, with a full diet of lean meat, bread, and coffee, again there was improvement, but only up to a certain point. Sulphate of Zinc emetics, and five grain doses of Nux-vomica, thrice a day, were useless. Common salt in doses of a table-spoonful to a half-pint of water three times a day caused *burning of the stomach*, (as well it might,) but it mitigated the fermentation. He was never cured.

In reviewing the expedients tried in the above cases we at once observe that the remedies tried were all good, if they had only been administered in an attenuated form. The Creosote, Nux-vomica and the table salt are proper remedies in such a case. The last of these was tried in the case of the man who took such large quantities of bi-carbonate of soda. He ultimately died of complete stricture of the pylorus, the passage being almost entirely obliterated; and this termination was a reasonable one to predict under the use of large and crude doses of irritating drugs. Table salt or Natrum-muriaticum is, in every form, an important antiseptic; but it only acts well when largely diluted, as we find it in some mineral waters, such as that of the Blue Licks,

Kentucky. I have seen its influence on some obstinate derangements of the stomach complicated with torpor, or chronic enlargement of the liver and spleen of malarial origin. About four-fifths of the solids contained in this water consists of pure muriate of soda; but the medicinal effect far surpasses that obtained by so small a quantity in a common solution, and is attributed to the large quantity of water with which it is combined. When still more largely diluted the effect is better.

Natrum-muriaticum, in higher attenuations, is appropriate where there is fermentation or putrefactive change in the contents of the stomach, whether *sarcinæ* be discovered in the contents of the stomach or not, and especially when ague complications are present.

Symptoms: Bitter, sour, or putrid taste in the mouth, want of appetite, aversion to food, or excessive craving for bitter or acid food or drink, the stomach feeling full and oppressed when but little has been taken; sour regurgitation of food, persistent heartburn, hiccough and nausea after eating; vomiting followed by extreme exhaustion, spasmodic or convulsive action of the stomach, and throbbing or burning at the pit of the stomach.

Bi-Sulphite of Soda.—Its specific chemical properties constitute its first claim to attention. As an *antiseptic*, it is employed to preserve bodies for dissection. It also prevents the fermentation of vegetable juices, but owes its virtues to the affinity of its soda for vegetable acids. When *it* meets with acetic or lactic-acid, in the stomach, it is decomposed, and *sulphurous*-acid is liberated.

This acid has the power to prevent alcoholic and acetous fermentation, and has been used to prevent the formation of acetic-acid in cider. Dr. Jenner employed it to arrest fermentation in the contents of the stomach. Dr. Budd dissolved two drachms of the salt in an ounce of water, giving a tea-spoonful in a wine-glass of water, as soon after meals as the fermentation began. Since the hypo-sulphite of soda is relied upon for its *chemical* rather than for its *dynamic* action, we consider in prescribing it, whether the *sulphurous-acid* formed by its decomposition be appropriate to the case. The following are important symptoms: Most of the common symptoms of confirmed dyspepsia, —sour eructations, strong acid taste remaining long in the throat, which feels rough as if scraped, bitter taste in the mouth, nausea with bitter or acid vomiting, the stomach remaining sore to the touch, feeling full and distended by something solid, a burning in the stomach; obstinate constipation ending in diarrhœa, with hæmorrhoids, quick pulse, emaciation.

I have for some years frequently prescribed the hypo-sulphite of soda for dyspepsias in which gastric fermentation is a prominent symptom. It is truly a *dynamic*, as well as a *chemical* remedy and may

well be tried in protracted gastric derangements in psoric constitutions.

IV. SYMPATHETIC AFFECTIONS OF THE STOMACH.

1. Functional disorder of the stomach from organic disease of other organs, may result from an influence transmitted through the nerves, as well as from the constitutional disturbance that may be produced by some change in the blood.

Dr. Hall in his exposition of the direct and reflex action of nerves has explained the process by which irritation of the lung, brain, liver, or uterus so frequently leads to *sympathetic* vomiting—that is, vomiting caused by nervous influence reflected from the seat of the disease upon the muscles that perform the act. In these cases the matters vomited are often acid, showing that the reflex influence excites not merely the act of vomiting, but also, as in the experiment of Spallanzani, a secretion of gastric fluid.

2. *Sympathetic Vomiting in Phthisis.*—It sometimes results from the reflex action excited in the stomach by irritation of the lungs when the cough is hard and dry, occurring as in whooping cough, only at the end of hard fits of coughing, when there has been no previous loss of appetite or of digestive power, and without pain in the stomach. This kind of vomiting is generally controlled by sedatives.

A few doses of Lobelia 3d, will afford relief. See *Dyspepsia.*

Later in the disease, vomiting is attended by loss of appetite, pain, sense of heat at the stomach, and the matter vomited is acid. These symptoms often continue till death; and, on dissection, the mucous membrane of the stomach at the cardiac end is found thin and soft; in some cases all the coats of the stomach are dissolved. (*M. Louis "On Phthisis."*)

In these cases the disorganization does not originate in structural disease of the stomach, but in undue and untimely secretion of gastric juice, and other functional disorder excited by reflex nervous influence. In some cases the functional disorder may ultimately lead to an inflammatory or catarrhal state of the mucous membrane, and this may be an additional cause of disordered digestion; but the *softening* almost always takes place after death; and depends on the quantity of gastric acid the stomach may contain at death.

In some advanced stages of phthisis there is often gastric disorder, especially in females, from fatty enlargement of the liver. In this case the liver by its increased size overlaps aud compresses the pyloric end of the stomach, and causes that enlargement of the stomach so commonly found in consumptive subjects, and in some degree, to evils

of obstructed pylorus. For this condition there is no remedy, as the cause consists in an incurable disease.

3. Disorder of the stomach caused by abscess of the liver. See that Article.

4. Disorder of the stomach from the effects of the passage of gall-stones. This is treated of under the head of Chololithus, or gall-stones. See *Gall-stones—Index.*

5. Passage of a renal calculus may produce the same sympathetic nausea and vomiting as that from the passage of a gall-stone.

6. *Gastric Disorder from Disease of the Brain.*—In inflammatory diseases of the brain, particularly in their early stage, when the symptoms denote irritation rather than compression, vomiting is a frequent symptom; and in many persons who die of it, the mucous membrane of the cardiac end of the stomach is even found more or less dissolved or digested by the gastric juice. This shows that the irritation of the brain can not only excite the mechanical act of vomiting, but also that untimely secretion of gastric-acid that may prey upon the coats of the stomach after death. Andral says, vomiting and especially nausea, frequently attend on the first onset of inflammation of the membranes of the brain; and, after twenty-four hours they generally cease to attract attention. In some cases after death from brain-disease, the stomach is entirely sound; in a smaller number the coats of the stomach have undergone "self-digestion" from the action of the free acid which may continue to be formed so long as the gastric disorder continues as the result of the cerebral irritation. Andral says, some patients vomit only two or three times a day; others every hour or two, or even every fifteen minutes, being unable to take even a spoonful of drink without vomiting. Some throw up enormous quantities of green bile, others with great effort can only throw up a little mucus. Females suffer more than men, and children than grown-up persons. The vomiting is sometimes attended by pain and tenderness at the epigastrium, but the degree of this tenderness is mainly dependent on the duration of the gastric disorder. When the pain of the head is severe the slighter pain of the stomach is little noticed. This gastric disorder is attended with secretion of much acid, is generally treated by Soda, Magnesia, chalk or bismuth. (Budd, p. 158.)

7. *Gastric Disorder from Organic Disease of the Uterus.*—Dr. Denman caused in one case pain and vomiting, by passing a ligature around the polypus of the fundus of the uterus. On loosing the ligature the symptoms ceased; on attempting to tighten it the pain and vomiting returned. The ligature was left on, but loose. The patient died in six weeks, and on post-mortem examination the uterus was found inverted; and the ligature had included the inverted portion. (*Gooch, Diseases, &c.*)

Cancer of the Uterus often causes frequent and distressing vomiting through the reflex nervous influence transmitted first from the uterus to the spine, and secondly reflected on the stomach. The vomiting in these cases is often attended by pain at the stomach and thirst, and the coats of the stomach after death may be found softened or digested; the reflex action having excited the secretion of gastric juice.

Nausea and vomiting are common effects of ulcer of the neck of the uterus, and the distress thus originating may be very severe, at the same time that the uterine pain may be so slight as to be entirely overlooked.

8. Nausea and vomiting are often dependent, in nervous females, on trifling causes. In those in whom the sensibility has been exalted by losses of blood or by anæmia otherwise induced, the digestion is habitually feeble; and any unwholesome or indigestible food may excite high irritation and vomiting; this may be kept up for weeks or months; though most common in women it may occur in men who have excitable nervous systems with feeble digestion. It generally begins in the evening after fatigue. The vomiting is followed by pain, or uneasiness at the pit of the stomach, loss of appetite and thirst, it returns after swallowing any food whatever, and even the simplest drinks. There is then severe pain at the stomach and the matters vomited are very bitter. In slighter cases the food is retained for a time and the matters rejected are intensely sour. The acid thrown up may be in part secreted by the coats of the stomach; but the constant irritation to which the mucous membrane of the stomach is subjected, greatly weakens the digestive power; and the unhealthy and decomposing mucus acts upon the starchy principles of the food, which pass into fermentation and evolve large quantities of lactic-acid. The stomach exerts a sympathetic influence on the liver, and after a few days the countenance becomes sallow, though only in a slight degree. This may remain but a short time, but the gastric symptoms often continue longer than those caused by the passage of gall-stones; in some cases for months. In one case the above symptoms were caused by loss of blood from hæmorrhoids, and frequently returned on occasions after great fatigue or the taking of improper food. The hæmorrhoids were cauterized by nitric-acid; the bleeding ceased and health improved. At a later period the disease returned, and the patient was confined to bed for four months, and vomited everything she ate. The proper emedies in such cases, are Nux-vomica, Podophillin, Calcarea-carb., Cantharides, Antimonium-crudum, Pulsatilla, and China. (*Budd*, 161.)

9. *Sympathetic Affections of the Stomach in young Children.*—In young children the secreting function of the stomach is very active, and they are especially liable to reflex functional disorders of other

kinds. In them this secondary gastric disorder is often excited by tuberculous disease of the lung or inflammation of the brain; and, though they are not liable like adults to disease originating in the liver or uterus, they have in the process of dentition a source of irritation which often causes gastric disturbance and convulsive affections. These effects of irritation are more severe in children weakened by eruptive fevers, by the use of improper food, impure air, or active purgatives. On the change of food at the weaning stage the digestive organs are liable to much disturbance.

"*Atrophia Ablactatorum.*"—*Marasmus from weaning.*—*Symptoms.*—Frequent vomiting, thirst, fretfulness; writhing of the body and plaintive cries expressive of pain. The matters vomited are sour and bilious, and thrown up with great effort. Diarrhœa, the evacuations being greenish from the presence of bile rendered green by the free acid secreted by the stomach, or formed by fermentation of the food.

Second Stage.—"*Hydrocephaloid Diseases of Infants.*" (*Marshall Hall.*) The child becomes rapidly emaciated, grows feeble, and exhaustion becomes more and more observable; surface cold, death.

Pathology. Sometimes no marked evidences of previous disease are noticed after death; in other cases there is seen that peculiar softening of the coats of the stomach, and (when there has been diarrhœa,) of the coats of the bowel also, that is produced after death by the action of the gastric juice.

Treatment.—When dental irritation exists reduce it as much as possible by lancing the gums. Feed the child on the best milk or milk and baked flour, or with the milk of a healthy nurse. The best remedies are, Hellebore, Arsenicum, Mercurius-corros., Chamomilla, Oxalic-acid, China, Veratrum. For further treatment, see Follicular Enteritis.

If this disease be not speedily remedied, the stomach disorder impedes nutrition and brings on fatal exhaustion. The constitutional disorder having exhausted the functional powers of the stomach, sometimes induces an inflammatory or catarrhal state of the mucous membrane; on the digestive power becoming further weakened the stomach secretes an unhealthy mucus which promotes undue fermentation in the starchy principles of the food, and thus leads to the formation of large quantities of lactic-acid, or some other acid of the same group, and this produces still further disturbance, ending in death.

Pathology. Softening of the stomach is very often found in these cases after death; but we have elsewhere seen that this change takes place after death, and does not depend on the severity or duration of the disorder, but on the quantity of free muriatic or lactic-acid, which the stomach may happen to contain at death. In severe cases of long duration there is often no perceptible change discovered after death; in other cases, much less severe, a large quantity of one of these acids

may be poured out into the stomach, and its coats may be found dissolved after death.

It has been common to attribute the vomiting, thirst, pain and tenderness of the epigastrium in these cases, as well as the softening of the stomach found after death, to inflammation. But all of these symptoms may arise from other causes; and in the form of disease now described they originate in the conditions above mentioned. At its origin, and long after, the disorder is functional only; and is more allied to the excited and disordered state of the intellect, in delirium tremens, or the excited involuntary, movements of the voluntary muscles, in chorea. (*Budd, Diseases of Stomach*, 164.)

In health, when food is placed in the stomach, the quantity of gastric fluid generated is proportioned, not to the powers and capabilities of the stomach, but to the want of the occasion, and is just sufficient for complete and speedy digestion. But in disease the power is often unduly expended by irregular, unnecessary and ill-directed effort.

Genus VI.—COLICA—COLIC.

Under this head we shall treat of several painful affections of the abdomen, all of which are characterized by severe griping pains in the bowels, with constipation, and often without vomiting. We shall notice the following species:

1. Colica cibaria. From food improper in quality or excessive in quantity. 2. Flatulent colic. 3. Bilious colic. 4. Colica pictonum. 5. Colic of children.

Bilious Derangement.—This term, though without being correctly applied to the affections here to be noticed, is in universal use, and may at present be retained. The popular idea is that there is an accumulation of bile in the system which has been absorbed from the gall-bladder and bile-ducts. Instead of this being true, there is generally deficient secretion of bile; and the importance of this fact is also much over-estimated by those who recognize its existence.

Symptoms.—It occurs most frequently in persons who eat freely and use stimulants unnecessarily; the skin is dingy and sallow; the spirits miserably depressed; constipation; flatulence; dull aching pain in the right shoulder; headache chiefly confined to the forehead, eye-brows and eye-lids; smarting in the eye-lids and eyes; eyes prominent, with yellowish tint in their whites; yellowness well marked on the side of the nose; tongue coated with brown fur; nauseous and bitter taste in the mouth on waking in the morning; appetite defective; sleep imperfect, disturbed by frightful dreams; melancholy despondent state of mind, which is haunted by an oppressive undefinable dread. (*Wright.*)

I. Surfeit.—*Cibaria.* The consequence of excess in eating or drink-

ing, or of something unwholesome or improper in the food. It consists in a heavy load or oppression of the stomach, with nausea, sickness, impeded perspiration, and at times eruptions on the skin. (See *Dyspepsia*, page 281.)

Definition.—Severe twisting, griping pains in the abdomen, with vomiting, and rigid contractions of the abdominal parietes, followed, in some cases by griping alvine evacuations, and looseness.

Causes.—Many articles of food disagree with some persons, whether taken in large or small quantities. Among the worst things is fresh pork, which often causes sickness, vomiting, colic and dysentery. A similar effect is often produced by tainted meat, mildewed wheat or rye, (called "sick-wheat" in the Western states); cold, sour, indigestible or unwholesome fruits, cucumbers, melons, &c.; injudicious use of griping purgatives, as pills, senna, &c. In Africa the natives cause dangerous colics by using freely when warm of acid drinks prepared from the juice of the palm and other trees. Kæmpfer says, that the Japanese often excited it by drinking fermented beverages, prepared from rice. Linnæus imputes its prevalence among the Laplanders to the use of stagnant water containing animalculæ. In other parts of the North Europe buttermilk, whey and vegetable infusions are fermented into acid liquors and used as a common drink. Severe attacks of colic often follow their use. Dr. Chisholm says, it was caused in his time in Devonshire by the acid cider drank by the laborers. In this country we have all of these or similar causes in constant operation. The markets are supplied by poisonous fish, muscles, lobsters, mushrooms. The smoked-meat sausages, and old cheese everywhere sold, often contain minute fungi, which not only cause severe colics, but also distressing and dangerous affections of the nervous and vascular systems. The symptoms are thus given by Dr. Hering: "The poison of fat is generated in half-putrified, half-sour meat, blood and fat, and also in cheese, blood-puddings, liver-puddings, sausages, sour pork, bacon and hams, old rancid grease of any kind, and substances not sufficiently or regularly smoked. It is generated very rapidly, and things eatable to-day are poisonous to-morrow." The Symptoms are: Heartburn and nausea; a feeling of dryness in the throat, extending by degrees into the mouth, the nose, ears and even the eyes; after a few days there may be cracking of the skin on the eyelids, the sides of the nose and points of the fingers. The voice soon becomes hoarse, the pulse is slow and weak; hunger and thirst are very great, but the patient can scarcely swallow anything; the strength now becomes less, the eyelids seem lamed, the pupil distended; the patient does not see distinctly, but as if he were looking through a fog, or he sees every thing double. The abdomen at the same time is tight, with much pain and constipation; finally, the knees

and feet become stiff. If the patient does not die in a few days, a tedious, incurable disease will remain. In the fatal cases observed from the eating of Wurtemberg sausages, death is preceded by the gradual wasting of the muscular fibre, and of all the like constituents of the human body. The saliva becomes viscid and emits an offensive smell. The patient becomes emaciated, dries into a complete mummy and soon dies. After death the body is stiff as if frozen, and is not subject to putrefaction. In the poisoned sausages no peculiar poison has been detected by chemistry. It has been thought possible to destroy it by the action of Alcohol or that of boiling water; but this is probably not true. Ordinarily it passes through the stomach unchanged by the gastric fluid, and is absorbed and carried into the blood where it acts on the blood-constituents as yeast does upon wort.

II. *Flatulent Colic.*—Definition.—Acute pain in the bowels, with occasional partial remissions, flatulent distention, or spasmodic contractions, or both at the same time, relieved by pressure and the expulsion of flatus.

Pathology.—There is morbidly increased sensibility and irritability of some part or the whole of the bowels; irregular distention and spasmodic constriction of different parts of the canal; and more or less generation of flatus in their tract, occasioning great distention and irregular reaction of the muscular coats.

Nervous Colic.—The morbid irritability and increased sensibility of the bowels are common in females and nervous persons, who lead a sedentary life, permit the bowels to be constipated, give way to mental excitement, and are susceptible to the influence of cold.

Symptoms.—The attack is usually sudden; the pain is felt in one or more points of the abdomen, may shift place frequently and be exacerbated at intervals. The face is pale and anxious; abdomen irregularly contracted; and pressure on it affords slight relief. When the pain is extreme, a cold perspiration is forced out on the surface, and the patient complains of a "sinking" feeling. The bowels are constipated; rumbling noise from wind constant. The attack lasts from one to several hours, and generally terminates in gradual recovery. It is liable to return repeatedly, from errors of diet or mental disturbance.

In cases most clearly consisting in accumulation of flatus, the expulsion of the wind gives ease; the distention and pain are traced along the course of the colon, and are felt worst in the sigmoid flexure and cæcum. The quantity of flatus is very great; and it evidently proceeds from irritation of the mucous surface of the bowels, the gaseous fluid being excreted from the blood by the vessels of this surface. Even if some of the gas be furnished from decomposing food imperfectly digested, the quantity of matters retained in the bowels is not sufficient to furnish all that is accumulated. In some parts the intestine is inordi-

nately distended, in others irregularly constricted, and the retained flatus is propelled from one part to the other, causing severe griping pains and rumbling noises in the abdomen. If the attendant constipation is relieved by enemas or otherwise, the evacuations consist chiefly of hard lumps, and accompanied with the escape of much flatus, the intestinal secretions having been entirely suppressed or much diminished In the more spasmodic form of the disease nausea and vomiting alternate with the constrictive pain. Injudicious treatment often develops ileus or enteritis.

Causes —Indigestible food, unripe or decayed fruits; beer; mental emotions, or any other cause capable of morbidly altering or suspending for a time the healthy action of the stomach and bowels, in such a manner as to cause them to generate an unusual quantity of gas.

III. *Bilious Colic.*—Diagnosis.—Severe griping pain, with vomiting of the contents of the stomach, and bilious or other perverted secretions; constipation or scanty evacuations, often with hiccough, tension of the abdomen, and restlessness; evident deficiency of the secretions of the intestinal canal and associated viscera.

Causes.—The retention in the cæcum and cells of the colon of those excrementitious matters, which are required by nature to be thrown off from the bowels, produces in many persons an unhealthy state; we see it oftenest in persons in whom the abdominal organs are in a state of torpor from the influence of malaria; in persons advanced in life, or who lead an indolent or sedentary existence; debilitated invalids, pregnant females, women of advanced age, or men who have old hernias.

The attack is preceded by indigestion, headache, nausea, heartburn, constipation of the bowels, bitter taste in the mouth; fulness about the cæcum, the sigmoid flexure or the colon. In many cases we detect large accumulations of the hardened fæces in the cæcum and ascending colon. Severe griping pain is followed by sickness and bilious vomiting; foul tongue; loss of appetite; thirst, and uneasiness in the bowels are speedily followed by severe griping, twisting, or shooting pains in the umbilical region; hot skin; painful distention of the stomach and abdomen; obstinate constipation, and finally, tenderness of the abdomen; yellow cast of the skin and eyes; coldness and torpor of the extremities; cold sweats; feeble or excited pulse, and other signs indicative of a fatal termination of the disorder.

If irritating purgatives be now given, they produce increased pain and tenderness, whether they operate or not. The abdomen becomes tense, tender on pressure; the pulse becomes quicker, the coating on the tongue increases; the tongue and mouth dryer, more red. When not speedily cured this condition progresses to enteritis, ileus, or dysentery.

During the first stage of the malady, the patient involuntarily makes

firm pressure over the umbilicus, which affords temporary relief; and it it is by this symptom that we may distinguish the disease from inflammation of the bowels, in which pressure is attended with an aggravation of the pain.

Causes.—Deranged function of the liver is supposed to be the chief cause of this disease. Authors assert that this organ is in a torpid condition, secreting only a small amount of bile, thus leaving the ingesta to be only partially acted upon by one of its natural solvents, and thereby rendering the half-digested food an irritant to the digestive organs. Atmospheric and other influences are known to originate the disease in certain seasons.

The *Endemic Colic of the West Indies*, that of *Madrid*, and several provinces of Spain, and that well-known as "*Bilious Colic*" in malarious parts of the United States, seem to be only modified forms of the same disease. They all owe their origin in part to errors of diet, atmospheric vicissitudes, and other causes that derange the secretions. But these causes are in operation everywhere; and they only establish this peculiar malady when operating on persons saturated with malarial poison. This specific poison is essentially the same as that which causes intermittent and remittent fevers. Its effect is to produce a torpor of the secreting organs; impeding the functions of the liver and inner surface of the intestines; there is accumulation in the hepatic ducts, gall-bladder, and prima-via of bile and morbid secretions, which excite painful and abortive aggravation of peristaltic action for their expulsion. There is evident torpor or congestion of the liver, irritation of the duodenum; an acrid state of the secretions, which are dark colored, causing great distress till removed.

Symptoms.—Dull aching and pressing pains in the course of the colon; loss of appetite; irritability of temper, difficulty of evacuating the bowels; though constipation had not preceded; evacuations small in quantity, with much flatus; feels easier in bed; tongue moist, loaded at the root only; much thirst. After these symptoms continue two or three days the constipation becomes complete; evacuations cease; the pain becomes more severe, fixed and constant at the epigastrium, with a twisting pain at the umbilicus; the countenance is pale, expressive of pain and anxiety; the pulse is slow, small, regular and constricted, but not febrile; the skin is dry, but not hot; and the urine is scanty, but not otherwise unnatural. The patient sits with his arms crossed over, and pressed upon the abdomen, and the trunk pressed forwards. When in bed the thighs are drawn up and pressed upon the belly. Generally, soon after the constipation is established, bilious vomitings come on accompanied with hiccough; the matters thrown up consist of those taken into the stomach, mixed with bile and glairy fluids. There is no sleep, but continued restlessness; the pain is now nearly constant,

most severe about the epigastrium and umbilicus: and it is not mitigated by any position. The thirst increases as the malady proceeds; but the fluids taken only aggravate the hiccough, and are immediately thrown off. The eyes are slightly yellow, and the whole surface sallow. In extreme cases the pain continues to be severe, the hiccough, and want of sleep continue; wandering delirium, and sometimes deafness come on; epileptic convulsions and sometimes fæculent vomiting follow and portend a fatal result. At this stage the abdomen which had been retracted is much distended. Purgatives, which had hitherto failed to operate, in the later stage excite dysenteric purging, which increase the prostration and hasten death.

Prognosis.—*Favorable Symptoms:* Free evacuations not the result of drastic purgatives, followed by amelioration of abdominal pain and vomiting; the pulse remains below one hundred beats per minute; the hiccough has not commenced, or is subsiding.—*Unfavorable Symptoms:* The tenderness, tension and tumefaction of the abdomen increase; the pulse becomes more quick, rising to and continuing at one hundred and twenty or more (in an adult). Constipation continues obstinate; hiccough is obstinate also; tongue brown, or red and dry; restlessness and tossing continue.

IV. *Colica Pictonum.—Rachialgia.—Painters' Colic.*—Diagnosis.—This form of colic generally attacks house-painters, plumbers, glaziers of earthen-ware, or workers in the different preparations of *Lead.* It is characterized by dull remitting pain, becoming constant and violent, extending to the back and upper and lower extremities; vomiting, obstinate constipation, often followed by paralysis.

Symptoms.—Lead colic usually commences with obscure pain of the abdomen, which becomes at intervals so severe that the patient tosses himself about, and vainly seeks a posture that will lessen his sufferings. He lies for a while on the abdomen, or presses or rubs this part with his hand. The pain is greatest at the pit of the stomach, but extends to the back, the arms, loins, thighs and legs. A twisting pain is felt about the navel, which is first drawn inwards; and cutting pains shoot at times with great violence to both hypochondria and iliac fossæ, and through the abdominal muscles. The voluntary muscles become so sore, that they cannot bear the slightest pressure; and the pain frequently alternates between the stomach and bowels and the external muscles. Sickness and constipation are early symptoms. The matter thrown from the stomach consists of a slimy fluid, with or without acrid bile, which continues to be secreted, causing its own evacuation. There are bitter eructations, hiccough, severe headache, pains of the wrists, hands, ankles, soles of the feet, shoulders or neck; these symptoms are worse during the night. The pulse is not affected at first, sometimes not at any stage. In some cases it is below the usual standard, in

others quicker and weaker, rarely fuller or stronger. Tongue pale, soft and moist; papillæ not erected. In most of the diseases caused by Lead, a *blue* or *purplish* line is seen running along the edges of the gums just where they meet the teeth. The coloring matter is supposed to be sulphuret of Lead, formed by union of the Lead with sulphuretted Hydrogen from animal matter absorbed by tartar on the roots of the teeth. The skin is commonly soft and moist, rarely hot. Urine free and often copious. Costiveness continues as the disease advances. When there is griping with fæcal evacuations, they are in small, hard, dry scybalæ, mixed with a dirty watery fluid containing a dark slime and a little blood. The abdomen is insensible to pressure; in some rigid and knotted; in the latter stage often distended and slightly painful from distention and affection of the muscles. In some cases the distention is owing to inflammation and fæcal engorgement of the colon, which can be felt through its whole extent. The sphincters of the rectum and bladder are constricted. In protracted cases the pains in the back, loins and limbs become more violent, the debility, tremulousness, and even paralysis of the extensor muscles progress. Dyspnœa, palpitations, short dry cough, even epilepsy, coma or apoplexy supervene. Some cases are cured in two or three days; others run on for two or three weeks or more. Many relapse several times.

Prognosis.—*Favorable Symptoms:* The disease is mild and mitigated by treatment.—*Unfavorable Symptoms:* The attack is severe; there are hiccough, obstinate vomiting, tremulousness, and distention of the abdomen. The worst cases are those in which complications of deafness, blindness, fæcal vomiting and symptoms of ileus appear.

Treatment.—The specifics for the different kinds of colic, are *Colocynth*, *Plumbum*, *Nux-vomica*, *Arsenicum*, *Chamomilla*, *Hyoscyamus*, *Stramonium*, *Veratrum*, *Cocculus*, *Senna*, *Colchicum*, *Phosphorus*, *Pulsatilla*, *Podophyllum*, *Jalap*.

Auxiliary to the above remedies, we may urge upon the practitioner the importance of *fomentations*, and *enemata of warm water*. These measures, conjoined in certain cases with the tepid bath, are worthy of high consideration, and should never be lost sight of in the treatment of this, as well as other maladies of a spasmodic character. The fomentations should not only be applied to the abdomen, but to the extremities, more especially if these parts are cold, and inclined to cramp. In moderate cases, fomentations, together with an ordinary enema, and the proper specific, will suffice to effect a speedy cure; but if the case has been very violent and obstinate from neglect, or mismanagement by *Calomel* and *Opium*, a general warm bath, with very copious injections of warm water while immersed in the bath, cannot be too highly recommended. Indeed, we have in several instances, observed the abdominal spasms to relax, the pains to cease, and free evacuations of

fæcal matter and of wind to occur, while the patient was yet in the bath. By adopting this mode we secure the advantage of *internal* as well as external fomentations, and thus bring a safe, yet efficient remedy to bear directly upon the parts affected. All who have practically tested the soothing influence of warm water applications upon the nervous system, when in a state of unnatural erethism, will appreciate the truth of our remarks.

Colocynth.—The medicine which is most generally applicable in the treatment of colic, is *Colocynth.* It is particularly appropriate when the complaint has been caused by a chill, by mental emotions, as grief, indigestion, mortification, &c., also when biliary derangement has been the exciting cause.

Inflation of the abdomen; position of the body bent forward, so as to relax the abdominal muscles; cramps in the calves of the legs; general agitation; temperature of the skin about the natural standard, or cold and covered with sweat; pulse natural, or but slightly increased in frequency; tongue covered with a yellowish fur, or natural; face pale and indicative of intense suffering; rigidity and contraction of the abdominal muscles, as well as of the tendons in other parts of the body. Violent cramp-like contraction or cutting pains in the abdomen, generally in the region of the umbilicus; painful cramps in the calves of the legs; sensation of faintness, with coldness and shuddering; bitter or insipid taste in the mouth; nausea; loss of appetite; disgust for drinks; constant inclination to move about, to grasp objects violently, and to make pressure against the abdomen; empty eructations; pains in the back and loins, especially semilateral; obstinate constipation or small watery evacuations. Most intense anguish and agitation; dejection; extreme restlessness and desire to move about; fear of speedy death.

Administration.—From the first to the sixth dilution may be employed according to the age, sex, constitution, temperament, and severity of the disease. A dose may be given every half hour in urgent cases until amendment or medicinal aggravation occurs, to be resumed and repeated as the exigencies of the case require.

Plumbum.—On account of the very marked and decided specific action of *Lead* upon the colon and ileum, whether introduced into the blood through the stomach, rectum, lungs or skin, this drug is peculiarly appropriate for the treatment of some of the varieties of colic. The practitioner will, of course, avoid exhibiting it in that variety of colic which has been caused by the absorption of *Lead.* Rigidity and contraction of the abdominal muscles; hard ridges or elevations in the abdomen; borborgymus; frequent expulsion of offensive flatus; eructations; tremblings, jerkings or cramps of the limbs; face and skin pale, bluish, or yellow; surface cold, and covered with clammy sweat; mouth dry or moist and clammy; pulse weak, and somewhat frequent;

body bent double. Violent constrictive, shooting, or pinching pains in the umbilical region; constant and urgent desire to eructate and expel flatus; chilliness or shuddering during the paroxysms; sensation of faintness; torpor, numbness, stiffness, and weakness in the limbs; desire to press the abdomen against something hard; extremities cold; dizziness; sweetish or bitter taste; thirst; vomiting of bilious or fæcal matters; pressure and cramps in the stomach; obstinate constipation; evacuations scybalous and difficult to expel; shooting pains in the loins, back, and limbs; cramps in the feet, excessive agitation and restlessness. Very great anguish and uneasiness; melancholy; discouragement; impatience.

Administration.—Same as Colocynth.

Case.—A delicate woman, aged twenty-six, after some heavy work and a fit of anger, was attacked with violent pain in the umbilical region, soon followed by vomiting of fæces, as if from obstruction in the intestines. Drastic cathartics were used, but with no relief. Dr. Lohrbacher found her with small frequent pulse, face of livid color, extremities cold; tearing, compressing pain; hard lumps could be felt in the umbilical region as large as a fist, abdomen tender to pressure; violent thirst, extreme anxiety; constant vomiting of fæces. No hernia. Plumbum, fifth dilution, three drops in ʒj. of water, a teaspoonful every two hours. After the fourth dose there was a very dark fæcal evacuation, but without apparent relief; pain and tenderness of the abdomen still increasing. Belladonna, 30°, five globules, one every hour, gave amelioration of the pain. Plumbum, 30°, a dose every three hours. Nine hours later a copious stool followed by cessation of the vomiting and recovery.

Case by Dr. Marcy. (*N. A. Jour. Homœop.* vol. IV. p. 343.)—A lady, aged thirty-six, of sanguine nervous temperament: distention and hardness of the cæcum and ascending colon; the whole region swollen, and painful to the touch or on motion. Tongue dry, brown in the centre, skin hot and dry, much thirst, nervousness, headache, general depression, expression anxious, feeling of lameness in the lower extremities, sour eructations, nausea, inclination to vomit, umbilicus retracted. Plumbum-met. two grains, given every two hours, improved the condition very much in a few hours, and in a few days more entirely cured, save a few remaining symptoms, which disappeared after Sulph., Nux., and Merc.-sol.

Nux-vomica is very useful in colic, arising from torpor of the liver, indicated by deficient secretion of bile, indigestion, flatulence, &c. It is also useful in *flatulent colic*, occurring in dyspeptic subjects after the use of improper articles of food. In cases where *Nux* is indicated, the face is pale or yellowish, the stools, previous to the attack, light and clay colored; the abdomen distended; there are frequent eructa-

tations, hiccough, sharp and cramp-like pains in the stomach and bowels, and rumbling in the bowels; giddiness, sensitiveness of the stomach and abdomen when pressed upon.

Administration.—This medicine may be used at the second or third attenuation; a dose once in half an hour to two hours until relief is obtained.

Arsenicum is specific in colic pains, coming on in *regular paroxysms*, and attended with decided remissions. In extreme cases, it may also be resorted to with advantage, where the powers of the system have been exhausted, and other remedies seem to be incapable of arresting the disease. The first to the third trituration may be used, and repeated as circumstances may require.

Chamomilla is advised by Hahnemann in colics of pregnant and parturient women, of new-born infants, and of children during dentition. It is also recommended for the colics of nervous and hysterical females. If this medicine does not afford the desired relief, resort may be had to *Hyoscyamus*, *Stramonium*, or *Senna*.

Administration.—A dose of the third to the sixth dilution every hour or two, as long as necessary.

Veratrum, *Cocculus*, and *Colchicum* will often prove valuable in spasmodic and flatulent colic, occurring in nervous and hysterical females, and in persons of a mild and phlegmatic temperament. In instances where the above prescribed remedies do not correspond, let the indications of these latter articles be considered.

Pulsatilla is principally useful in colics arising from the abuse of crude, esculent vegetables, unripe fruits, and abuse of fat and greasy articles of food. The pains are very severe, and usually occur a few hours after eating, attended with borborygmus, and the expulsion of large quantities of flatus. We have often seen the most prompt relief follow a single drop of the tincture, and we have rarely been obliged to repeat the dose more than two or three times.

Phosphorus will apply to cases occurring in persons of a feeble organization, who have been weakened by long-continued gastric affections, and especially for those who are afflicted with disease of the mesenteric glands. A dose of the third attenuation may be administered every two hours until relief ensues.

Cuprum.—Case by Dr. Kissel. (*Brit. Jour. Homœop.* 1860, p. 554.) A married woman aged twenty-four, nursing a child several months old. Found her on the evening of Aug. 16, writhing in bed with outcries and groans, able to answer questions with difficulty. She had severe constrictive, pinching, tearing pains in the præcordium, remaining concentrated in the same spot for an hour at a time; but a more distressing symptom was a sensation of swooning, in which she believed that she was in the last extremity,—that her life was about to terminate.

Her eyes were without expression, her countenance collapsed; her extremities cold; pulse wiry; tenderness of the third and fourth dorsal vertebra. Slight pressure on the stomach gave pain, though pressure more severe gave relief. The first attack had occurred four weeks before this; had been free from pain in the interval. The excretions presented nothing unnatural. Tincture Cuprum-acet., in divided doses, every half hour.

The pains and swooning sensation continued two hours, till the medicine arrived. The patient felt the influence of it every dose she took, and was quite well of all the symptoms after two hours from beginning it. The prescription was twice repeated, after which there was no return.

Case II.—A lady aged thirty. Menstruation imperfect for the last year and a half; has had within the last eight days repeated attacks, which were successively more intense and lasting. On October 30, she had an attack still more severe; she had severe constrictive pains in the præcordium, which extended along both hypochondriac regions, and quite into the neck, with oppression of the chest. She was in the greatest restlessness and anguish, would get out of bed, tossing herself about; then grasping again with both hands at the pit of the stomach, leaning upon it and throwing herself upon her face, she still cried that she must die. The præcordium was contracted; a light pressure upon it was painful, heavier pressure not so. The third and fourth dorsal vertebræ were tender, and she shrank from gentle pressure. The attacks appeared at irregular times, and gradually extended to three hours. The extremities were cold, the pulse small and thin. Every thing else normal. She is directed to take Acet-cupri daily. From the first exhibition of Cuprum there were no more attacks; but two days passed before the feeling of exhaustion was quite removed. On November second the tenderness of the vertebræ had also disappeared. No fits occurred subsequently.

We have often used Sulphate of Copper, third trituration, with the best results for nausea, vomiting, anxiety, gastric or abdominal pain, colic, &c.

Confirmations of the Homœopathic Principle by Allopathic Authors.—Muralto, says Hahnemann, saw what we may witness every day, viz. that *Jalap*, besides creating gripes in the belly, also causes *great uneasiness* and *agitation*. Every physician acquainted with the facts upon which homœopathy rests, will find it perfectly natural, that the power so justly ascribed to this medicine by G. W. Wedal of allaying the gripes which are so frequent in young children, and of procuring them tranquil repose "arises from homœopathic influence."

The remark made by Murray, that oil of *Aniseed* allays pains of the stomach and flatulent colic caused by purgatives, ought not to surprise us, knowing that J. P. Albrecht has observed *pains in the stomach*

produced by this substance; and P. Forest saw *violent colic* likewise caused by its administration.

It is also known and has been attested by Murray, Hillary and Spielmann, that *Senna* occasions a kind of colic, and produces, according to C. Hoffmann, *flatulency* and *turgescence of the blood*, ordinary causes of insomnolency. It was this inherent homœopathic property of *Senna* which enabled Detharding to cure with its aid patients afflicted with insomnolency, (*Organon*, p. 62).

In cases of colic from the poison of lead, where there is reason to believe that any portion of the absorbed metal remains in the system, it is desirable to neutralize the poison by a direct chemical antidote. Of those proposed for this purpose, the highest claims have been made for Alum. It was first introduced into England by Dr. Percival from Ireland in 1774. It acts by converting the salts of lead it may meet with in the body into a comparatively innocent sulphate. It may be given in doses of fifteen grains every two hours. In such doses it sometimes purges, to restrain which it may be followed by Coloc., Senna, Jalap, &c. Dr. Breschet says he tried it in 150 cases with complete success. (Brit. and For. Med. Chir. Rev. Jan. 1851.)

5. Colic in Children.—*Nature of the Disease.*—Spasm of the muscular fibres in some parts of the intestines or distention of the bowel with flatus. The affection may be acute or chronic.

Symptoms.—In children attacked with colic there is often an increased discharge of urine, followed by agitation and impatience, constant weeping, sudden screams, contortions of the face, sleeplessness and twisting pain, with retraction of the umbilicus. The legs are bent towards the stomach; the body is twisted; and infants cannot suck in a recumbent position. The pain is relieved by pressure.

Prognosis.—If the bowels move and some relief of pain follows, the case may be considered as progressing favorably. Unfavorable symptoms are: obstinate constipation continuing; the pain being fixed in one spot and increased by pressure; this may denote the termination in inflammation of the bowels.* See *Enteritis.*)

Causes.—A chill, worms, flatulency, improper diet; mental emotions. The mother's milk is often poisonous to children.

Treatment.—A warm bath and hot fomentations to the abdomen may give temporary relief, but the chief reliance must be on appropriate remedies. The diet must be light and nourishing, and free from stimulants. (See *Follicular Enteritis.*)

Medicinal Treatment.—*Chamomilla.*—The pain has been excited by a chill or a fit of passion; there is anxiety, restlessness; vomiting and diarrhœa of bilious matters; extremely violent pain, tearing and drawing; one cheek pale and the other red.

* Dr. Wood's Edition of Hartlaub on Children.

Nux Vomica.—Colic accompanied by costiveness; sensation as of a heavy weight in the lower part of the abdomen; rumbling in the bowels; great heat; tension of the abdomen, with short anxious and painful breathing; sense of fulness in the abdomen; drawing, pinching, pressive pains; pressure at the navel; stupefying headache; tenderness of the abdomen to the touch; loss of consciousness; coldness of the feet during the attack.

Mercurius.—Colic caused by worms; urgent desire to vomit; copious flow of water into the mouth; contractions in the stomach and hardness of the navel; cramps in the muscles of the abdomen; smarting of the throat; frequent hiccough; voracity; distaste for sweet things; constant desire to go to stool; hardness and swelling of the lower part of the abdomen; tensive and burning pain around the navel; risings from the stomach; general weakness; diarrhœa; evacuation of mucus; appearance of the abdominal symptoms chiefly at night. (*Hartlaub on Diseases of Children*, p. 111.)

6. Ileus, Iliac Passion.—*See Obstruction of the Bowels.—Index.*

7. Gastrodynia Cœliaca.—*See Neuralgia Cœliaca.—Index.*

Genus VII.—COPOSTATRIS.—CONSTIPATION.

1. Constipation.—*Alvine Obstruction. Costiveness.*

Definition.—Prolonged retention of the fæces; or slow, imperfect, or difficult evacuation of them. In general and in health the intestinal apparatus completes its revolution once in twenty-four hours. Within that period the whole process of digestion, the carrying forward of the contents of the stomach, the absorption of the chyle, and the expulsion of the fæces should be accomplished; and a sensation of relief should be experienced by it. Any deviation from this condition may be regarded as resulting in a state of constitutional disease. The different degrees of departure from health are thus distinguished:

1. The evacuations are either hard, causing pain, or hard and small, but still causing pain.

2. *Confinement of the Bowels.*—They do not act more than once in forty-eight or seventy-two hours.

3. *Irregular Action of the Bowels.*—They are alternately constipated and again relaxed.

4. *Delayed and Imperfect Action of the Bowels.*—The patient continues to expel only small portions during a lengthened period, extending sometimes to a half an hour or an hour, or the action is soon completed, but the sensation following is not that of relief.

5. *Inaction of the Bowels.*—There is no action of the bowels for a week or nearly so long. There is a total absence of *want to relieve them* or it is attended with no result. It is said by Dr. Edwd. Johnson,

that this condition is not always one of disease, but that the habit exists in many persons in comparative health.

In general, the contents of the bowels are carried forward until they reach the sigmoid flexure of the colon. When they have passed through this portion of the tube they enter the rectum, which is stimulated by their presence to contract, and thus grasp the intestinal contents and expel them. In a case, however, in which the bowels do not act regularly, this inaction being dependent on the diseased constitutional state, affecting specially the rectum, the stimulus from the intestinal canal is not sufficient to cause the expulsive effort to be effective.

I. *Mechanical Obstruction.*—1. Some cases of constipation, or non-expulsion of the fæces, are dependent on mechanical obstruction; the intestine is diminished in calibre by a stricture formed of a part through which the intestine is protruded, forming a strangulated hernia.

2. One portion of the intestine sometimes passes into another portion, forming what is called an intussusception.

3. Mechanical obstruction may arise from thickening of the internal coats, or by the forming of a transverse band, causing a stricture.

4. Enlargement of surrounding organs may cause pressure upon the intestines and thus cause obstruction. Enlarged and hardened uterus often causes pressure.

II. Constipation proper is not dependent on mechanical causes, but upon the modification of the vital powers associated in carrying forwards the movement of the intestinal canal. It is dependent on a *constitutionally diseased state*, effecting either the whole or special parts of the entire apparatus; and for such state the only proper treatment must consist in measures calculated to remove these constitutional conditions.

Causes.—These are often obscure, and consist of constitutionally diseased states, which are not cured by purgatives, but increased by them. If homœopathic remedies properly selected cure the case, they often do not begin to remove the constipation till other attendant symptoms give way. The remedy should cover the whole case, and then the whole of the symptoms in due order will give way. Dr. Epps says:

In a common case the bowels do not act for three or four days; the patient has never had an action without purgatives; and when they do not act he is sure to have headache. If now a proper remedy be given; "though the bowels do not act for a week, there is no headache;" thus proving that the medicine is curing the constitutional state, and consequently, the headache, which, like constipation, was one of the manifestations of that state, does not occur, although the constipation be not yet removed. Constipation appears to occur principally in the large intestines, more especially the cæcum, sigmoid flexure and the rectum. The latter seems to be less a receptacle than a *conveyor*. Generally

when the fæces enter the rectum from the last portion of the sigmoid flexure, the rectum at once contracts, comes forward or draws forth from the last portion of the sigmoid flexure the feculent portion, and carries it on to expulsion. In many cases of constipation the rectum has lost the power, and that power is very great, of grasping the intestinal contents; the cure of constipation depends much upon the restoration of this power. The inaction of the bowels does not depend on the hardness of the fæces; they ought to acquire a certain solidity before expulsion, having already lost nearly the whole of their fluid portion before reaching the rectum. The want of grasping expulsive power of the rectum is the chief condition associated with constipation, and that want is dependent for its manifestation on the general constitutional diseased state. It seems to depend on an exhaustion or suspension of the nervous power of the rectum, a kind of palsy of the muscular fibres of the intestine itself.

Constipation often consists in nothing more than a deficiency of the fluids necessary for digestion, and depends on a deficiency of the secretions or a diet in which too little liquid is taken into the stomach. In its simple form it generally originates in sedentary habits, and the neglect of attention to the regular evacuation of the bowels at a particular hour of the day. As most persons can best go to sleep at a certain hour of the night or day, so are almost all other vital actions influenced by the law of *periodicity*. Any unexpected business or detention at the usual hour which breaks in upon the *habit* of a regular daily evacuation, may postpone it for the day. Among students and literary persons profound application of the mind diverts it from attention to objects of mere physical concern; also indolence, or detention and want of a convenient place near at hand, cause many to put off making the effort till the contents of the bowels become hardened by the absorption of their more fluid parts. Chemical changes may cause acid eructations, heartburn, flatulence, colic, diarrhœa, headache and fever, flushing of the face, constant fulness of the head. One of the usual causes of troublesome constipation is the practice of flying to purgatives on the slightest deficiency of the intestinal action. Many a slight case, which if left to itself would soon have been spontaneously relieved, is converted by unnecessary purgings into obstinate constipation, ending in paralysis, spasmodic obstruction of some part of the bowels or complete obliteration.

The disease then is not a *primary* one, but constitutes the absence of action in a given way; and that absence of action is caused by a peculiar state constitutionally diseased, which suspends the harmonic actions of various parts of the human frame, of which suspension of peristaltic action is one of the manifestations. We therefore do not treat the constipation as a disease in itself, but as a part of the whole.

Mr. Abernathy announced the idea in 1827 (on the *Constitutional Origin of Local Diseases*, p. 35.), that constipation is a constitutional disease. He said the increased discharges from the bowels under the influence of purgatives consisted of the morbid secretions from the bowels themselves; and gives a case of a child born with the œsophagus impervious, though it was otherwise healthy. No food could pass to the stomach, and it died of starvation after thirteen days. Though it took no food, the alvine evacuations were natural, corresponding in color and consistence with those of children of that age, and continued, though diminishing in quantity, to the last. Persons who have had the œsophagus obliterated by disease, and been supported by enemata, have still had the fæces naturally formed and expelled. (*Dr. Epps*, p. 154.)

Dr. Edw. Johnson goes so far as to say, "that none of the food taken is ejected as fæces from the body, but all is absorbed, all is assimilated; and that the fæces are really the intestinal secretions formed into a mass and expelled." Though this last assertion goes, in our opinion, beyond the truth, it still embodies an important idea of the highest practical importance.

Curvature of the Spine is a common cause of constipation which becomes both a cause and an effect of general ill health. It is probable that the curvature produces pressure on the spinal nerves and modifie also the nervous communication with the parts of the great sympatheti symptom of nerves; thus by causing imperfect supply of nervous powe to the rectum producing constipation.

3. Pregnancy is a cause of constipation; and injurious results often result from efforts to remove the constipation by purgatives.

4. Over-excitement of the genital organs produces constipation, by exhausting the nervous energy of the nerves which supply the digestive system as well as of the spinal column generally. The loss of the nervous powers causes paralysis of the muscles and loss of expulsive power of the muscles of the rectum. Accumulations follow; and when the sphincters become paralysed the power of closing them is lost and fæces escape.

5. *Old age* is attended with diminution of vital powers generally; torpor of the intestines is common.

Pathology.—The whole gastro-intestinal cavity is affected with torpor, but is free from all signs of structural disease. The natural peristaltic action of the bowels is deranged through causes that diminish the secretion of the fluids which are naturally poured out of their surface, rendering the fæces hard and difficult to more forward; and by causes that diminish the contractile power of the involuntary muscular fibres of the bowels. There is probably in this disease a deficient supply of healthy arterial blood to the glands which secrete the

intestinal fluids, with deficient nutrition of muscular fibre and secreting glands. (*Taylor, N. A. Jour. Homœ.* 1857, 191.)

There is in nearly all cases of constipation a torpid state of the liver and great deficiency of bile. It constitutes a prominent difficulty in jaundice and nearly all febrile diseases, as catarrh, measles, fever excesses of food or stimulants, melancholy, spermatorrhœa, impotence female sterility from defective menstruation, amenorrhœa, chlorosis The appetite is capricious, digestion difficult; pain in the stomach or intestines, heartburn, acidity, flatulence, oppression of the stomach after meals, nausea and occasional vomiting; headache, slight fever, thirst, coated tongue, depression of spirits, melancholy, imperfect sleep; alvine evacuations performed with great difficulty. See p. 272.

Treatment.—The common treatment of constipation by purgatives is not in accordance with any scientific law. It is only the treatment of a symptom to the neglect of its cause, and is always unsuccessful.

To cure constipation requires a true knowledge of, 1. The constitutional disease of which the constipation is only a symptom. 2. Of the special medicine suited to the diseased state, the constipation being only a manifestation of that state. 3. Of the law regulating the action of the remedy to the diseased state. Purgatives can not cause the regular and permanent expulsion of the proper amount of fæces of the proper character. The error (says Dr. Johnson), consists in the manufacturing functions of the secreting arteries, there being no fæces to expel; an active purgative will force some kind of an evacuation, but its object is not achieved. An "excess of secretion is attained, but it is not a natural fœcal product; it is only the exfiltration or outpouring of the serum of the blood into the bowels." Though some temporary relief be sometimes attained in this manner, it is only such a relief as we could get by diminishing the volume of blood. The capillary system has been *bled*, but only depleted of its watery contents. Nothing is done towards the cure of the constipation. The next day the bowels are more constipated than ever. (*Dr. Johnson*, p. 167.)

Constipation must be cured by improving the secretory powers of the arteries.

Auxiliary Measures towards the Cure of Constipation. 1. Endeavor to establish the habit of relieving the bowels at a certain time every day. There is a natural tendency to the establishment of a rule of this kind, and it should be encouraged. The time most likely to be successfully fixed will be a short time after breakfast every morning. The act of taking food having given a slight impulse to the peristaltic action of the intestine, it is comparatively easy to propagate this impulse along the whole alimentary tract. In persons troubled with pro-

lapsus of the rectum, it is better that the bowels be relieved on going to bed.

2. Moderation in the quantity of food, and regularity in the hours of eating; several hours should interpose between the different meals.

3. Frequent ablution of the body with cold water; delicate persons can use it as warm as is necessary to prevent chilling the surface.

4. Frequent drinking of water, cool, but not iced. See p. 297.

5. Frictions to the spine over its whole length.

6. Exercise, walking or other modes of exerting the muscles of the limbs and abdomen. See p. 288.

7. Avoidance of late suppers; a heavy supper keeps up digestion through a great part of the night.*

Medical Treatment.—The medicine that is properly adapted to remove the morbid condition of the system is the proper remedy for the constipation, which forms a part of the said morbid condition. It is, therefore, impossible to enumerate all the proper remedies by which constipation has sometimes been cured, and give the specifics symptoms of each; but since this condition is very frequently the predominant feature of the case, and that for which we are requested to prescribe, we will give the principal remedies and the symptoms which direct us in the choice of each in ordinary cases.

Opium.—Constipation caused by external circumstances exerting a debilitating influence on the nervous system. In acute cases when constipation is not habitual, but there is a want of power to relieve the bowels, with a feeling of constriction; desire to relieve the bowels, with a sensation as if they were obstructed; pulsation, sense of weight in the abdomen, dull heavy pain and pressure in the stomach; beating in the abdomen; parched mouth, want of appetite; thirst; determination of blood to the head; redness of the face; headache; constipation in young children, after Nux has failed; repeat the dose, if not relieved in twenty-four or forty-eight hours.

Of its power to cause or cure constipation, Hahnemann says, in the Organon:

Opium, of all vegetable substances is the one whose administration in small doses produces the most powerful and obstinate *constipation*. How is it possible that it should, notwithstanding, be the most efficient remedy in those cases of constipation, which endanger life, were it not in virtue of the homœopathic law? Opium, whose primary effects are so powerful in constipating the bowels, was discovered by Tralles† to be the only cure in a case of ileus, what had been ineffectually treated by evacuants and other remedies. Bohn found, that *nothing* but *opiates* could act as purgatives in the colic, called *miserere*; and Hoffmann, in

* Dr. Epps On Constipation p. 249. † Uses and Abuses of Opium.

the most dangerous cases of this nature, placed his sole reliance upon Opium and the Anodyne, called by his name. It is true that "two hundred thousand volumes have been written upon medicine, and out of them all we can not extract a simple explanation of the mode, in which Opium cures constipation; the law of homœopathy alone gives it."

Bryonia.—Constipation occurring in warm weather; in the puerpural state, accompanied with inflammatory irritation of the abdominal organs. In persons of an irritable or obstinate disposition, with a tendency to be easily chilled and subject to rheumatism; constipation arising from a disordered stomach; determination to the head and headache.

Enemata.—A mild cathartic enema, employed at a particular hour a short time after breakfast, will generally give present relief to the bowels; and the habit persisted in will restore the habit of acting at a certain hour. The quantity thrown up must be large, and the patient, lying on the left side, should retain it as long as possible. It is important that this habit be persisted in till the regular habits of health be restored. It is immediately after breakfast that the bowels are most inclined to act spontaneously, as the pressure of the distended stomach upon the transverse arch of the colon disposes the latter to contract and propel its contents into the rectum. This natural tendency should always be encouraged at the moment, for the activity of the absorbents in the bowels soon removes the more fluid parts, and the bulk being reduced, the disposition subsides. (*Hull.*)

Injections should be large in quantity and their efficacy is not permanently increased by the addition of stimulants, which have been supposed to exert a salutary influence on the colon.—The patient should lie on the right side for the purpose of enabling the injected fluid to reach the ascending colon and cæcum, where accumulations always exist. Here the contents of the bowels are compelled through sixteen out of twenty-four hours to ascend in opposition to the power of gravity; and here we find fulness and hardness in many cases, especially in chlorotic persons. Inflammation or ulceration of the mucous membrane of this part may be caused by long contact of hardened fæces; and irritating fœtid compounds are formed by chemical decompositions; and irregular fatty looking masses of inspissated mucus secreted from a highly irritated surface, are often found in the evacuations. When long retained this matter becomes purulent. To assist in clearing out the large intestines gentle pressure and kneading by the hand of an assistant may aid in pressing the delayed masses forward. This process has sometimes been made a special basis of success in constipation. A German practiced it successfully in London, in 1847. He kneaded the abdomen over the small intestines; and then, beginning from the right groin, he continued the process till the

object was attained. But a true cure can only be reached by homœopathic remedies.

Nux-vomica.—Constipation resulting from too heavy a meal; from indigestible food, or stimulating drinks, as coffee, and lasting severa days; adapted to persons of irascible and lively temper; determinatio of blood to the head; giddiness, stupor, intoxicating heaviness in the head, especially in the morning, redness of the face and headache, person of sallow complexion, loss of appetite, tendency to vomit, flatulence, pressure at the stomach, dry cough, dryness of the mouth, acid and bitter taste, unfitness for exercise, disturbed sleep; general oppression and heaviness, lassitude and drowsiness in the morning; heartburn, nausea in the morning, swelling of the stomach after eating; frequent ineffectual efforts to relieve the bowels, constriction of the sphincter and shooting pain in the abdomen, constrictive pain in the chest, restlessness, general depression; in individuals subject to hæmorrhoids; tenesmus, pain in the rectum, and loins, constipation in young children. After it fails try Opium 2d, then Bry. 10, Veratr. 10, Sulph. 10, Calcar.-Carb., and particularly Zincum.

Tincture of Nux. one drop night and morning, increasing the dose one drop every day. (*Becker*, p. 49.)

Abstinence from coffee and other heating drinks, exercise in the open air. Nux at bed-time and Sulph. in the morning are sovereign remedies for constipation; fæces are hard, dry, and evacuated with great pain and effort. (*Becker*, p. 57.)

Case by Dr. Henderson.—A lady, long subject to constipation, took Nux, third attenuation, a half drop twice a day. She began soon tc feel "extremely weak, sleepy all day, headache all over the forehead; creeping tickling feeling in the lower limbs; extremely cold feet; cold sensation in the chest; extreme exhaustion." She did not attribute the symptoms to the medicine, but persevered for four days, when her symptoms became alarming. The physician pronounced her suffering under over-doses of strychnine." She had been taking only the *one millionth of a drop* of the mother tincture of Nux-vomica per day. (p. 263.)

A case of constipation is given in the *Medical Register*, vol. 2. p. 168. A man had been long suffering from constipation, and in the course of six months passed under the care of *thirty different physicians and fifty surgeons.* For two weeks there had been scarcely any evacuation. "His skin was nearly the color of mahogany; there was a horrible sphere flowing out from him which was intolerable, there was scarcely any flesh upon his bones, and he scarcely resembled a human being. The abdomen was filled with scybalæ, like a wallet of pebbles;" of these "near a peck were afterwards discharged which resembled black marbles."

Cases by Dr. Epps.—1. A man, aged twenty-two. Has to take me-

dicine twice a week, has uneasy sensation at the top of the head and heat in the scapula. He took Nux; and a week after reports that the bowels have acted four days out of the seven. Other symptoms improved. After taking Opium 2°, he took Sulphur which confined the bowels. But he was entirely cured.

2. Constipation in a Case of Ovarian Dropsy.—A woman, aged twenty-seven, mother of three children, had an ovarian tumor on the left side after confinement. In April, the tumor was tapped, and eleven pints of fluid drawn off. She was getting large again; has had constant pain down the left groin, and in the back down the left side; bowels confined; menstruation failed for the last two months. She has taken Merc.-Iod. and Elixir-Vitr. (under other hands). She took Nux-vomica twice, when the bowels became regular, which had never been the case before. See p. 291.

Sulphur.—Habitual constipation, with hæmorrhoids.

It cured an elderly man who had suffered from constipation twenty years, accompanied by severe headaches, fulness of the stomach after eating, dry loaded tongue, hitherto only relieved every second day by aperients; dyspepsia caused by repeated purgatives, also disease of lower intestines; dull pain in the liver, increased on pressure. In five weeks the bowels were enabled to act daily and the headaches subsided. (*Becker*, p. 50.)

Pulsatilla.—The same indications, as Nux-vomica. But Pulsatilla is particularly suited to females and children of mild phlegmatic dispositions; generally want of thirst rather than thirst, repugnance to fat and rich meat, suffering after taking pork and pastry, frequent and loose or difficult and slow evacuations; bad effects of rich greasy food, accompanied by moroseness and shivering.

Graphites.—It has cured a large number of cases, generally complicated with certain other diseases. Dr. Epps gives thirty-two cases. Usually four globules were given each week; in one case eight globules in sixteen days. In all constipation was a prominent feature. Of the second series of cases:

1. A case of confined bowels with crusts on the face, caused by the application of oil to an erysipelatous surface. 2. The same with scaly brownish eruption. 3. Another in combination with erysipelas. 4. The same. 5. Another with ulceration on the toe. 6. A case with dry skin and an eruption on the skin and uterine disorder. 7. One case with a crustaceous eruption on the head; stools solid. 8. Another of confined bowels and eruption on the skin. 9. Two with ulcerated leg, pains in the ulcer; shooting like pins and needles; all cured,—the ulcer relieved. 10. Case of constipation with diseased knee. 11. Constipation with large stool, headache, eruptions on the hands, dry skin. 12. Constipation with pains produced on action of the bowels, with erup-

tion on the skin. 13. A case with dry skin and dizziness, causing the patient to fall. 14. Four cases with dry skin. 15. A case with dry skin, great depression of spirits on which the remedy produced remarkable effect. 16. Constipation with great mental distress; eight globules given in sixteen days.

Additional Cases.—1. A woman, aged twenty-five, has been nursing a child for eleven months. Eyelids weak since the child was born, being inflamed, with angry, reddish yellow margins, having pricking pains in them; water comes into the eyes and prevents her seeing, especially at candle-light, the eyelids seem to draw down; skin dry; constipation has been long treated without benefit; stool large and causes bleeding. Under the use of Graphites 12° for nine days the sight became better; the bowels regular, acting every day; the bleeding ceased. (*On Constipation.*)

2. A man, aged thirty, had pleurisy three years ago. Under old treatment he was laid up five months. Has pain through the left side to the shoulder; food causes a sense of weight and pain; throat sore from slight exposure; pain in the back; skin dry; great difficulty in passing stool and after long effort. He took Graphites, and in eight days was entirely better. The remedy was repeated with increased benefit.

A woman, aged twenty-nine, bowels habitually confined; stools large, passed with blood and great pain, lasting for a whole day, following the passage. Graphites was given. A week after, the bowels act better, there is heat all over the surface, attended with faintings. Graphites repeated—*cured.*

Her child, aged eight months, had since the fifth week a whistling, wheezing, with burning heat in the skin; skin dry; constipation. Hepar-sulph.

The whistling got better, also the wheezing and burning heat; bowels better. Hepar continued.

The heat at night afterwards returned, with constipation. Graphites cured.

Constipation complicated with Hepatic Disease.—Veratrum.—An officer, after having yellow fever several times, suffered for thirty years with constipation and liver-disease, bowels never moving without purgatives, distressing headaches, and great depression of the nervous system. He was greatly benefitted by Nux 30, Bryon. 30, Verat. 12 every second or third day in succession for two months.

Dyspeptic symptoms; acid and bitter eructations, fulness of the stomach and bowels after eating, pain in the region of the liver, constipation, and eruptive disease covering a great part of the body. Veratrum first cured the skin-disease and afterwards the stomach-symptoms and constipation yielded. (*Becker*, p. 37.)

TREATMENT OF CONSTIPATION IN CHILDREN.—The greater the dread of costiveness the greater are the objections to the use of purgatives. In healthy children the bowels move twice in twenty-four hours; but no uneasiness should be felt if these intervals should be prolonged to two days, and in older children to four or five. The difficulty can be safely overcome if we are not too impatient; if *mild* aperients could be made to answer they need not be used; violent purgatives are especially dangerous when the constipation is accompanied by hernia or other mechanical obstruction. Lobelia is a better remedy.

A permanent cure may be promoted by exercise in the open air, by avoiding indigestible food and stimulating drinks, by eating slowly, and the avoidance of too early use of solid food, especially meat. If purgatives have been habitually used they must be abandoned gradually. The child should gradually be accustomed to drink cold water, and when the bowels must be relieved promptly it can generally be done by a mild injection of milk and water. Neither the nurse nor child should drink strong coffee.

MEDICINAL TREATMENT.—*Nux-vomica.*—Dissolve only two globules in a tablespoonful of cold water, to be taken at bed-time every night till the bowels move naturally.

SYMPTOMS.—Constipation caused by indigestible food or by over-eating; after a diarrhœa has ceased spontaneously; when there is loss of appetite; unpleasant taste in the mouth; tongue loaded with white mucus; loathing, and nausea; cuttings and painful shootings in the lower part of the abdomen, with tension and pressure; heat; flushing of the face; stupefying headache; disturbed sleep; oppression; much heat in the lower part of the abdomen; protrusion of the bowel.

Pulsatilla: in addition to the above symptoms; there is: bitter taste in the mouth; desire to vomit; sour eructations; flow of mucus into the mouth; burning sensation in the œsophagus; tension and pinching in the lower part of the abdomen; sallow complexion; shivering; dejection; mild and gentle disposition.

Sulphur.—Obstinate cases resisting other remedies, one pellet at bed-time once a week for a month, in psoric constitutions.

Lycopodium.—Case by Dr. Epps.—A man, aged twenty-three, had constipation four years. Active temperament, appetite good, urine natural when passed, though often thick when cold; at times large quantities, pale. Heaviness in connection with the constipation. Hands and feet cold, Lycopodium.

In the same month he had some numbness of the hands in the morning for two days, Causticum.

He afterwards wrote that he was always relieved of the irregularity of the bowels by alternating Nux-v. with Lycopodium or Sepia. He

was permanently cured by them. For four years he had been compelled to often take Castor-oil, pills and other purgatives.

II. Intestinal Obstruction.—1. Any mechanical obstruction of the bowel causes an accumulation of its contents above the obstructed part; and this accumulation provokes such a peristaltic action as insures their mixture, and, strictly speaking, their reflux.

2. Increasing distention finally brings about paralysis and inflammation of the intestine, ending in the collapse and death of the patient.

3. The symptoms of the several forms of obstruction (referring more generally to the nature of the obstacle and its situation,) usually permit an accurate diagnosis, even in the earliest stages of any given case. It is therefore desirable to inculcate the importance of an early and accurate diagnosis, which will have an important bearing on the treatment. *Mechanical obstruction* must be clearly distinguished from *enteritis*.

Prognosis.—The cases that *recover* are almost invariably the *protracted* ones. Intussusceptions which end by the expulsion of the affected part or segment of the intestine have a duration of twice to thrice as long as that of the fatal cases. In those cases which finally recover it is only in the second, or third, or even the fourth week that I have witnessed that remission of symptoms which announces relief of the obstruction, and which often precedes by a day or two the first healthy evacuation. (*Brinton, Croonian Lecture.*)

Medical Treatment.—*General principles.*—1. To protract the duration of life by every means in our power. If we can lessen the rapidity and increase the duration of the malady, we multiply the chances of recovery. The constriction or inflammation may possibly end of itself by resolution, or retraction of the intusception, by efforts of the *vis* medicatrix *naturæ*. A gradual accumulation of fluid leaking into the stricture forms a kind of wedge there; and, transmitting equally in all directions whatever force it may receive, it allows even the most distant wave of peristaltic contraction, applied at a distance, to tell with undiminished energy as an agent of dilatation at this point.

Chief Indications of Treatment.—1. To prevent distention; 2. to assuage pain; 3. to mitigate extensive peristalsis; 4. to support the patient's strength during what is necessarily an exhausting and often a long illness.

1. To prevent distention, reduce the food and drink in every available way. Give only small and frequent sips of cool, even iced liquids. Give the food in the shape of beef-tea, soups, &c.; and, if these articles disagree or excite vomiting, diminish the doses and try other articles: soda water in small quantities; wine or brandy in some cases.

2. To lessen the pain. Opium has long been the only reliance, and in many instances it has been used to very great extent, far exceeding

what could be usually borne. Belladonna, though less effectual than Opium in easing pain, has a specific power in this disease, that must not be passed lightly over. Lobelia is often successful.

Tobacco has a specific power in an antipathic way to produce relaxation of the constricted portion of the bowel. But in the dose it requires it is very dangerous. Whatever be the means we resort to, we have before us a task of great difficulty, and it is only, as Mr. Brinton says: "by close and even unconscious reasoning; by strict scrutiny; by deep insight, and by a truthful and teachable habit of mind, that the treatment of diseases of such severity must be wrought out."

3. *Enemata.*—They may effectually support the patient's strength, and by their mechanical action they may sometimes remove the obstruction. The water they contain, when absorbed, is important both for the purposes of nutrition and lessening the fever and inflammation. Milk, broths or gruels may be employed in this way and may long maintain life. They may act also, by distending the bowel on the lower side of the obstructed point, and thus effect such a change in the position or arrangement of its parietes, as may release the impacted or intuscepted part. They aid also by their gentle warmth and the water, which may be absorbed in the immediate vicinity of the point of disease.

It is chiefly in their earlier stage that they are likely to be beneficial. They should be injected slowly and gradually, and with considerable force, though with caution;—with such care that the tension, which an additional ounce may cause, shall subside before we attempt to introduce more. The patient should be willing to bear some pain, and the operator to give the least he can.

Purgatives in such a case can do no good. They can not remove the obstruction. The enormously distended state of the intestine clearly indicates the folly of attempting to force a passage by purgatives. This is the decided opinion of the highest living authorities. Long before the advanced stage of obstruction, at which purgatives could do good, long before the fæcal vomiting which usually precedes it for some time, physical examination of the abdomen shows an accumulation of liquid, and the creeping, flatulent peristalsis, beneath its perhaps still smooth, relaxed and flattened walls. This condition shows, not indeed that purgatives are useless, for they have sometimes given relief, but rather that nature herself is preparing, within the obstructed bowel, the best of all purgatives: a mass admirably adapted by its quantity and quality, and especially by its consistence, to do whatever any aperient can towards opening a passage. And if, as we have concluded, there is any danger of even this stimulus being too great; if it is distending the bowel with such rapidity, as to paralyze its muscular coats, or to provoke an excessive and exhaustive peristalsis, or to ex-

cite a diffuse inflammation which so aggravates and distorts the local phenomena, as to destroy all chances of their restoring the permeability of the obstructed canal;—withhold purgatives in these cases, because they are not merely useless, but positively hurtful, not only in the late, but even in the early stage of the obstruction.

Obstruction in the Colon.—Amusat's Operation.—Either the right or ascending, or the left (descending) colon may be opened to relieve the distention produced by an obstruction near the lower part of the large intestine. This operation generally permits an unwounded state of the peritoneum; but it can hardly be doubted that its success is due to other causes. Indeed, considering the circumstances of many of the obstructions, for which it is performed, the serious lesions, (cancer or stricture,) by which they are caused, and the scarcely less serious accidents, (diarrhœa and hæmorrhage,) by which they are often long preceded, practically, no doubt, this unpromising measure is mostly undertaken merely to palliate the suffering or to defer the approach of inevitable death. And yet it has been in "every way more successful than any other operation hitherto practiced for the relief of obstruction." This striking result is greatly favored by the circumstance that the physiological relations of the large intestine render the phenomena of its obstruction altogether slower and of later occurrence than are the same phenomena in obstruction of the small intestine.

The cases, then, for which gastrotomy may with propriety be practiced are reduced to a small number. They are: obstructions, such as may be caused by a band of organized lymph by an adhesion; a diverticulum, a rent in the mesentery; a malformation of the peritoneum; a twisting of the intestine.

Either one of these cases might be removed by an operation; spontaneous cure is scarcely possible; if accumulation, distention and leakage fail to dilate the constricted segment against the pressure, which is often feeble, of the band or adhesion, or fail to retract it from the peritoneal or mesenteric aperture into which it has slipped, death seems inevitable. And even for these very cases gastrotomy should not be considered as the exclusive remedy. It would be hopeless if practiced on persons of advanced age or broken constitutions, when there is violent inflammation of the obstructed bowel or general peritonitis.

Aconite.—Dr. G. H. G. Jahr, says: Aconite is the best remedy in all cases of incarcerated and inflamed hernia. According to the susceptibility of the patient, we may administer it in the third, twenty-fourth, or two-hundredth attenuations in globules or in water, at intervals of one or two hours. In recent cases, with violent and persistent pains, this medicine should be employed until the violence of the symptoms has subsided. It is equally appropriate in all other incarcera-

tions accompanied by inflammation. (*Gauwerky, Gaz. Hom. de Leipzig*, vol. XI. p. 220.)

In two cases of incarcerated hernia, accompanied by a high degree of inflammation, *Aconite*, eighteenth and twenty-fourth, repeated every hour, effected cures in eight and twelve hours, both patients being quite well on the next morning. (*Goullon, Archiv de Stapf*, vol. XIV. cah. 11. p. 138.) We have also seen prompt relief from one drop of Lobelia.

When there are, in the incarcerated parts, violent pains, burning like live coals, with great pain and sensitiveness at the least touch, nausea, bitter bilious vomiting, anguish and cold sweat, Hering says, Aconite is the appropriate remedy, and should be given till the pains subside.

When the affected parts are already rigid, painful, swollen, tense, hot, and red, a single dose of Aconite, twelfth, will often cure in a few hours. (*Kreussler, Therap. Hom.* p. 99.)

Particular Symptoms indicating Aconite.—Severe inflammation of the affected parts; burning pains like coals of fire or pulsations; nausea and bilious vomiting. (*Jahr.*)

Electro-Magnetism.—"*In Hernia* par engouement I have found this agent most valuable. Every effort I had made for a reduction, proved useless, when, finally, I inserted the positive pole connected with a proper instrument, into the rectum, and the negative pole, connected with a silver plate, was placed upon the tongue; this immediately produced an undulating motion of the bowels, previously motionless; no shock was received, nor was there any contraction of the abdominal muscles. The patient was soon in a state of diaphoresis, the muscles relaxed, and the hernia was spontaneously reduced. After removing the instrument from the rectum, it was followed by a copious evacuation of hardened fæces." (*Dr. H. Lassing.*)

4. DIAPHRAGMATIC HERNIA.

Definition.—A protrusion through the diaphragm of the parts below it. It occurs in consequence of congenital absence of a portion of the diaphragm; perforation by rupture or wounds, or a yielding of this septum at certain points, permitting the stomach, intestines, or other abdominal viscera to enter the cavity of the chest, or to encroach more or less on the thoracic space. The disease is so rare that no individual may expect to meet more than one case in a life-time.

Dr. Bowditch, of Boston, presented before the Boston Society for medical improvement in 1847 a condensed report of all the cases then known to have been published; and he found in the books eighty-eight cases. In connection with these he gave the history in full of a case "in which nearly the whole of the left side of the diaphragm was want-

ing; so that the stomach and a great part of the intestines lay in the left pleural cavity; compressing the lung, and forcing the heart to the right of the sternum." This condition was evidently congenital. The subject of it died at the Massachusetts General Hospital, with fracture of the spine caused by a heavy blow upon it." (*Buffalo Med. Journal*, June and July. 1853.)

Varieties of the Disease.—1. "Parts of the abdominal viscera are forced through some one of the natural openings of the diaphragm, viz., that of the aorta, vena-cava inferior, an intercostal nerve, or the œsophagus. 2. When portions of the diaphragm are wanting," resulting from congenital arrest of development. 3. "Hernia from accidental wounds or lacerations. 4. When one side of the diaphragm is violently forced up into the chest, producing compression of the lung."

The effect of this displacement of the viscera is various in the different conditions in which it exists. In some cases there is found inflammation, after death, extending to the pleura, lungs, or abdominal organs. The lungs are compressed in proportion as their space is intruded on; the condensation thus caused is easily removed by inflation. Pneumonia in some produces solidification of the lung. There is often displacement of the heart, generally to the right; and also pleuritic effusion.

Diagnosis.—When the stomach or large intestine has ascended into the chest, a proportionate tympanitic resonance is perceived on percussion, and it differs in degree in proportion as the ascended viscera is distended with gas. The presence of the liver must cause dulness of sound, liquid effusion must do the same. So far as the lung is compressed the percussion sound elicited must be proportionately dull; as also when it has become solidified by inflammatory exudation.

Auscultation reveals tympanitic resonance over that part of the chest upon which the hollow viscera have encroached; the degree varying in proportion to the extent of space within them occupied by gas. Over compressed portions of the lung, the percussion-sound is necessarily dull, still more so when the lung is solidified by exudation. Auscultation will show the absence of the respiratory vesicular murmur in parts compressed by intruding organs; and the same exaggerated in portions of the lung of the opposite side; Dr. Bowditch found in the case observed by him "gurgling, whistling, blowing" gastric or intestinal sounds over the seat of the hollow viscera. They were excited at times by the act of respiration, and also when the patient held his breath. Metallic tinkling also was heard like that heard over the stomach. Some of these sounds were probably produced by pressing suddenly on the abdomen and thus forcing air into the intestines while yet in the pleural sac.

The cardiac sounds are heard in the region to which it may be dis-

placed. The affected side of the chest is generally enlarged and its motion constrained. The lungs are much compressed.

The *characteristic* symptoms relate to the respiration. This is generally though not always embarrassed, oppressed, increased in frequency; some dyspnœa, or orthopnœa. The difficulty of breathing is increased by the recumbent posture, which favors the pressing of the viscera into the thorax. The difficulty of breathing occurs in paroxysms, from the greater distention of the hollow intruding viscera containing at times more gas, and taking up more room. In the single case, reported by Dr. Bowditch, the patient, aged seventeen, was able to perform the duties of a laborer; he did not suffer from embarrassed respiration; and died, not of this affection, but from fracture of the spine.

The diagnosis is so difficult that of the eighty-eight cases collected only one was determined before death. That just mentioned was also detected by Dr. Bowditch by physical signs. These in general are: dyspnœa, coming on suddenly or going off suddenly, when congenital the embarrassment of breathing is observed from birth. If from a rupture or wound, the dyspnœa dates from the time of the injury. The symptoms of the respiration are characteristic: Tympanitic percussion-resonance; absence of respiratory murmur; presence of sounds identical with those observed over the stomach and intestines, as, borborygmi and metallic tinkling when the respiration is suspended; dilatation of the affected side; difficult motion, or immobility, probably absence of vocal fremitus.

Though these symptoms occur in emphysema the latter may be distinguished by: its being accompanied by paroxysms of asthma; more or less cough and expectoration; the sonorousness revealed by physical exploration is not purely tympanitic, but vesiculo-tympanitic; dilatation and deficient motion especially marked at the upper part of the chest; bronchial rales or a modified respiratory sound more or less diffused; with absence of borborygmi and metallic tinkling.

Pneumo-hydrothorax.	Diaphragmatic Hernia.
Generally suddenly developed as the result of perforation, commencing within the pleura in the course of chronic pleuritis, which has previously existed.	Only suspected where these antecendents cannot be ascertained.
Physical Signs.—Tympanitic resonance, absence of respiratory murmur, dilatation, and deficient mobility, abolition of fremitus.	These symptoms are also common to diaphragmatic hernia.
Positive Signs.—Metallic tinkling occurs in connection with re-	Borborygmi is a positive and peculiar sign. Tinkling and ampho-

spiration, voice, and cough; cavernous amphoric respiration and voice. Succussion-sound generally can be produced; fluctuation absent.

ric sounds occur, but not in synchronism with acts of breathing, speaking, coughing; without respect to the movements of the body.

5. INTESTINAL INTUSSUSCEPTION.

PASSIO ILIACA.

TREATMENT.—*Manipulation or Pressure.*—This expedient has been employed to relieve obstruction, perhaps by lengthening and effacing a twist in the intestines. In one case a moderate palpation necessary to physical examination forced onward an impacted gall-stone. But in other cases the same degree of pressure has been sufficient to burst a distended and rotton bowel, and thus to kill the patient.

Gastrotomy.—In very few instances has this operation accomplished any good compared with the number in which it has been performed. In one case intussusception has been withdrawn, in another a band has been divided, in another a portion of the intestine cut out, with a tumor attached to it.

But there have been other cases in which by manipulation of the abdomen, or by giving crude Mercury, or by violently shaking the patient, the obstruction has been removed. Therefore there must be very few cases that can justify an operation.

Question of the Propriety of an Operation.—The following cases must be excluded from consideration: 1. All intussusceptions, which constitute nearly half of the fatal cases of obstruction recorded.

About thirty or forty per-cent of all intussusceptions undergo a process which permits, and often really accomplishes the recovery of the patient by casting off the intussuscepted part.

2. In the early stages of the lesion and often in the latter, that state of the obstruction which chiefly indicates the operation is often quite subordinate to those local lesions which cause the pain, tenesmus and other signs of irritation present; so that there is a transit, and not any accumulation of the intestinal contents at the intussusception itself. The characteristic tumor, too, is a sign which belongs, not so much to the occurrence of the intussusception as to its progressive increase of length on the one hand and to the tenesmus, the enormous infiltration and swelling of its various layers on the other. Hence, if the operation were deferred until after the access of these signs, (indeed if it were not practiced almost instantly) it would generally be rendered incapable of successful completion by adhesion of the opposed coats of the middle and outer layers, or in withdrawing the inflamed and rotton portion of the intussuscepted portion it would, at the same time literally withdraw the patient's only chance of recovery.

3. The next group of obstructions to withdraw from consideration in deciding upon the operation of gastrotomy, include, one already alluded to—namely, that of the strictures and tumors which experience shows to be chiefly (though not exclusively), related to the large intestine. Occupying this bowel in the great proportion of eight-ninths of their total number; coming on gradually; and further, suggesting an accurate diagnosis by their symptoms, on the one hand, and their signs accessible to an examination of the abdomen and the rectum on the other; they are grouped here, however, unscientifically, by the practical considerations, that 1, their nature may be generally recognized at once; and 2, the operation indicated is that of opening the distended colon, and not gastrotomy, and is palliative and not curative.

In stricture of the large intestine the institution of an artificial anus has been resorted to above the obstacle.*

In obstruction from bands, diverticula, &c., mostly affecting the small intestine, gastrotomy and division of the cord-like cause of strangulation has been thought necessary; a procedure which, if interrupted by unforeseen impediments, may further require the institution of an artificial anus in the most distended part.

In obstruction by stricture the relaxing power of a tobacco enema has been considered to deserve one trial at least (*Brinton*). It has also been used with success in obstruction, by bands, especially by gallstones. We much prefer Lobelia in only drop doses.

In all cases opium and spirits have been used freely from the earliest stage of the disease. The bulkier liquid constituents of the food may be given as sparingly as possible by the mouth, but introduced in sufficient quantities in enemata.

Distensive Enemata, to precede all operations as a means of relief, and also to assure diagnosis. Where vomiting is excessive, nourishment sufficient to be given in this way, in sufficient and frequent quantities.

After recovery all food that can cause indigestible accumulations within the intestines must be avoided; as the bowel may have undergone a change of calibre which may not permit subtances to pass which in health could pass without difficulty.

Belladonna.—Flanius proposed this remedy; "knowing its action in diminishing the contractile force of muscular fibre, he thought that when applied directly to the intestinal surface, it would lessen and put a stop to the spasmodic constriction which occasioned the characteristic phenomena of this dangerous malady." The theories of different schools have since been invoked to explain its mode of action

* Brinton's Lecture, 1859.

and its apparently contradictory effects. Though classed as a narcotic it was found to produce wakefulness, and to dissipate the stupor excited by Opium. How it acts in dilating the pupil? how in nocturnal incontinence of urine and involuntary alvine evacuations? these are questions which can not be answered by enrolling Belladonna in any of the systematic categories philosophers have invented. Dr. Debreyne, who took up the question from the homœopathic stand-point, found it able to cure the same diseases it was capable of causing. In his monograph on this remedy, he says: "We shall observe that Mydriasic dilatations of the pupil are cured, and speedily too, by the direct application of Belladonna." He found the same to be true of simple, epileptiform and hysteriform convulsions, partial or general tremblings, unusual motions of the arms, hands and fingers, and says: "These phenomena are all occasioned by its toxical affects." It was therefore a "proper agent for the restoration of those laboring under these maladies."

Symptoms applicable to Passio-Iliaca, observed as Pathogenetic Phenomena produced by Belladonna. Authors have observed: Frequent and abundant vomiting. Epigastrium sensitive to the touch. Sharp pains in the stomach and lower belly. Extreme distention of the stomach and intestines, lancinating, cutting pain in the pit of the stomach, obliging him to hold the breath and bend the trunk. Pressure in the stomach as from a stone. Inflation of the abdomen, with borborygmus of the intestines of the left side. Tumefaction of the abdomen which is very sensitive to the touch. Borborygmus, sensation of general mixture in the abdomen, with blinding headache. Sensation of heat mounting upward in the abdomen, with sweating. Painful contraction within the abdomen, retraction of the belly, with pain in the abdomen, lasting a long time. He is awakened by colic and borborygmus, inflation of the belly; sits with the body drawn forwards; desire to go to stool, without result, but followed by vomiting. Pinching in the intestines, in the ascending and transverse colon; pain increased by retraction of the integuments and throwing the trunk forward to the left side. Spasmodic tension of the entire abdomen, preventing the least movement; drawing pain in the abdomen; pain as if the intestines had been seized by pincers; violent colic below the umbilicus; the pain constrictive and returning periodically; painful contraction in the umbilical region, commencing in the flank and ascending to the sternum; sensation under the umbilicus as if the viscera were about to escape. Alvine evacuations retarded. Constipation and absence of stool and urine. Constipation and meteorism are common. In a case in which they ceased there was amelioration; but they returned with delirium.

In a case treated by Wagner, "the abdomen was tense, hard, meteorismic; the slightest pressure increased the pain and caused the

patient to cry out." There were also, "twitchings, syncope, convulsions, with insupportable anxiety. The effect of Belladonna was surprisingly favorable.

M. Sollier, fils, treated a young girl suffering from spasmodic ileus, with fever, great thirst, abdomen painful, inflated to an enormous degree, occasional loss of consciousness. Dr. Fiessinger treated a woman in whom the abdomen was enormously distended, very painful to the touch and covered with phlyctenæ around the umbilicus; features greatly altered, eyes fixed, body bent, extremities cold. In a patient mentioned by M. Brunet, pressure gave no pain; but there was great agitation, and he complained of burning heat, while the body was cold and pulse feeble. Reaction commenced immediately after the exhibition of Belladonna; skin became warm, pulse developed, &c. In other cases have been observed intense cold, alternating with vomiting, abdomen distended, sensitive to pressure, meteorism, face pinched, pulse accelerated, contracted or strong and febrile, abdomen hard, meteoristic very sensitive; anxiety, burning thirst, dry, red tongue; eyes haggard, features pinched; agitation alternating with exhaustion. In the exacerbations, the face becomes suffused, eyes injected and haggard, febrile aggravation; delirium both by night and day; confusion of ideas; fainting and unconsciousness. In all of these symptoms we perceive peritoneal inflammation which plays an important part in passio-iliaca. These are the same symptoms that M. Frédault gives as indications for the use of Belladonna in strangulated hernia. Two characteristic symptoms are: 1. A sort of nervous erethism manifesting itself in extreme sensitiveness of the abdomen; great agitation; features rapidly and profoundly altered;—2. Inflammation in the hernial tumor.

These same symptoms have been regarded by physicians of the Italian school as indications for the use of Belladonna, which they considered as one of the most important and certain modifiers of peritonitis.

The effects of poisonous doses of Belladonna exhibit also the same general features, though they have been often misinterpreted. In one dissection, reported by Faber, the abdomen was distended, and the stomach filled with gangrenous patches.

*Case by Dr. Dufresne of Geneva.**—A painter aged thirty-six, had two attacks of lead colic; and, on a third attack of pain in the abdomen and vomiting, he took purgatives and four grains of Opium daily with warm baths and injections for three days, followed by leeches without relief. The abdomen was now greatly distended, the convolutions of the intestines visible; a sensitive point to the left of the umbili-

* L'Art Medical, 1860.

cus; urine scanty, features pinched, pulse feeble, incessant moaning; vomiting on swallowing a drop of water. Directed two hundred grammes of water with five drops of tincture Belladonna—one spoonful every half a hour. Frictions on the abdomen, with an unguent of extract Bell. eight grammes and Axungia fifteen ditto. In eight hours the pain diminished; he took iced and Seltzer-water and tea; swelling less; urine increased. Next day he slept; fifth day convalescence established. Bell. discontinued as it begins to occasion agitation and wakefulness. A second case was cured by simple injections, cataplasms, and Belladonna 6°. Frictions with ointment of extract Bell. four grains to fifteen of Axungia.

A third case presenting all the same features was cured by the same treatment.

Plumbum.—Lead produces the most obstinate constipation, and even the iliac passion, as shown by Thunberg, Wilson, Lazuriaga and others. From the same authors we learn that this metal has likewise the virtue of curing these two affections. Angelus Sala cured a species of ileus, and J. Agricola another kind of constipation which endangered the life of the patient, by administering Lead internally. Many other physicians have cured the iliac passion and obstinate constipation, with *Saturnine* or lead pills; and they acted only homœopathically.

Introduction of a Flexible Tube through the Sigmoid Flexure.—"This can only be done by a skilful hand. It may be arrested by folds or displacements or curvatures of the rectum, or may turn back upon itself, or may pass through the stricture without bringing any relief, or it may aggravate the distress by transmitting fluids to increase the distention of the dilated and paralyzed canal above the obstruction. It is said to be of great service in the distention associated with enteritis." (*Brinton.*) I have many times resorted to this expedient and always with success. I never found any of the difficulties mentioned by this author and others; and feel satisfied that no case should be permitted to progress to a dangerous point without having this operation carefully and skilfully performed.

Inflation of the Lower Intestines.—There are cases on record of an obstruction having every symptom of an intussusception being removed by the inflation of the rectum by a bellows. Relief instantly followed from that severe pain accompanying the complete distention. In another case inflation was successfully accomplished by injecting the solution of a carbonate and an acid so as to cause considerable effervescence within the intestine, but we have always better resources.

Crude Mercury.—It has often been given in ounce-doses, and in some cases with success. Its mode of action was supposed not to be well settled; it has certainly often done harm by increasing the dis-

tention and the pressure which is already disposing to paralysis, inflammation and gangrene.

In intussusception of the large intestine repeated injections may be employed to distend the bowel to its fullest extent.

Genus VIII.—DIARRHŒA.

1. *Fœculent Diarrhœa.*—Diagnosis.—Looseness of the bowels, with or without griping pains; frequent discharges of feculent or thin and watery secreted or undigested matters; respiration, circulation, skin and the organs generally in a natural condition.

Accompanying Symptoms.—Partial or complete loss of appetite; pain in the stomach; swelling and tension in the lower part of the abdomen; rumbling in the bowels; cold and dry skin; thirst; urine scanty; dejection; irregular and intermittent pulse; cutting or tearing pains which shift their position; occasional desire to vomit; in severe cases there is burning in the rectum; violent straining, extreme weakness, even fainting.

The discharges are *painful* or *painless.* The secreted discharges are *mucous*, *serous* or *purulent.* These when feculent are, in regard to *color*, designated as *black*, *brown. gray*, *green*, *red*, *white* and *yellow*; by difference of odor, as of *spoiled eggs*, *putrid*, *acid*, &c.

Causes.—Dentition, worms, irritating articles of food; raw vegetables, as cucumbers, melons, salads; various unripe or acid-fruits, as plums, pine-apples, apples, green corn; food partially putrid; some kinds of fish, shellfish; depressing passions, as grief, fear and anxiety; fatigue, sudden changes of temperature, hectic fever, repelled eruptions, epidemic influences, &c.

Prognosis.—This is generally free from danger. But when it is accompanied with much pain and fever, it may, if not properly treated, prove fatal, or degenerate into some other disorder. It may progress into dysentery, or when cholera prevails epidemically, diarrhœa may terminate in that malady.

General Treatment.—Warmth, a light farinaceous diet, a small cup of warm coffee and rest may cure moderate cases. In those more severe, the patient should be confined to bed, should keep the feet warm and wear flannel.

Medical Treatment.—For the diarrhœas which supervene during dentition, suitable remedies will be found in: *Chamomilla*, *Ipecac*, *Dulcamara*, *Mercurius*, *Sulphur*, *Calcarea-carb.*, *Rheum*, *Coffea and Aconite.* *Pulsatilla* is appropriate when the disease has been caused by the use of fat and indigestible food, and the discharges are pultaceous, mucous, liquid or fœtid, attended with burning or excoriation of the anus, nausea, regurgitation, colic, and aggravation of the symptoms in

the night. Discharges green or white mucus, very acrid. Pain *before* the evacuation, is attended with much rumbling of the bowels; the disposition of mind peculiar to this drug.

Dulcamara is a remedy of the highest value in diarrhœas, and it covers a much wider range than has generally been attributed to it. It has been employed principally in watery diarrhœas, which have arisen from cold; but we have used it with distinguished success in bowel complaints, which have been caused by teething, worms, repelled eruptions, errors in diet, &c., and in which there were mucous, slimy, bilious, greenish and sanguineous evacuations. Dr. Rummel expresses the opinion, that nine-tenths of all cases of diarrhœa may be cured with *Dulcamara*. White or yellow mucous, slimy diarrhœa, with prostration of strength. The color frequently alternates between green, white and yellow; the desire to evacuate, attended with *nausea*, and the attack is generally the result of a *chill*.

1. *Painful Diarrhœa.*—For severest pain: Arsen., Coloc., Jalap, Rheum., Rhus-tox., Senna. (*Dr. Wells on Diarrhœa, &c.* 1862.)

Pain less severe: Bryonia, Carb.-veg., Caps., Cham., Merc., Nux-v., Petrol., Puls., Sulph., Veratr.

Still less pain: Agar., Aur.-mur., Anac., Asaf., Spigel.

Arsenic.—Pain burning, affecting the whole intestinal tract, discharge brown, green, red, white, or yellow, or black and watery; a mixture of mucus and fæces. Symptoms violent; great restlessness, prostration, cold sweat.

Capsicum.—Burning confined to the lower part of the rectum, with throbbing and sense of excoriation and pain in the back, continued after the evacuation.

2. *Bilious Diarrhœa.*—If the discharges are mucous, slimy, or sanguineous, and are preceded and accompanied by griping and tenesmus, our best remedies are *Acid-nitr.*, and *Mercurius-sol.*, in alternation. We may use the third attenuations,—a dose after each evacuation. Other remedies are: *Arsenicum*, *Ipecac.*, *Sulphur*, *Acid-phos.*, *Acid-sulph.*, *Petroleum*, *Colocynth*, *Veratrum*, *Phosphorus*, and *Dulcamara*.

Mercury.—This article is familiar to all, as the agent commonly employed to *cause Diarrhœa*, for the purpose of drawing off the increased vital action from some distant organ. Thus it has been used as a purgative. In moderate doses mercurials act without great irritation, merely increasing the natural secretions of the liver, pancreas, and mucous follicles of the bowels. In large doses, or when by the repetition of smaller ones, the mineral has accumulated in the system, violent purging is often the consequence. It is attended with griping, and sometimes with sanguineous evacuations. The evacuations are frothy whitish, tough, and often greenish." (*Pereira* vol. 1. p. 817.)

Dr. Wood says, "I have seen the operation of Calomel in some instances so exactly like cholera morbus, that the most experienced eye could scarcely have detected the difference." (*Pract. Medicine*, vol. 1. p. 674.)

Mercury has long been a chief allopathic reliance in the treatment of diarrhœa, and it has succeeded best when given in minute doses, triturated with chalk or white sugar. Those who prescribe it in this form do not know that they are marching under the banner of Hahnemann. The symptoms of diarrhœa most characteristic of Mercury are: Pain in the large intestines; discharges of green or red mucus, with tenesmus.

Symptoms. Chills between, and flashing heat *during* the stools; tenesmus; great uneasiness *before* the stool; cold perspirations on the face; anxiety and trembling *before* the stool; heartburn and bitter eructations *after* it; pain in the back and tenesmus continuing *after* it. Cinnabar is one of the best forms of Mercury.

Chamomilla.—White mucous discharges, painful, more common in children than in adults. Diarrhœa caused by taking cold, anger or chagrin; diarrhœic stools of odor of spoiled eggs. Fever and sweat during sleep; excessive sensitiveness of feeling, with intolerance of noise.

Colocynth.—The pain very sharp, doubles the patient up; he cries out, has slight nausea; pain relieved by the evacuations; returns in paroxysms, rather neuralgic than inflammatory, affecting the whole intestinal tract.

Plumbum.—*Constricting* pains. See p. 318.

Podophyllum.—Sense of constriction, but the parieties of the abdomen are retracted. Discharges fœculent, yellow or dark green, of the odor of carrion, often accompanied with prolapsus ani, especially in children; diarrhœa occurs most commonly in the morning; pains in abdomen and back worse *during* the evacuation and continue *after*. Discharges excited by eating and drinking. (*Dr. Wells.*)

Nux-vomica.—Pressing or squeezing pains; pressure more in the upper part of the abdomen and sides, in the colon: discharges brown, offensive and slimy, green, small in quantity, more frequent after eating; tenesmus, drawing pain in the back; prolapsus ani.

Thuja.—Discharges frequent and with a gurgling noise; great prostration; short and difficult breathing; intermittent pulse; pressing pain in the back, rapid emaciation.

Sulphur.—Pain with excoriation; red mucous discharges, *with fever*, loss of appetite and cutting pain in the bowels.

When diarrhœa occurs during dentition, and is connected with some chronic cutaneous eruption, it will be necessary to exhibit *Sulphur*, either alone, or in alternation with *Dulcamara*, *Chamomilla*, or *Mercurius*. It has often occurred to us, that after Mercurius, Chamomilla,

and other apparently appropriate remedies have failed to arrest the discharge, a few doses of Sulphur have effected it.

If the complaint appears to be characterized by prominent biliary derangement specific medicines will be found in *Mercurius*, *Chamomilla*, *Pulsatilla*, *Nux-vomica*, *Arsenicum*, and *Bryonia*.

Sulphuric-acid.—This is one of the best remedies in almost every form of diarrhœa. In children who are teething, and suffering from nausea and vomiting, fever, thirst, bleeding spongy gums, frequent discharges mixed with bloody mucus. A single drop or two in a glass half full of water gives it a pleasant acid taste, and may be given by spoonful doses.

For the diarrhœas which supervene during dentition, a suitable remedy will be found in Arsenicum when there are: watery, slimy, greenish evacuations, with burning pain, great thirst, debility and emaciation.

When diarrhœa arises in consequence of violent mental emotions, we employ *Chamomilla*, *Ignatia*, *Colocynth*, *Veratrum*, *Antimonium-crud.*, *Coffea*, *Nux-vomica*, *Phosphorus*, *Arsenicum*, *Pulsatilla*, and *Ferrum*.

If the discharges can be attributed to the presence of worms, we give *Sulphur*, *Cina*, *Spigelia*, *Aloes*, *Mercurius*, *Nux-vomica*, *Carbo.-veg.*, *Ferrum*.

For the diarrhœas which occur during hectic fevers, especially if connected with a scrofulous dyscrasia, the appropiate medicines are *Sulphur*, *Calcarea-carb.*, *Acid-nitr.*, *Acid-phos.*, *Iodine*, *Ferrum*, *Mercurius*, *Sepia*, *Kalmia*.

For painless chronic diarrhœa, we suggest, *Phosphorus*, *Phos.-acid*, *Ferrum*, *Arsen.*, *Hyos.*, *Lycopodium*, *Cham.*, *Sulph.*, *Calcar.*, *Secale-cornut.*, *Veratrum*, *China*, *Natrum-muriaticum*, *Acid-nitr.*, *Sulph.*, *Lachesis*, *Lycopodium*, *Graphites*, *Arsenicum*.

Tris-nitrate of Bismuth.—Dr. Theophilus Thompson says, its efficacy is not surpassed by any other remedy in the wasting diarrhœa accompanying phthisis.

Nux-moschata.—Case by Dr. Leon.—A lady, aged forty-five, lymphatic temperament, diarrhœa, evacuations every two hours, small in quantity, and not watery, but a peculiar feature of the case was that after each evacuation the patient *fainted entirely away*. Nux-moschata, first dilution, two drops to a half tumblerful of water; a dessert spoonful every two hours. After the first dose the patient said, she felt the remedy pervade her whole system, and that its influence was especially perceptible at the seat of the disease. There was no more of the diarrhœa or the faintness after taking the remedy, and she was quite well next day.* Hahnemann also mentions the

* U. S. Jour. Homœop. vol. 1. p. 44

homœopathicity of *Nutmeg* to diseases *accompanied by fainting fits.**

3. *Diarrhœa Adiposa.*—After the exhibition of Castor-oil there is frequently recognized some peculiarity in the appearance of the evacuation: "sometimes it resembles caseous flakes or a soap-like scum, floating on the more fluid part of the dejection; occasionally it is arranged in a form not unlike bunches of grapes, or more nearly of hydatids of a white color; more generally, however, it is found mixed up with the fæces as a kind of emulsion, and in some few instances it has been discharged under the form of solid tallow-like masses." (*London Med. Gaz. Dr. G. Bird.* vol. XV. p. 225.)

Dr. Watson, after describing the nature and symptoms of that very rare disease, which is named *Diarrhœa Adiposa*, from the circumstance of fatty matter passing from the intestinal canal, in connection with the ordinary stools, says: "With respect to the treatment in such cases, all the hints I can give you, are such as are furnished by the two following facts: Mr. Howship, in his book on morbid anatomy, mentions the instance of a lady who was affected with this diarrhœa adiposa, and parted with vast quantities of fat, and who was cured upon the principle of "*Similia similibus curantur*," for she recovered after swallowing a pint of sweet oil. And Dr. Elliotson, acting on this hint, gave his patient, who was laboring at the same time under diabetes, a quarter of a pint of Olive-oil; and the voiding of fat greatly diminished from that time and soon ceased entirely." (*Practice of Physic.*, vol. II. p. 505.)

It is known that the phenomena of the excretion of fat is not peculiar to the action of *Castor-oil*, but also follows the use of *Olive-oil.*

Cuprum.—Copper.—1. "Two women, who had taken a confection prepared in a copper utensil, suffered from severe headache, constriction of the throat, nausea, colic, and *extreme weakness.* Two young men, having eaten of the confection more freely, had for some hours excruciating colic, severe pain in the mouth and throat, impeded breathing, and hurried, irregular pulse; for twenty-four hours they suffered from headache and *prostration of strength.*" (*Christison, Treatise on Poisons*, p. 466.)

In each of these cases *debility* is mentioned as a symptom. Now the sulphate of copper is classed by medical authors as a mineral *tonic.* As such it is frequently prescribed in those states of the system in which debility is the most prominent symptom.

2. "A confectioner's daughter took two ounces of verdigris, and died on the third day, under incessant vomiting and diarrhœa, attended towards the close with convulsions, and then with palsy of the limbs. A lady and her daughter partook of "*Sauerkraut*," which had been

* Organon. p 49.

kept in a copper-pan. Soon after dinner they were attacked first with pain in the stomach, then with nausea and anxiety, and next with eructation and vomiting of a green, bitter, sour, astringent matter. The pain afterwards shot downwards throughout the abdomen, and was followed by diarrhœa, afterwards by convulsions, at first transient, then continued, and finally by insensibility. The daughter died in twelve hours, the mother an hour later.

In these cases a conspicuous symptom *is diarrhœa.* For this special symptom Cuprum has long been used as a remedy.* The sulphate of Copper has been used with great benefit in chronic diarrhœa and dysentery. It often succeeds when the ordinary vegetable astringents fail." (*Pereira, Mat. Med.* vol. I. p. 803.) "In extreme cases," says Watson, "the sulphate of Copper has been found to have a powerful effect in restraining the flux. It is apt to gripe." Then let him diminish the dose, and he may still say with truth that "given three or four times a day, it is frequently found successful, when previous attempts to remove the diarrhœa have failed." (*Princip. and Pract.*, vol. II. p. 483.)

4. *Serous Diarrhœa.*—From Debility or Relaxation.—In the early stages, the cases connected with relaxation and debility may generally be arrested by Mercurius-sol. I have frequently arrested it by a single dose of the third or fourth attenuation. In persons of advanced age whose constitutions have been broken down by other diseases, who are pale, sallow, feeble and subject to exhausting diarrhœa from slight exposure, or irregularity of food, I give a dose of Mercur-sol. in a very small powder on the tongue. In ten or fifteen minutes the patient will frequently express relief. These cases were all in scrofulous constitutions and did not appear to have been previously injured by Mercury. The *Dewberry, Rubus-cæsius*, is regarded in the southern States as a specific. Prof. Mettaeur, of Virginia, says, the tincture of Diospyoros-virg. or an infusion of the unripe fruit, "meets the indications most perfectly." This remedy is peculiarly efficacious in arresting diarrhœa, especially those distinguished by sero-mucous discharges without pain and the protracted cases of diarrhœa following the bilious fevers of the Mississippi. Rheum, Cinnabar, Arsen., Aloes are good remedies. (*Amer. Jour.*, 1850. p. 390.)

Coffee has often been employed with success in chronic diarrhœa of different forms. Indeed, coffee *causes* constipation in large doses, acting as a cathartic, by the same process that it cures it in small ones, when it restrains diarrhœa. When the motor nerves possess their normal power, large doses, by over-exciting them, exhaust that power, and constipation results; when they are weakened by other causes, the moderate stimulus of small doses of coffee removes the paralyzed state of

* Dr. Drummond, Homœop. among the Allopaths. p. 42.

the nerves and cures the diarrhœa, as well as constipation attendant on it.

5. *Chronic Diarrhœa.*—CALCAREA CARBONICA.—Case by Dr. Dunham. A boy, aged ten years, has had diarrhœa from the age of four. Of good height, but emaciated till his tissues are utterly devoid of fat, and muscles wonderfully attenuated. "My thumb and finger meet with ease around the middle of his arm. Is active and full of fun; appetite prodigious—thirst very great; distress or "grumbling pain" in epigastric region before stool, partially relieved by pressing his hand upon it. Epigastrium sensitive when touched. Abdomen greatly distended, hard, tympanitic; hard ovoid bodies, tangible by deep pressure on the abdomen. Stools five to twenty in twenty-four hours,—copious, pappy, dark greenish-brown, quite offensive, occurring chiefly between four A. M. and noon. Though copious they do not produce faintness or sense of weakness; he is lively, full of mischief. Arsenicum had failed though fully tried. He now has twenty stools daily.

The general dyscrasia and diathesis directed to *Calcarea-carb.* There are diseased states of the alimentary canal and of the mesenteric glands, depending unquestionably upon a general depressed state of the vascular and nervous systems. The case was not merely a *diarrhœa*, which was only a secondary symptom. The distended, prominent abdomen, the indurated and enlarged glands, the excessive appetite, the great thirst demanding large draughts of water, the pain in the upper part of the abdomen just before the stool, the tender epigastrium, the copious long-continued diarrhœa, *without corresponding exhaustion*, correspond better with Calcarea-carb. Its aggravations are frequently in the morning, and the pain in the abdomen relieved by warmth. Calcarea-carb. two-hundredth dilution; two globules were dissolved in four ounces of water; a teaspoonful of the solution to be given every four hours. (*Amer. Hom. Rev.* 1860. p. 471.)

From the day after this visit the lad had but one stool daily; and now after ten months the bowels continue to act normally, and only once every day. In one month the boy became ruddy and plump, having gained strength and twenty-two pounds of flesh; the rotundity of the abdomen disappeared, and the indurated abdominal glands were no longer felt. The two globules of the remedy *were all that he received.*

6. *Chronic Diarrhœa of Camps and Hospitals.*—See COLITIS.—*Index.*

GENUS IX.—CHOLERA.

1. CHOLERA MORBUS.—SPORADIC CHOLERA.

Name derived from χολὲ, *bile*, ρεω, *flow*, literally a flow of bile. In general, however, there is an utter suspension of the biliary secretion.

Diagnosis.—Distressing nausea and vomiting, with great fulness and oppression at the stomach; severe griping or colic pains in the umbilical region; frequent watery stools; twisting cramps in the abdominal muscles and calves of the legs; tongue slightly furred; pulse quick and weak; countenance expressive of suffering and anxiety.

Causes.—Torpor of the liver; obstruction of the biliary ducts; eating unripe or decayed fruits, or crude esculent vegetables; constant exposure to a cold and damp atmosphere.

Causes and Pathology.—The lungs and liver are the great decarbonizing organs of the body. The lungs are most active in cold weather from the part they perform in generating animal heat; in summer the liver is stimulated by the heat to increased action, and forms a larger quantity of bile, which is required to perform important uses in the function of digestion. The peculiarity of the function of the liver consists in its reception of the blood from the stomach and intestines, and from this venous blood, secreting the bile. If, therefore, the liver is in full healthy action, the blood transmitted to it through the portal veins passes freely through all the minute vessels of the liver, the excess of carbon with which it is laden is eliminated by the secretory apparatus, the purified stream flows onward to the heart, while the newly-secreted fluid, the bile, is poured through the biliary ducts to exert its powerful chemical influences on the contents of the alimentary canal, and stimulate its muscular fibres to propel these contents forward to their destination.—But, when the secretory cells of the liver are deranged in their action, the blood furnished by the portal system of vessels accumulates in the liver, there being no other route by which it can proceed to the heart. The liver becomes *congested*, engorged; and the spleen participates in its condition. When the spleen is full, the congestion extends to the splenic vein, thence to its tributary, the inferior mesenteric, and, still farther, to the vascular *rete* that lines the colon. "Now, we know," says a late writer, "that, whenever an obstruction to the venous circulation exists *a fronte*, an exudation of the serum takes place through the walls of the distended vessels. If we apply a ligature around the arm, so as to impede the circulation towards the heart, all the parts beyond the ligature become œdematous from the exudation of the serum of the blood in the distended vessels into the cellular tissue. In the congested state of the vascular rete of the colon, this exudation takes place into the colon and gives us diarrhœa."

When from any cause there is entire suppression of the function of the liver, we immediately have extreme congestion of the liver, stomach, large and small intestines. This condition directly leads to increased sensibility, (irritability,) and an exosmose of the watery portion of the blood of the congested part into the stomach and bowels. As it passes, it will wash away the epithelial scales of the mucous membrane. The

increased sensibility in the stomach produces vomiting; in the bowels, frequent stools which consist of washed off epithelial scales presenting the appearance of rice-water. (*Gayley, Amer. Jour. Med. Sci.* July, 1850. p. 85.)

These are the usual phenomena presented in *Cholera Asiatica*, bu they are also seen in severe sporadic cases of cholera morbus. The hot season of almost every year furnishes occasional cases of this kind when there is no epidemic cholera in the country. (See *Congestive Fever, Cholera form.*)

Therapeutics.—The most efficacious medicines in the treatment of this complaint, are, *Veratrum, Arsenicum, Colocynth, Chamomilla, Pulsatilla, Ipecacuanha, Mercurius.*

Veratrum-album.—Countenance pale or bluish, cold and disfigured; eyes sunken; nose pointed; mouth parched, lips dry or cracked and of a dark color; surface cold or hot and dry; contraction of the muscles of the abdomen and extremities; pulse frequent and very weak; cold sweats; evacuations watery, light, greenish or brownish. Severe cutting pain in the umbilical region; violent nausea and vomiting, with diarrhœa; burning sensation in the stomach; speedy rejection of food or drinks; stomach and abdomen tender on pressure; cramps in the abdomen and in the extremities; extreme prostration; great oppression and distress at the stomach; intense thirst; general uneasiness. Excessive anguish; fear of death; despair of recovery; delirium.

Administration.—This medicine may be used at from the first to the third dilution, a dose every half hour, in urgent cases, until the requisite impression is produced. In slight cases, two or three doses of the third dilution, at intervals of two to four hours, will suffice for the cure.

The author of the treatise on epidemic diseases (ἐπιδημιῶν) (attributed to Hippocrates—at the commencement of lib. 5.) mentions a case of *cholera morbus* that resisted every remedy, and which he cured by means of *white Hellebore* alone, which, however, excites *cholera* itself, as witnessed by Forest, Sedelius, Reimann and many others.

Arsenicum-album. The indications for this remedy are somewhat similar to those of *Veratrum*, but it is especially useful when the disease is violent from the commencement, attended with an almost immediate prostration of strength; trembling of the limbs; severe burning pain in the stomach; constant nausea and vomiting; diarrhœa; ringing in the ears; vertigo; giddiness; great anguish and restlessness; skin dry or cold, and bluish; hippocratic countenance; eyes sunken, dim and suffused; thirst; distress from swallowing the blandest liquids; tongue and lips dry, dark and cracked; breath cold; excessive anguish, anxiety and despair.

Administration.—Same as Veratrum.

Colocynth will occasionally serve us in cases attended with moderate nausea, vomiting and purging; violent cramp-like pains in the region of the navel; cramps in the extremities; tongue loaded with a yellow fur; bitter taste in the mouth; great dejection and anxiety, and general restlessness. It may be given at the third potency, every two hours, gradually lengthening the intervals as the pains subside.

Chamomilla has been highly recommended when the disease has been "excited by a fit of passion." The symptoms which point to this remedy are: frequent vomiting of food or of mucous, sour or bitter substances; great anguish and pressure at the pit of the stomach; cramps in the calves of the legs when lying down; tearing and cutting pains in the abdomen.

Administration.—Same as *Colocynth.*

Pulsatilla is chiefly useful in cholera which has been induced by the abuse of fat, crude and indigestible food. In cases of this description, it is often promptly serviceable, administered at the first or second dilution, as circumstances require.

Ipecacuanha is the remedy when vomiting is the most prominent and troublesome symptom. It may be given at the third potency, every half hour, until the symptoms abate, afterwards as the exigencies of the case demand. (*For Mercurius,* see p. 346.)

2. CHOLERA ASIATICA.

General Remarks.—This disease, which is said to have destroyed more than fifty millions of human beings, and has now raged in all the four quarters of the globe, originated in India. A similar disease is endemic in that country, and has been described in a Hindoo work of great antiquity; it was very fatal in the time of Bontius, 1629, and has prevailed to some extent almost every year for at least one-hundred years; but the great epidemic now so much an object of terror, first began in the beginning of June, 1817, in its epidemic form in Jessore, Nuddea and other parts of the marshy districts of the Delta of the Ganges. At that time the artificial canals employed in irrigating the ground, being out of repair were overflowed and filled with stagnant water. The excessive rains had destroyed much of the grain raised, and damaged that which was saved. It was while the people in immense numbers were crowded together on the banks of the Ganges, living on limited supplies of *spoiled* or *mildewed rice*, that epidemic cholera commenced among them in a more malignant form than in any former year. (*Dr. Fytler, Sir Gilbert Blane, Murray's British India,* Vol. 2, p. 192.) The first year it extended no further than the boundary of Bengal, but during 1818 and 1819, it diffused itself

throughout the whole length and breadth of India, the Burmese Empire and other territories of Eastern Asia and entered China in 1820. In 1821 it traversed the shores of the Persian Gulf. In 1822 it spread through parts of Arabia, Persia, Mesopotamia and Palestine; in 1823 it invaded the Russian Territories at points to which it has several times since returned. In 1830 cholera advanced through the southern provinces of Russia and reached Moscow September, 28.* It thence proceeded through Poland, the Austrian and German dominions and crossed the British Channel to England, to Scotland and Ireland 1831. In 1832 the pestilence crossed the Atlantic Ocean. The first case officially recognized, occurred June 8, 1832, at Quebec. The first subjects were emigrants, who were said to have come over in healthy vessels, having no where been exposed to infection. The board of health reported that they were found "in a low, unhealthy and ill-ventilated part of the city, crowded, &c." (*Encyc. Amer.* Vol. 13, 430.) It then came direct to New-York, June 27, the same year, and 2521 died.

In 1845 (September), cholera appeared at Bokhara and Samarcand. And, soon after, at Bagdad, where 450 died daily, of a population of 80,000. It then followed the pilgrims to Mecca, advanced toward Teheran (in Nov.), but did not reach it till June, 1846. In that city, of a population of 130,000, nine thousand died. After an irregular desultory march through Persia, sometimes in opposition to the prevailing winds, at others passing large tracts untouched, it approached Tauris in August, then Astrabad, and proceeded westward. In October, 1846, it appeared in the region of the Caucasus. In May, 1847, it commenced at Tiflis; and thence advanced to the mouths of the Don, and to some parts of the coast of the Black Sea. In September it reached Trebizond and Ezeroum, returning at the same time to Bagdad. In October the official reports of the Russian officers announced the progress of the pestilence to the northward and westward. From the close of August to the middle of September, in its march through Astrakan to Moldavia and Wallachia, of 7248 attacked, 3342 died. (*Lond. Lancet*, Nov. 1847.)

The northern limit of the cholera, says Boudin, "is found in Europe at Archangel (May, 1831, and July, 1848.). In America, it has penetrated as high as Canada. It has hitherto spared Iceland, Greenland and Siberia. In the southern hemisphere it has shown itself but very exceptionally, and has there attained its southern limit at Bourbon, Latitude 21° south. Java was invaded by it in 1819 and 1826. Su-

* In November, 1830, the *Medico-Chirurgical Review* announced that the "terrific epidemic had reached Astrachan and even Moscow. The Emperor Nicholas, who had seen how powerless medical science was to combat it, had already offered a reward of £1.100 for the best treatise on its cause, nature and cure.

matra in 1853. The Cape of Good Hope and Australia have hitherto been spared, and America, south of the line, did not suffer until 1855."

Diagnosis.—Copious secretion into the stomach and bowels of a serous fluid, albuminous in character, free from acids or alkalies; its color is slightly yellowish; though often perfectly transparent; it generally resembles *rice water*, containing white flakes of the size of lentiles, is seldom bloody, and is discharged from the bowels or from the mouth without effort. The smell is slightly albuminous, mouldy, sperm-like; taste insipid.

Decrease or entire cessation of all the secretions, and excretions, the tears, saliva, bile, fæces, urine, perspiration, the milk and menses partially excepted.

The skin is cold and void of elasticity, presenting wrinkles (facies cholerica), lead color. The mucous membranes are in a similar state, hence the tongue and breath are cold (about 70° or 72° of Fahrenheit.)

The pulse is soft, the veins congested.

In the muscles, tonic, sometimes clonic spasms, particularly in the lower extremities and abdominal muscles.

The only characteristic feature of Asiatic cholera, by which it is distinguished from severe forms of sporadic cholera, consists in the fact of its *specific origin.*

Asiatic cholera varies much in its mode of attack, violence and duration. It may seize its victim in such a manner as to produce an immediate prostration of strength, together with most of those symptoms which indicate an almost total loss of vitality, as a sunken and cadaverous expression of countenance, small and almost imperceptible pulse, surface of a bluish tinge and cold, cramps in the calves of the legs and fingers, burning in the stomach and throat, extreme anguish or stupidity, vomiting, diarrhœa, and an almost entire loss of power over the voluntary muscles. Other cases set in with vertigo, humming in the ears, oppression and burning pain at the pit of the stomach, nausea, vomiting, griping, purging of a liquid resembling "rice water," which are soon succeeded by oppression of the chest, difficulty of breathing, cramp-like pains in the extremities and abdominal muscles, intense thirst, great loss of strength, bluish color of the lips, nails and skin; pulse almost imperceptible, hippocratic countenance; delirium, cold, icy skin; profuse sweats; weak, hoarse voice, and sometimes sopor; with eyes half open and fixed, with partial or total loss of consciousness. A few or the whole of these symptoms may be present in any given case, according to the constitutional, predisposing and exciting cause which may exist.

In cholera as it appeared in the United States, there was such a thing as a *premonitory stage;* but in tropical climates its course is described as *one exhausting march* from the beginning to the termination in

death. The flow of serum into the internal cavities, whether carried out by vomiting or purging, or remaining in them would continue till it drained away the powers of life, sinking the pulse and the animal heat as fast as a flow of blood.

In July, 1833, when cholera was sweeping the borders of the Gulf of Mexico, the city of Campeachy, in Yucatan, was considered safe from infection, as it was fortified with high walls and garrisoned with soldiers. But the cholera came; the sentinels dropped dead at their posts and the guards at the gates; priests fell dead in procession, while carrying the saints whose intercession they invoked. The houses were soon closed and the streets deserted; graves ceased to be dug; and burials were only made by armed soldiers compelling the assistance of the friends.

Causes.—*Remote Cause.*—Asiatic cholera originates in a peculiar *specific poison.* Originally developed by a peculiar train of circumstances in the centre of a region which contained all the materials for the generation and propagation of organic poisons; it has been conveyed by visible and invisible channels over distant continents; in some of the regions it has visited it has remained but for a short time; in others it has found "more suitable climate and other influences, which have led to its *acclimation* and adoption, as one of the endemics of the country. In those countries, as in the tropical regions of both hemispheres, cholera may be aroused by a series of favoring influences. The poison can *be conveyed* and planted wherever the thoroughfares of travel may conduct it; but the disease makes only a transient stay in places which furnish but little material for the growth and propagation of the infinitesimal fungi, which may be supposed to constitute the agent on which the disease depends. It manifest itself as a peculiar subtle poison, capable of being conveyed by currents of wind from place to place, either dissolved in aqueous vapor, or in some other unknown manner. Whether this infinitesimal, imponderable morbific agent is generated during the prevalence of some peculiar conditions of the atmosphere, from vegetable or animal matters in a state of partial or total decomposition, or from some other source, is as yet a matter of speculation. Like most of the other more potent agents in nature, the particles of the poison are in so minute a state of subdivision, and so subtilely diffused in the air, that in the present imperfect condition of the sciences, we are entirely unable to investigate or appreciate their nature. That the cause or agent is *material,* no one can for a moment doubt; for it must be *something* or *nothing;* if it is the former, it must be composed of minute particles or atoms of matter, which, by being absorbed, produce those specific effects which constitute cholera.

Proximate Causes.—Fear, sudden fright, nausea, grief, error of diet,

purgatives, taking cold, dampness, heat, low grounds, lower floors in a dwelling, crowded dwellings, as prisons, narrow streets, negative electricity of the air. The favorable circumstances are: cold climates; high elevation above the sea; free circulation of air. No disinfectants have any power to arrest the spread of the disease. The manner in which cold damp air excites *cholera morbus* may be seen under that head; and all that is there said on the subject applies with equal force to cholera Asiatica. But the deleterious effect of moisture is denied by many. The *Board of Health of New-Orleans* for 1849, say: a *dry fog* prevailed during its visitation, such as Humboldt noticed, on the Andes as accompanying influenza. (*Amer. Jour. Med.*, Jul. 1850.

Predisposing Causes.—Middle age, female sex, idiocy, chronic diarrhœa, venous plethora, scrofula, intermittent fever, plica polonica.

Amongst children.—Male sex, aphthæ, jaundice, worms, difficult dentition. Persons who have once had the disease are not exempt from future attacks. Its course may be modified by: infancy, old age, ulcers on the feet, phthisis, influenza. The disease is generally excited by great errors of diet; intemperance, neglected diarrhœa, taking cold, fear, sorrow, fright, and, above all, *anger*. Among the worst articles of diet are cucumbers, melons, green corn, unripe vegetables and fruits of all kinds. Champagne, beer, cider, &c. in process of fermentation. (*Dr. Hencke of Riga.*)

Course and Progress of the Disease.—First Stage.—After slight premonitory symptoms, such as irritability, languor, sleepiness, imperfect sleep, soft slow pulse, confusion of head, pale countenance, derangement of stomach, tendency to diarrhœa. In the first stage Cholera resembles *Cholerine*.

This is *not* a premonitory stage, but the first stage of the *pestilence itself*. It often begins without any pain; and the first suspicious circumstance observed is the *absence* of *pain* when diarrhœa begins. In other cases there is "pain in the epigastrium, aggravated by the touch," extending to the throat and abdomen; diarrhœa, by which the contents of the bowels are rapidly carried off; the discharges become more light colored as the disease progresses; as the second stage begins they become more serous, the white flakes and the rice-water discharges appear.

Auscultation reveals the bellows sound, first in the aorta and next in the heart itself; pulse softer; thirst increasing in proportion to the loss of fluids by diarrhœa.

After continuing from a few hours to a week or more, this stage terminates in

1. In recovery, indicated by abatement of the symptoms, gentle perspiration, sleep, increased urine, restored action of the liver, consistent alvine evacuations, or

2. In the SECOND STAGE, with increased violence of the symptoms, with the true painless rice-water discharges and vomiting, and lasting from two to forty-eight hours.

SYMPTOMS.—Anguish in the chest; pressure or cramp in the stomach fear of death; quiet position on the back or great restlessness anxiou expression of countenances and lamentations; indifference to the outer world, to wounds, to relatives; tonic spasms which contract the muscles making them hard, round, rigid and frequently remaining after death They commence in the lower extremities, pass to the upper, and then to the muscles of the abdomen or thorax; and are severe in proportion to the venous obstruction and lividity, often causing the patient to cry out. The cramped muscles contracted into knobs and painful; feet distorted by continuing contractions; drowsiness and numbness increase, though the voluntary muscles retain their power, often lax, soft, doughy, never becoming paralyzed, but remaining rigid after death. Pains in the sacrum.

Pulse.—Very soft, easily compressed, and disappearing during the spasm; in frequency varying from 110 to 120 per minute, thready, sometimes imperceptible, equally soft at the wrist, carotids and heart. The sounds of the auricles indistinct, that of the ventricles distinctly revealed by auscultation near the pit of the stomach.

Skin.—Inelastic, cold, dry, smooth, pale, becoming soon of a leaden color; and bluish gray, very thin; it forms wrinkles on the back of the hands, fingers, &c.; pinched up it remains long as left. Wounds do not gape, and no *cutis anserina* is formed by dashing cold water on the skin, which feels like leather. General temperature 65° to 77° Fahrenheit. Coldness greatest in lower extremities; skin on fingers, hands and toes wrinkled. The patient still complains of heat on the surface, but says he is burning up within; mustard plasters redden the skin; itch dries up, syphilis remains, hydrops disappears; all diseases of the skin return with increased violence after recovery from cholera.

General Expression of Features.—Eyeballs deeply sunken, turned upwards, indolent, glassy, pupil dilated; sclerotica with a bluish semicircle; look fixed; upper eyelid half closed, dark blue circles round the eyes, or lower eyelid with a blue semicircle; countenance pale, color changing from lead to violet; skin very smooth on the lips, cheeks, tip of the nose; nose pointed; cheeks sunken; upper eyelid drawn upward; cartilages of the nose and ears very flexible; coldness extending from the *alæ nasi* to the corners of the mouth. In a later stage cold clammy sweats.

Tongue cold, flat, heavy or blue; mucous membrane of the mouth cold, feels as if tanned, uneasy, at first clean, at the transition into the next stage, bloated, and if the danger be great, bluish; deafness.

Pit of the Stomach.—Oppressed, painful to the slightest touch, dis-

tressed; burning in the epigastrium, extending to the abdomen and pharynx.

Thirst.—At first moderate, afterwards unquenchable; sometimes great aversion to drinks, at others violent desire for water, fruits, acids, fresh air.

The Effusion of Serum begins first into the lower portion of the bowels, alternating with the diarrhœa, watery, having fewer white flakes, sometimes transparent; is discharged without effort, in gushes, or passes involuntarily; sometimes in less violent cases, it has the consistency of rice-water or pea-soup, or often more like brine; in a worse form the discharge is mixed with blood; in full habits, and in persons of middle age (twenty-four to forty) it is light red, dissolved in the effusion, without smell; in old people, dark, unmixed, and having a putrid smell; abdomen sunken, and ribs protruding.

Secretions.—These are all suppressed. (See *Diagnosis.*) The suspension of the action of the liver exerts the most important consequences. (See *Cholera Morbus.*)

Breath.—Cold, inspiration deep, rather slow; expiration short, moaning; respiratory murmur distinct, somewhat *puerile*; percussion on the thorax before and behind, sowing emphysema.

The Blood—is unnaturally dark and thick. In the later stages it is black, tarry, ropy, semi-coagulated; in the ratio of the degree of progress of the case. (*Brit. Army Med. Reports.* 1819 to 1822.—*Johnson on Hot Climates.* p. 355.

The characteristic *cholera voice* is rough and hoarse; enunciation imperfect, owing to the want of elasticity of the mucous membrane, and the spasmodic constriction of the larynx; perceptible after the third or fourth vomiting. Frequent and annoying hiccough.

Aggravation after midnight and towards morning; patient easier in the afternoon; speedy exhaustion from slight exertion.

Transition.—This may be: 1. Into health by subsidence of the symptoms into those of cholerine; abatement of the cold, of the dryness, the pulselessness, the thirst and anxiety; less vomiting; discharges greenish or yellow; sweat, cheerfulness, languor, and tranquil sleep; later: urine pale yellow, clear, abundant; appetite increasing; wounds heal rapidly. Final recovery in from one to two weeks. Or

2. *Transition into the* Third Stage.—Symptoms.—Abatement of vomiting; great indifference; consciousness remaining to the last; extreme prostration; the patient, lying on the back, sinks down to the foot of the bed; some return of warmth and moisture on the skin; more lividity and *facies cholerica*; the pulse cannot be felt, later, not even at the carotids or heart; eyes dull and glassy when spoken to; rare, and not characteristic vomiting and diarrhœa; later, the stools are in-

voluntary, as if coming from a spout; respiration labored, rattling, almost ceasing.

This stage lasts from one hour to two days.

Termination, 1. in *Death*, preceded by cold clammy sweats, complete cessation of circulation and respiration; and final paralysis of the lungs.

Or 2. in *Convalescence*, which is manifested by bilious stools; return of the pulse and sounds of the heart; breathing and color more natural, critical warm sweat. But recovery is slow, free perspiration often diminishes the strength; and slight mental excitement, too much warmth, drink, or food, cause anguish, palpitation, small soft pulse, vomiting or diarrhœa, extreme debility, uneasy sleep.

Or 3. The *Fourth or Consecutive Stage.*

Symptoms.—*First Variety.*—Congestive, which is soon developed into a *typhoid Fever*, which consists in the reaction following the preceding stage of depression. There is arterial pressure on the brain, spine, and its nerves, all of which were unaffected in the cholera stage. Inflammations subside rapidly in cholera, and wounds heal quickly in the convalescence. The typhoid features are clearly marked in places where the patients are in close dwellings and the population crowded. The symptoms are: quiet immovable position on the back, then sinking down to the foot of the bed; indifference, or satisfaction with his own condition; great debility; transient delirium; fixed look; dilated pupil, conjunctiva injected; humming in the ears; difficulty of hearing; dirty blue color of hands and arms, of countenance; nostrils scurfy; tongue dry in the middle; slightly swollen or œdematous; taking impressions of the teeth; tongue, teeth and lips covered with a dirty incrustation, little thirst; accelerated respiration, somewhat puerile; articulation imperfect, though not hoarse; pulse perceptible again, sound of heart not clear, the contraction seems difficult. Later: sleepiness, followed by stupor, or high delirium with efforts to escape, total unconsciousness, rattling breath, sometimes meteorism. Finally: pulse and beating of the heart intermitting, very rapid, carotids pulsating very violently; the air only penetrates to the upper lobes of the lungs; the breathing becomes slower and finally ceases: *death.* (*Dr. Nusser of Augsburg.*)

In other cases there is abatement of the symptoms, the debility and the delirium; the urine increases, is clearer; moderate sweats, tranquil sleep; and final recovery. This stage lasts from five to eight days. (*Johnson*, 360.—*Jackson and Neill's Report. Phila.*, 1850.)

Pathology.—Congestion of the viscera, especially the liver; bowels congested in some cases, the whole tube has a blanched appearance. Vessels of the mesentery full of blood. Epithelial layer destroyed or detached. Peyer's glands developed, also solitary glands; villi denuded, capillaries and proper tissue of the liver exsanguinous, but large blood-vessels full.

PROGNOSIS.—Favorable, when there is gradual subsidence of the symptoms, cessation of vomiting and purging, re-appearance of more natural evacuations, slight warm perspiration, which is *critical* in the second stage, though not later, and does not always occur.

Unfavorable, in those who are greatly exhausted by the rice-water purgings; who are restless after vital warmth has returned; relapses generally prove fatal. Intemperate persons often die in the typhoid stage of cerebral typhus; consumptive patients, or those exhausted by venereal excesses either die or recover slowly.

TREATMENT.—When the Asiatic cholera commenced its destructive course amongst the millions of Europe and America, the disciples of the ancient school of medicine stood aghast and almost powerless before the awful scourge, their best resources often hastening rather than retarding the work of the destroying angel.

Up to 1832, "Epidemic Cholera" was the prominent feature of every Medical Journal. The different theories and modes of treatment proposed have now little claim on our attention. One writer says: "Venesection was at one time ordered to be employed by Government! Then sweating was praised; various ingenious contrivances were brought forth for the purpose of exciting perspiration."

"Of internal remedies, *Calomel* and *Opium* were most in repute. But they were far from successful. *Rhubarb* and *Magnesia* superseded them, and were in turn superseded by *Sub.-nitrate of Bismuth.*" This was at one time regarded in Russia, as a "specific" but was denounced in England as "inert;" but hopes were still maintained in the "Mustard Emetic." Soon, however, the conclusion was reached that all experience "from Ceylon to Archangel, from Orenburg to Berlin," left the profession "as far from a rational *methodus medendi* as they where when it first appeared on the banks of the Ganges."

The medical theorists were all of this time wildly wandering in the thick fogs of conjecture. *M. Andral*, then regarded as a leader in pathology, pronounced the disease of an "*enteralgic* instead of an *enteritic* character;" and recommended "free bleeding among the young and vigorous, external irritation, and plenty of Laudanum internally." His neighbor and equally distinguished colleague, *Broussais*, declared it to be "highly inflammatory action of the whole alimentary canal," and prescribed "ice internally, leeches to the epigastrium, and heat to the extremities."

The experience of other years and of other countries was added to that of twenty years in Asia and Europe. The amount of it all was thus summed up by the editor of the Medico-Chirurgical Review, "*James Johnson*, M.D., Physician Extraordinary to the King of Great Britain." He said: "When cholera appeared in Hindostan, the papers so teemed with specifics and cures, that the government put a stop to

their further publication, on account of the mortality they caused." "For ourselves, what shall we say? Alas! we must own that we are gloomy, heartless skeptics, without so much as a grain of faith, or one saving particle of belief. Would that it were otherwise—would that we could only so much as imagine that cholera has been, is, or will be cured by the thousand and one plans of happy memory, already published, or to be published.

"In point of fact, *we know no better mode of treating cholera than when it first* appeared in the island; and the really severe cases are just as fatal as they ever have been."

The degree of mortality of cholera as it had been observed in different seasons and in different localities may be approximated by official reports: The Medical Board of Bombay, in India, reported that of 1294 cases which received no medical assistance, every individual died; and that no case was known to have recovered without medical aid. In fourteen years, beginning with 1818, 4430 deaths occurred in the British Army, out of 19,494 cases in that presidency; these results seemed to show that medical treatment, if not the best, was better than none.

Another report of five years shows that within that period twenty-two per-cent of the whole number attacked were carried off. In civil life the disease has often proved much more fatal.

At Bushire, on the Persian Gulf, in 1821, the sixth part of all the inhabitants died. At Bassora, says Mr. Rich, 18,000 died, and of these 14,000 died within a fortnight.

In September, 1830, the epidemic invaded the Russian empire, and entered Moscow with a step more terrifying than that of the grand army of Napoleon eighteen years before. Up to the first of January 4385 had died, equal to fifty-four out of every hundred persons attacked by the disease.

It was just at this time, that Andral and Broussais were speculating about the "*enteritic*" or the "*enteralgic*" character of cholera; or whether the remedies should be "*antiphlogistic*" or "*antispasmodic;*" and at the same time (1830) Samuel Hahnemann in Germany, was endeavoring to solve the true problem of cholera by a different method, "Collecting," says Dr. Dake, "the symptoms given, one by one till the image of the hideous monster stood up before him as a living reality." Then, under the guidance of the law he had been permitted to discover, "with a knowledge of drugs such as no other man ever possessed, he soon arrived at *Camphor*, *Cuprum*, and *Veratrum*, and wrote them down as the best remedies for cholera."* The solution of Hahnemann was not accepted by the profession; pursuing their own theories the results they reached are well known.

* Dr. J. P. Dake, U. States Jour. Homœop. Vol. I. p. 395.

It is universally conceded, at the present time, that homœopathy is far more efficient in the treatment of cholera than any other mode of practice. During its prevalence in Europe, from 1831 until its disappearance, the average mortality of cases under this treatment was about one in twelve, while under allopathic treatment, the average was one in three. In Germany, Russia, France, and other European kingdoms, where our system had become known, even distinguished gentlemen of the old school were forced to admit its vast superiority over their own system; and it was undoubtedly this superior efficacy and success which caused so many distinguished men of Europe to investigate the claims of the doctrine of "*similia similibus*," renounce the fallacies of Hippocrates and Galen, and throw their influence on the side of truth.

Being a disease of extreme violence, and having a tendency to run its course with great rapidity, there was no time to apply remedies according to the principle *contraria contrariis*, nor would its severity permit the additional waste of strength and nervous energy which ever follow opiates, stimulants, and counter-irritants. A positive *specific*, a real *antidote*, could alone reach the seat of the disease, and arrest its progress; and to the disciples of Hahnemann, is due the credit of bringing forward these *specifics*, and demonstrating to the world their tremendous power and efficiency over this world-wide scourge.

Dr. Lobethal, of Germany, who had charge of a large cholera hospital (*allopathic*) during the prevalence of the epidemic, in 1831, and who treated an immense number of cholera patients *homœopathically* in the summer of 1847, and again in 1849, observes: "It has been reserved to the "specific" healing art, generally known under the name of homœopathy, to stand the test of practical observation, and to demonstrate its superiority in combatting this fearful disease, (cholera,) the appearance of which, followed by an immense number of well-substantiated cures, has tended in the highest degree to the spread of the new healing art."

Dr. Buchner ("On the results of Allopathic and Homœopathic treatment according to Official Statements,") says: In nineteen different cities 1557 patients treated homœopathically, recovered, while only ninety-three died, or nearly six per-cent. Where the spirits of Camphor and the higher potencies of homœopathic remedies were used, it was common for only one in a hundred to die. In 1831, in the district of Tischnowitz, under allopathic treatment, two-hundred and twenty-nine were cured and one-hundred and two died. Homœopathists cured two-hundred and fifty-one, and lost twenty-seven. Dr. Baer, of Prague, treated allopathically one-hundred and nineteen patients, of whom he saved seventy-two and lost forty-seven. He then tried homœopathy on eighty patients, of which he did not lose any. "Count Nadasdy of

Daka, in Hungary, in the absence of professional aid, treated his subjects with spirits of Camphor. Of one-hundred and fifteen, who were attacked, he only lost fifteen." (*Lutze, Practice*, p. 128.)

TREATMENT.—First stage.—When the cholera is preceded by nausea, loss of appetite, constant borborygmus, violent thirst, slight febrile symptoms, frequent thin watery discharges, *absence of pain* in the bowels, and other symptoms generally known under the term "*cholerine*," Dr. Lobethal obtained marked benefit from *Phosphoric-acid*, repeated every two or three hours until the symptoms are better. If the above symptoms are attended with coated tongue, vomiting, debility and indigestion, *Ipecacuanha* of the third dilution is required.

Cholera.—When cholera has actually made its appearance, a remedy which covers the exact symptoms of the case ought to immediately exhibited. Our best remedies are *Veratr.*, *Arsen.*, *Cupr.*, *Camphor*, *Canth.*, *Carbo-veg.*

In the *forming stage* of cholera, and in *cholerine*, with cramps in the calves of the legs, give *tincture of Camphor*; "and for aching or burning in the epigastrium, *Ac.-phos.*, *Arsen.*, *Cupr.*, *Phos.*, *Veratr.*; for rumbling in the abdomen, *Acid-phos.*, *Ver.*, *Phos.*; for diarrhœa, *Acid.-phos.*, *Arsen.*, *Ipecac.*, *Secale*, *Sulph.*, *Veratr.*" (*Nusser.*)

In the third stage, or collapse, *Arsen.*, *Phos.*, *Veratr.*, *Carbo-veg.*, *Lauro-cerat.*, are to be used.

During the prevalence of cholera, much may be done towards warding off its attacks, and thus disarming it of a portion of its terrors. The most important rule which we would inculcate, is the cultivation of presence of mind under all circumstances, cheerfulness, contempt of danger and strict temperance and regularity in all the habits of life. Other precautions are: frequent ablutions so as to insure perfect cleanliness, and a healthy action of the skin; careful ventilation; frequent changes of body linen, moderate and agreeable exercise; good company; and a clear conscience.

As a prophylactic, many European authors have highly recommended *Camphor in tincture*, in doses of a drop or two, once or twice in twenty-four hours. From its extensive application as a medicinal antidote we believe it to possess virtues of a high order as an antidote against the poison of cholera.

FURTHER PROPHYLACTICS.—Fresh pure air; the avoidance of small close, damp apartments or streets; cheerfulness, habitual calmness of mind; regularity in all natural habits; the use of such diet and drinks only as can be certainly digested, without deranging the stomach or bowels; substantial healthy food; avoid acids; avoid all over-exertions, grief, anger, fear.

PROPHYLACTIC MEDICINES.—1. *Cuprum.* May be used during the prevalence of cholera when the first symptoms are felt.

2. *Camphor.*—This is the specific remedy, having the power of killing or destroying the animalculæ or malignant agent. In the premonitory stage, when there are spasms in the calves of the legs, and painless diarrhœa,—one drop of tincture (one part gum to five of Alcohol) on sugar, every three or five minutes, with some brandy and water every fifteen or twenty minutes. As he grows warm, give less frequently.

Phosphoric-acid, Arsen., Cupr., Phos., Veratr., aching or burning in the epigastrium, rumbling in the abdomen; diarrhœa. Of these, Phosphoric-acid has been generally the most successful in cases showing a disposition to repeated attacks.

Arsenicum, Secale, Sulph.: diarrhœa. See p. 370, 372.

Sulphur, thirtieth, taken twice a week, six globules in the evening, destroys the psoric diathesis, which favors the disease.

When reaction begins and he begins to perspire, a little brandy and water will give strength. The perspiration should be kept up eight or ten hours. During the reaction following the use of Camphor, if headache indicates the beginning of congestion; give Belladonna. If constipation follows, give a cup of coffee without milk, and twenty-four hours after give a dose of Sulphur. If dysenteric symptoms, give Mercurius. (*Pulte*, 325.)

Second Stage.—Perfect rest in *recumbent position;* perfect composure of mind, cheerfulness and confidence, both in the patient and his attendants.

Food: weak broth only; it is often necessary to prohibit or restrict even this for some time.

As a drink, *cold water* is desired, and often does good, even when it is constantly thrown up. In some cases it renews the vomiting and diarrhœa after they had been checked by medicines. Beer is often allowed to the convalescent. Medicines should be administered at short intervals, even as short as every five minutes. Ice, in small pieces, frequently swallowed, seems to give relief. Injections of ice-water are recommended when the abdominal muscles are cramped. Frictions over the abdomen may be applied at the same time.

The medicines which have been found upon the whole, most serviceable in the treatment of this malady, as it occurs in different localities, and in its various forms, are: *Veratrum*, *Cuprum*, *Arsenicum*, and *Camphor.* Symptoms often supervene, also, which call for the exhibition of *Secale-cornutum*, *Nux-vomica*, *Phosphorus*, *Phosphoric-acid*, *Ipecacuanha*, *Carbo.-veg.*

Camphor: Distressing anxiety in the region of the heart; spasms of the muscles; pulse small and rapid; hands, feet and skin cold; lividity especially of the lips; unelastic; facies cholerica; anxious expression of countenance; tongue cold, dry, livid; epigastric pain; thirst; rice-water discharges; suppression of urine; cold breath; hoarse, raw

voice; aggravation after midnight; amelioration by rest; death in a few hours from apoplexy or sudden collapse. (Dr. Hencke, of Riga, says, Camphor is specific in these cases. Spiritus Camph.-fortis, in drop-doses, every five minutes, till the heat returns.

During the prevalence of the epidemic in England and France, in 1848—49, and in America, in 1849, almost every individual experienced unusual intestinal irritation and disposition to *diarrhœa*. In the large cities especially, very few exceptions to this rule could be found. Even the most strict regard to diet, and avoidance of all exposure, was no security against this weakness and rumbling of the bowels, and a certain lassitude and uneasiness which constantly attended it. Most of these cases subsided without any serious disturbance; others passed into *cholerine*, which could generally be controlled when promptly taken in hand; while those cases, which were neglected, or improperly managed, usually terminated in *cholera*. In rare instances, individuals would be attacked, suddenly and violently, without any apparent *premonitory symptoms*, but cases of this description have almost invariably occurred in those whose constitutions were impaired from intemperance, disease, or who had been deprived of proper repose, by mental application, excitement, fear, &c.

Dr. Hencke found *Camphor* a positive specific in the spasmodic form of cholera, "when the patients were suddenly taken with rigor, and even cold in the back, which was soon followed by faintness and weakness, sinking sensation in the stomach, *vertigo*, *nausea*, *aching*, *contracting pain in the epigastrium*, gagging, vomiting, *spasms in the calves*, general *tonic* spasms, disappearance of the natural warmth, therefore coldness of the hands and the whole body, *depression of the pulse*, which could hardly be felt, lividity of the lips, *anxious expression of the countenance*, &c., sometimes diarrhœa." Dr. H. advises that the patient be well covered and dry heat applied to his body and limbs, and that strong spirits of Camphor be given in drop-doses every five minutes, until reaction occurs, warmth returns, and perspiration sets in. Dry frictions may at the same time be employed. As soon as we observe signs of reaction, we must either omit the remedy, or if the urgency of the case demands further remedial means, give the *Camphor* at the first or second dilution until reaction is fully established. It was a very common occurrence for a patient to be taken in the night, generally after midnight, with cramps in the stomach, nausea, vomiting and purging of a watery fluid, without pain or effort on the part of the patient; sense of exhaustion and debility, and great anxiety. If these symptoms were not speedily arrested, there soon succeeded extreme prostration, almost constant vomiting of rice-colored fluid; contractive or burning pains in the stomach; coldness of the surface; spasms or cramps in the calves and other parts of the body; counte-

nance sunken, altered in expression, and indicative of extreme anxiety, voice feeble or hoarse; marbled appearance of the skin; skin shrunken and shrivelled; cold breath; cold and pasty sweat; burning thirst; marked loss of power in the circulatory and respiratory organs.

Camphor, *Veratrum*, *Arsenicum*, *Cuprum*, *Acid-hydrocyanic*, *Secale*, *Laurocerasus*, and *Carbo-veg.* have been most successful in the epidemic of 1848 and 1849, both in Europe and America.

Probably in no part of America did the cholera rage with more violence in 1849 than in Cincinnati. Two physicians, Drs. Pulte and Ehrmann, treated 1116 genuine cholera patients, in all stages of the disease, *and with a loss of only thirty-five*,—two Americans and thirty-three Germans. These gentlemen also treated 1350 cases of *cholerine*, and many cases of malignant dysentery, after the subsidence of the cholera, without the loss of a single patient. Of the cases of genuine cholera asphyxia, five-hundred and thirty-eight had *vomiting*, *diarrhœa* and *cramps*—seventy of these being in a state of collapse, and the balance, five-hundred and seventy-eight presented with vomiting and rice-water discharges. These last being subjected to prompt treatment, were speedily restored without the supervention of more serious symptoms.

The treatment adopted by Drs. P. and E., was as follows; in the first *stage* of the malady, *Tincture Camphor*, one or two drops every five minutes for one or two hours, or until profuse perspiration ensued, which should be kept up for several hours, care being taken to keep the patient well-covered. This remedy was perfectly effectual in almost every case during the early part of the disease.

In the *second stage*, when cramps, general prostration, and rapid sinking of the physical energies appeared, *Veratrum*, when the cramps were in the lower extremities; Cuprum, if they were in the bowels and breast, and *Secale-cornutum* were relied upon. The latter medicine was found of eminent service in elderly people. In cases of *decided collapse*, *Arsenicum*, and *Carbo-veg.* were the remedies employed. Mild frictions of the extremities with the hands alone, were the only external means made use of.

In St. Louis, New-Orleans, and other cities of the West and South, a similar plan of treatment was adopted by homœopathic physicians, and with results, which, for the most part compare favorably with those detailed by Drs. Pulte and Ehrmann.

Cuprum.—Cardiac anguish; spasms; pulse soft, small, frequent; cold, livid, dry skin; facies cholerica; aching in epigastrium; violent thirst; rice-water discharges, both from stomach and bowels; every thing seems turning round; suppression of urine; voice hoarse, raw; aggravation after midnight; amelioration by rest. (*Nusser.*)

Cuprum is suited for cramps in the muscles of the chest and great

oppression of the breath. It may be given in alternation with Veratrum; dissolve twelve or sixteen globules of each in four tablespoonfuls of water and give a teaspoonful every fifteen minutes till the pulse becomes less frequent, when the cramps will subside.

Camphor.—It is not alone as a prophylactic that this medicine has been advised. Hahnemann made use of it in all stages of cholera, but he found it particularly successful in the *first* stages of the malady, when vertigo, extreme weakness, cramps, in the calves of the legs and muscles of the abdomen, burning and heat in the stomach, convulsive distortion of the features, eyes sunken, face and hands bluish and cold, and anguish, dulness, loss of consciousness and hoarseness, were present. It has been found most useful in those cases, which have been almost entirely unattended with nausea, vomiting and diarrhœa. It has in some instances restored patients who were apparently in *articulo mortis.*

Nux-vomica may by used when the principal sufferings seem to be in the stomach, as anguish, oppression at the pit of the stomach, and severe spasms in the stomach, also tenesmus, with an increase of the spasms at each discharge.

In some severe cases, where the previous remedies have failed to afford relief, the practitioner should take into consideration, *Phos., Phosphoric-acid, Ipecac., Carbo-veg., Canthar., Sulph.-ether, Chloric-ether, &c.*

Veratrum.—Anguish at the heart; spasms of the extremities and abdominal muscles; soft, small, and frequent pulse; skin cold; livid, inelastic; facies cholerica; tongue cold, livid, dry; epigastric pain; violent thirst; effusion serous, with white flakes, upwards and downwards; suppression of urine; cold breath; voice hoarse, raw; aggravation after midnight or towards morning; amelioration by rest. At St. Petersburg, (Russia,) in 1849, the success of this remedy was so great that the pharmacies were overrun by allopaths. (*Dr. Griesselich.*) Cuprum and Veratrum may be persisted in four or six hours. If the cramps continue or stupor begins, give Secale-cornut. every half hour, for an hour or two. If there still be much nausea or retching, increased by motion of head or body, give *Tabacum.*

Veratrum.—General coldness of the surface of the body; cold perspiration on the face, and sometimes over the whole surface; skin white, or of a bluish tinge; bluish color around the nails and of the lips; contraction of the muscles of the extremities; nausea, vomiting and purging; face pale, sunken and hippocratic; nose cold and pointed; breath cold; pulse almost imperceptible; general appearance of prostration. Painful cramps in the limbs; sensation of extreme debility and faintness; nausea; vomiting and purging; vertigo and confusion in the head; constrictive pain in the throat; oppressive and burning pain

at the pit of the stomach; painful contraction of the abdomen; oppression in the chest; fulness and pressure in the region of the heart; obstructed respiration; rumbling and griping in the bowels; thirst; great restlessness. Excessive dejection, anguish and despair; constant disposition to turn from side to side, or otherwise to change position; sometimes loss of memory, stupidity.

Administration.—The first to the sixth dilution should be employed, a dose every ten, fifteen or twenty minutes in urgent cases, and extending the intervals as the symptoms demand.

Arsenicum-album.—Skin of a pale or bluish color and cold; face wan and cadaverous; eyes sunken; nose pointed; general expression of countenance unnatural and indicative of pain; lips bluish or black and dry; trembling or stiffness in the limbs; skin cold and covered with a clammy sweat or dry and shrivelled; pulse very weak, irregular and trembling; watery discharges by vomiting and purging.

Burning pain in the stomach, worse after vomiting; cramps in the calves of the legs, toes and fingers; dizziness; nausea; frequent inclination to vomit and purge; rumbling in the bowels; ringing in the ears; feeling of extreme debility; very great restlessness and agitation; intense thirst; for which drinking affords but slight relief; spasmodic contraction and burning in the throat and œsophagus; cramp-like pains in the stomach and abdomen; frequent desire to pass water, or retention (complete surpression) of urine; difficulty of respiration with hoarseness; general sensation of coldness and loss of vitality.

Intense anguish, anxiety and discouragement; dread of death; constant uneasiness; confusion of ideas; delirium.

Administration.—The lower potencies of this medicine should be used, and in urgent cases the doses may be repeated once in fifteen or twenty minutes until the symptoms yield, some writers extol it highly in alternation with *Veratrum*, and where either of these remedies does not afford prompt relief by itself, by all means let them be given in alternation.

Symptoms of Arsenicum.—Anguish at the heart; indifference; spasms of the extremities and abdominal muscles; pulse soft, small and frequent; skin inelastic, cold, livid; facies cholerica; tongue cold, dry, livid; aching at the epigastrium; violent thirst; serous effusion with flakes, upwards and downwards; suppression of urine; cold breath; hoarse raw voice; aggravation after midnight; amelioration by rest.

Previous to the first outbreak of cholera in Europe, Hufeland said, 'if there is any truth in homœopathy, Arsenic should be the remedy for cholera;" Arsenic is the remedy upon which homœopaths have very generally relied since the first experiments were made with it for the cure of this fearful malady. They have endeavored to arrest the attention of the public to induce them to make a trial of it with little

success. During the last visitation of this disease, according to the statistics laid before the medical board, it appeared that under homœopathic treatment more than two-thirds of the patients recovered, whilst the returns from the allopathic cholera hospitals showed that upwards of two-thirds died. Although this committee was commissioned by government to examine and report the various results attending the different modes of medication adopted during this epidemic, they withheld those of the homœopaths, believing that "to publish the returns from homœopathic practitioners would be to give an unjustifiable sanction to an empirical practice, alike opposed to the maintenance of truth and the progress of science." And yet *Dr. Mac Loughlin*, the medical inspector and an allopathist, said, "all I saw were true cases of Asiatic cholera, in the various stages of the disease; and I saw several cases that did well under the homœopathic treatment, which I have no hesitation in saying would have sunk under any other. Were it the will of Providence to afflict me with cholera, and to deprive me of the power of prescribing for myself, I would rather be in the hands of a homœopathic than of an allopathic adviser." (*Drummond, Homœop. amongst Allopaths. Lond.* 1836, *p.* 50.)

The *London Lancet* for Oct. 2, 1857, contains a letter from *C. Black, M. D.* "On the value of Arsenic in Cholera." The author, perhaps, did not design to advocate, homœopathy, but his testimony is none the less valuable on that account. He details a severe case of cholera treated by the ordinary solution of Arsenic, the *Liquor-arsenicalis.* In conclusion he says:

"From such data, then, I maintain the *specific* action of Arsenic in the very worst form of English cholera, and I thence infer for it a similar power in the malignant type of the disease.

"In the East, where at the present moment the tenure of our Indian possessions depends on the maintenance of the health of our soldiers, this dreadful scourge is decimating the heroic band under Havelock, and, unless speedily checked, may possibly lose us an empire which has cost us so much blood and treasure to win. Let the surgeons of the Indian army adopt this remedy—let them give it a fair and impartial trial—and I feel confident that with them it will maintain the reputation of a specific for cholera, which I here accord to it." In a second letter, published a fortnight later in the same Journal, he thus expounds the theory of the *ratio* medendi of Arsenic in curing cholera: "The facts connected with the history of the rise and propagation of cholera, show that the proximate cause of the disease depends on the presence of a certain poison in the blood which has been termed the 'choleraic poison.' To the question, then, "in what respect does Arsenic act on the constitution in cholera? I reply that it acts by neutralizing or destroying the choleraic poison in the blood; and when

it has done so, the peculiar symptoms of the disease subside. It produces its effect in accordance with a well-known physiological law, *that no two actions of a similar nature can go on in one and the same part at one and the same time; that in short, the greater action destroys the less.* If, then, a greater poison be given to the blood than the one which is already present in it, the latter must, in accordance with the above law, be destroyed." If there be any such well-known physiological law as Dr. Black refers to, it is the law first promulgated by Hahnemann in the following words:

"A weaker dynamic affection is permanently extinguished in the living organism by a stronger one, if the latter, whilst differing in kind, is *similar* to the former in its manifestations." (*Organon, Hahnemann*, § XXVI.)

This doctrine of similia similibus curantur, as announced by Hahnemann, seems intelligible enough to a mind accustomed to look at it, but in the mind of the learned editor of the Lancet is only a meaningless jargon of words. When, however, the very same doctrine is announced by a British surgeon whose orthodoxy is not suspected, the same learned editor cordially endorses it. Dr. Black's proposal to treat cholera with Arsenic is commended in the Lancet, because the editor is too ignorant to understand that it is an endorsement of homœopathy. To test the Lancet more fully: Dr. Hitchman, a distinguished homœopathist, wrote a letter commending Dr. Black's proposal, expounding the homœpathic law "in the very words which Hahnemann uses in explaining the peculiarities of his doctrines; the letter was published in the Lancet without awakening the suspicion of its vigilant editor.

Phosphoric-acid.—Anguish at heart; indifference; spasms of extremities and abdominal muscles; pulse soft, small, frequent; facies cholerica; epigastric aching; rice-water discharges from the bowels; hoarse, raw voice; aggravation after midnight. It seems very successful in the first stage (cholerine). After the vomiting begins it is considered useless (*Dr. Griesselich.*). Also useful after the consecutive fever stage begins in a typhoid form; there are: stupid insensibility, optical illusions; confusion of the senses.

Phosphorus—has all the symptoms of Phosphoric-acid, with the addition of violent thirst, and amelioration by rest.

Secale-cor.—Distortion, jerking and convulsive movements of the limbs; great desire to sleep; coldness in the back, abdomen and limbs; cold clammy perspiration; suppression of urine; pains in the extremities; vertigo on looking upwards, relieved by lying down. Secale has all the symptoms of Phosphoric-acid, with the addition of cold, dry, livid tongue; violent thirst; serous vomiting, with white flakes; suppression of urine; amelioration by rest.

In fully developed cholera asphyxia, as it occurred at Breslau, 1848

and 1849, Dr. Schweikert of Breslau, found *Veratr.* first, and *Secale*, first, a drop every five minutes, *in alternation*, more commonly indicated than any other remedies. When asphyxia took place, Dr. S. relied upon *Acid-phos.;* either alone or in alternation with *Secale;* but in a few cases he used *Tinct.-phos.*, first or second dilution, with success.

Rhus.—Anguish at heart; spasms of the muscles of the extremities and abdomen; pulse soft, small, frequent; skin inelastic, cold, livid; facies cholerica; epigastric pain; violent thirst; serous purging; suppression of urine; cold breath; hoarse, raw voice; aggravation after midnight.

In the consecutive stage, when the disease assumes the form of typhus-fever, with delirium. The following remedies are required:

Carbo-vegetabilis.—In the third stage (collapse.). No pulse, livid countenance, hoarse voice, sunken eyes. This stage often lasts two or three days. This remedy, thirtieth dilution, a tea-spoonful every hour, for six hours. Arsenic may be alternated with it, if burning in the stomach and thirst continue. They may be continued for four or six hours and then discontinued as long; after which they may be resumed. Coldness of the surface often remains a long time without injury.

Lauro-cerasus.—In the typhoid stage; torpor and stupor; lethargy bordering on paralysis of the brain, or entire exhaustion of the nervous system; expression of countenance indicating great suffering, patient weak, pulse slow, eyes half closed; deep sighs and moaning. In that torpor which follows a severe attack of cholera, when the patient can not easily be aroused, is very weak, the pulse slow, yet the expression of countenance is natural, *Spiritus-nitri.-dulcis* is of the greatest benefit. (*Pulte*, 327.)

Aconite.—Especial Indications for Aconite.—Strong excitement of the vascular system; bitter, greenish vomitings; *passage of lumbrici with the evacuations.* (*Jahr.*)

Aconite, says *Marchesani*, is especially indicated when the evacuations are whitish, with discharges of lumbrici, excitement of the arterial system, producing congestion, with heat, redness, full and accelerated pulse, and palpitations.

In 1835 Dr. Bærtl, of Venice, observed an epidemic cholera characterized by discharges of lumbrici with the evacuations. The first period of this epidemic manifested itself by vertigo, pressive headaches, nausea with desire to vomit, coldness, vomiting and diarrhœa. In the second period, there were: vomiting of bitter and greenish matter, vertigo, increased heat, thirst, irritable and frequent pulse, but occasionally full and strong. At the third period the pulse became extinct, with icy coldness of the hands and feet, continual agitation and accelerated, short and anxious respiration. Dr. Bærtl found Aconite the

best remedy for this condition. He prescribed dessert spoonful doses of an aqueous solution of extract of Aconite every hour, joining with it, if speedy improvement did not occur, injections of a weak watery solution of extract of Aconite. In all stages of the malady, this treatment was followed by speedy success, generally within forty-eight hours. (*Gazette Hom. de Leipzig*, Vol. IV., p. 161.)

Aconite has been employed with success against the first symptoms of cholera, and is an indispensable medicine in the tumultuous reactions which follow these attacks. A few doses are quite sufficient to combat these reactions. (*Kummel, Gaz. Hom. de Leipzig*, Vol. XXXV., p. 328.)

In almost all cases, says Schneider, of the vascular excitement which accompanies the development of the first stage of simple cholera, a few doses of Aconite will suffice to tranquilize the pulse and equalize the circulation. (*Gaz. Hom. de Leipzig*, Vol. XXXVI., p. 277.)

In the ischuria which accompanies cholera, Aconite, says Peterson, has been employed with great benefit. Three doses of the ninth attenuation afforded relief in about twelve hours. (*Annales de Hartlaub et Trincks*, Vol. III., p. 75.)

In a case of sporadic cholera, in a young man, following a chill and errors in diet, the following phenomena were present in the night: suddenly a cramp-like pressure and tension in the stomach; then at the expiration of two hours, shaking chills, nausea, vomiting of acid mucous matter, cramps in the legs, watery diarrhœa, cold sweats, coldness of all the limbs, agitation, convulsive movements and distortions of the limbs, face sunken and earthy, pulse weak, extreme muscular debility, eyes dull and expressionless, prostration of all the vital forces, inability to speak. A few minutes after a dose of Aconite, twenty-fourth, the vital heat returned, and the pulse became stronger; in two days the patient was cured. (*Kammerer, Hygea*, Vol. IV., p. 490.)

In Asiatic cholera, says Dr. Quin, Aconite is indicated when *Veratrum, Cuprum or Camphor* have arrested the evacuations, and an inflammatory condition only remains. (*Therap. du Cholera Asiatique*, p. 24, 27.)

Reubel says: After the third period of cholera is happily passed there often returns a reaction of the vascular system, in consequence of which blood accumulates either in the liver, the lungs or the brain. The cure then depends upon the promptness with which the physician recognizes the seat of this congestion. In cases where the violence of this reaction does not permit us to distinguish at once the organ most threatened, we ought to make use of an aqueous solution of from six to ten drops of Aconite. (*Hygea*, vol. VII., p. 397.)

After the cessation of the actual cholera symptoms, sanguineous

congestions often occur, which may become so violent as to result in inflammations. In such cases says *Tretzer*, Aconite is an efficacious medicine. (*Hom. de Leipzig*, Vol. XXXVII., p. 82.) In this consecutive stage Aconite becomes important when the reaction begins with a full and bounding pulse, anxiety and other symptoms of fever.

Adjuvantia.—In the beginning of the attack the patient should be placed in bed, well covered, and hot bottles or stones placed around him; Camph. every five minutes, rising to higher dilutions in succession, till warmth, perspiration, &c. return. In this state he should remain without change for eight or ten hours; and much longer if a tendency to relapse remains.

In the second stage, the covering should be still warm, but left to the patient's choice. In the cramps of the muscles, friction with the dry hand is the best remedy. It also aids materially in restoring heat to the extremities. If the disease has advanced to the third stage, the same general external measures may be pursued. Cold drinks are preferred by the patient and are generally proper; but ice in small quantities at a time, often repeated is better. External heat can not be applied so as to produce warmth of the surface, and is most oppressive. Pulte recommends wrapping the patient in a sheet wrung out of cold water, repeating it after a few hours, if desired, and adding another blanket when reaction begins. None of these measures have in themselves any power to control the violent symptoms. The spasm and debility are only removed permanently by exciting the proper action of the secretory cells of the liver. "*Sanguis solvit spasma*," was an aphorism of Hippocrates. When the circulation is equalized the spasm ceases. (*Gayley, Amer. Jour.* 1850, p. 88.)

Allopathic Treatment.

All treatment that has ever been successful in the cure of cholera has effected it on truly homœopathic principles. Mercurius, in some form, has the most clearly defined power of exciting, through successive over-stimulations, that exhaustion of vital power in the liver which leads to inaction, cessation of the function of secretion, torpor, and thence *congestion* of the organ, which forms the characteristic feature of cholera. The size of the dose is less material in cholera asphyxia than in any other disease known to me; the mucous membrane, with all the fine vessels through which the medicine should be absorbed, is being constantly loosened and washed away by the serous exudation; and the blood vessels are already so full that the process of absorption is almost entirely suspended. The danger then in giving Mercurials in large doses consists, not in the poisonous powers of the medicine, but in the failure of the absorbing vessels to take it up. The most we can

expect is that an infinitesimal quantity may be absorbed; and *if it is*, the disease will be arrested. In the summer of 1834, when occupied day and night with cholera patients, I took the disease. After the characteristic vomiting had proceeded for some hours, I took forty grains of Calomel every four minutes until one hundred and sixty grains had been taken. The only effect of this was, to suspend the vomiting immediately, and there was a gradual return to health in the course of two days; there was no purgative effect from the Calomel; and, so little did I then regard its powers for good or evil in cholera, that I took nothing to carry it off. The slightest perceptible tenderness of the gums a few days after, reminded me that the remedy was not entirely insignificant.

The extent to which Calomel has been carried in allopathic practice in cholera is sufficient to show that the size of the dose has little to do with its curative effect. It is only partially homœopathic to the disease, and in this imperfect degree it has shown some power in arresting some of the alarming symptoms, whatever sized dose has been employed.

In 1832, cholera in a malignant form was prevailing at Campeachy, Yucatan. "On the seventh day of the pestilence, when the burials exceeded three hundred," Dr. Perrine, the American Consul, declared to the city council, that he "had not yet seen one patient die who had retained forty grains of Calomel in the stomach one hour, administered while heat and pulse yet remained." He said: "In all cases of cholera the first object is to arrest the flow of serum into the intestines. That Calomel does this is not doubted. Whether we class it among the diffusible stimulants which calm irritation, or the astringents that contract the exhalent vessels, I neither know or care. Forty grains of Calomel will arrest this intestinal effusion. In many cases within half an hour the whole surface has become warm; the cramps have ceased and vomiting has not again returned. The size of the dose in this disease is unimportant, salivation *may* result, but it is as liable to result from five grains as from five hundred." In Lexington, Ky., it was common to take even a fourth of a pound in two days. All experience in this disease, as well as others, shows, that, a remedy *partially* homœopathic gives only an unsatisfactory success, even when given in the largest doses. Whereas, a *true specific* produces the best results in doses which those unacquainted with the true law of cure regard as inefficient and inappreciable. This remark applies to all other diseases as well as to cholera. (See pages 116 to 121.)

3. CHOLERINE.

Cholerine.—A disease which often precedes and also follows Asiatic cholera. It is a diarrhœa in which the evacuations are of the ordinary feculent character, accompanied by rumbling of the bowels and

caused by the epidemic constitution of the season under the cholera influence. It may be excited by debilitating influences of all kinds: fear, grief, &c. (*Pulte*, 328.) I have seen it run rapidly into well-marked cholera, on hearing the cry of fire in the street. In a cholera season it may be regarded as the beginning of the fatal pestilence, and should be promptly treated in whatever form it may appear. I have seen it excited in a whole family by the use of water from a well, that had not been used for a few days. In 1842, a choleroid disease was originated in New-York by the eating of smoke-dried beef, prepared from diseased animals. (*Hosack's Report.*)

TREATMENT.—When caused by grief: Phosphoric-acid and China in alternation.

If caused by fear: Chamomilla, a few small doses.

If attended with bilious rheumatic symptoms, as headache, pains in the limbs, arms and back, chilliness, or approaching to a typhoid state: Bryonia and Rhus. in alternation, every two hours a dose, till four doses are taken, then wait twenty-four hours. If the diarrhœa continue, China and Phosphoric-acid in alternation.

The disposition to diarrhœa which prevails in a cholera season is removed by *Sulphur*, two doses on successive evenings, and avoiding all other remedies for one or two days.

As principal remedies for the prevention and cure of cholera, Camphor, Veratrum, Cuprum, and Sulphur are recommended to be kept always at hand by persons or families liable to be invaded by cholera. Dr. Pulte says: In 1849, these remedies with printed directions for their use were in the hands of every homœopathic family in the city of Cincinnati. The disease was as severe and as generally fatal there that year as in any other city of the same size. But under homœopathic practice 2410 patients were treated, and of these only eighty-five died or only about 3½ per-cent.

GENUS X.—INTESTINAL CONCRETIONS.—ENTEROLITHUS.

1. *Intestinal Calculus.*—Substances accreted into solid masses in some part of the alimentary canal, more frequently in the cæcum or colon, sometimes in the stomach. Bonetus found in two instances stones in the stomach as large as a hen's egg, each weighing four ounces. In some cases they consist chiefly of earthy deposits, in obscurely crystalized layers, around a distinct nucleus; in others they are composed of indigestible substances taken into the stomach as food. They are often formed in concentric layers and radiated from a central nucleus, often a gall-stone, or some foreign body. 1. The *nucleus* when a *gall-stone* is composed chiefly of cholesterine, the yellow coloring matter and the resin of the bile, surrounded by layers of a mixture of the

phosphate of lime, and of the ammoniaco-magnesian phosphate, with animal matter. Haller thought, the saline constituents furnished by the pancreatic-juice, and the resinous parts derived from the bile.

2. The nuclei composed of foreign bodies. These are common in Scotland, where the people live much on oaten bread. The beard and fibres of the husks of the oat resist digestion, and collecting together form a nucleus around which saline matter with successions of layers of fibres can collect.

A case is given in Dr Cox's Medical Museum (No. 3) of a miller's horse, which had colic and obstinate obstruction of the bowels, and died in three days. In the cæcum and colon were found one-hundred and thirty-four stones, of which one weighed four pounds; it was large for this weight, as a common calcareous stone of the same size weighed three times as much. The stones were accounted for by the existence of the gravelly particles rubbed from the mill-stones and mixed with the bran fed to the horse. Mr. Siebald, of Ulm, said, he had seen a stone of this kind, that weighed seven pounds. In the collection of the American Philosophical Society there is a stone, taken from the duodenum of a horse, that weighs eighteen pounds.

Concretions of a different character are formed in the intestines of persons who have taken large quantities of magnesia or chalk, for the purpose of correcting constipation or acidity. The concretions in these cases consist of those earths cemented together by thick mucus. In some persons who have long had the bowels in a costive state, concretions are formed of fæcal matters with earthy phosphates and inspissated secretions, sometimes hardened to the consistence of calculi.

Intestinal concretions are sometimes quite large. The first Monro found some seven or eight inches in circumference.

Diagnosis.—When the concretion is of a large size, and the patient begins to be emaciated, a very hard, painful, globular tumor may be felt in the abdomen, by placing the patient on his back and relaxing the abdominal muscles. It is found most frequently in the position of the cæcum or ascending colon, and can in but few cases be made to change its place by careful manipulation. The digestive powers are much impaired and the patient becomes greatly debilitated and emaciated; pulse at first little affected; much pain and tension in different parts of the intestines; there are occasional attacks of nausea, vomiting, tormina or purging; pain referred to one spot, and aggravated by taking acids or food difficult of digestion; constant disposition to go to stool, and sometimes dysenteric, watery, scanty evacuations, with viscid ropy mucus or blood. Some patients have to abstain from solid food; others reject much of what they take.

Causes.—Sedentary occupations, inactivity, indolence; injudicious use of Magnesia as a purgative; swallowing of husks or beards of oats,

fragments of bones, stones or seeds of fruits. Constipation originating in habitual use of purgatives.

2. *Bezoar-stone.*—(Persian *pazachar*, against poison) ; a concretion or calculus, of an oval or orbicular form, found in the stomach, gall bladder, salivary ducts, pineal gland, and especially the intestines of various animals. On analysis the bezoar-stone is found to consist chiefly of bile and resin. The oriental stories of their origin and of their wonderful properties are all fabulous. So efficacious were they once thought in counteracting the effects of poisons and as preservatives against contagion, that they were sold at ten times their weight in gold; they were also hired and worn round the neck, as in Portugal, at the rate of ten shillings per day. They are now regarded as nothing more than common gall-stones, and no value is ascribed to them.

3. *Scybala.*—Intestinal concretions sometimes consist of fragments of sewing-threads, paper or other substances, which have been thoughtlessly chewed and swallowed. Persons who indulge in such habits, often become the subjects of obscure abdominal diseases, and at length manifest tumors or accumulations in the cæcum or colon. In one case, after numerous physicians had disagreed on the nature of an abdominal disease, a series of twelve solid masses, from the size of a filbert to that of a walnut, were evacuated. These concretions were found to consist of a substance resembling pasteboard, of a brown color, containing earthy particles. On maceration they exhibited nothing but coarse paper, partially reduced to a pulpy state, agglutinated with mucus, portions of fæces, and a little phosphate of lime. The patient had, some years before, been in the habit of chewing and swallowing pieces of coarse gray paper. Their expulsion was followed by the disappearance of all the symptoms.

A Form of Intestinal Concretions is common in large cities in which no unusual substance has been taken or passed into the bowels; but there is a compact mass of considerable size in the acending colon which passes for a tumor. The patients are all sufferers from dyspepsia. They can take no food without distress; they have formerly been in the habit of taking purgatives frequently; have ceased to drink water even in the smallest quantity; all the secretions are deficient; the skin is dry, swarthy, wrinkled, mummy-like; the countenance devoid of animation; constipation; perspiration, if any, is thick, clammy, fœtid; the mind gloomy, peevish, hopeless. In some of these cases there is a solid stony or earthy concretion, as Monro found one of seven inches circumference; but this is rare. Much more commonly the concretion is made up around some solid substances injudiciously swallowed; as the cherry-stones, of which Helm in a fatal case found three-hundred in the cæcum and adjoining ileum. And, more frequently than any other intestinal concretion or tumor, we meet with fæcal accumulation

in the enlarged cæcum and colon. Such was that found by Odier in the case of De Saussure. After being the first to measure the crater of Ætna, and to explore the summit of Mont Blanc, this philosopher died of an accumulation in the distended cæcum, which better medical treatment would have remedied.

In some recent cases involving chiefly the ascending colon, we noticed the breath as very offensive; tongue loaded or furred; lips and gums bloodless; muscular energies much diminished; appetite almost extinct; some headache; abdomen tumid; constant uneasiness caused by spasmodic efforts to pass the offending matter forward, threatening dysentery; pulse very soft and weak, but nervously rapid. The patient inclines to crouch down forward, pressing the hand on the tumor. Constant moaning, and short irregular breathing; general lassitude; faintness on assuming the erect posture. The worst cases were females advanced in age. In all, the alvine evacuations were infrequent and very small; in one there was nothing passed for several weeks.

The treatment of intestinal concretions will readily be seen under constipation, dyspepsia and ileus. In the cases just referred to we succeeded in all with Nux-vomica, insisting upon a gradual but speedy return to the habit of drinking plenty of pure fresh water. See p. 297. 330.

Genus XI.—HELMINTHIA.—INTESTINAL WORMS.

Species of Worms found in the Human Body.—Tænia solium; Tænia lata; Tricocephalus, or trichuris; Ascaris vermicularis; Lumbricoides.

1. *Tænia or Tape-worm.*—A long tape-like worm, formed of a chain of flat articulations united together by a membranous border, varying in breadth or thickness; each of the links is possessed of independent vitality and capable of becoming a distinct worm. Brera describes one in the cabinet of the University of Pavia, which exceeded two-hundred and thirty feet in length. They have been seen one-hundred and fifty, three-hundred, and even eight-hundred feet long. (*Copenhagen Transactions.*)

The species called *armed tape-worm* is found exclusively in the human subject and is with difficulty dislodged, as its head is armed with two small fangs, which it insinuates into the mucous membrane of the intestines. It is generally dislodged in joints which resemble gourd-seed. Tænia lata is unarmed and more easily expelled.

2. *Tricocephalus.*—This parasite is seldom seen. Length from one and a fourth to two inches; external surface marked by transverse-lines like rings. One part of the body terminates in a filamentous elongation, as fine as a hair and coiled up in a very singular manner; another portion ends in a broad and obtuse hook, resembling the pistil

of a leguminous flower. From this extremity the worm "can put forth a sort of tube enveloped with a sheath." Found in the ileum and cæcum. (*Brera*, p. 44.) Dr. Stokes exhibited a preparation of a cæcum containing the tricocephalus in his lectures.

3. *Ascaris vermicularis*, or *Ascarides*.—Very common and often discharged in incredible numbers. Round and thread like, very slender and only from one-fourth of an inch to an inch in length. They move with great celerity, and when touched contract to near one-half their length. They reside in the large intestines, and are most abundant in the rectum near its termination. But they are sometimes found in the stomach; and Brera says, he found them in masses in the œsophagus of a woman.

4. *Lumbricoides*.—Resemble in shape the common earth-worm; white or flesh color, perfectly round and of the size of a goose-quill; abdomen yellow and transparent; length from four to twelve inches; most common in the small intestines, but sometimes found in the stomach, colon, and rectum; children more subject to them than adults. They are often discharged in great numbers, sometimes united in balls rolled together.

Diagnosis.—Symptoms.—Worms in the intestinal canal may produce any of the usual spasmodic or convulsive diseases. By irritating the nerves of the prima-via they may originate chorea, catalepsy, tetanus, paralysis, mania, or convulsions. To the same cause are also attributed pleuritic and rheumatic pains, dysentery, remitting fever, hydrocephalus, consumption, chronic spasmodic cough, &c., &c. The presence of worms is more commonly indicated by: pale and leaden color of the face, occasionally flushed with fever; bluish streak under the eyes, which are dull and heavy; pupils dilated or much contracted; lower eye-lids and upper lip tumefied, especially while sleeping; itching in the nostrils; picking at the nose; fœtid breath; disturbed sleep, during which the patient grinds his teeth, is disposed to lie on the abdomen, and suddenly start up and scream as if frightened; tingling in the ears; giddiness; interrupted speech; palpitation of the heart, muscular debility; pulse frequent, corded, or intermittent; dry spasmodic cough; irregular and depraved appetite; abdomen swelled and hard; diarrhœa or constipation; evacuations unnatural, slimy and fetid; pricking and tearing pains in the abdomen; emaciation, convulsions, paralysis, &c.

Signs of Lumbricoides.—Pricking and rending pain in the umbilical region; colic with rumbling noise in the abdomen, caused by this worm irritating the mucous membrane with the sharp cutting point of its head.

Signs of Ascarides.—Irritation and intolerable itching and pricking pain with swelling at the extremity of the rectum. They some-

times produce inflammation of the rectum, and discharges of blood with tenesmus, and are exceedingly difficult to remove.

Signs of Tænia.—Sense of weight and pain in the abdomen; with burning, and feeling of something alive in the bowels; "prickings or rather bitings felt in the region of the stomach; the abdomen swells at intervals and then subsides; sense of cold in the abdomen; appetite voracious; complexion livid; pupils dilated; vertigo; vomiting; the legs vascillate and the whole body trembles convulsively; small substances resembling gourd seeds or lemon seeds passed with the fæces, which are found to be portions of these worms. (*Brera*, p. 147.) Some authors say, there is an uneasy feeling on hearing music. Though the concurrence of many of the above symptoms may indicate the presence of worms, it is also certain that any one of them may arise from other causes.

Diseases and sympathetic Effects produced by Worms.—Nymphomania in females, and seminal emissions in males: epilepsy; hysteria; convulsions, dilatation of the pupils; amaurosis, symptoms of hydrocephalus, and even mania. Kraus says, one man of advanced age was effected with immoderate fits of laughter. In one case the convulsions caused by worms were soothed by music, like those caused by the bite of the tarantula. In a case, mentioned by Hoffmann, yellow vision was caused by worms. Many cases of mania and aphonia were relieved by expelling worms; one man had spasmodic action of the muscles of the eye, which inverted the eye-ball, causing it to present the appearance of a globe of flesh. A case is reported by Serres, which resembled hydrophobia; some cases of cures are supposed to have been of this kind. Stokes says, he saw a child which had convulsions, coma and dilated pupils; two eminent physicians declared the case to be one of hydrocephalus; treatment directed to the head had no effect; but some lumbrici were expelled, and in two or three hours there was improvement, and a speedy recovery followed. He says, he tried to relieve a boy of intermitting difficulty of respiration, with wheezing, loud ringing, incessant cough coming on in the night; but Calomel, Ipecac., and Tartar-emetic made the case worse. There being a swollen abdomen and constipation, he gave some Castor-oil and Ol.-Terebinth, which brought away some lumbrici; following this with a syrup of cowhage (Dolchicos pruriens,) a large quantity of thread-worms were expelled and the cough ceased. A young girl had chronic bronchitis and hepatization of part of the left lung, and they gave her some cowhage and aloes, the cough ceased, and respiration became perfect in that lung. Ramsay, of London, says, hæmoptysis may be caused by worms; Stokes says, consumption also may result from the irritation produced by worms.

But it is quite as common to attribute too much to worms as to over-

look their existence; a disease may happen to exist at the same time with worms without having been caused by them. The same remedy which expelled the worms, may have been appropriate for the attendant disease. And children are very frequently injured by treating every species of intestinal irritation with anthelmintics and drastic purgatives. Nervous and hysterical persons easily imagine the presence of worms or other living creatures in the intestines, and can never be satisfied with any reasoning until they see the parasite expelled. Such fancies often exist in the minds of incurable hypochondriacs.

Dr. Morton, of Ohio, proposes to distinguish diseases, caused by worms, by the following additional symptoms, which, when united with others, are "unerring." "A pearly whiteness of the sclerotica of the eye,—a brilliant shining carmine tinge of the lips, particularly the upper,—and a peculiar almost indescribable expression of the alæ nasi, which can be compared to nothing except the expression seen in the same organ in the facies-hyppocratica." (*West. Med. Jour.*, vol. 6. p. 32.)

Causes.—What is the origin of intestinal worms? It has been generally supposed that they are introduced into the stomach, either in the egg-state or more fully developed in food or drink taken into the stomach or in the air breathed into the lungs. But it has been shown by Müller, that the worms found by Linnæus in the marsh in Lapland, and pronounced the same as those existing in the human body, have never been found in the body of any animal whatever. The intestinal worms found in the human body, exist no where in the external world, either in any article of food, in earth, in water, or in air. Bremser examined 15,000 species of worms in the cabinet of Vienna, and could easily distinguish those belonging to the human intestines. It is not possible that they can have originated without the body, and undergone a change of structure by being transplanted to a new locality; for no specimen has ever been seen which was in the transition state between one species and the other. And the most distinguished physicians and pathologists have come to the conclusion, that they must have originated within the body.

1. They have a peculiar structure, differing from all worms found elsewhere.

2. The worms found in different animals have all their own peculiarities.

3. Worms are found in different parts of the human body, in the cellular tissue, the liver, the gall-bladder, the lungs, the trachea, the brain, heart, kidneys, and spleen. They have been found in the air-bladder of a fish, in the ovaries of a woman, in an aneurism of the mesenteric artery of a horse, in the anterior chamber of the eye of the horse, of birds that had just broken the shell; and in the human eye; in the human fœtus; and there are worms peculiar to certain structures, that

have never been found any where else. Though each structure has worms no where else to be found; and we never find any one of them in the act of passing from one of these situations to another, or detect it in the structure from which it might be supposed to have travelled.

Dr. Stokes thinks, that all these parasites originate in the places in which they are found by an original generation "the result of one organization taking place within another—the production in fact of a distinct being."

The theory of Bremser and others is that intestinal worms are formed by the presence of semi-assimilated nutritious matter in the digestive tube. Food taken into the stomach under ordinary circumstances is converted into a substance fitted to supply the waste and wear and tear of the living body; and when this process is not perfected, it is not taken up by the absorbents, and is then converted into an animal substance; this theory explains why worms so frequently occur in cases where the assimilating powers are weak, in persons who have great appetites and weak digestion, and in children with diseased mesenteric glands. (*Stokes in London Med. Jour.*, May, 1834.) Bremser says, a monk, who had lived for sixty years in good health on animal food, suddenly changed his diet for one of milk and farinaceous vegetables. After a few days he was troubled with flatulence, sour eructations, colic, &c. Remedies carried off a mass of tape-worm. The monk resumed his former habits and recoved his health.

Pathology.—Broussais taught, that worms were always associated with a chronic inflammation of the gastric intestinal surface. But it is known that worms exist in connection with every possible condition of the intestinal canal, even when it presents the appearance of perfect health. Andral says, that they are almost always enveloped in a quantity of mucus, and he found some redness in the place where they lay, which was caused by their presence. They are rapidly generated in some animals in their best state of health.

Pathological Changes effected by Worms.—Fischer, of Vienna, saw two circular orifices in the colon of a female which communicated with a cavity in the peritoneum, and a lumbricus had passed half its length from the colon into the peritoneum. A similar worm had entirely passed into the peritoneum. Andral saw a young man, in whom a tumor formed near the umbilicus, which afterwards gave way and discharged a lumbricus and a large quantity of puriform matter. Worms and pus were also found in the peritoneum on dissection. (*Pathol. Anatomy.*) Bremser examined a dead fish, from the abdomen of which a worm had made its way to the outer world, had perforated the abdomen in another place, and had returned part of the way into the body. In one well-authenticated case a lumbricus was discharged through a tumor in the groin of a woman; and, during the progress of the case more than one-

hundred more worms passed out through the opening. In another case twenty-four worms were discharged through an opening, which was formed by ulceration in the right hypochondrium. In some of these cases it has been supposed, the worm that first escaped *perforated* the intestine, but in the most of them it is evident that the aperture was formed by inflammation and subsequent *ulceration*, first excited by the irritation of a mass of worms. The inflamed intestine forms an adhesion to the walls of the abdomen; the different structures, in their turn, ulcerate, and the worm and his accompanying mucus, pus, and the contents of the bowels are conducted to the surface. In one case, mentioned also by Stokes, a lumbricus made its way from an abscess of the liver through the parietes of the abdomen. On dissection, the abscess was found to have a connection with the stomach, from which it was supposed the parasite had passed into the liver.

Conditions in which Worms are most rapidly produced.—Most common in debilitated cachectic children under six or seven years of age. Their digestion is imperfect; gastro-intestinal mucous membrane irritable and in a low state of vital power; food but partially digested undergoes some other decomposition. A diet of unripe vegetables, containing too much sugar, and deficient in tonic ingredients favors the formation of worms. By an old law of Holland, criminals were often condemned to live on bread without salt. The effect, says an author, "was most horrible; these wretched creatures were devoured by worms engendered in their own stomachs." The want of salt in the food of sheep originates the disease, called the "fluke" or "rot." It oftenest commences in low and damp pastures or where sheep are too much crowded together. Worms are said to be sometimes epidemic, or endemic in particular localities. It is said, that the Swiss, who live much on vegetables, are very subject to worms.

"Worms are to the intestinal mucous membrane, what the acarus is to the skin, and are best removed by the ordinary anthelmintics. The general or radical treatment to prevent the morbid secretions upon which the worms are supposed to feed is indispensible;" but it is always proper to preface it by the active expulsion of the parasites.

Dr. Epps says: (*On Constipation*, p. 171), "Worms exist alive in the stomach and bowels. The unscientific physician gives emetics and purgatives to expel them," but by this treatment he does not remove the diseased condition in which they originate. John Hunter first explained the process by which the disordered stomach secretes the gastric juice of a perverted character which permits the parasites to live in the stomach.

Diseases connected with the Presence of Worms.

VERMINOUS DIARRHŒA.

It is common during the warm seasons of spring and early summer, and sometimes supervenes upon cholera infantum. It continues, when not checked until the emaciation is extreme; and it often proves fatal, The attendant fever, irritability of stomach, vomiting, thin, watery. fetid alvine discharges, thirst, and impaired or extinct appetite correspond almost entirely with cholera infantum. But the characteristic symptoms which denote the presence of worms are, in the earlier stages, the prominent features of the disease.

Causes.—Catarrh retroverted upon the mucous membrane of the intestines; improper use of fruit, indigestible diet. Once induced, it is kept up by enteric verminous irritation in children in whom these entozoa already exist. In many cases the disease is originally excited by them.

Treatment.—The ordinary treatment for worms will be sufficient to begin with; but specific remedies for the correction of the dyscrasia which favors the continual production of worms are necessarily, associated with treatment proper for the diarrhœa.

Spigelia, followed by Cinnabar, will succeed in ordinary acute cases.

In chronic, or sub-acute cases, the difficulty is greater. The patient is enfeebled, emaciated, and the mucous membrane of the stomach and bowels is rapidly becoming disorganized, and effusion on the brain is threatened. In these cases the treatment directed under follicular enteritis will be proper.

Rheum in the form of a diluted syrup is peculiarly suited for children in this disease. When persistently used it changes the action of the inflamed or irritated mucous membrane to a similar though different action.

Diospyrus or *Persimmon.*—A tincture diluted with water has been highly successful in the Southern states.

Terebinth.—This remedy is specific against worms, as well as against the mucous inflammation of the bowels. If diluted with some syrup or emulsion it may be given in doses of one drop or less.

Diet.—In all cases permit the use of such food as is appropriate for follicular enteritis, (*which see.*) Flannel should be worn next the skin, which is usually cold and bloodless.

Treatment of Worms.—The indications are:

I. To expel the worms; II. To prevent their reproduction.

1. *Anthelmintics.*—Those in popular use, which act mechanically, are, filings of tin, Dolchicos-pruriens, pulv. Charcoal, and Crude-mercury. Of these the second, Dolchicos-pruriens or cowhage is the only one much used. The legumes are beset with stiff hairs, which,

when applied to the skin, excite intolerable itching. Generally given in form of an emulsion to expel ascarides.

We never prescribe any of these articles.

Ascarides are often removed in great numbers by injections of a decoction of aloes and milk; also by injections of cold salt-water.

Among the specifics which destroy worms by some poisonous property, are a great number of vegetables, most of which are remarkable for a strong and peculiar odor: as Valerian, Assafoetida, Camphor, Geoffrea-inermis, Chenopodium-anthelminticum, Artemisia-absinthium, Tobacco, Garlic, Spigelia-marylandica, &c.

Spigelia-marylandica or Carolina-pink.—Its active power is in a bitter substance and a fixed volatile oil. The bitter extract possesses narcotic powers and produces intoxication, fulness of the head, ringing in the ears, vertigo; water extracts the active properties. (*Bigelow's Med. Botany.* vol. 1. p. 144.) The whole plant is active, but the root possesses the most power.

Spigelia, given in large doses accelerates the pulse, flushes the face, produces drowsiness, and sensation of stiffness of the eyelids. (*Dr. Thompson, Inaug. Dissert.* Phil. 1802.) Eberle says, he gave three or four gills of a strong decoction of the root to a boy, six years of age, and it produced "complete mental derangement, precisely like that caused by Stramonium. The boy was affected by alternate fits of laughing and crying; he ran about the room, talking wildly and incoherently. His countenance was distorted in the most fearful manner, the pupils greatly dilated; the symptoms subsided in twenty-four hours. In doses too large, the Spigelia often produces slight giddiness, dimness of sight, and dilatation of the pupils. It is often given allopathically in doses of ten grains or more to children. The decoction is more often used. Given in this way, it perpetuates the disease.

We cannot sanction the use of Spigelia in poisonous doses, but we have long used it for the purpose of curing the drug-symptoms above named.

Cina (*Wormseed.*)—Ascarides, lumbrici; pinching colic and irritating pain in the umbilical region from worms; spasms of children from worms; during the intervals they partially sleep, rubbing the nose, the eyes half closed; epileptic spasms at night; whooping cough with worms; bluish color around the mouth. Cina is the seed of the

Chenopodium-anthelminticum, or Jerusalem oak, a plant indigenous to the United States and some parts of South America. As an anthelmintic the seeds are pulverized and given in doses of from twenty to forty grains in syrup. But the essential oil is more convenient, as it is very active. A child, two or three years old, may take from three to eight drops of the second dilution. Dr. Morton, of Ohio, says, he cured one-hundred successive cases of worm-disease with this article.

We have not in twenty years found it necessary to use any of these poisonous anthelmintics.

Symptoms.—Most of the symptoms appear at night. Nightly restlessness; yawning, with sudden tremor and shuddering; disposition to weep or complain; tickling cough; Cramps; stupefying headache; weariness and soreness of the eyes; dilatation of the pupils; paleness of the face; sickly appearance; canine hunger; diarrhœa.

Santonine.—This is a crystallizable, fusible, volatile substance separable from the terminal flowers of the Artemisia, or Chenopodium-santonica (Cina, Semen-contra). Discovered in 1830, by M. Kahler, of Düsseldorf. It produces the pathogenetic symptoms enumerated by Hahnemann, as peculiar to Cina: "Heat and flushed or puffy face, bluish pallor around the nose and mouth, agitation, delirium, wakefulness, and insurmountable somnolence in succession; epileptiform convulsions, palpitations of the eye-brows, dysphagia, partial spasmodic movements of the limbs, and cramps; dilatations of the pupils, troubles of sight; frequent desire to urinate, &c."* This shows, that Cina is not merely a vermifuge, but that it exerts also a homœopathic action against the morbid state, which results from the presence of worms; and we habitually see it dissipate the symptoms for which it has been exhibited, either in massive doses or in infinitestimals without having expelled any worms.

Dr. Gabalda gives a case (L'Art Medical), in which all the above symptoms were caused by Santonine. They subsided without the expulsion of worms.

M. Martini observed, that patients who had taken Santonine in full doses, saw all objects green after the lapse of a few minutes, an effect which with some patients lasted all day. This phenomenon is attributed, not to a transient coloration of the blood-serum, but to a molecular action on the retina, by which the tension and vibratory reaction of its nervous molecules are changed under the impression of the luminous rays. The eye thus affected generally sees objects greenish yellow.

Ascarides.—Dr. Compiret (*Amer. Med. Monthly*, 1860.), the best remedy is a "simple injection of water, containing five, ten, fifteen, or twenty drops of Sulphuric-ether, according to the age of the patient, and repeated according to the number of the worms present. This agent, by its subtility readily enters into and destroys the larvæ; and by its antispasmodic powers it allays the spasmodic and nervous symptoms produced by them."

Oleum Terebinthinæ.—This article has long been considered the most certain of the anthelmintics. Turpentine, says Dr. J. Smith,

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* Materia Medica Pura.

seems peculiarly destructive to vegetable life; small insects are speedily destroyed by it; indeed no other drug exerts so fatal an influence over the majority of parasites which infest animal and vegetable life. (*Lond. Jour. Med.* 1850.)

It should be given several times at moderate intervals, and in this manner it seldom fails to destroy the tape-worm. It has been a common though very bad practice to give Ol. Terebinth in large doses. In this way, though it stimulates the system generally, it passes rapidly through the bowels; and the quantity absorbed seldom produces strangury. Castor-oil is added to it or given after it, and bland demulcent drinks freely used. Others give Ol. Terebinth in doses only of a few drops every four, five or six hours. But such doses often produce strangury. Still smaller doses have been successful in removing the following symptoms: dull pain in the epigastrium; sickness of stomach after eating; vertigo; dry, short cough; foul breath; and choking sensation in the throat. Worms expelled by it in such cases appear in a dissolved state. When this course is long continued, strangury may be produced. Camphor and large quantities of diluent drinks with mucilage of Gum Arabic may be given to obviate their effect.

In 1832 Dr. Bardwell of Indiana, gave Ol. Terebinth to a sailor from the East Indies, who was supposed to have stone in the bladder. He discharged seventy or eighty lumbrici. He afterwards passed bloody urine and vast quantities of dirty white, hair like worms from the bladder; about two thousand were discharged. He recovered. (*W. Med. Jour.* Vol. VII., p. 354.)

Aspidium-filix-mas.—M. Reschier of Geneva, has obtained from this plant a fatty principle by digesting the root in Sulphuric-ether. The preparation has an oily consistence and is used to expel the tape-worm, in doses of one drop, made in a pill with extractive matter. Eight pills are often sufficient to expel the tape-worm, though sometimes thirty or more, in the course of several days are required. The tape-worm is effectually destroyed and removed by a purgative.

Sulphuric-acid.—1. Dr. Darrach, of Quincy, Ill., says: Dr. Nichols ordered Sulphuric-acid aromatic, one ounce, water one and a half pints. The patient to drink as often as he could. On the third day he passed of tape-worm in fragments. The dose was repeated on the fourth day, but there was no more of the worm. He had been debilitated and emaciated, had severe cough. After the tape-worm was expelled these ceased; and he gained flesh and strength.

2. Thirty years ago the same remedy was used at Cape Ann, Massachusetts. A lady took a tea-spoonful of Sulph.-acid-aromaticum and expelled the vessel half full of the animal.

3. A woman in Quincy, Ill., kept her bed for two years and passed five feet of tape-worm. Turpentine was given two days without success.

The acid was given, three doses in twenty-four hours, in sweetened water. A large worm was expelled, and health and flesh returned, (*Amer. Jour. Med. Sciences*, Oct., 1860, p. 377.)

Principal Remedies for Worms.—*For Ascarides*, *Acon.*, *Calcar.*, *Chin.*, *Sulph.-Cupri.*, *Ferrum*, *Ignat.*, *Cinnabar.*, *Nux.-vom.*, *Spigelia*, *Sulphur.*

When accompanied by fever:—*Acon.*, Bell., *Cina*, Ferrum, *Merc.*, Spigelia.

For Lumbrici.—*Acon.*, Bell., Calc., Cham., Chin., *Cic. Cina*, *Merc.*, *Natrum-mur.*, *Spigelia*, Sulphur. In scrofulous children. Iod.-sulph., Calcarea.

Worms with emaciation.—Arsen., Calcar-hyperphos., *Cina*, Graph., Spigelia, Cinnabar, Iodine.

Worms with diarrhœa.—Acon., *Cina*, *Cinnabar*, *Spigelia.*

Worms with convulsions.—*Cicuta*, *Spigelia.* We have seen the latter promptly successful when the convulsions were alarming and had resisted several remedies. A few drops on a handkerchief and applied to the nostrils dispelled the paroxysms of convulsions permanently.

Genus XII.—PROCTICA.—HÆMORRHOIDS.

Anatomical Structure of the Rectum.—The veins of the rectum are very tortuous and numerous, and form between the mucous membrane and the muscular coats of the intestine quite a network of vessels. The hæmorrhoidal veins unite in forming the interior mesenteric vein, which with the superior mesenteric vein, the vein from the spleen, and the gastric vein, compose by their union, the great portal system vein, described as supplying the liver with blood.

As the blood is supplied to the rectum from such various sources, and in such abundance, the reason is apparent why in diseased states, blood is discharged from these vessels; and also why in cases of constipation blood often passes at the time of evacuation of the bowels.

The external surface of the rectum has a great resemblance to the external surface of the œsophagus. It is smooth and polished, without any elevations and without longitudinal depressions which are so evident in the colon; the only marks it presents being parallel, dependent on the powerful muscular fibres which form a part of this intestine.

In the rectum the fæces accumulate, lose their thinner parts by absorption; they then in the healthy state become moulded into a form corresponding to the shape of its upper portion. When they have accumulated to a certain degree they excite the rectum to contraction,

and a sensation is experienced causing a desire for their expulsion. Their escape at any other time is prevented by two muscles, the *external* closing muscle or sphincter, and the *internal* closing muscle or sphincter which is only a portion of the former. When the will submits to the internal prompting to expel the contents of the bowels, several agencies operate together in their expulsion:

1. The muscular fibres of the rectum contract; 2. the diaphragm acts by contraction which is followed by inflation of the lungs; 3. the muscles of the wind-pipe close the epiglottis or valve at its top, which prevents expiration; 4. the abdominal muscles contract, in opposition to the forcing down of the diaphragm and compress the bowels and force them backward and downward; 5. and last of all, the two elevatores ani, press the rectum forward and upward, and aid in the expulsion, and thus the contraction of the sphincter is overcome.

1. THE HÆMORRHOIDAL DIATHESIS.

This predisposition to hæmorrhoidal disease consists in a congestive condition of the pelvic circulation which involve not only the rectum but the whole digestive tube in inflammatory, spasmodic, or neuralgic affections, without taking the common form of hæmorrhoids. The patient is often treated for disease of some other name, as gastritis, or gastro-enteralgia, flatulent colic, engorgements of the liver, obstructions of the portal system, and finally for insanity. In other cases there are congestion, inflammation or hæmorrhage of the lungs or brain or chronic structural disease of the bronchia, nervous headache, neuralgia, asthma.

The superiority of homœopathic treatment in hæmorrhoidal disease is not due to the power of our remedies to operate upon the hæmorrhoidal circulation, but to their specific influence on the whole system, in these cases especially the abdominal venous circulation. Even in allopathic hands certain *mineral waters* and a class of remedies called *deobstruents* have sometimes benefitted, if they did not thoroughly cure, patients who suffered from diseases of the character under consideration. Dr. Porges, has analysed the cases cured by the waters of Carlsbad, and found them all referrible to what he calls *abdominal venous plethora*. He has also shown that the same waters in sufficient doses, when taken by persons in health, produce the same diseased conditions for which he recommends their use.

Case *by Dr. Escallier.**—A lady aged fifty-three, tall, lean and dark, with pimples of *acne rosacea* on her face; speech feeble and painful; slight dry cough, palpitation very constant and distressing,

* L'Art Medical.

worse after eating, and preventing sleep; some cerebral excitement affecting the hearing, causing her to imagine that she hears the report of cannon or exploding rockets; some maniacal paroxysms; she has been reduced to a milk diet; can now hardly rise from hear seat; faints several times in the course of the day, and is supposed to be dying; flatus in the stomach or bowels increase the palpitations; pulse small, rather frequent, with irregular intermissions; second sound of the heart strong; no bellows sound; no œdema of the ankles, but she had amenorrhea in youth, and then had ascites, treated by puncture, then cured by Digitalis. Has now flatulent dyspepsia with constipation; has had hysteria under various forms, sometimes accompanied by gastralgia. Rendered worse by sea-bathing. For this condition, she was directed to take Arsenicum, twenty-four, and Platinum, twenty-four, in alternation, twice a day, with good diet. The constipation was partially removed on the second day. By the third day the heart was calm; she slept, appetite better, digestion easier. The medicine was suspended. She continued to improve for ten days; when, the diet disagreeing, she took Nux-vom. one hundred. Next day she was doing well, medicine suspended. Then she continued to improve; and the difficulties of the heart and other organs returned no more.

2. HÆMORRHOIDS.—PILES.

DIAGNOSIS.—This very common and troublesome complaint will probably demand the attention of the physician more frequently than any other single malady; nor when we consider the causes which originate it, and their almost constant and universal prevalence, shall we be surprised at this. Any cause which operates upon the rectum in such a manner as to impair the integrity of its vascular and muscular structures, may induce the disease. The effects in these cases are: a permanent dilatation or varicose condition of the veins, and a relaxation of the mucous membrane of the part, causing tumors of various sizes, at the verge of the anus, and within the rectum, and in some instances, a protrusion of a portion of the rectum itself. When this last result obtains we are presented with the disease known as prolapsus ani.

Bleeding Hæmorrhoids.—Many persons experience small discharges of blood with the fæces whenever the blood vessels of the abdomen are in a state of congestion from cold or an over-stimulating diet. The veins of the rectum are the most dependent part of that whole system of vessels, which should convey their contents by the vena portæ through the capillaries of the liver. Any influence then that retards the flow of blood through the liver, causes an engorgement of the hæmorrhoidal veins.

Symptoms of Bleeding from the Rectum.—There is a sense of

weight, heat, fulness, and general uneasiness in the rectum which increases for twenty-four hours; then when the bowels act, part of the discharge is liquid; this consists of blood, which seems poured out only at the time of the evacuation; or the passage of the fæces produces the rupture of the small vessels from which the hæmorrhage proceeds. On the next day the uneasy sensation is lessened, and it soon ceases altogether. The patient says, he is relieved by the flow. This transient relief often deceives him. If it happens to be suppressed by treatment, he immediately suffers from abdominal venous plethora, as well as from cerebral symptoms.

When the hæmorrhoidal bleeding continues long it always produces anæmia, debility and consequent nervous symptoms. In some cases the loss of blood continues for months, reducing the strength more obviously at first than afterwards. When the loss extends to two or three ounces per day there is only some sensation of numbness extending down the lower limbs, paleness of the face, &c.

Case *by Sir Benjamin Brodie.*—A lady, suffered from symptoms of stricture of the œsophagus; she could not swallow the smallest morsel of solid food, and was compelled to subsist entirely on liquids which she swallowed with great difficulty; these symptoms continued to increase for three years. A bougie was passed through the œsophagus into the stomach without meeting with any impediment. It was then suspected that the dysphagia was only a symptom of some other disease; her face was bleached as if she had suffered from repeated losses of blood, and the feet were œdematous. On further investigation, the whole train of symptoms were found to have originated in the loss of blood from internal hæmorrhoids. The following remedies are proper for such cases: Podoph., Lobelia, Hamamelis, Sepia.

Fluoric-acid.—Congestion of blood in the rectum.

Lobelia.—Discharge of black blood from hæmorrhoids.

Elaterium.—Blood from hæmorrhoids.

Hæmorrhoidal Tumors.—Piles or hæmorrhoids are soft tumors, which form either within the rectum or around the anus. In the first place they are covered with the mucous membrane of the intestine, and are termed inward piles. When situated without the rectum they are covered entirely or in part with the common integument.

Hæmorrhoidal tumors may be external or internal—hard or soft—sensible or insensible. Their general appearance in regard to color, size, &c., will depend much upon the amount of inflammation present, the causes which have been in operation, and the length of time which has elapsed since the commencement of the malady.

Internal Hæmorrhoids vary from the size of a pea to that of a large walnut. Sometimes there is a single one, in other cases several. They are found immediately within the sphincter, or at some distance

above it, and may be attached by a narrow pedicle, or by a broad elongated base. In some cases they do not protrude beyond the sphincter, in others they are forced outward by slight straining effort.

Symptoms of a fit of Hæmorrhoids.—It is ushered in by vertigo dull headache, coldness of the extremities, flashes of heat, heaviness bloating of the abdomen, flatulence, throbbing in the abdomen, consti pation, palpitation of the heart, weariness, heaviness of the limbs, des ponding and irritable mood, disposition to melancholy, fulness of the parts in the vicinity of the rectum, producing heavy pain in the neck of the bladder and region of the prostate; strangury, pains in the loins and back, weak digestion, loss of appetite, eructations, heartburn, mucous coating on the tongue, burning in the abdomen and anus; disposition to vomit, itching of the anus and perineum, eruption on these parts. When these symptoms are only partially present and the veins of the anus are swollen, we apply to these veins the designation of *blind* piles; if the turgid vessels bleed at more or less regular periods, giving some relief to the distressing sensations, the bleeding tumors are called fluent piles. When mucus is discharged instead of blood they are called mucous piles.

During "a fit of piles," the tumors are usually red or purple, inflamed, and painful, the pain is of a severe kind, aggravated to an almost intolerable degree when at stool, and accompanied by tenesmus and frequent discharges of blood. The location and character of the pains vary much in different cases, being sometimes confined to the tumors themselves, and at others extending upwards into the intestines or into the perineum down the thighs, &c. The pains may be itching, burning, aching, throbbing, darting, or shooting, constant, or only when at stool, on sitting down.

Causes.—When the mucous membrane of the rectum is much relaxed, we almost always have as a complication, *prolapsus ani*. Although this complaint sometimes originates independently of any hæmorrhoidal enlargements, in the majority of (severe) cases the two diseases are conjoined, and this is explicable from the circumstance that the causes of both are generally the same. The most common of these causes is *habitual constipation*, induced, for the most part, by the reprehensible practice of inattention to daily alvine evacuations. We have before observed that the protracted presence of indurated fœcal matters in the rectum, gives rise to a semi-paralytic condition, which impairs the tone of the parts, and thus induces *constipation*, *piles*, and *prolapsus ani*. The evils, then, to which this condition of the lower bowels give rise, may be summed up as follows: first *constipation*, and the numerous and grave consequences which often result from it, in the form of determinations of blood to the brain, lungs, and intestinal canal; also mania, hypochondria, neuralgia, dyspepsia, bowel

affections, colic, fistula in ano, &c.; second, *piles*, and its train of unpleasant symptoms; third, *prolapsus ani*.

Other Causes of these affections, in addition to the one already mentioned, are, abuse of cathartics, as Aloes and Sulphur, which operate specifically upon the lower portion of the intestinal tube; ascarides, excessive exercise on horseback, long continuance in the standing posture, or in certain other constrained positions; protracted bowel complaints, general debility, dyscrasias, sedentary habits, indulgence in highly seasoned food, coffee, wines and liquors, tight dressing, lacing the epigastric region of the abdomen, and all other causes by which the regular course of the circulation is interfered with. Sleeping on feather beds, and sitting on soft chairs are common causes.

Treatment.—The first object with the physician in the treatment of hæmorrhoids, should be to ascertain the cause or causes upon which the malady depends, so that immediate and efficient measures may be taken to remove them. In a majority of instances the disease is unquestionably connected with *constipation*, which should therefore receive a due share of attention. Nothing can remove the torpid condition of the bowel, upon which the constipation depends, unless all indurated fæcal matters be removed daily, in order that a sufficient time may elapse, to enable the debilitated parts to recover their impaired tone. The first step necessary to secure this result is to adopt suitable dietetic regulations. In many instances this alone will suffice to regulate the bowels, and thus to remove all traces of the hæmorrhoidal affection. Amongst the articles of food which we particularly commend in those cases, in which the stomach is not irritated by it, is bread made from unbolted wheat. A liberal and daily use of this highly nutritious substance, and of other articles of a similar character, with an occasional indulgence in ripe and wholesome fruits, and the habitual free use of cold water as a drink (see page 297), will often surpass our most sanguine expectations in abolishing diseases of the rectum. Should these simple means alone prove ineffectual after a thorough trial, we may then call in the aid of enemata of cold water. This last resource will rarely disappoint us, provided the case is recent, and the cause has not been too long in operation. When the hæmorrhoidal tumors are much inflamed and very painful, great service will frequently be derived from external applications of cold water, and in some instances, of ice, enclosed in a linen cloth, and applied to the parts as long as may be deemed expedient. In troublesome cases of *prolapsus ani*, *also* these applications and injections will sometimes afford prompt relief. Water *moderately cool* is often better than ice.

The medicines which are entitled to the highest consideration in hæmorrhoidal affections are, *Nux-vomica*, *Sulphur*, *Rhus-tox.*, *Sepia*,

Bryonia, *Lycopodium*, *Opium*, *Pulsatilla*, *Aloes*, *Carbo-vegetabilis*, *and Calcarea-carb.*

Nux-vomica is appropriate in choleric dispositions, when the disease has been caused by inactive and sedentary habits, high living, use of coffee or spirits, or the depressing mental emotions, and is attended by constipation, prolapsus, and general loss of power over the muscular structure of the rectum; stinging, burning or itching of the anus; stitches and shocks in the small of the back, with bruising pain; frequent constipation; unsuccessful urging to stool; congestion of blood to the abdomen and head; bloating of the pit of the stomach and hypochondrium; heaviness of the head, inability to think; retention of urine; discharge of blood and mucus, &c. It may be given in the second or third attenuation, one grain every night as long as is deemed expedient.

Kali-carbonicum.—Constipation owing to inactivity of the rectum, passage of fæces difficult, owing to their bulk; the knobs bleed and swell during a stool, or when the urine is passed.

Calcarea-carbonica.—Hæmorrhoids which bleed profusely, are protruded in knobs, and become painful in walking, relieved by sitting down; protruding and forming a bunch externally, in evacuating the bowels; constipation; disposition to determination to the head, when the hæmorrhoidal flow of blood is arrested; hæmorrhage in females having the menses too early and too profuse.

Muriatic-acid. — Prolapsus recti when urinating; swollen, blue. protuberant knobs, very painful to the touch.

Phosphorus.—Hæmorrhoids appear simultaneously with chronic diarrhœa in which the sphincter ani is relaxed; the stools mucous, liquid, and passed involuntarily.

Nitric-acid. — Old hæmorrhoids, particularly after the abuse of Mercury with remains of condylomata and syphilis.

Thuja.—Excrescences on the skin, or sycotic affection, remaining after the local symptoms have disappeared spontaneously, or been driven away by local means. Symptoms: Feeling of pressure on the hæmorrhoids, with compression; swollen knobs, protruding much: tenesmus; itching, burning in the anus.

Carbo-veg. — Constant bleeding at every stool with burning and itching in the anus; great swelling of the tumors, and lancinating pain in the thighs.

Causticum.—Constipation with ineffectual efforts of defecation, when the knobs impede the passage of the fæces; the pains are aggravated by walking, and especially by mental labor.

Graphites.—Feeling of weight in the abdomen; chronic constipation, with hardness in the region of the liver; hard knotty stools with discharge of mucus and blood; pains in the hæmorrhoidal knobs; prolapsus ani without straining, as if the sphincter were paralyzed, (see

its use in constipation, page 331); watery leucorrhœa at the time of menstruation.

Sepia.—Its special sphere of action is the portal circulation. Its effect is to retard the circulation, and cause an over-loading of the portal vascular system with venous blood. The condition it produces, and which it specially cures, is a *plethoria venosa*, with a corresponding state of depression. (See *Meyer*, in *Homœop. Viert.*, &c.)

Sulphur.—Irritable disposition, tenesmus, vomiting, griping; the power of Sulphur to produce these symptoms enables it to cure similar symptoms in cases of dysentery, hæmorrhoidal diseases attended with tenesmus.

Sulphur is well adapted to cases occurring in individuals tainted with syphilis, scrofula, psora, or mercury. If the piles bleed frequently and profusely, and there exists considerable inflammation of the surrounding mucous membrane, with darting pains up the bowel, tenesmus, discharges of mucus or of fæcal matters, mixed with blood and mucus, this mediciue will generally prove effective. It should be given at the third attenuation—one grain morning and evening, until the desired effect is produced. In some psoric constitutions Sulphur is effectual when given in high attenuation and permitted to have a long-continued action.

Rhus-tox., in alternation with *Sulphur* or *Nux*, has been eminently useful in piles and prolapsus conjoined, which appeared to be connected with some latent impurity of the blood. We are accustomed to use the first or second attenuations in these cases – giving a dose daily, and changing the medicine every other week.

When the hæmorrhoidal tumors protrude, and are inflamed, red, and painful, with profuse hæmorrhage during each evacuation, we may consider *Acid-nitr.*, *Acid-mur.*, *Aloes*, *Calcarea-carb.*, and *Sepia.*

If the disease arises during pregnancy, and constipation is unusually obstinate, we advise *Pulsatilla*, *Opium*, *Bryonia* and *Platina.*

Administration.—This malady responds more satisfactorily to the first, second and third trituration—given in grain or drop doses, once or twice in twenty-four hours.

Case by Dr. H. C. Preston. *Hamamelis-virginica* is used empirically and with success in varicosis of the hæmorrhoidal veins, except when coagulation has reduced the veins to hard cords.

A woman, mother of six children, middle age, had at one time varicosis of all the veins of the legs up to the groin, crampy pains in the legs, preventing sleep. Bandaging the legs, and use of Hamamelis cured for the time. At one time after delivery, when hæmorrhoids were in the worst state, she took Hamamelis, six drops to the tumbler full of water, a table spoonful every hour. This, with external use of

a tincture of the remedy, applied with linen cloths, gave entire relief in twenty-four hours. It did not return.

Aloes.—In large doses it excites griping heat at the lower part of the rectum and hæmorrhoids; frequent small evacuations, chiefly of mucus, attended with tenesmus; abdomen at the same time distended and tender; the patient complains that the "bowels feel as if scraped;" pulse quickened; sensation of constriction of the head. Under long-continued use of Aloes we observe emaciation; the purgative action becomes more uncertain; mucus and portions of lymph, and sometimes matter resembling fat, being passed off with much tenesmus, enteritis, stricture of the rectum; some degree of diuresis where squills and other diuretics have failed. In appreciable doses it aggravates dysmenorrhœa, menorrhagia, organic disease of the uterus, hæmorrhoids, &c.

3. PROLAPSUS ANI.—PROTRUSION OF THE RECTUM.—FALLING OF THE INTESTINE.

This affection has often been described, as consisting in an extrusion of the mucous and sub-mucous coats alone through the expulsive power of the muscular coat of the rectum. But it is really an inversion of all the coats of the intestine. The protrusion and eversion of the rectum is effected by the weight and pressure of the bowels above, aided by the contraction of the abdominal muscles in the act of relieving the bowels. At ordinary times, when the sphincter is contracted, its strength is sufficient to resist the bearing-down forces above; but when the bowels act, the sphincter is necessarily relaxed, and the strain is allowed to tell on its lateral adhesions. The rectum is indeed, as well as the œsophagus and colon, provided with a strong coat of longitudinal fibres; but its power is rendered inadequate to its object, and when the bowels are long constipated, the passage of a mass of solid fæces will carry through the rectum an everted fold. This generally returns spontaneously, but its frequent repetition renders a spontaneous replacement less and less perfect.

Causes.—Habitual constipation and frequent efforts to relieve it by purgatives; the tenesmus attending diarrhœa or dysentery; certain purgatives which operate specifically upon the rectum, as Aloes, Podophyllum, Sulphur. Calomel and Blue-mass often cause it. These articles, therefore, are remedies for certain cases. The protrusion of the rectum is also often caused by straining, as from the irritation of a stone in the bladder, which causes involuntary bearing down. In children this effect is peculiarly liable to occur; and if the stone be removed by an operation, and the cause of the straining is removed, the prolapsus ceases to take place. It is more common in persons debilitated by disease, or by inherited discrasias.

Prolapsus is common in children, not otherwise much diseased, and is usually not serious, though if neglected, it may terminate in inflammation or ulceration of the part.

TREATMENT.—The tumor is easily returned; place the child for two or three minutes in a warm bath; anoint the protruded part with olive oil, and then apply gentle and uniform pressure. If the protruded bowel is already inflamed, it may be relieved by the aid of the following remedies:

Nux-vomica; when there is constipation and hard straining. It has a specific influence on this disease, as well as the constipation and hæmorrhoids often associated with it.

Mercurius.—When there is diarrhœa or dysentery.

Ignatia.—Analogous in its action to Nux-vomica.

Sulphur.—In psoric constitutions, in which there has been diarrhœa or dysentery, followed by costiveness, and an evident tendency to relapse.

ORDER II.—FUNCTIONAL DERANGEMENTS OF THE COLLATITIOUS VISCERA.

1. THE LIVER.

The Minute Anatomy of the Liver is thus described by Dr. Helmuth.* "Each lobe of the liver constitutes in itself an *epitome of* the *hepatic structure*, and there are *two* sets of veins, one artery, and one duct in each lobule. Of these two varieties of hepatic veins, the first is the intra-lobular, which occupies the centre of each lobule and receives the blood from a plexus, formed in each lobule by the radicals of the portal vein; the second variety being those veins contained in canals, formed by the bases of the lobules, applied side by side, and which veins for the most part receive the intra-lobular veins; or in other words, in each of the minute lobules of the liver we have first an artery (as usual in all organs) to supply the requisite sustenance to the part; 2d, a vein to carry off the effete blood; then, 3dly, we have blood from which the bile is extracted, contained in the portal vein, the secretion being carried away, or received 4thly into the ultimate ducts of the acini, and following these channels to the larger biliary canals.

1. FUNCTIONAL DERANGEMENT OF THE LIVER.—The lungs and liver are the great decarbonizing organs of the body, and the activity of one of them is always in an inverse ratio to that of the other. "In the lungs, carbon undergoes slow combustion, accompanied by a disengagement of heat for keeping up the animal temperature and is thrown off

* N. Jour. Homœop. vol. XI. p. 486

as carbonic acid. In the liver, it unites with hydrogen, and small portions of hydrogen and nitrogen, and forms bile." In summer, when the temperature of the air is high, there is less demand on the oxygen of the air, therefore the decarbonization by the lungs is less, and the extra labor of getting rid of the carbon which the lungs do not throw off with sufficient rapidity, devolves upon the liver. This increased secretion, which the liver is required to perform, demands increased activity in the circulation of the portal system; and all the radicles of the veins which unite to form the vena portarum must partake of the acceleration. The circulation, supplying the digestive organs must then be more active in warm weather and in warm climates, as it also is after taking food.

Besides the lungs and liver, the skin also participates in the work of eliminating carbon and other effete waste materials of the body. As the product of its secretory function we have a sebaceous matter for keeping the skin soft and in a healthy condition, also the perspiration furnished by the sudoriferous glands, and a large quantity of fluid passing off by simple evaporation. And a further duty performed by the skin is a partially respiratory function, by which it aids the lungs and liver in the function more especially assigned to them.

The evaporation from the skin, kept up by perspiration, keeps the temperature of the body at the proper point for health, at the same time that the respiratory power of the skin is directed in aid of the liver in the decarbonization of the blood. When the dew-point is *low*, these processes go on satisfactorily, when it is *high*, the decarbonization is less effectually performed. This relation of the skin to the liver in eliminating disease-causing materials from the system, is the ground of that sympathy between them explained by Johnson.* When increased heat is temporarily applied to the skin, it is stimulated to over-action for a time; but this increased excitement is followed by a corresponding depression and diminution of the natural function of the over-worked organ, with increased susceptibility to the action of any deleterious influence. When the skin and liver have been for some time over-excited by heat, exercise or other undue stimulant influences, and are in a state of consequent exhaustion, the depressing influence of cold is liable to produce disease by repelling the blood from the surface, and causing internal congestion of the internal viscera; and, of these, the liver, being the most exhausted organ, will naturally suffer most. When the over-excitement and subsequent depression have been great, the result may be "*bilious fever;*" otherwise the tonicity of the system is repaired by sleep and rest, and the equilibrium is restored. If, however, the liver has been too much or too frequently

* On Tropical Climates, p. 19—242.

congested, it may not be able, by the re-acting powers of its vessels, to press out the excess of blood thrown upon it; and some portions of the organ may remain in a state of partial congestion. If the causes which produced this condition continue to operate, the morbid conditions they produce continue to increase. The functions of the liver become obviously deranged; the stomach, the large and small intestines become involved. The patient now complains of a bitter taste in the mouth on waking in the morning, furred tongue, constipated bowels, languor, yellow adnata, and a heavy feeling over the eyes; and the skin, participating in the deranged condition of the liver through the "cutaneo-hepatic sympathy," referred to above, becomes pale, dry and sallow. If the patient continues to be exposed to the same deleterious influences, especially if the atmosphere be charged with marsh miasm or malaria, the resisting power of the system becomes progressively less, till a stronger determination of blood takes place to the liver, spleen and portal vessels, and we have the phenomena of a chill, followed by the consequent re-action, called fever.

2. ICTERUS—JAUNDICE.

This disease was so named by the ancients, from its likeness to the plumage of the golden thrush, of which Pliny relates, that, if a jaundiced person looks on one, the bird dies and the patient recovers.

General Characteristics.—Yellowness of the skin and eyes fæces white, and urine of a high saffron color. The yellow color of the skin characteristic in jaundice, is often only a symptom of some chronic structural disease of the liver. In this place we shall treat of jaundice as a specific disease as connected chiefly with functional derangement of that organ.

BILIARY JAUNDICE.—*From Sudden Suppression of the Biliary Secretion.*

Under this title Allison and Bright have given cases of a formidable character. In Allison's case there was "pain and heat in the abdomen with thirst and chilliness for seven weeks; then jaundice followed in two days by delirium—occasional singultus, stools bilious, coma, purpuric spots on the skin, death ten days from the occurrence of jaundice. Liver smaller than natural—flabby—light yellow—mucous membrane of the ducts unnaturally white." (*Edinb. Med. Jour.*)

Dr. Bright gives two cases characterized by: "Abdominal pain—jaundice—tenderness of the epigastrium—occasional sickness.—Three weeks after the appearance of jaundice, indistinct utterance, loss of power in the left hand, coma and death. Liver very small, soft or flaccid, and of a reddish color. No inflammation on the capsule or in the ducts, which were not even stained with bile—brain congested." (*Guy's Hospital Reports.*)

DIAGNOSIS.—Rokitansky says, "it is distinguished during life by its acute course, extreme pain in the liver, (not a constant or even frequent symptom,) nervous symptoms and jaundice; finally a fatal issue after fever, symptoms of blood poisoning, irritation of the brain, and its membranes, hydrocephalic softening of the brain, exudation and softening processes generally, and especially of the mucous membranes, pneumonia, &c. The blood in the larger vessels of the liver is thin, fluid and of a dirty brown color."

CAUSES.—A serious lesion of the proper hepatic nucleated cells, which are, perhaps, sometimes entirely destroyed. The attack has sometimes the features of a fever accompanied by an apparent "acute paralysis" of the biliary functions. The subsequent head affection resembles that which may follow any organic lesion of the hepatic structure. The excessive drowsiness, or any other symptom denoting cerebral irritation or oppression should be promptly treated.

Among the causes of jaundice from suppressed secretion of bile, deep grief or other strong mental emotion may be mentioned, also the bite of serpents or poisonous insects, the miasm of certain fevers; the noxious products of depraved digestion, and certain vegetable or mineral poisons. In some cases it is impossible to discover any probable cause. Abercrombie says, in one case, which he calls "black ramolissement of the liver," there was a sudden occurrence of deep jaundice, followed by frequent vomiting of black matter, and great prostration; death occurred at the end of three weeks without any cerebral symptoms. On dissection the liver was much diminished in size, was of black color, soft and disorganized throughout, like a mass of coagulated blood. The gall-bladder was empty and collapsed. This case was allied to gangrene. (See *Gangrene of the Liver.*)

TREATMENT.—The usual allopathic measures for serious structural diseases of the liver,—active purgatives, and moderate bleeding have never been successful. Mercurials, Nitro-muriatic-acid, Sanguinaria, &c., have done better.

*Sanguinaria.**—This remedy alone is capable of curing many of the common cases, particularly in young persons and in the spring-season. In those more serious cases, in which all the vital powers are in a state of extreme depression, other remedies may be preferred. Sanguinaria acts on the liver and stomach, improving digestion, increasing all the secretions, and, when long continued, improving the condition of the pulse and skin. In cases of jaundice, dependent on abscesses and induration of portions of the liver, intestinal accumulations, torpor of all the secreting viscera, it should be employed for a long period in sensible doses.

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* Sanguinaria was first noticed by Jacob Cornuti, 1635.

Mercury.—In no form of diseases have physicians, who deny the truth of Hahnemann's principles, so nearly approximated to both his theory and his practice as in the inflammatory diseases in which their great reliance has been *alterant* remedies. Of these Mercury is the most important; and when we come to employ it according to the homœopathic law of cure, avoiding the fearful medicinal aggravations or drug-diseases that it has so often caused, we shall find it an agent of the highest value.

Diseases caused by Mercury.—1. Increased secretions of the liver, intestinal mucous membrane, &c., causing increased evacuations from the alimentary canal.

2. In smaller doses it produces excitement of the salivary glands and glandular system generally, excited circulation, nervous irritability, and quickened circulation of every tissue of the body.

3. An insensible tranquil, alterative action, which may subvert diseased action without greatly deranging the operations of health; there is no perceptible quickening of the circulation, no increased vital force, or subversion of the accustomed action of life.

Mercury acts in causing as well as curing disease:

1. In a manner almost homœopathic to certain well-known diseases, as "iritis, hepatitis, or hepatization of the lungs," which ends in the deposition of coagulable lymph. It has been common in pushing it to the extent of *sensibly* producing these results to cause a strumous or anæmic condition which ends in *phthisis* or *scrofula*. More recently this action of Mercury has been called *substitutive*, and is relied upon in obstinate fevers and acute inflammations, threatening the destruction of vital organs by suppurative or ulcerative disorganization. The *drug disease* commonly produced in the effort to cure acute or chronic inflammations with Mercury is called *ptyalism*. It is manifested by tenderness, redness and swelling of the gums, increased secretion from the salivary glands, often progressing to ulceration of some of the affected parts. See p. 248.

3. *More violent Effects of Mercury.*—In large doses it excites violent irritation of the stomach; in smaller doses often repeated it soon produces excessive action of the salivary glands, or destructive ulceration of the mucous membrane of the mouth and fauces; this inflammation is of an erysipelatous character, is spreading, ulcerating, and commonly without suppuration. In other cases the mercurial action displaces the diseased action, when the fever remits its violence; but it yields to the superior power of the fever in every febrile exacerbation, and Mercury, therefore, is not entitled to be regarded as a true specific for fever.

Mercurialism is a disease produced by the constitutional influence of Mercury, and presents itself under various aspects. Under mercu-

rial action, the whole glandular and absorbent system is more active; the patient becomes emaciated; all accumulations of fat are taken up and thrown into the general mass of blood; disintegration of the old materials of the body goes on more rapidly than the new supply furnished by recently digested food is deposited.

Mercurial Anæmia.—Dr. Farr says, that Mercury as rapidly and effectually destroys the red blood as venesection. A lady was attacked with hæmatemesis; the stomach and liver were engorged with blood, and her complexion was composed of the tints of the rose and the violet. Under a course of Mercury, "she was blanched in six weeks as white as a lily." (*Watson's Lectures.*) It is this power of destroying the red blood which has given this poison its immense popularity in the treatment of inflammatory diseases. It being supposed that it has the power of suspending that kind of inflammatory action which results in the effusion of coagulable lymph either in serous or cellular tissues; it has long been the sheet-anchor of the energetic physician. By this power of "defibrinizing the blood" it suspends inflammatory action and *substitutes* its own action. But, even here, it is never effectual in strongly *phlogistic* cases; and, in all the forms of inflammatory action in which some general *dyscrasia* disposes to erysipelatous, gangrenous or scrofulous disease, its action in minute *crude* doses, is just the opposite of that which is desired. Allopathic mercurialization deepens and aggravates all forms of disease in debilitated, irritable or nervous constitutions. Having itself the power to produce these very conditions in the strongest persons, and being *capable of curing them, when used in accordance with the homœopathic law*, it always reduces the vital disease-resisting powers in persons predisposed to any of the above conditions.

Mercury in Hepatic Derangements.—When mercurials are prescribed for temporary bilious derangements with some apparently beneficial effect, this "cure," so-called, is generally of transient duration. The same patient, whatever the precise degree of his derangement of the liver may be, is almost certain to need that kind of curing very frequently in the course of a few years; and the oftener he is compelled to resort to the inevitable blue-pill to rouse up his torpid liver, the shorter are the intervals between the occasions that call for it. In the tropical and malarial parts of America, as well as in the Eastern hemisphere, we can point out in any community the persons who have most frequently undergone hot climates. Dr. Morehead* thus sums up the results of his observations on the mercurial treatment of the diseases most common in hot climates. "To all who have within the last twenty years had the opportunity of extensively observing disease in India in

* Clinical Researches on the Diseases of India, Vol. 2, p. 206. 1857.

all classes of the European community, the asthenic state, the dyspeptic symptoms, the injured teeth, the pains in the sides and loins, the habitual foul tongue, the constipated bowels, the pale alvine evacuations, the depressed spirits, and the sense of sinking at the epigastrium — *all clearly traceable to the abuse of Mercury* — must be familiar facts." We seldom find in medical literature as much truth in one page as is embodied in the above comprehensive sentence. These symptoms, every one of which embodies a volume written over, within and without with human miseries are now all known to be the common effects of Mercury. And it is also known that they have been caused, not always by a reckless heroic administration of Calomel or Blue-pill in dangerous diseases, but quite frequently by the most minute doses spoken of in standard works. But they have been generally regarded as orginal diseases, or as the relics of diseases imperfectly subdued. The patient who suffers from any or *all* of them does not say he has been poisoned, and does not charge his physician with mal-practice.

For further remedies see *Treatment of Jaundice in general.*

3. JAUNDICE WITHOUT OBVIOUS ORGANIC DISEASE OF THE LIVER.

Diagnosis.—Yellow color of the skin and conjunctiva; sometimes itching of the skin, yellow tint from bile in the urine, readily distinguished by the eye, and also by the chemical test of Sulphuric-acid, by the addition of which the urine containing bile assumes a dark-green and afterwards a purple color; urine in jaundice sometimes appears in a deep vessel dark, almost black.

The stools are generally, though not always, pale or whitish from deficiency of bile; and have a sour and very offensive smell.

In most cases the bowels are constipated, as the bile has an important use in exciting the natural peristaltic action; though in exceptional cases there is chronic diarrhœa associated with the yellow color of the skin.

The perspiration is also bilious and stains the linen yellow. Saliva sometimes yellow, with a distinctly bitter taste.

The mucous membranes and their secretions do not participate with the skin in this change of color; the tongue, inside of the lips, and the mucus of the stomach are not tinged with bile, and that of the intestines is not stained except where bile continues to flow into the duodenum. The milk of nursing women is said to be sometimes, if not generally, entirely unchanged.

The color of objects, seen by persons in this disease, is sometimes changed to yellow, as in the cases of Dr. J. Mason Good and some others. It has been often remarked that "to the jaundiced eye all things look yellow." It is supposed that the ophthalmic vessels in their

natural state do not permit the coloring matter of the bile to pass through them; but that when they become enlarged by disease, so as to admit the coloring particles of the blood, they may also give a passage to the yellow coloring matter, whieh tinges the humors of the eye, thus coloring the rays of light as if they had passed through a piece of stained glass.

The color of the skin varies in different in persons, being in some bright lemon yellow, orange or of a greenish olive hue.

Dr. Schmidt of New-Orleans, in a memoir to be published by the Smithsonian Institution, proposes to prove 1. the existence of a network of capillary vessels, previously discovered and described by him as "biliary tubules," from which start the smallest hepatic ducts. This network is independent of that in which the smallest branches of the portal hepatic artery, and veins arise.

2. The discovery of minute lymphatics of the liver, and their origin in the network of biliary tubules, by which a communication between the hepatic vessels and the lymphatics is effected.

3. The discovery of lymphatic vessels *directly* joining small hepatic ducts, by which a *second* communication between these vessels is established.

4. A minute description of a system of small follicular and racemose glands, the ducts of which form extensive plexuses throughout the liver; and their relationship to the other constituents of the organ.

5. The discovery of a communication of the lymphatics, directly with these glands. As many of these glands also join the hepatic duct, a *third* communication between the lymphatic and hepatic ducts is thus indirectly established.

The discovery of a natural communication between the hepatic ducts and the lymphatics of the liver enables us to give a natural physiological explanation of the phenomena of *jaundice*, which never appears as a symptom of any disease where the *secretion* of bile is arrested, but often, nearly always is present where there is an abnormal or *excessive* secretion of bile through the bile-ducts, or the common bile-duct, into the intestine, is closed or obstructed by concretions or otherwise. These discoveries also explain why the lymphatics of the skin, or near the surface of the eye-ball are loaded with bile, giving a yellow or green tinge to the derma and the sclerotica, even within a very few hours, when the flow of bile through the gall-duct has been arrested by biliary calculi; they also explain why the large lymphatics on the surface of the liver are frequently found filled with bile after death.*

* See Freirich's Memoir on the Liver. Transl. by Dr. Murchinson

4. JAUNDICE FROM OBSTRUCTION OF THE EXCRETORY DUCTS OF THE LIVER.—CHOLOLITHUS.—GALL-STONE.

1. Any pressure, made upon the excretory ducts of the liver, will produce jaundice; such pressure may be made by tumors, seated in the liver itself; scirrhous pylorus; disease of the pancreas; diseased condition of the duodenum. 2. The bile-ducts may be obstructed by mucus within, or by biliary calculi in the ductus choledochus, the cystic, or the hepatic duct.

A *Gall-stone* consists of a solid concretion from a bile, usually formed in the gall-bladder, and occasionally in the hepatic ducts. The latter are darker and more irregular on the surface, in consequence of the absence of an investing deposit of cholesterine.

Gall-stones are very light considering their size. When fresh from the gall-bladder they usually sink in water; but, when they have been kept long and are quite dry, they generally float in water till they become saturated with it, and then sink slowly. Their characteristic constituent, cholesterine is lighter than water. The coloring matters of the bile are heavier. The lightest are those which contain the largest proportion of cholesterine. Some of these stones are composed almost entirely of it. These are white, have a crystalline appearance, a soapy feel, and burn with a bright flame in a candle.

Diagnosis.—In the case of a gall-stone obstructing the bile duct, the pain is very severe; as a stone, a half-inch or more in diameter, may be forcing its way through a tube no larger than a goose-quill. The pain is not constant, but comes and goes; there is nausea and vomiting of sour matters, sometimes hiccough, flatulency; the patient is dyspeptic, languid and gloomy. If the concretion passes into the intestines, the pain suddenly ceases; but such attacks, having once occurred, are liable to be repeated.

The pain is distinguished from that of inflammation by the absence of tenderness and of fever. Pressure, instead of increasing the pain, generally mitigates it. At the beginning of the attack the patient keeps his hand firmly applied to the epigastrium or leans forward, resting the weight of his body on some hard substance. After there has been much retching the straining and vomiting produce some tenderness of the abdominal muscles. The pulse is not quickened by the pain, but is in some cases even rendered slower; the skin is cold.

Prout, Watson and others direct when gall-stones are suspected, to mix the fæces with water, on the surface of which the stones, if they exist, will be found floating; but Watson acknowledges that he never but once detected a gall-stone in this way.

The symptoms of the passage of the gall-stones through the ducts into the duodenum are: "Sudden pain in the region of the gall-bladder,

commencing two or three hours after eating, resembling colic." The pain continues the whole time of a dull, aching character, and is occasionally interrupted by paroxysms so excruciating, that the patient bends himself double, or rolls himself on the floor, pressing his hands firmly against the pit of the stomach, or lower part of the chest, where a great constriction is felt, which sometimes eases the pain. These paroxysms cause great exhaustion; the pulse becomes weak or slow, the face pallid, whole body covered with a cold sweat. There is also distressing nausea and frequent vomiting of very acid matters, which, in all cases of repeated vomiting, when the duct is not closed, are bitter. In some cases these symptoms cease after an hour or two, and generally *suddenly*, as the stone escapes into the duodenum. In some other cases in which the stone is larger, or the passage is less free, or where several stones pass in succession, the symptoms may continue, with intervals of comparative ease, for several days; sometimes, when the stomach has been completely emptied of food, enormous quantities of *acid* are thrown up. It is secreted from the surface of the stomach and shown by Prout to be muriatic-acid. (*Budd on the Liver*, p. 288.) When the paroxysm continues long the patient becomes more or less jaundiced; there are frequent rigors occurring at irregular intervals as in stricture of the urethra, or when a calculus from the kidney descends into the bladder through the ureter.

The prognosis is generally favorable, though some cases have terminated fatally. In these cases ileus has ensued, or the gall-bladder or ducts have been ruptured, and the bile has been effused into the abdominal cavity. In some cases the stones are very numerous and their occasional passage gives constant pain and anxiety. In one severe case a lady passed two hundred of various sizes in two weeks. Mackintosh found two hundred and forty in one gall-bladder, others have found 2000 or more; sometimes a single concretion nearly fills the gall-bladder.

Pathology.—The mechanical irritation of the stone in passing through the gall-duct causes vomiting by nervous influence reflected on the muscles that perform the act of emesis, and also causes untimely secretion of acid in the stomach by nervous influence reflected on the mucous coat of the secreting apparatus. The muriatic-acid is derived from the decomposition of common salt in the secreting vessels of the stomach by a process that seems to be merely chemical. In some cases the vomiting takes place when there is no pain produced by the gall-stone; as a worm in the intestine may cause spasmodic disorder without exciting pain in the point where it happens to lie, and an old abscess of the liver, painless in itself, may occasion frequent vomiting.

Treatment of Jaundice from Gall-stones.—The following method of treatment was directed, N. A. Journal of Homœop., vol. VII., p.

395: As soon as the pains have declared themselves, give six ounces of tepid olive-oil, and follow it with Aconite and Nux in alternation, every half hour; apply hot water fomentations and an occasional warm bath till the pain subsides. The oil softens the concretions, relaxes and dilates the duct, and thus great numbers of the stones are enabled to pass into the bowels and pass off with but a trifling amount of pain. Olive-oil dissolves the stones placed in it in a short time out of the body. We have treated several severe cases by this method and found it successful. If the stones be large and numerous it may be necessary to repeat the oil several times. It dissolves the stone, relaxes and dilates the gall-duct, and gently moves off all the contents of the bowels. Our object here is to remove not a *disease*, but to carry off an extraneous mechanical substance.

Professor Hale gives the following case: A young lady suffered several years from paroxysms of supposed gastralgia, or neuralgia of the stomach, and was treated with Mercury, Opium, and Chloroform without benefit. She became "emaciated, jaundiced (her skin of the hue of bronze). The tongue was coated white; no appetite; headache most of the time; pulse quick and hard, but small; urine very scanty, of yellowish brown color and containing bile; pain in the epigastrium, extending to the region of the gall-bladder; constant, but at times aggravated in paroxysms of extreme intensity; excessive nausea, when the pain became severe; constipation, alternated with diarrhœa; evacuations for several weeks, destitute of bile."

Dr. Hale having decided the symptoms to depend upon obstruction of the bile-ducts by gall-stones, after some other trials, "gave *one grain* of Podophyllin in the evening. She was allowed chloroform during the night. In the morning she swallowed *three ounces* of olive-oil, at 6 o'clock. At 9 o'clock she vomited bile, after which all pain ceased; at noon she had a free evacuation of the bowels, of a bilious appearance. At 3 P. M., another bilious stool, and with it a discharge of several gall-stones. The concretions were round, about the size of cherry, rough externally, yellowish, and when broken, showing a radiating appearance from a common centre. In a few days, under the use of Aconite and Nux, the jaundice had nearly disappeared, the appetite returned;" in two weeks she rode into the country, and afterwards enjoyed good health. (*N. A. Jour. Hom.*, Nov. 1863, p. 261.)

Jaundice is often met with, associated with conditions of general ill-health, with mental depression and anxiety in persons in whom no structural disease or obstruction of the ducts of the liver can be supposed to exist. It has been caused by fits of anger, fear, or alarm; by the pain of a severe surgical operation or the dread which preceded it; grief, mortification, and extreme anxiety. It is observed, says Watson, that these cases "are often fatal, with head sympfoms: convulsions, deliri-

um, or coma, supervening upon the jaundice." In the cases that prove fatal with such symptoms, it is supposed "that some peculiarly poisonous matter is evolved in the system, most probably from the decomposition of the retained elements of the bile." (*Mayo, Budd, Watson.*)

Jaundice sometimes succeeds violent and long-continued vomiting it is a symptom of both acute and chronic inflammation of the liver it is often caused by the depressing influence on the skin and liver in hot climates, and hot weather; it often accompanies pregnancy, from the pressure of the enlarged uterus on the liver and its ducts.

There is a form of jaundice which is common among newly-born children. This is called *icterus neonatorum*, and is ordinarily of little importance, being curable by the remedies given below.

Prognosis.—Jaundice may be expected to terminate *favorably* when it is obviously connected with functional derangement of the liver; when it proceeds from some known cause of a temporary nature, and which can be avoided in future. When the patient is of previous good health, and not far advanced in life. The prognosis is unfavorable when the disease depends on structural hepatic disease; when it has arisen upon some great mental or physical shock, in a constitution previously broken by serious disease; or when there is no visible cause for the jaundice in an aged person, and the color of the skin is greenish, approaching to black.

Treatment of Jaundice.—The Chief Remedies are:

Aconite, Arnica, Aurum, Bell., Bry., Calc., Canth., *Cham.*, *China* Cocculus, Crotalus, *Hepar*, Iod.-mer., *Lach.*, *Merc.*, Nux-v., Phos., Rhus, *Sulph.*, *Phos.-ac.*, *Digit.*, *Sanguin.*, *Podop.*, *Berberis*, *Canth.*

Jaundice, after anger and chagrin, or keen disappointment:—Acon., *Cham.*, *China*, *Nux-v.*, Puls., Sulph., Taraxacum.

After abuse of Cinchona:—Bell., Calc., *Merc.*, Nux-v.

Jaundice after abuse of Mercury:—*China*, *Hepar*, *Lach.*, *Sulph.*, *Nitric-acid.* The last is also a remedy for prolapsus ani.

Phosphoric-acid.—Pain in the liver during menstruation: feeling of heaviness in the liver; stitches in the region of the liver and spleen; burning at one spot in the region of the liver; deficiency of bile in the stools; whitish-gray, red evacuations; very light yellow stools. In jaundiced subjects it increases the action of the kidneys, diminishing the bile in the urine; inflammation of the duodenum; jaundice in scrofulous children; languor of body, inactivity of mind; bad effects of grief, chagrin, care, and anxiety; itching eruptions or reddish spots on the skin.

Aconite.—Dark-yellow skin; yellowness of the sclerotica; loss of appetite; disgust for meat; bitter taste in the mouth; pain under the short ribs. Malaise after eating; eructations with sourish taste; vomiting of green bile, or of watery fluid; pressing in the stomach as from

a weight; violent colic, or pressing pain in the hypochondria; inflation of the bowels by wind; respiration embarrassed as if from enlargement of the liver; aching in the umbilical region; squeezing pain in the region of the gall-bladder, when sitting; alvine evacuations white, thin watery; rumbling in the abdomen with faint feeling; urine reddish or brown in the morning, depositing a sediment; constipation several days; nights very restless, sleepless, full of fearful and vexatious dreams. Head feels confused and vacant in the morning on waking. Pain all over as if beaten. Unusual weariness. Pulse slow, unequally full, soft. (*Meyer.*)

The following concentrated remedies have been successfully used in the cure of jaundice: Apocynin, Chelonin, Myricin, Podophyllin, Populin, Veratrin, Leptandrin, Rhein, Colocynthin. They have hitherto been too indiscriminately used.*

Melæna.—Two forms of this disease was described by Hippocrates: 1. The *Black Disease, Morbus Niger, Black or Green Jaundice.*

Diagnosis.—Vomiting of blackish-red concrete blood, mixed with a large quantity of insipid acid, or viscid phlegm. The evacuation is generally preceded by a pungent, tensive pain in both the hypochondria; and its commencement is accompanied by anxiety, compressive pain in the præcordia, and fainting. As the disease progresses the blood evacuated becomes fœtid and putrid and the prostration becomes extreme. The disease has been supposed to depend on diseased condition of the spleen; but it is probably always associated with some dyscrasia or depraved constitutional condition. Dr. Nuñez, of Madrid, thought it to depend on repelled herpes or other inveterate psoric disease. (See *Psora.—Index.*) He gives the following case: The Marquis of C. had formerly suffered from chronic eruptions on the legs and at the anus, which were expelled by Sulphur-baths. He had afterwards disturbed digestion, and vomited black coagulated blood. Successive attacks of the same character followed at intervals, accompanied with black alvine discharges and prostration. The patient became feeble, emaciated and unable to turn in bed. Dr. Nuñez found him powerless and motionless; the least movement or cough caused nausea and vomiting, tongue brown, clay-colored; intense thirst; mouth and throat dry; aching pain in the epigastric and hepatic regions, with constant anxiety; obstinate constipation; pulse thready, frequent faintings; sight obscured by a veil. He took Ipec., twelfth, in repeated doses, which diminished the cough and nausea. The appetite improved. Veratrum-alb., twelfth, removed the constipation, faintings and cold sweats, producing first melanotic, and on the next day natural evacuations. The patient recovered in a few days under Arsenicum, twelfth, and Sulphur, twelfth.

* Concentrated Organic Remedies. By Dr. Coe.

TREATMENT. Chief remedies: Aconite, Aur.-c., Ant., Nux-v., Phos., Secale-cor., Ipecac., Arsenicum, Chin., Veratr.-alb., Sulph.

Aconite.—See symptoms of this remedy under jaundice. p. 140.

2. *Melæna Cruenta.—Black Vomit.*—See *Yellow Fever.*

GENUS IV.—VISCERAL VENOUS PLETHORA.

1. VENOUS PLETHORA OF THE PORTAL CIRCLE.

There is a condition of retarded circulation, with overloading of the vascular system, with venous blood or blood resembling venous, called by Cullen physconia, and by Dr. Good parabysma, or visceral turgescence. The pathological state is marked by depression; debility of the physical and mental powers; the muscles are feeble, and the nerves manifest exhaustion.

TREATMENT.—*Sepia.*—The homœopathicity of Sepia to venous plethora of the portal circle has been demonstrated by Dr. V. Meyer.* He proposes to show:—

1. That Sepia, by primarily affecting the splanchnic nervous system, induces an over-loaded condition of the portal system.

2. That all further morbid conditions are but secondary, and are natural results of the further development of the primary disease.

"*Action of Sepia on the Portal System.* When the blood corpuscles lose the power of separation and of becoming reddened by oxygen, the quantity of the blood becomes increased and its quality deteriorated by the useless and defunct corpuscles which remain behind. The whole of the blood assumes a dark, blackish-red color, similar to venous blood, which has been called by Schultz melanotic blood. At first this abnormal blood is collected in the portal system, and subsequently gives a melanotic appearance to the entire mass. Various chronic diseases gradually appear."

SYMPTOMS.—Feeling of fulness in the region of the liver; pain under the last rib caused by jolting motion on a rough road. Pain and soreness in the liver; flatulency; yawning; feeling of weight in the limbs; shooting pain in the region of the liver and kidneys; constipation, paleness of the face; sickly, pale countenance; eyes red; *face and conjunctiva yellow*; yellowness extending over the nose and around the mouth. Icy cold feet in the afternoon and evening when sitting. Feet remaining a long time cold in bed; cold hands and knees. Sweating of the feet. Ebullition of the blood, with determination of the blood to the head and chest. Feels the pulse beat in the head and limbs; aching of parts of the body or limbs on which one lies or sits. Legs feel weak, and ache on slight exertion;

* Homœopathische Vierteljahrschrift.

faintness in the morning, loss of thought, constant chill with shivering, goose-skin and yawning for an hour. Blackness before the eyes; nausea; heat of skin, but pulse slow; dejection of spirits; timidity; intestinal flatulence; headache with dulness and heaviness in the forehead, preceded by scintillations before the eyes. Profuse sweat in walking; morning sweat over the whole body. Absence of thirst, or thirst with bitter taste in the mouth. Drowsiness during the day, falling asleep late in the evening; uneasy dreams. Nerves sensitive to the least noise. Despondency, weariness of life; indifference to every thing; without sympathy; apathetic; mental indolence, dejection of spirits; anxiety, timidity, involuntary laughing and crying. Fever characterized by slowness of the pulse, slight shivering, drowsiness, and absence of thirst; pressure and weight in the head. As the venous plethora extends there arise various disorders of the digestive organs; hæmorrhoids, disordered respiration, spasmodic twitchings or paralysis. The formation of the blood is incomplete; there arise gouty or rheumatic complaints, and finally dropsy.

Carbo-animalis.—When excess of venous blood is denoted by blueness of the lips; also, in elderly people there is blueness of the cheeks.

2. HÆMETEMESIS.—Vomiting of Blood.

The mucous membranes consist of a layer of epithelium spread like a pavement over a thin and structureless membrane, which serves to support it; and the blood-vessels run and ramify in the cellular tissue behind. It is observed that however the congestion may be induced, whether by impediment to the return of blood from the stomach or not, it is only on the open surface of the mucous membrane that the blood issues in any considerable quantity. The stomach may also be injected with colored size in the dead body, and it oozes forth from the open surface of the mucous membrane. It is further remarked that though the mucous membranes allow blood to issue upon their surfaces they never allow the serum of the blood or the watery fluid to escape without the red corpuscles. In dropsical cases resulting from the gin-drinker's liver disease, though the peritoneal sac is enormously distended with watery fluid there is no flow of serum, no drain of fluids from the intestine itself, beyond the slight oozing of blood already mentioned. When the passive congestion of the intestines from the obstruction to the portal circulation has continued long, the nutrition of the digestive organs is slower than in health. The solvent juices are sparingly secreted, digestion is slower and more feeble, and the bowels are constipated.

The impediment to the passage of blood through the liver or chest, if it be created rapidly, usually causes hæmorrhage from the stomach

before it causes ascites; an equal impediment created slowly causes ascites before it causes hæmorrhage.

The mucous membranes compose the only tissues from which hæmorrhage occurs readily and from mere congestion. It hardly ever occurs from this cause in the brain or liver, and never in the serous or synovial membranes. In the mucous membranes the liability to hæmorrhage is great in proportion to the more active function of the membrane. The œsophagus, urethra and urinary bladder are lined with a membrane which acts as a mere lining and is little disposed to bleed. The membranes lining the stomach, the intestines and uterus, being designed to furnish large secretions to perform important functions in the body, are more vascular, and readily bleed from passive congestion of their vessels. Blood effused within the stomach is thrown up by vomiting.

Diagnosis.—Previous to the vomiting there is experienced a sense of weight, fulness, pressure and disturbance in the stomach, nausea, faintness, debility, general uneasiness, giddiness and confusion in the head, roaring in the ears, anxiety, bitter or saltish taste in the mouth, loss of appetite, occasional chills and sometimes pains in the stomach, side or chest. The pulse is for the most part small and contracted, though now and then full and bounding.

"The hæmorrhage," says Dewees, "no doubt generally occurs from the mucous membrane of the stomach, but it is thought also to proceed in some cases from the liver or spleen. When the blood comes from the former organ, it passes along the common bile-duct into the duodenum, and thence regurgitates into the stomach. When the spleen is the source of the hæmorrhage, if this be ever the case, the blood, it is supposed, gains admission into the stomach through the vasa brevia."

The appearance of the blood which is thrown up, varies, being in some instances liquid and bright red, at other times black or coagulated. If the hæmorrhage proceeds directly from the rupture of a blood-vessel in the stomach, it will be red and liquid; but if it has been conveyed from the liver or spleen into this organ, it will be black and perhaps coagulated.

The quantity of blood which is sometimes vomited from the stomach is very great. I have in several instances witnessed the loss of two, three or even four quarts from this organ without any very serious inconvenience, and that too in persons whose constitutions had been impaired from long-continued intemperance. A not uncommon result of these profuse evacuations is, however, the supervention of dropsy.

Causes.—Intemperance, suppression of accustomed discharges, as hæmorrhoids, catamenia, &c.; congestions and engorgements of the liver, spleen and pancreas, scirrhous and other ulcerations of the gastro-

mucous membrane, violent inflammations, whether caused by active drugs or mechanical injuries.

Causes.—1. *Strangulation.*—Dr. Yellowly described the effects of strangulation in the case of a criminal executed by hanging in 1813. The body which had been much convulsed in the death struggles in the act of dying, was opened the next day; and the stomach and its appendages were found deeply congested with dark colored blood. The external vessels of the stomach were turgid, and its inner surface coated by dark, coagulated blood; and when this was washed off, the whole surface of the mucous coat was red.

All the minute capillaries had been injected with blood and it had escaped by exhalation from every part of the surface of the membrane.

2. *Epileptic Convulsions.*—In some severe cases, during the terrible spasmodic contractions of the muscles of the whole body, the face and neck are highly congested, and frothy saliva is forced from the mouth. The profound stertor that often follows the spasmodic paroxysm may be succeeded by vomiting of a dark coffee-ground looking matter, which is shown by the microscope to consist of altered blood. The discharges from the bowels after such paroxysms are often black like pitch, which receive their color from altered blood.

3. *Organic Disease of the Liver.*—In that state of altered structure called "hob-nail" or gin-drinker's liver the current of blood is impeded; and the stomach and intestines, which should be constantly relieved from excess of blood passing from all their veins through the vena portarum to the liver, are left in a state of congestion. In some cases this leads to a frequent oozing of blood from the mucous membrane, and in many others to a freer hæmorrhage, in which case the blood is brought up by vomiting. When the quantity of blood is large its loss diminishes vital power rapidly, and this is one of the most common of the modes in which death is brought about; and when death occurs, post-mortem examination shows that the blood has exhaled from an unbroken mucous membrane.

More generally the congestion is slowly induced and the minute vessels accommodate themselves to the increased quantity of blood they are compelled to retain; or a small oozing of blood takes place from the membrane. The patient has constant pain in the epigastrium, and may vomit daily a small quantity of blackened blood, which is generally mixed with mucus. The stools are sometimes stained with altered blood.

4. *Organic Disease of the Heart.*—Pericarditis, with disease of the lungs may produce impediment to the onward course of the blood, keeping the stomach in a state of congestion. The quantity of blood effused on the mucous surface is small and is seldom noticed. In some cases the obstruction is so great as to cause vomiting of blood.

Congestion from Change in the Relative Proportion of the Constituents of the Blood.—Such change, by altering the consistence of the blood, and thus "rendering its propulsion more difficult, or by modifying the chemical relation which naturally exists between the blood and the tissues, may cause blood to pass less freely than natural through the capillaries." When from any cause the condition of the blood is changed and plethora of the organ results, the secretion of the gastric fluid is lessened, and the mucous membrane is more disposed to be inflamed by the irritation of the undigested or unwholesome food; if this congestion proceeds far, a certain oozing of blood takes place from the open surface of the membrane.

Diagnosis.—Vomiting of blood, especially in small blackish coagula showing that the blood has escaped by oozing, and that it was coagulated before it had time to collect in a mass.

Treatment *of Hæmatemesis in General.*—The following remedies will be found useful in all cases in which there is no fatal organic disease.—Acon., China, Puls., Nux-v., Ipec., Ars., Sulph., Arn., Ham., Millef.

5. *Amenorrhœa.*—Hæmorrhage from suppressed menstruation may occur from one of the mucous membranes, from which blood easily flows, and is more common from the stomach than any of them. Dr. Latham says in one case, Hæmatemesis occurred monthly in a young female who never menstruated. After her marriage it ceased during pregnancy and lactation and then returned. No uterine menstruation ever occurred. Hæmorrhage of the stomach from this cause usually occurs at or near the menstrual period; while it lasts the stomach is painful and tender. Cullen remarked that it was scarcely ever fatal, as the plethora of the system is relieved by it. We have seen one fatal case, but it was one in which there was long-continued congestion and structural disease of the liver. The patient was mother of a large family, and was fifty-eight years old when the vomiting of blood commenced. Up to that time regular menstruation had continued. She lived in an atmosphere strongly malarious, and had suffered from many attacks of remittent and intermittent fevers. Her liver had been torpid for years, was in a state of habitual congestion, had often been inflamed, and remained in parts of its structure permanently indurated. The skin was yellow, wrinkled, shrivelled, somewhat resembling the skin of a yellow peach, withered and dried upon the stone. The vomiting of blood commenced at a period when menstruation first failed. The quantity of blood ejected from the stomach by vomiting was usually about two quarts, which always relieved for the time the gastric distress, but left the patient in a state of extreme prostration. The paroxysms were at first periodical and approximating the menstrual periods, but they ultimately became much more frequent. Though temporarily relieved by medical treatment, this patient, in the

course of a year and a half, sank into extreme anæmia with permanent enlargement of the liver and spleen, and total failure of physical and intellectual power.

Diagnosis.—Hæmatemesis from deranged menstruation is known by its occurrence at or near the time when menstruation was expected, and when ordinary causes of hæmatemesis, as extraordinary obstructions in the liver or chest, or enlargement of the spleen are absent; there is in this case no reason to suspect an ulcer or other organic disease in the stomach, and the derangement of the stomach is not of long continuance. For treatment see Anæmia.

The *Treatment of Hæmatemesis from suppressed menstruation* consists chiefly in slightly acidulated drinks, complete abstinence from solid food. The remedies usually indicated are: Ipecac. and Hamamelis in alternation. Other remedies are: Gallic-acid, Millefolium, Arnica, Collinsonia, Iodine, Secale, Sabina, Macrotin.

6. *Hæmorrhage from ulcer of the stomach.*—In this case the hæmorrhage issues not from any large vessel laid open by ulceration, but from the minute vessels of the tender surface.

In the treatment of diseases that cause impediment to the passage of the blood through the liver or chest, the congestion of the stomach and the feebleness of digestion must be borne in mind. Though the congestion is secondary and can only be relieved by the means that can relieve the primary disease.

Sparing diet of articles easily digested; total abstinence from intoxicating drinks, except in cases where stimulants in a dilute form are necessary to promote the strength and can be used without irritating the stomach or quickening the action of the pulse. Mercury can only be given with safety in a form highly attenuated; stimulating diuretics can not be used safely. It is only in their attenuated form that they may not do injury to the stomach as well as to the kidneys. A persistent congestion of the stomach improperly treated always leads to gastritis, as continued congestion of the lung leads to bronchitis.

When the stomach is kept in a state of congestion by obstruction of the blood in the liver or chest, the secretion of the gastric juice is diminished, and the stomach, which in full health should secrete about four pounds of the digestive fluid in one day, secretes far less; it can digest less food than in health and requires longer intervals of rest. (See Remedies.—Argen.-nitr., Kal.-bi., p. 217.)

Prophylactic Treatment.—Such a regimen as shall regulate the bowels, and the portal circulation, and thus prevent the engorgement of the stomach. All such measures as promote the general health, Nitro-muriatic-acid, in drop-doses, diluted in large quantities of water; Sepia and other remedies that promote menstruation.

CLASS II.—DISEASES OF THE RESPIRATORY FUNCTION.

There is a sympathetic relation between the organs of respiration, circulation and digestion; and this relation is kept up through the nervous system. The connection between these functions is seen in the case of a person apparently drowned. He is taken out of the water, without action of the parts concerned in breathing, without pulse; the mere dilatation of the lung, its repeated action will bring on the action of the heart. Were it not so there would be no possibility of resuscitation. This first action of the heart does not cause decarbonization of the blood, nor does it send arterial blood from the heart through the body. It only first restores sympathy between the actions of the heart and lungs. Inflation and compression of the lung being repeated for a certain time the pulse returns. (*Charles Bell.*)

If a frog be rendered apparently insensible and motionless on being immersed in a non-respiratory gas, the heart being pricked with the point of a needle, begins to act, and according to its nature, acts two or three times, when being pricked again, it renews its action; and presently after it has acted the breath returns, and respiration becomes established. And when the animal has breathed once or twice it turns from its back and leaps about. Here we see the action of the lungs drawing after it the action of the heart, and then again, the action of the heart drawing after it the action of the lungs.

The experiments of Mr. Colman showed, that if a narcotic were introduced into the stomach in the attempt to perform such experiments, it would not succeed. The explanation is this: These three organs are connected together, not only by proximity of situation; but by being supplied with branches from the par vagum, which lies by the side of the pharynx, giving off the pharyngeal branches; coming to the larynx, it gives off the laryngeal branches; coming down to the thorax, it gives off the recurrent nerve under the arch of the thorax; which course removes the particular interest attached to it, because, so long as it continues to run from its source, distributing its branches, there is no intricacy about it, nor is there any call for its minute study. But we next find the nerve taking a circuitous route, the branches running up together, and it now becomes a fair subject for close investigation and inference. It is observed, that the trapezius muscle acts in the process of respiration, but only when stimulated by the same nervous influence by which it is connected with other parts. The nerve through which this influence is conveyed is seen running down to the root of the lungs, about to expand on the lungs, but not before it sends circuitous

branches back to supply those parts, which are necessarily drawn in the regular act of breathing. The frame, were these parts not so drawn in, (one branch being kept irregularly or imperfectly excited,) would suffer spasm or suffocation as the result.

Now the nerve comes down into the chest, one branch passes to the lungs, where it throws out little branches, which unite again, and so are distributed to the heart. It was formerly said, that the lungs and heart were void of sensibility. They are not very sensible. When Harvey put his hand to the heart of a young gentleman, which had been laid bare by an injury, the youth did not know, that the organ was touched; he did not know they were handling him, except when the external integuments were touched.

But with all this insensibility, as commonly expressed, we can not rise from a seat without a certain increase of the pulsating artery; we can not walk faster without quickening the action of the heart.

DISEASES OF THE RESPIRATORY ORGANS.

GENERAL OBSERVATIONS.

In all of our investigations touching affections of the lungs and their appendages, whether acute or chronic, a few preliminary inquiries are essential, in order that we may be able to arrive at accurate opinions respecting the seat, nature, treatment and probable termination of each particular case. Although we are to be governed, as a general rule, by *symptoms*, yet certain constitutional or accidental peculiarities connected with a given train of symptoms, might induce us to select one specific in preference to another, which was equally homœopathic to the disease. Thus cough, copious expectorations, pains in the chest, tickling in the throat, &c., which had followed immediately upon the suppression of some chronic eruption, might be completely covered by *Bryonia*, *Ipecacuanha*, Phosphorus, Phosphoric-acid, Staphysagria, Silicea, &c., so far as the mere symptoms are concerned; but who would not prefer, in cases of this description, *Sulphur*, or some other specific, which would have a tendency to reproduce the eruption, while at the same time, it would be perfectly homœopathic to these indications? So in regard to temperament, habits of life, occupation, medicinal symptoms, age, sex, climate, &c., our remedies should always be selected in such a manner as to bear upon any occult miasm, or other latent cause, which may be operating upon the organism, and thus, either directly or indirectly aggravating and complicating the apparent symptoms. See p. 152.

When called to treat lung-affections, therefore, let the physician inquire, first, is there any hereditary predisposition on the part of the patient to scrofula, consumption, dropsy, erysipelas, nettle-rash, syphi-

lis, &c.? Second, is the chest well developed and symmetrical, so that the lungs can have ample room to perform their functions? Third, is the subject, during health, put out of breath by slight exertion? Fourth, has the malady supervened on, or shortly after the disappearance of an eruption? Fifth, do all parts of the chest dilate equally and properly during inspiration, and is the respiration natural during health?

Respecting this last question, it is proper to observe, that a difference of opinion exists amongst authors. Laennec, considering respiration natural, "when the anterior and lateral parts of the chest dilate equally distinctly, yet moderately, during inspiration, and when the number of inspirations, in a state of repose is from twelve to fifteen in the minute;" which Andral, Broussais, Müller, Forbes and others suppose, that Laennec has placed the mean number of inspirations too low. These gentlemen assure us, that the "mean average of respirations is more than sixteen or eighteen in the minute, in the healthy adult, and that most persons in health breathe from eighteen to twenty-four times in a minute." From much observation in reference to this subject we are disposed to adopt the opinion of Laennec, rather than that of Andral, &c., and, therefore, estimate the mean number of respirations in a healthy adult at fifteen or sixteen in a minute.

DIAGNOSIS OF DISEASES OF THE CHEST.

ABDOMINAL RESPIRATION.

On simple inspection of the chest and abdomen, it is seen that the ribs scarcely move at all, while the belly rises and falls alternately with the descent and ascent of the diaphragm; we infer that there must be painful condition of the intercostal muscles, of the pleuræ, rendering the patient unwilling to elevate his ribs, or that there may be disease of the spinal cord, between the origins of the phrenic nerve and the intercostal nerves, rendering the patient *unable* to raise them; or that this *inability* may arise from some disease of the lungs themselves.

Thoracic Breathing.—When the breathing is entirely performed by the *thorax*, no motion of the abdomen being perceptible, there may be affection of the diaphragm, or of the pleura, reflected over it; or disease and tenderness within the abdomen; or peritonitis, or mere distention of the abdomen.

Auscultation and Percussion.

One side of the chest may be seen to expand, while the other remains motionless, it may appear of the natural size; it may be contracted or rounded and bulging. From all of which appearances important conclusions may be deduced.

Auscultation is a term, used to express the investigation of disease through the sense of hearing, and is generally employed in the investigation of diseases of the thorax. It is employed to express all that can be learned by listening to a cough or the sounds of the respiration, or the sounds made by striking the chest. *Percussion* is the term used to express the mode of eliciting new sounds by striking the surface of the chest. More exactly, the term auscultation denotes the art of distinguishing internal conditions by listening to internal sounds, by means of the application of the ear to the naked or thinly covered surface of the body; or by means of some conductor of sound interposed between the ear and the person of the patient; when this only is applied the operation is called immediate auscultation; when an instrument is interposed the process is called *mediate*. Both modes are employed to ascertain the qualities and modifications of the voice, as reflected through the chest; the peculiarities of the breathing; and the sounds of the heart. To Laennec we owe the discovery of auscultation and nearly all that is known of it, though gradual improvement is still being made in it.

By percussion, which was invented by Avenbrugger, a German, a hundred years ago, we ascertain the degree of resonance, or want of resonance of the part struck. As different substances, when struck, give out different sounds, an experienced ear soon learns to detect by the sound the nature of the substance struck. Bodies that are solid or inelastic, give the sound dull in proportion to their thickness, or their want of elasticity. On the other hand, hollow vessels, those containing air, with thin, firm, elastic boundaries, give out a sound more or less approaching in its qualities to that of a drum; this is called a *hollow* sound. A wooden cask containing air only, resounds when struck; if half full of water, the lower half, when struck, gives a flat sound, the upper half a hollow sound, less hollow however than a vessel entirely empty; fill it up with water and the whole is *dull* on percussion; take out the water and fill it loosely with wool, and it will give a sound on percussion, though less clear than when filled with air alone.

When we make a similar experiment on the human chest, we find it a large cavity bounded by firm, thin, tense and elastic walls. Within it we find the lungs of a spongy texture when full of air, with other solider parts of which the heart is the principal. If a slight *knock* is made against the chest, over a portion of a healthy lung, it produces a resonant or hollow sound. If the lung be not there, but is pushed aside by something more solid which occupies the space, or by fluid, we hear a dead sound. If the lung be there, but has become more solid by disease, we also hear the dull sound. But still there are liabilities to mistake which render practice necessary before percussion may be depended on in auscultation. When we percuss the chest over

the heart, we get a positively dull sound. Avenbrugger, who invented percussion, and Corvisart, who brought it into public notice, employed only *direct* percussion with the ends of the fingers. More recently M. Piorry showed the advantage of an intermediate solid substance which he calls a *pleximetre* or "stroke measurer." A round, thin, flat plate of ivory was first used by him; other substances have since been used; at present it is quite common to use the fingers of the left hand.

Method of employing Percussion.—Place the patient, if convenient, in a sitting position on a firm chair in the middle of the room; at least in some position in which the parts to be struck be as firm as possible.

When the front of the chest is to be percussed let the patient permit his arms to hang loosely down, while he throws the head back. To explore the side of the chest, let him place the hand of that side upon his head and lean a little to the opposite side. To try the posterior part of the chest, let the patient lean forward, the arms hanging loosely between his knees, the head bent downward.

Mode of Percussing.—Bring the ends of the fingers of the right hand together in such a way that the *ends* may stand as if of equal length, no one projecting beyond the other. If we employ no intermediate substance, we merely strike the surface with the evenly projecting ends of the fingers. To test the relative condition of the two sides, always try the corresponding point of the opposite side. Always strike on one side, and then, immediately, on the exact *corresponding point* on the opposite side, thus constantly comparing the two sides. If we have tried one side at the moment of inspiration, we must choose the moment of another inspiration to strike the other side. The fingers should be held in the same manner, and the ends forming a line which makes the same angle with the ribs of both sides; the same degree of force should be exerted for each, the blow not being hard enough to give pain, but smart and quick, the ends of the fingers being instantly withdrawn. When the patient can not bear it without being pained and distressed, it is better to omit it, as the case can always be made plain enough by other means of diagnosis.

Mediate percussion produces less pain, can be employed on a spot precisely indicated even through the clothes; it gives a more decided sound though the force of the stroke is broken by the pleximeter. It may be also employed over œdematous or parts covered by very great thickness of fat, where immediate percussion would reveal nothing; though the ivory plate, employed by Piorry, gives a louder and clearer sound, the fingers of the left hand answer well enough in general. Press them closely to the surface, and strike on the backs of the fingers.

The sound given out on percussion during inspiration is more reso-

nant than during expiration; in childhood and youth than in middle age; it is still less so in old age; less in females than in males; in thin persons than in fat.

We beg leave in this place to recommend, in strong terms, the use of *auscultation* and *percussion* in the investigation of chest-diseases if for no other reason than to form an accurate diagnosis and prognosis In order to acquire skill in the use of the stethoscope, percussion, &c., a patient and careful course of study and practice upon both healthy and diseased is indispensable. By this means, the physician will be able to pronounce with certainty the seat and nature of the malady, and its probable termination. As we advance in our descriptions of the different affections of the respiratory organs, we shall point out the peculiar sound elicited by percussion and auscultation, in the several varieties of disease.

ORDER I.—FUNCTIONAL DISEASES OF THE RESPIRATORY MUCOUS MEMBRANE.

Genus I.—CORYZA.—Simple Catarrh.—Defluxion, or Cold.

Diagnosis.—*Characteristic symptoms.*—Sneezing, watery discharge from the nostrils; increased secretion from the lachrymal glands; slight headache; heavy feeling in the head; occasional chilliness, slight evening fever; in severer cases, sore throat, hoarseness and cough. It appears in different forms and with varying degrees of severity. Thus: 1. *Coryza simplex*, as fully described by Celsus, which is chiefly confined to the schneiderian membrane. 2. *Gravedo*, or catarrhal cephalalgia, in which the affection is chiefly seated in the frontal sinuses. 3. Cold in the head, involving both the sinuses and the mucous membrane. 4. Catarrhal sore throat, involving chiefly the fauces. 5. Catarrhal cough with hoarseness, the disease extending to the glottis and pharynx. 6. Catarrhal bronchitis, in which the bronchia are implicated. 7. Catarrhal ophthalmia. 8. Catarrh of the stomach.

The nature of catarrh is influenced by the constitution of the patient. In many persons it presents many of the features of rheumatism; in others, there is an inflammatory state which is more characteristic of erysipelas. As each of these diseases is entirely distinct from inflammation, they each require a specific treatment.

Symptoms of Coryza.—Chilliness or coldness, commencing one, two or more days after exposure or atmospheric change; lassitude, heaviness of the head, followed by dryness, fulness or stuffing of the nasa passages; frequent sneezing; dull pain and sense of weight in the forehead; stiffness or uneasiness of the eyes; increased secretion of a watery fluid from the nose and eyes; slight redness and tumefaction of the mucous surfaces of these parts. The defluxion from the eyes

and nostrils is somewhat acrid and saline, sometimes producing slight excoriation of the parts over which it passes. If the disease proceeds in its course only a day or two after these symptoms are developed, we have in the evening chilliness, shiverings, followed by increased heat; the posterior nares, fauces, nose and eyes are affected. The patient complains of a sense of roughness or soreness of the throat; loss of sense of smell; sometimes dullness of hearing; sôreness or pain extending along the eustachian tube to the ear, with slight redness of the fauces and mouth; hoarseness; tickling cough; mucous fluid secreted from the posterior nares, fauces, pharynx and trachea. The voice becomes partially or entirely suppressed from œdematous fulness about the glottis. There are pains resembling those of rheumatism in the neck, head and limbs; loss of appetite, slight thirst and bowels constipated. The patient is unusually sensitive to the influence of cold, though the skin is warmer than natural, he is continually liable to contract fresh cold. Thus he is liable to prolong the disease or aggravate it until it assumes a more serious form. See *Catarrhal Fever*, *Bronchitis*, *Pneumonia*, *Ozœna*, *&c.*

Pathology.—This disease consists in a specific irritation of the mucous surface of the nostrils, extending to the frontal sinuses and eyes, to the posterior nares, fauces, throat, and occasionally also to the pharynx, œsophagus, glottis and trachea, thus terminating in catarrhal bronchitis. It is believed that the morbific influences which originate catarrh, affect, primarily the organic nerves which supply the surface principally disordered, and through them, the system generally. Owing to this change in the condition of the diseased texture, the functions of secretion and circulation in the part are specially deranged. The chief modifications of the disease arise from the degree in which the constitutional actions are disturbed, the extent of surface involved, and the grade of irritation produced in the capillaries of the part.

Prognosis.—Catarrh is generally a mild ailment, attended with no danger. It is more serious in aged persons, in those predisposed to pulmonary disease, who have already tubercles developed in the lungs; in those who have had hæmoptysis, who are asthmatic or have suffered from bronchitis, pneumonia, pleurisy, or chronic catarrh in the form of ozœna. Unfavorable, obstinate and difficult cases are characterized by continued irritation, slight redness of the posterior nares and fauces, abundant muco-puriform discharge, or persistent progress towards chronic bronchitis. Aged persons; children of lymphatic temperament, in which the muco-purulent secretion obstructs the breathing; infants, becoming irritable, and showing evidence of disturbance of the circulation in the brain or chest, or obstructed croupy breathing or cough, or in whom the disease assumes the aspect of ozœna, are sometimes difficult to cure permanently.

TREATMENT.—*Tartar Emetic* exercises a specific influence upon the mucous membrane of the air-passages, producing among other effects, sneezing, violent coryza, chilliness, loss of taste and smell, and irritation of the Schneiderian membrane. It has been used with success in influenzas and ordinary catarrhs, also in herpetic pustular and other eruptions about the nostrils. It is efficient in the first, second and third attenuations.

Aconite.—Almost always proper in the beginning of a cold, even if the appearance of fever is very slight. Also when on an increase of the cold, the discharge from the nose is suppressed and is followed by headache.

Arsenicum.—Not much fever, heat or thirst, the patient restless, particularly at night; drinks often, but little at a time; is very weak and easily agitated; discharge acrid and corrosive; excessive soreness of the nostrils and violent burning of the nose, internally and externally. Exercise and warmth are agreeable, and exposure does not aggravate the disease.

Nux-vomica. When Arsenicum has failed to relieve; catarrh fluid during the day and dry at night; mouth dry and parched, without much thirst; lightness of the chest, constipation; fever and chills alternate in the evening; great heat of the head and face.

Mercurius.—Epidemic catarrh or influenza when many persons are affected with it a time; there is constant sneezing; soreness of the nose, with constant watery discharge; offensive smell; profuse perspiration at night; catarrh worse in the morning; there is fever, thirst; heat is uncomfortable, but he can not bear cold air. See Influenza.

Hepar.—Catarrhs caused by suppressed perspiration, in persons who have taken much Calomel; fever with pains in the limbs; catarrh renewed by every breath of wind; headache increased by motion.

Lachesis.—Catarrhs of great severity, profuse watery running from the nose; with great soreness and swelling.

Dulcamara.—Patient better when in motion than at rest; slight exposure renews the obstruction.

Pulsatilla.—Loss of appetite and of smell; the mucus discharged is thick and yellowish, sometimes green and offensive.

Euphrasia.—Catarrhs with discharge of white mucus from the nose; eyes watery, sore and running. Cepa has the same symptoms.

Chamomilla.—Catarrh, with ulcerated nose, chapped lips; one cheek pale and the other red; chills and thirst.

Ipecacuanha.—Difficulty of breathing.

Sulphur.—Psoric cases, protracted and resisting other remedies.

Nitric-acid.—Dr. Helmuth had operated on a child, eight months old, for hare-lip. The case was doing well, but about the second day a violent coryza set in, the discharge being very profuse and quite

acrid; having seen a similar case in which the acrid discharge prevented union of the lips of the wound, the termination of which was unfavorable, Nitric-acid and Arsenicum were prescribed. In a day the coryza was arrested, and the cure, in the usual time was complete. In such cases several coatings of Collodion should be applied over the whole surface of the upper lips, jaws and ligatures to prevent the injurious influence of any nasal discharges.

Genus II.—POLYPUS.

Polypus is a tumor, generally originating from a small pedicle, which was formerly supposed to consist of several roots or feet, like the zoophyte polypus. In some cases a polypus of the nose commences from a small swelling of the pituitary membrane and gradually enlarges until it fills up one nostril and entirely obstructs the other. Others commence on a carious point of some of the bones which form the internal surface of the nostrils. Some are so soft that they bleed on the slightest touch, others are hard, compact, even scirrhous. They always produce disturbance of the breathing, compelling the patient to breathe through the mouth. A large one presses upon the spongy bones, forcing them down on the upper maxillary, thus obstructing the lachrymal duct, and forcing the tears to flow out over the eyes and cheek. Le Dran described polypi so large as to force the ossa palati, and protrude the fleshy palate to a position parallel with the third molar teeth. The most common form bears in consistence, shape, color and size some resemblance to a common oyster. When both nostrils are occupied by polypi, the patient breathes with difficulty, and with a peculiar rattling noise.

Pathology.—Polypus is believed to originate in a constitutional dyscrasia, further views of which we will give in the article on *Sycosis*. As the polypus always appears protruding from the mucous membrane which is always kept moist by the proper secretion flowing over it, and not exposed to the drying effect of the air, it is always softer in texture than the sycotic tumors or excrescences which grow from those points of the mucous membrane at which it unites with or is continued into the skin. The polypi either hang by a narrow pedicle, or present a bloated, wrinkled appearance, and are attached at no great distance from the external orifice where the access of air is still possible. They are highly vascular and often bleed largely when removed by surgical operations.

Treatment.—Before Hahnemann's time no treatment was relied upon except excision. The publication of his work on chronic diseases led to new efforts to discover specific remedies for the diseases pro-

duced by the constitutional miasms which had hitherto baffled medical skill.

The remedies which have been most successful are: *Calcarea*, *Phosphorus*, Staphysagria, Teucrium, Sepia, Silicea, Sanguinaria and Thuja.

Mucous Polypus, *Teucrium-marum* produces the principal symptoms of polypi of the nasal fossæ;* irritating formication in the right nostril, with running of tears from the right eye; the right nostril feels half stopped up and cannot be relieved by blowing or sneezing. Tearing, shooting at the summit of the right nostril; nose runs for several days, whenever exposed to the air; frequent obstruction of both nostrils.

Puffy swelling of the nasal mucous membrane after a facial erysipelas, was cured in six days by the use of the powder of Marum leaves.

A recent polypus of the nose was cured by Marum in a short time.

A nasal polypus already thrice torn away, has not again appeared after the use of Teucrium Marum, 3d, taken internally, a drop every evening for several months. The loss of smell of twenty years standing was cured at the same time.

A mucous polypus which entirely filled one nostril disappeared under this drug in a few weeks. (*Veith*, *Hygea*. Vol. V., p. 450.)

Dr. Hermel gives a case. A lady aged twenty-five had a polypus in the left nostril. Within three years it was twice torn away and returned. Six months later it began to reappear after a cold, and was visibly closing the upper part of the left nostril; there were painful formications and shootings at the root of the nose, in the frontal sinus of that side; the eye ran tears, and mucus flowed copiously from that nostril; blowing the nose caused acute pain and bleeding; breathing through that side impossible. Teucrium 6th was used for a fortnight made no impression, the first and third were tried. At the end of another week there was sensible diminution, a little flow of mucus, and the air could traverse the nostril. In three weeks more the polypus had entirely disappeared, and the breathing was nearly free. A year after she continued well. But four years later her nose was stopped with a cold; she feared return of polypus, took Teucrium, and was relieved by the first dose.

Case *by Dr. Gabalda.*—A man aged 42, had mucous polypi of the left nasal fossa; had long felt increasing difficulty of respiration in both sides, worse on the right. Ordered to snuff a few drops of water containing Thuja tincture. No change in a fortnight. Calcar. 30th substituted. In a fortnight more the respiration, was freer, right nostril

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* Roth's Materia Medica Pura.—Dr. Hermel, in L'Art Medical, 1859. Augsburg Hom. Gaz. Vol. I., p. 59.

less embarrassed than the left, in which a small polypus is visible, reduced in size. Teucrium-marum 12th every morning. A month later rapid improvement, cure under Teucrium 30th. Kleeman, (*Rust's, Magazine*, Vol. 18.) A mucous polypus which hung down almost to the orifice of the nostril was reduced by the snuffing of powdered Teucrium in two months till the air could pass up the nostril.

C. Mayer, (*Merat and Helen, Dict. univ. Mat. Med.*) had polypus from his fourteenth year; often extirpated and cauterized, but it still returned. Advised to snuff Teucrium he was permanently cured.

J. Mayer gives in *Hufeland's Journal* (Vol. 64.) a case of polypus in a child aged eleven years, cured by snuffing Teucrium, three to five times a day. In twelve days there was no trace of polypus left. During the use of the remedy there were heaviness of the head, vertigo, and bleeding from the nose. Some months later another coryza developed another polypus. The same powder produced more violent pain in the head. On the third day it was detached by sneezing. It did not reappear.

Roth gives a case of a uterine polypus three inches in length, pyriform, smooth and polished. Tincture of Teucrium was applied locally for several weeks, when the polypus withered and came away at the touch of a ligature.

Nenning and Roth report each a case of failure with Teucrium.

Drs. Hermel, Roth, and others report numerous cures.

Symptoms.—"Violent titillation in the right nostril with weeping of the right eye." Titillation in the nose soon after taking the medicine, recurring frequently. The right nostril feels as if half closed; obstruction cannot be removed by ordinary efforts. Brief lancinations in the upper part of the right nasal cavity. Fluent coryza in the open air. The nose is much obstructed several times during the day and particularly in the evening while reading aloud. (*Archiv*, V.) A thickening of the mucous membrane of the nose, the sequence of an erysipelas of the face, was removed in six days by the use of powdered leaves of Teucrium. (*Archiv*, XX.) A recent nasal polypus, which had been three times removed by the operation did not reappear after Teucrium had been administered, in the dose of one drop every evening for several months. At the same time the sense of smell returned, which the patient had been deprived of for twenty years. (*Nusser's Allgemeine Zeitung*, I.*) A mucous polypus which entirely filled one nostril was cured in a few weeks by the use of Teucrium. (*Hygeia*, V.)

The effect of this remedy is seen in the case of a lady, who had polypus in the right nostril. In the course of three years it had twice

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* Allg. Hom. Zeitung. Tr. by Dr. J. M. Rhees. Am. Hom. Rev. Sep., 1859, p. 556.

been extracted but still returned. A new coryza developed it again; it fills the upper part of the nostril; there are titillations and painful prickings in the root of the nose, and in the left frontal protuberance. The eye weeps much, the affected nostril discharges much mucus; blowing the nose gives pain, sometimes hæmorrhage; breathing through that nostril impossible. July 14th, Teucrium 6th, two drops in two hundred grammes of water, a spoonful morning and evening. After fourteen days tried the first, then after a week the third. In three weeks the size of the tumor had diminished. On the eighth of September nothing could be seen of the tumor; some inconvenience in that nostril in respiration. In 1858, May 7th, the lady feared a new coryza would reproduce the polypus. She took Teucrium, 6th, as before. Immediately after the first dose the symptoms that gave uneasiness vanished.

Polypus of the Nose.—Dr. Richards, of N.-Jer., gives the following case: Sarah ——, aged twenty-eight, bilious temperament, has polypus of the right nostril, which commenced five years ago; two years ago had it extracted; about a month ago it began to return.

The polypus is of a soft gray color, and obstructs the nostril so as to almost wholly prevent breathing through it. Calc.-carb., 6, Staphys., 1, given Aug. 31, 1860. Sept. 14th. No better, Teucrium, 1, three times a day. Improvement commenced in a week. Nov. 18th, polypus has disappeared, patient breathes freely through the nostril. March 5th, 1861, continues well.

Thuja.—Dr. Pétroz, in 1852, read before the congress of homœopathists of Paris, some cases of polypus and other sycotic diseases cured by this remedy. One of these was that of a lady, aged forty, who had been treated with Sulphur for scabies when young. At thirty-four, she had attacks of asthma; afterwards, her face was pale; there was constant sense of fulness in the brain, diminution of memory; melancholy, flushes of heat to the face; head too full; throbbing of the temples; dyspepsia; then followed metrorrhagia, and the development of a large uterine polypus. She was cured by Thuja, 18, a dose every two days. The polypus was detached on the eleventh day. Bell., Secale and Silicea completed the cure.

Sanguinaria.—Some cases have been cured by the local application of this remedy. One was a youth, in whom the polypus projected from the nostril. It was first extracted by force, causing profuse hæmorrhage. It again grew as large as ever, and extended beyond the alæ nasi. Dr. Price, of New-Jersey, applied the pulverized root of Sanguinaria, and the tumor soon assumed a paler shrunken appearance. He entirely recovered. A case of a little girl and one of a man advanced in life, were cured in the same manner. (*Louisville Med. Jour.* 1840.)

Sanguinuria has been often used successfully as an errhine for the

cure of polypus. Dr. Wolf directs it in the 200th potency for a severe, one-sided headache, which extends into the frontal sinus. Mercur.-corros. relieves it temporarily only. Nitric-acid is one of the best remedies for that condition of the pituitary membrane that predisposes to polypus. There are bleeding from the nose; scorbutic state of the gums; swelling of the lining membrane of the throat, which often proceeds to laryngeal phthisis. These cases often occur in persons of sycotic or psoric constitution. They have been cured with Nitric-acid, Apis, and Fluoric-acid, each at the 30th potency or higher.

Minor Operations on the Nasal Passages.—The extraction of nasal polypi, whether by forceps or ligature, requires a knowledge of the position and relations of the turbinated bones, and the direction of the meati of the nose. These abnormal growths may attain such proportions that the whole contour of the face is disfigured. Fergussen gives a case in which "the tumor extended from the ethnoid bone to the condyles of the occipital, and was also detached to both sides of the septum. Two large pendulous bodies hung down into the pharynx."*

Hæmorrhage from the Nose.—In obstinate hæmorrhage from the nose, when the ordinary medicines have failed to arrest the bleeding, *the posterior nares must be plugged*, and a correct idea of the canals and cavities to be operated on is absolutely requisite before the instrument can be applied, whether the instrument be the canula of Bellocque, the hog's intestine used by Frank, or the gum-elastic bag of Martin St. Agne.†

Eustachian Tube.—Catheterism.—This operation is a simple one; but it is necessary for the operator to bear in mind that the position of the floor of the nares is horizontal, *and that the internal opening of the canal is on a level with the inferior turbinated bones.*‡

Genus III.—RONCHUS.—RATTLING RESPIRATION.

1. *Stertor.*—A noisy kind of respiration, such as is observed in apoplexy.—Snoring. It is more properly a symptom of certain pathological conditions, which will be illustrated under *coma*, *apoplexy*, *&c.*

2. *Wheezing.*—An imperfectly-developed form of asthma, called in some countries *phthisic.* We meet it in children of psoric constitutions, and elderly persons predisposed to phthisis. It is sometimes induced in horses by driving them too fast and compelling over-exertion of the lungs. Such horses are said to be "wind broken." The most effectual remedy we have known tried is Nitric-acid,—a few drops in a pail of water. See *Asthma.*

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* Practical Surgery. p. 491. † Bernard and Ruette, Manual, &c. p. 192.
‡ Dr. Helmuth.

3. *Obstruction to Respiration from Foreign Bodies in the Larynx or Trachea.*—In the act of talking or laughing at the same moment that something is swallowed, sometimes a portion of the food is drawn in with the breath and starts down "the wrong way;" thus instead of passing into the œsophagus it goes into the glottis, and instantaneously produces alarming symptoms, in some cases immediate death.

The foreign bodies, which find their way into the larynx, are frequently much larger than the size of the glottis would seem capable of permitting to pass; morsels of food, coins, grains of corn, seeds, nuts, teeth, bullets, nails, &c., have found their way through this narrow aperture; how they got through it has been regarded as a mystery. But it has been fully shown that dilatation and contraction of the space at the glottis occur in regular alternation during the respiratory acts, the first in inspiration and the contraction during expiration. When dilated during inspiration, the size of the rima-glottidis is nearly double what it is in a state of rest. Then in the act of inspiration, if the epiglottis fails to protect the laryngeal opening, a foreign body passing toward the œsophagus may be drawn into the larynx. After its entrance, the vocal chords contract forcibly from its irritation and thus prevent its being thrown out again, hence so often a surgical operation becomes necessary for its removal.*

Symptoms *caused by a foreign Substance in the Trachea.*—"The pain caused by its presence is towards the front of the throat, before the œsophagus; when in the throat the pain is further back; there is difficulty of breathing and of swallowing in both cases; but, when the wind-pipe is obstructed, the breathing is particularly difficult, the face is bloated and purple, the eyes protrude; the voice is more affected, becomes hoarse, or is lost altogether; the cough is whistling or rattling, and threatens to terminate in suffocation. These symptoms are slight at first, but they gradually increase, sometimes subsiding almost entirely for a time and then returning with greater violence; obstruction to the passage of air, often producing fatal asphyxia. Some cases of this kind have been treated for croup, for laryngitis, or spasm of the glottis; these may also be mistaken for a foreign body in the trachea, &c. When it exists, it may be lodged in the trachea, larynx, or one of the bronchi, being more frequently found in one of the latter. Dr. Gross found, that they had been more common in the right one. In one case it was transferred from the right one to the left.

If the foreign substance is not located *in* but *below* the glottis, and respiration is not impeded by it, the patient may seem to be in good health for days and even for weeks, without experiencing any cough or

* Foreign Bodies in the air-passages, by Prof. S. D. Gross, of Louisville University. 1854.

other symptoms. "Suddenly, however, he will be taken with violent spells of coughing, almost to suffocation, the attacks resembling those of croup. In such cases, if *Tartar-emet.* or *Silicea* do not afford immediate relief, there is little hope remaining. Neither will an incision avail, if, between the attacks of coughing, the respiration becomes more and more difficult and heaving. By this time the lungs have become hepatized, and the sufferer must die, whether an opening be made into the larynx or not."*

Diagnosis.—Auscultation may reveal the fact of the existence of the foreign body, indicate something of its size and locality. Chloroform has been advised as an aid in the performance of a satisfactory exploration.

A dry rale, sonorous or sibilant, may be heard at the point of lodgment. It is described as whizzing, whistling, cooing, whiffing, puffing, snoring, any of which may indicate the fact of the existence of the body and its locality. A boy in Dublin was whistling through a plum-stone, perforated on each side, the kernel removed; by a strong inspiration he drew the stone into the largynx, where it became fixed transversely, producing a sound as when the stone was held across the lips; for hours he continued this new mode of whistling, being much pleased with it, and it gave little inconvenience for several days; when it was removed by an operation. (*Stokes on the Chest, p.* 252.) When the body is lodged in one of the ventricles of the larynx the rale is heard on that side. If it remain long in one position it produces inflammation and ulceration, and a moist rale is produced. When the body is drawn up and down by the current of air, passing in and out, a valvular flapping sound is the result. It has even been felt to be projected by the current of air against the vocal chords in the act coughing. In one case a pebble was thus felt in the trachea of a boy, and was extracted by an operation. The symptoms are:

"Feebleness or suppression of the vesicular murmur equally on both sides, if the foreign body be situated in a bronchus, the vesicular murmur on the corresponding side enfeebled or suspended, the percussion-resonance remaining clear, except collapse of the lung be induced. Feebleness or suppression of the murmur sometimes suddenly giving place to a well-evolved and normal respiratory sound, after an act of coughing, which dislodges the foreign body, and carries it upward into the trachea. Occasionally feebleness or suppression of the vesicular murmur transferred from one side to the other, indicating a removal of the foreign body from the bronchus of one side to that of the other side. Exaggerated vesicular respiration on the side opposite to that on which the murmur is found to be diminished or suppressed. Dry and moist bronchial rales, after a time, more or less diffused over the

* Hering.

side corresponding to the bronchus in which the foreign body is lodged."*

TREATMENT.—The first efforts to give relief in these cases generally consist in "beating with the flat of the open hand on the back, blowing snuff in the nose to induce him to sneeze, or tickling the throat with a feather to excite vomiting, may throw it out. But if it be firmly fixed in the wind-pipe, it will not be brought up by any such efforts; and, if the symptoms become alarming, if there be danger of suffocation, the patient must be relieved by the operation of tracheotomy.

MEDICAL TREATMENT.†—*Ipecac.* may be given whenever it is ascertained that a foreign body is lodged in the wind-pipe. Free use of demulcent drinks.

Belladonna.—The distress is paroxysmal, showing irritability of nerves and disposition. By controlling the spasmodic effort the patient sometimes sleeps and becomes relieved by the ejection of the substance during sleep.

Dust, feathers or hair, having been inhaled, cause violent cough. Hepar may follow Belladonna. Sugar-water or Gum-arabic water used freely as drink.

Hepar for after-symptoms during recovery.

Tartar-emetic.—Danger of immediate suffocation, symptoms resembling those of croup. Suffocative paroxysms in children who have got something in the throat pressing on the larynx.

Opium.—Suffocative paroxysms of distressed breathing. The patient becomes purple in the face.

Silicea.—When after trying Tartar-emetic the attacks return continually, or, if there is a cough attended with an offensive smell. Continue, morning and evening, until the obstruction is removed by coughing. In tedious cases, Hepar may be alterated with Silicea.

GENUS IV.—APHONIA—LOSS OF VOICE.

Dumbness or loss of voice may arise from various causes, none of which need be treated of at length in this place. The different species described by authors are: 1. Aphonia from absence of the tongue. 2. Aphonia from tumor of the fauces or near the glottis. 3. Aphonia from disease of the trachea. 4. Aphonia atonica from paralysis or loss of nervous energy.

1. *Aphonia from defect of the Organs of Speech.*—Two hundred years ago it was supposed that dumbness was always dependent on organic defect of the organs of speech. It is now known that persons

* Flint's Diseases of the Respiratory Organs, p. 626.

† Hering.

who are deaf and dumb are almost exclusively capable of producing vocal sounds, and indeed of speaking and reading, and that they are only dumb, because they are deaf; they cannot imitate, because they cannot hear the articulate sounds made by others. There are a few cases of malformation or defects of the organs of speech from injury.

In the states of North Africa cutting out the tongue has been often inflicted as a punishment. The subjects of this cruel operation retain the sense of taste for ordinary sapid substances, but acids and bitter articles cause intense suffering.

2. *Aphonia from Disease.*—The diseases which cause loss of voice are generally of an inflammatory character, and will be sufficiently referred to under their respective names. On curing the accompanying disease the voice is restored.

3. *Aphonia* from *breathing caustic vapors.*

Ammonia.—A young lady lost her voice entirely from exposure to cold. Numerous remedies were tried in vain for three months; she at last regained it in three days by inhaling ammoniacal vapor, disengaged from a mixture of a solution of the hydrochlorate of Ammonia and carbonate of Potash. See *Bromine, Iodine.*—Index.

4. Aphonia Surdorum.—*Deaf-dumbness.* See *Deafness.* Index.

Genus V.—DYSPHONIA.—DISSONANT VOICE.

1. HOARSENESS.—RAUCITAS.

Nature of the Disorder.—A peculiar condition of the mucous membrane which lines the larynx or trachea. The affection may be acute or chronic.

Symptoms.—Rough and indistinct voice and cough, sometimes accompanied by pain; asthma, and rattling in the throat. When caused by a chill, the disorder is mostly associated with a hard dry cough, or with expectoration of a watery saline fluid; after a few days, much viscid white mucus is discharged. Other catarrhal symptoms often occur. The hoarseness is observed only when the patient coughs or speaks, or when the lungs contract, and not during inspiration.*

Causes.—A chill; congestion of blood in the neighborhood of the throat. Relaxation or partial destruction of the tissues of the larynx or throat.

Prognosis.—Hoarseness is generally temporary and soon yields to judicious treatment; in rare cases it continues for years, even for life.

Treatment.—*Aconite* when there is any fever beginning or anticipated; when the disease has been recently excited by cold; heat of face and hands with cold feet; shivering.

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* Hartlaub.

Arnica may be diluted with water and used as a gargle when the affection seems to depend on a relaxed state of the lining membrane of the pharynx, tonsils and adjacent parts.

Chamomilla,—Suited especially for children; there is hoarseness with catarrh, tough mucus in the throat, dryness, burning and thirst; the temper irritable; easily vexed, morose, taciturn.*

Nux-vomica.—Persons of quarrelsome, obstinate, headstrong and sulky disposition. There is a rough, deep, dry cough, arising from dryness, tension, and soreness of the throat; the mucus not loose; heat and chills alternating, causing cough, with pain in the throat; voice hoarse, *weak*, deep and dry; obstruction of the nose; slight pain while breathing; sleeplessness at night; cold feet and hands in the afternoon, followed by fever and thirst; confusion of the head in the morning; peevishness; aversion to labor; irritable, fretful disposition; obstinacy.

Pulsatilla.—Roughness, hoarseness and pain at the back of the throat; roughness in the palate, with dryness of the mouth; tenderness of the throat, during deglutition; cold in the head, with discharge of bloody mucus from the nose; cough, with expectoration and pain in the chest; tickling of the throat, which excites coughing, and which is worse in the evening; shivering with drawing pain in the limbs; fever towards evening, followed by external coldness, fatigue and depression, dry heat at night; disturbed sleep, troubled with dreams; silent, tearful, irresolute disposition; fickleness.

Mercur-vivus.—The voice is hoarse and rough; burning and tickling in the larynx; disposition to perspire, but the sweat giving no relief; exposure to the air aggravates.

Capsicum.—Hoarseness with itching and obstruction of the nose; cough, producing pain in different places.

Causticum.—Obstinate hoarseness, with catarrh; soreness of the chest and throat. In obstinate cases a psoric influence in the constitution may be suspected and *Cinnabar* will give the patient the benefit of its valuable anti-psoric powers.

Sulphur.—A dose of the thirtieth attenuation, once a week, will often remove obstinate hoarseness. *Acid-mur.* is one of the best remedies.

Genus VI.—PSELLISMUS.—DISSONANT SPEECH.

1. Bambalia.—*Stammering*.—Hesitation of speech consists in an interrupted articulation, accompanied generally with more or less of straining and distortion of the features. When owing to serious malformation of the tongue or other organs of speech it may be incurable.

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* Hering.

But in all the cases we have seen, the disease was of a spasmodic character; the cure is generally possible and sometimes easy. It generally arises from the effort to speak while drawing in the breath, which can be avoided by an exertion of the will. Let the patient begin by filling the chest well before he tries to articulate the first word, and then slowly enunciate one word after another. Let him avoid the usual hurried repetition of the same syllable; and, when one oral position threatens to become spasmodically permanent, let him simply open the mouth, allowing simple *sound* to escape. A still more specific direction is the following: Let the stammerer begin at once to beat time for *every word he utters*, either in talking or reading, just as if singing the words. If this does not stop the hesitancy, then try beating time for every syllable, and afterwards gradually run into beating for words, and then for sentences. The beating can be done with the foot, or with a hand, or one finger. Thus: "When [beat] in [beat] the [beat] course [beat] of [beat] hu-[beat] man [beat] e- [beat] vents," [beat] &c. A persistent course of measuring the words until the stammerer can read and talk straight forward, though slowly, for an hour at a time, will overcome the habit of stammering in very many, if not all extreme cases.

Internal Medicinal Treatment must be directed to the cure of nervous peculiarities of the patient's constitution. *Mercurius-sol.*, *Ignatia*, *Aconite*, *Belladonna* and *Pulsatilla* are the most important remedies.

ORDER II.—DISEASES OF THE RESPIRATION AFFECTING THE LUNGS.

Genus I.—COUGH.

1. IDIOPATHIC COUGH.

In most instances *cough* is one of the symptoms of inflammatory action, either of the parenchyma of the lungs, or of some membrane connected with the respiratory organs; but coughs occasionally arise and reduce the patient to a very low state of hectic fever, without the presence of any inflammatory action, except that which is produced by the act of coughing, from an elongation and relaxation of the uvula, from the pressure of tumors and swellings in the throat, trachea or thorax, from hypertrophy and other organic affections of the heart, and from accumulations of serum or pus within the thorax. The process by which this symptom of disease is produced consists in closing the glottis, and then making a sudden or strong expiration. Its purpose is the dislodgement of mucus, which may have collected in excess in the air passages, or it requires the admission of a certain quantity of air, and the possession of a certain degree of muscular strength. Patients often die from want of strength to expel the accumulating mucus and

phlegm. A case is given of a boy who was dying of croup, being about to suffocate from the accumulated mucus in the trachea which he could not expel, because he could not draw in air enough to inflate the lungs *beyond* the collected mucus. An opening was made into the trachea; he drew in a long breath and coughed up the mucus *through* the *rima-glottidis*. (*Med. Chir. Transactions.*)

Cough may also be excited by other causes besides the accumulation of mucus in the air-passages. The sensation that prompts to cough may be caused by: slight irritation about the glottis; a long trailing, tickling uvula; inspiration of irritating vapors; pressure upon the respiratory organs.

Sympathetic Cough.—Irritation of the nerves of the stomach may excite a sympathetic cough. (See *Catarrh of the Stomach.*) We see therefore that mere *cough* is not a diagnostic symptom, which by itself can reveal to us the nature of the disease of which it is but a symptom.

We have in several instances speedily succeeded in removing troublesome coughs, and of restoring patients to health, who were apparently in the last stages of pulmonary consumption, by clipping off a portion of an elongated uvula. It is not uncommon that protracted and troublesome coughs are promptly cured by the removal of tumors in the neck, by the puncturing of abscesses in the throat or chest, or by evacuating from the thorax an effused fluid. It behooves us, therefore, in all cases of cough, where the cause is not perfectly apparent, to make our investigations with reference to the above enumerated complications, in order that surgical measures may be resorted to on all suitable occasions.

It is to be feared that errors are sometimes committed by gentlemen of our school, in underrating the value and importance of surgery, as a means of curing disease. When the cause is of such a nature that our remedies are at best slow and uncertain, while speedy and safe removal may be affected by a surgical operation, we should never hesitate in our choice. Even in cases like paracentesis abdominalis, or paracentesis thoracis, where only a troublesome symptom is removed, we often accomplish much good by placing the patient in the best possible condition for the favorable operation of remedial agents. But in the examples of obstinate tumors and abscesses, pressing unduly upon some part of the respiratory apparatus, the aid of the surgeon is often indispensible.

Many individuals are troubled with coughs in temperate latitudes from an inherent debility of the lungs, and a want of vigor to resist the stimulating influence of cold air. Such persons often succumb eventually from phthisis without having experienced any actual inflammation of the pulmonary structure.

Others, from excesses of various kinds acquire a predisposition to coughs from the most trivial exciting causes.

TREATMENT.—Appropriate remedies for all ordinary kinds of cough, may be selected from those elsewhere referred to, when treating of the different affections of the respiratory organs.

Chronic Cough.—Case by Dr. Drysdale.—Arsenicum.—A patient had suffered for a year with a cough which came on in paroxysms; it was worse on lying down at night, with dyspnœa, and was relieved after an hour's coughing by the expectoration of tough mucus; the appetite bad; gnawing pain at the epigastrium an hour or two after meals; diarrhœa for the last month. Urine scanty, clear, but passed frequently and with difficulty. Cured by Arsenicum in two weeks.

Sanguinaria.—In dry and humid coughs of almost every form, and chronic coughs following inflammations, acute or chronic, Sanguinaria is one of the best remedies. In these cases there is irritation of the bronchial membrane. In many cases the cough is kept up by irritation of the stomach, torpor of the liver, tendencies to headache; and in females spinal irritation. In all of these cases Sanguinaria is peculiarly appropriate; and in none of them is its success to be attributed to its power of exciting expectoration. It is most useful in the pretubercular stage of phthisis, the follicular inflammation of the throat; chronic catarrh. In phthisis it helps to prolong life, even in the later stages.

2. PERTUSSIS.—HOOPING-COUGH.

DIAGNOSIS.—Most writers recognize three destinct stages in hooping-cough, viz: first, the *forming stage*, presenting symptoms like ordinary catarrh, as sneezing, watery eyes, dry cough, headache, constriction and oppression at the chest, feverish nights, &c., which continue for two or three weeks, when the *second* or *convulsive stage* sets in. At this period of the malady, there are violent paroxysms of cough of a convulsive and suffocative character. This cough is distinguished from others by a peculiar stridulous or whooping sound, which occurs during inspiration, while the expirations are interrupted by frequent fits of coughing. This whooping sound is owing to a spasmodic contraction ef the glottis, which renders respiration very difficult, and gives rise to a sense of obstruction and impending suffocation. This spasm and contraction, together with a tickling in the throat come on previous to the paroxysms and subside somewhat after the coughing has ceased. The duration of the paroxysms varies from one to five minutes, at the termination of which there is often vomiting or expectoration of mucus. This stage usually acquires its greatest degree of violence in from one to two weeks, and its continuance is from five to six weeks, when the third, or *stage of declension* commences. At

this period all of the symptoms gradually become milder; the paroxysms are less frequent,—the cough less urgent; the contraction and obstruction less strongly marked, until at the end of two or four weeks more, under favorable circumstances, all of the symptoms have disappeared.

Causes.—Pertussis is unquestionably attributable to the absorption into the organism of a *miasm* of a specific nature. We know nothing of its chemical or physical character; but in this, like other maladies, the system must be rendered susceptible by previous preparation, or predisposition, to enable the miasm to exercise its specific effects and induce the phenomena of hooping-cough.

Whether this specific miasm operates primarily upon the mucous membrane of the air passages, the stomach, the diaphragm, the lungs, or the eighth pair of nerves, we are unable to decide in a satisfactory manner. It would seem that the advocates of each particular opinion in regard to its primary location, have found in their autopsical examinations, appearances which indicated that there had been inflammation in each of the structures alluded to. That the pneumogastric and other nerves, as well as the membrane of the glottis, larynx, &c., are involved either as a primary or secondary effect of the contagion, there can be no question.

The causes which act upon the organism in such a manner as to render it susceptible to the action of the miasm, are, atmospheric vicissitudes, colds, debility and chronic diseases of the respiratory organs, inhalation of irritating substances, fatigue and exhaustion of the physical or nervous system.

Dr. Wolf, in his work on Psoric Diseases, says: "hooping-cough has become a stationary disease, in consequence of the universal practice of vaccination. It often appears after vaccination or re-vaccination, or vaccination exerts a salutary influence upon it."

Treatment.—*Tartar-emetic.*—When the paroxysms of coughing are accompanied by vomiting, diarrhœa, great weakness, rapid and feeble pulse, cold and clammy skin, great tenderness, and irritability of the larynx, and trachea; flushed face. Tartar-emetic about the second or third trituration meets all the symptoms. It is often proper to alternate it with Belladonna.

Trifolium-infœna.—Common Clover.—This remedy has, says Dr. Foster, "a wonderful effect in relieving hooping-cough.

"The remedy is *purely empirical*, but it nevertheless cures most cases in a few days." On this subject Dr. Hale remarks:

Instead of "*empirical*" the doctor should have written "homœopathic" for it certainly is indicated by the law of *Similia*. The so called "hay asthma" is due to the influence of the medicinal principle of clover, which escapes partially during the process of curing. It

seems to reside principally in the impalpable dust which arises from the clover. It has been supposed that this dust produced its effects by its *mechanical* action alone. The same has been asserted of Ipecac., yet we know that Ipecac. in small doses relieves many forms of asthma, and various spasmodic coughs. The *Trifolium* deserves a trial in many affections of the bronchia and lungs. It is homœopathic to spasmodic asthma. It causes a similar disease in man; and horses who eat clover, get the "heaves," which is but a form of asthma. Dr. Hale says, it causes spasmodic cough in horses; a cough which much resembles hooping-cough, and the cough arising from spasmodic croup.

Capsicum.—Dr. Morgan, of Ill., says, he cured promptly a severe case of hooping-cough with three pellets of Capsicum, 3° centesimal, every three hours. Having seen the result in this case, he gave it to a half dozen or more other patients in whom the disease had not, any more than in the first one. In every case in which it was faithfully used, it was successful in immediate suspension of the disease; and the improvement was permanent.

Coffea.—Coffee, "Café l'eau" hot and well sugared, a tea-spoonful for a child, two years old: allow a good diet of minced meats, moderate quantity of milk and farinaceous food. Prohibiting confectionaries.

In one case, a child had alarming paroxysms of coughing, which threatened suffocation and fainting, till relieved by vomiting; the coffee mitigated all the symptoms. We have often used it with success in severe cases. Coffee acts both on the stomach and on the nerves.

The chief remedies for pertussis are: *Bell.*, see *Exanthemata.*—*Index. Drosera*,—pertussis after measles, with hæmorrhage from the nose or mouth. *Mephitis-putorius.*—The most effectual in all common cases. Other remedies are: Acid-mur., Cup.-sul., Cup.-met., Acid-nitr., Ammon.-mur., Veratr.-alb., Acon., Canth., Allium-sat., Senega.

Genus II.—DYSPNŒA.—EMBARRASSED OR LABORIOUS BREATHING.

In a healthy adult under ordinary circumstances, the act of respiration is performed, unconsciously almost, about eighteen times in a minute, nearly equal to one act of respiration for about every four beats of the heart. In certain diseased conditions the frequency of inspirations and expirations may be increased or diminished. Dyspnœa is applied to that deviation from the natural manner of alternately expanding the thorax and permitting it to collapse, in which this act of breathing is performed with labor, usually in a hurried but imperfect manner. This irregularity and difficulty depend on an altered proportion between the quantity of air that reaches the lungs, and the quantity of blood that is sent into them from the right ventricle of the heart to be converted into arterial blood.

Respiration is a movement, that is carried on unconsciously during sleep, but which is also subject to the occasional control of the will. It is supposed, that the presence of venous blood in the capillary vessels of the lungs excites the pulmonary branches of the par-vagum; this excitement is transmitted to the brain and reflected on the motor branches of the nerves, which supply the muscles of respiration; by these muscles more powerful efforts to alternately expand and contract the chest are made in an excited irregular manner; and their failure to completely accomplish their object is accompanied with a feeling of distress. In ordinary health the sensation indicating the "want of breath" is so slight and so exactly apportioned to the need of the individual, that it is scarcely felt and is not attended to, and is at once appeased by the immediate aëration of the blood. It is only, when it is not relieved by the admission of air that the sensation of "want of breath" becomes extremely painful; then all the *voluntary* muscles of respiration are forcibly called into action to assist in the mechanical process of pro pelling and aërating the blood.

In various forms of disease dyspnœa becomes a prominent and alarming feature. Thus in croup and laryngitis, the inlet for the air is narrowed at its entrance to the lungs; more blood then passes to the lungs than can be supplied with oxygen, and instinctive efforts are aroused to make up by numerous short inspirations the work which should be better performed by a few full ones. If the obstruction to the passage of air increases, the bad effects of the half-decarbonized blood circulating in the arteries begin to be perceptible. It begins to linger and stagnate in the lungs; the lips become livid, the skin grows dusky, showing the accumulation of carbon in the blood.

In any condition in which the quantity of blood flowing to the lungs continues the *same* as in health, while the air inspired, is disproportionately small, dyspnœa will be produced. When a portion of the lung loses its spongy texture and becomes rapidly solid, so no air can penetrate it, though *blood also* ceases to penetrate it; the same quantity of blood flows towards it from the right side of the heart into the pulmonary artery, and the portions of the lungs still pervious receive an excessive quantity; therefore there is great deficiency of oxygen for this excess of blood and dyspnœa. The same effect may arise from obliteration of the pulmonary vessels in one part by pressure of fluid in the pleura; enlargement of the heart; dropsy or tumors of any kind within the chest; or pressure upward against the diaphragm by enlargement of organs within the abdomen, from tumors, ascites, obesity, pregnancy or full stomach. Dyspnœa may also be caused by disease of the walls of the chest, or by restricted capacity of the chest by disease, rigidity or pain preventing its expansion, or by palsy of the muscles depended on to expand it.

Dyspnœa from increased Flow of Blood to the Lungs.—Under active exercise the pressure of the muscles upon the veins propels the blood with greater velocity to the right side of the heart; the heart contracts more frequently in proportion as it is more rapidly filled with blood; an increased quantity is sent to the pulmonary artery; and the breathing must be more rapid to supply this excess of blood with air the individual is out of breath, he is in a state of dyspnœa, though temporarily so. We also see dyspnœa in some states of fever, and in all other cases in which the equilibrium between the blood sent to the lungs and the air supplied for its oxygenation. Such disordered conditions show, how intimately the functions of the heart and those of the lungs are dependent on each other; and also that *dyspnœa* considered in itself is not a diagnostic symptom revealing what organ is suffering or *how* it is affected, whether the fault is in the heart or the lungs, or whether neither or both of them are in fault. For treatment see *Asthma.*

Genus III.—ASTHMA.

Diagnosis.—For a week or two previous to an attack of asthma, the patient will often be troubled with sneezing every morning, itching in the inner canthi of the eyes, irritation of the throat, with constant disposition to hem or hack, lassitude, dull pains in the head, back, and limbs, loss of appetite, dry hacking cough, and great depression of spirits.

The attack most commonly commences during the night, with tightness and constriction about the chest; urgent and distressing dyspnœa, aggravated by the slightest movement; inspirations short and strong, while the expirations are long, labored and wheezing; great and rapid movement of the nostrils; countenance bloated and livid, and indicative of intense distress and anxiety; inclination to retain the erect position; even during the forming stage there is inability to lie upon the right side or back; more or less pricking or burning heat after the attack commences, aggravated by scratching; sometimes aggravated by eating even bread; respiration very difficult, as if from want of air, yet the wind from a fan or the draught from a door or window, stops the breath, and can not be borne; face and forehead livid, or pale; sharp pain through the temples; inability to lie upon a feather bed from the first; during the paroxysm must constantly retain the erect posture; the dyspnœa, &c., worse in the night, and remitting during the day; dry cough in the first instance, sometimes, but not always, followed in a few hours by expectoration of a viscid mucus; perfume of flowers, hay, &c., increases the symptoms, and almost puts a stop to the breath during the paroxysms; extremities cold; respiration through the mouth; attacks brought on from excitement, particularly grief and fear; also certain odors or irritating substances inhaled; palpitation during the attack; the attack occurs for the most part during the

season of flowers; tongue foul; breath offensive; eructations; flatulency; urgent desire for cool, fresh air; pulse variable.

Causes.—*First*, the causes of the paroxysms; and *second*, the causes of the disease. The former are usually easily ascertained; but it is often very difficult to point out the latter, or those influences which have disposed him to fall into the asthmatic state on the occurrence of the ordinary irritations are divided. The authors between those who say that asthma has at the root of it some organic disease within the chest, and those who deny that genuine spasmodic asthma ever depends on organic lung-disease, and maintain that it is always a pure neurosis.

It was observed by Hahnemann that asthma always occurs in individuals who are suffering from some chronic miasm. In numerous instances we have been able to trace a direct connection between asthma and an attack of urticaria, but partially developed, and then suddenly suppressed. Indeed it may be safely asserted that a majority of the cases of true asthma, are attributable to this or to some other miasm, which has been thrown, from some exciting cause, upon some portion of the respiratory apparatus. We are confirmed in this opinion, from the fact that in several instances where an attack of asthma has been seriously threatened, and even commenced, we have been able to cut it short by administering a remedy like Puls., Bry., and *Cupr.-acet.*, which had the effect to develop the nettle-rash, and thus relieve the air-passages. See page 449, *Causes*, &c.

Other causes which are, properly speaking, exciting causes, may be enumerated, as humid easterly winds, atmospheric vicissitudes, and electricity in the air; inhalation of certain medicinal and other irritating substances, like *Ipecac.*, the odors of certain plants, the inhalation of the imponderable particles of which often causes severe paroxysms of the malady; also indigestible food, anger, fear, the irritation of pregnancy, spinal disease, sedentary habits, &c.

Prognosis.—"Asthma," says Dr. Salter, "never kills," at least he has never seen a case in which a paroxysm proved fatal. When a patient dies from the contingencies of the disorder, he does so from the organic changes in the heart and lungs which have gradually progressed. An unfavorable prognosis must be made when there is obstinate persistence of expectoration, and chronic cough, as both of these symptoms show that the lining membrane of the air-passages is the seat of organic change.

"If the patient is young, the chest sound, the attacks short, the intervals long; if there is no permanent shortness of breath, no cough or expectoration; if the attacks are getting milder or rarer, and if the exciting cause is clear and such as may be obviated, then a favorable prognosis may be given. If the patient is old, the lungs damaged, the

attacks frequent and severe, the breathing never quite free, coughing and spitting constant, the disease apparently gaining ground, and the exciting cause occult, or irremediable, then, in view of all or any of these circumstances, there is no alternative, but to give an unfavorable prognosis." (*Dr. Salter on Asthma.*)

TREATMENT. — *Pulsatilla*, *Ipecacuanha*, *Arsenicum*, *Bryonia*, *Nux-vomica*, *Belladonna*, *China*, *Sulphur*, *Lobelia-inflata*, *Coffea*, *Digitalis*, *and Acid-hydrocyanic*, *and Moschus* are the principal remedies in this complaint.

Pulsatilla is indicated in cases occurring in persons of a mild temper, light complexion, hair and eyes, from suppressed or confined urticaria or other rash, cessation or other derangement of the menses, and inhalation of the vapor of *Sulphur*. The *external indications* are: Short, suffocating and extremely difficult respiration, as if from want of sufficient air, or choked by some irritating substance; the patient is obliged to retain the erect posture; his movements are rapid and his whole appearance indicates great distress and anxiety; tongue loaded with a thick coating; breath offensive; frequent eructations; hiccough; countenance pale, sometimes alternating with redness; attacks usually coming on in the night during sleep.

Cramp-like and constrictive tension of the chest or larynx; respiration impeded and distressing, increased by motion, walking in the open air, or by eating; short spasmodic cough, nausea; palpitation of the heart; sensation of fulness and distention in the stomach; throbbing pain in the forehead; bad taste in the mouth; cramp-like pains in the abdomen; itching, burning or prickling sensation in the skin, in the evening or during the night; pains in the limbs; nausea and vomiting; smarting or burning pain in the canthi, and pressure in the eyeballs.

Very great depression of spirits, and melancholy from the onset of the symptoms; intense anxiety; agitation and dread of suffocation during the paroxysms.

Administration.—From the third to the sixth dilution may be used —a dose every half hour in urgent cases—until aggravation or amendment occurs.

Ipecacuanha.— In asthma, caused by the suppression of miliaria, urticaria, and by the inhalation of irritating vapors, *Ipecacuanha* at the first to the third attenuation, may be exhibited. The signs which particularly indicate this medicine, are: Spasmodic contraction of the larynx and chest; anxious sighing or panting respiration; palpitation of the heart; air seems full of dust; face pale; extremities cold; nausea; vomiting; coated tongue; insipid or bitter taste; dry, spasmodic cough; irritability; impatience and fear of death.

Arsenicum-album, is a valuable remedy in bad cases, occurring from suppressed eruptions or catarrh, also in persons of feeble or im-

paired constitutions, whether from excesses, previous sickness or old age. The following symptoms point especially to this medicine, viz: feeling of extreme lassitude and debility; difficult, stifling dyspnœa, with attacks of suffocation; spasmodic constriction of the larynx and chest; respiration short, anxious and wheezing; irregular throbbings of the heart; sufferings aggravated at night by lying down, movement, eating, mental excitements, or exposure to the cool fresh air; distention and cramp-like pains in the abdomen; frequent eructations; nausea; vomiting; burning sensation at the stomach; fœtid breath; smarting or burning sensation in the throat; oppressive burning pains in the eyes; face pale or bluish; anxious aud desponding. The first to the third trituration may be employed, regulating the repetition according to the urgency of the symptoms.

"It is a common practice in China, for asthmatics to smoke Arsenic, and with the greatest relief to the disease. A very interesting case is related, in which a French lady did the same, in consequence of hearing the above. She commenced with a quarter of a grain, swallowing the smoke. From being in a state of constant breathlessness and suffering, unable to lie down or make the slightest exertion, she is now able to go abroad, and is rarely threatened with an attack oftener than once in three or four months, and that is at once checked by smoking Arsenic."

The Liquor Arsenicalis is said to be much more efficacious than the *Ars.-alb.* It seems to be more prompt and energetic when Arsenicum is indicated. It should be prepared with distilled water instead of Alcohol. The most efficacious and satisfactory method of treating asthma, is with the Arsenical solution—first dil. and Kali-hyd., first trit. (dec.) in alternation, every hour or two, or three times a day, as circumstances demand.

Bryonia is applicable in cases arising from suppressed eruptions, or rashes but partially developed. It is also appropriate in cases complicated with catarrhal and pulmonary disorder.

The paroxysm usually occurs in the night; the respiration is difficult, short, sighing, impeded by stingings in the chest, and aggravated by exercise; there are oppressive, tensive or contractive pain in the chest; cramp-like pains, cuttings or shootings in the abdomen; bitter or acid eructations; throbbing or pressive pains in the head, increased by movement; pressure and burning pain in the eyes on motion. It may be exhibited in the same manner as *Pulsatilla.*

Asthma, which has been caused by derangement of the disgestive functions, excessive study and watching, sedentary habits, abuse of drugs, liquors, coffee, &c., may often be cured by the use of *Nux.*

The *Nux*-symptoms are, weight and constriction at the chest; great difficulty of breathing; aggravation of the symptoms in the night, on

walking, eating or lying down in the evening; heat and burning in the chest; bitter and acid eructations; pressure and contractive pains in the stomach and epigastrium; palpitation of the heart; short, dry, spasmodic cough, sometimes attended with a scraping in the throat; fœtid breath; loaded tongue; heartburn; distention of the abdomen after eating; heaviness or tearing, throbbing, drawing or jerking pains in the head; frequent sneezing, with coryza; hypochondria, anxiety and irritability. It may be employed in the same manner as *Pulsatilla.*

Belladonna has been especially recommended in cases occurring in females of an irritable constitution, also in cases where there exists a tendency to spasms, or any organic lesion. Hartmann asserts that it "often proves radically curative after the exhibition of some intercurrent remedy, particularly in cases which have not become too chronic by repeated relapses, under which circumstances we must have recourse to *Sulphur*, *Calcarea*, or some other antipsoric."

It is particularly called for when the paroxysms come on in fits of short, difficult, irregular and suffocating respiration, accompanied by dry cough; pressure on the chest; violent beatings of the heart; vertigo, swimming or darting pains in the head; pains in the small of the back and limbs; cramps in different parts of the body; anxiety, irritability, and fretfulness.

A dose of the second or third dilution every hour or two until an impression is produced.

Chamomilla is an important remedy in the flatulent asthma of children, also in that following a suppressed catarrh. It is likewise specific in those attacks which are caused by anger, grief, fear, &c., in adults. Among the symptoms which point to it may be mentioned distention and sense of fulness of the stomach and bowels; pressure, anxiety, and fulness in the region of the heart, short, wheezing respiration; great restlessness; dry irritating cough; bad taste; tainted breath.

Administration.—Same as Belladonna.

Lobelia-inflata.—Dr. M. Cutler says: he had been an asthmatic for ten years, during which time he tried all known modes of treatment, getting better results from Ictodes-fœtida (skunk-cabbage) than any thing else. When an attack, the most severe he ever had, came on, he took a table-spoonful of tincture of Lobelia, the fresh plant, fully saturated,—at a time when the difficulty of breathing was extreme. In three or four minutes the breathing was as free as it ever was; there was no nausea. In ten minutes took another spoonful, which occasioned sickness. In ten minutes more he took a third, which produced moderate vomiting and a prickling sensation through the whole system, even to the extremities of the fingers and toes. The urinary passages

were affected with smarting in passing urine. These symptoms soon subsided, and a vigor was restored to the constitution which he had not experienced for years. He had no attack afterwards, and had only on a few occasions a few of the symptoms. Before taking the Lobelia he scarcely passed a night without more or less of them; and often was unable to lie in bed. In other cases he found it to give relief, but it affected different persons in different ways. A tea-spoonful produced emesis in some. Nausea in some degree was thought necessary. He thought his own case one of "convulsive asthma from pulmonic irritation of effused serum. Dr. W. P. Barton gave it to lady who had narrow and compressed thorax, subject for years to asthma. The above excessive and dangerous doses only *cured* because the remedy is capable of *causing* asthma.

The Lobelia-longiflora, which grows in the West Indies, spreads such deleterious exhalations around it that an asthmatic oppression of the chest is felt on approaching within many feet of it as it stands in the corner of a room. (*Ingenhouz.*) Darwin thus alludes to it:

> "And fell Lobelia's suffocating breath
> Loads the damp pinions of the gale with death."
>
> *Botanic Garden.*

Lobelia-inflata is a remedy of great value in cases of spasmodic asthma induced by humidity, and certain other conditions of the atmosphere. It is indicated when the attack is preceded or accompanied by a kind of "prickly sensation through the whole system, even to the extremities of the fingers and toes," constriction across the chest; short, anxious and wheezing respiration; nausea; vomiting; sense of prostration; trembling of the limbs; giddiness and headache, spasmodic cough; burning sensation in passing urine; intermittent pulse; cramp-like pains in the abdomen; cold sweats.

Administration.—Potencies from the third to the sixth,—a dose every two to four hours, as the symptoms require.

There are other remedies, like *Coffea*, *Ignatia*, *Stramonium*, *China*, *Arnica*, *&c.*, which should always be borne in mind by the practitioner; for instances may occur where one or more of them will be required.

In cases of asthma of long standing, and which appear to be connected with some chronic miasm lurking in the organism, *Sulphur*, *Digitalis*, Acid-hydrocyanic, Calcarea, &c., are worthy of consideration, and will sometimes effect cures when the other medicines enumerated have disappointed our expectations.

Thuja.—Dr. Wolf says of this remedy that it corresponds to all forms of asthma; and in the course of the cure by Thuja it is not uncommon to see the sycotic gonorrhœa appear and re-appear in its primitive form, and with apparent relief of all other morbid symptoms. Often

also, we find the above described affections appear as the immediate consequence of vaccination. (See 449, *Causes*, &c.)

Bromine.—Dr. Douglas says a dyspnœa of ten years standing in a girl sixteen years of age, which had remained after measles, and was so violent that the girl was sometimes not able to walk fast or go upstairs without feeling very much exhausted, disappeared after taking five doses of *Bromine* 30° of five pellets each. It is one of the few drugs that produce the croupous false membrane in the air-passages.

Calcarea.—Dr. Luther reported a case of a girl aged seven years, who presented all the appearances of permeability of the *ductus arteriosus*, namely dyspnœa, irregularity of circulation, blue discoloration of the skin, &c. Calcarea 30° effected a radical cure in six weeks.

Genus IV.—LARYNGISMUS.—Laryngic Suffocation.

1. ASTHMA THYMICUM.—ASTHMA MILLARII.—SPASMUS GLOTTIDIS—LARYNGISMUS STRIDULUS.—CROWING DISEASE OF CHILDREN.

This disease was first described by Dr. John Clarke, and then by Dr. Simson, 1761, Dr. John Millar in 1769, Dr. Davies, 1826. It consists essentially of a constriction of the glottis, which impedes the passage of the air into the chest, even in the mildest cases, and sometimes suspends altogether for a time the respiratory function.

Diagnosis.—The child has an interruption of the breathing, and, after vehement struggles at length succeeds in drawing in its breath with a shrill sound like the peculiar inspiration of croup and hooping-cough. These attacks are paroxysmal, and vary in frequency, severity and duration. The intervals become shorter as the disease advances. In the earlier stages the attack is often slight, and soon stops with a fit of crying, which is succeeded by a refreshing sleep. The severity increases in violence and becomes unyielding. In the early stages the attacks begin generally in the night, but afterwards they come on at any time from trifling causes. It is evident that there is an unusual approximation of the sides of the glottis as in hooping-cough or croup. When the closure is not perfect, the child breathes, but hurriedly, and the countenance is bluish, eyes staring, and each inspiration is attended with a crowing noise. Where more complete, respiration is entirely suspended for a while; the child makes vehement struggles, termed convulsive, to recover its breath; at various intervals, from a few seconds up to a minute or in some to two minutes, air is admitted, and this rush of air, passing through a narrow chink produces this peculiar sound. A fit of coughing or crying follows and the paroxysm ends; or, if the glottis does not open at the end of two or three minutes, the child dies of asphyxia; pallid and exhausted, it falls lifeless on the nurse's arm, and is said to have died in a fit.

During the struggles for the recovery of breath all the muscles supplied by the respiratory system of nerves are in violent action; the face is pale and cadaverous, and the external veins turgid with highly carbonized blood. When it ends in death, sometimes we have true convulsions, but generally slight.

Contraction of the flexors of the thumb, fingers, wrists, ankles and toes has been considered as characteristic.

The sound of mucus in the trachea, as the child wakes from sleep, breathing for some moments unusually hard, is caused by the increased secretion of mucus; the sound is more observable just before a paroxysm. In some cases it is one of the most striking symptoms, lasting for weeks or even months without interruption, and so resembling hooping-cough as not to be distinguished from it. It has been confounded with catarrh with increased secretion, but in the crowing disease the lining membrane of the fauces, nares and frontal sinuses are free from disease.*

The convulsions are common, but the disease may exist without them, convulsions do not always indicate cerebral congestion. Dr. Merriman gives two cases of children who died in the fits, in which no trace of cerebral congestion could be found after death; he only found a collection of small glandular swellings on the neck, pressing upon the par-vagum.

It is also noticed that when the crowing is caused by dentition, the symptoms do not vanish instantly upon cutting the gum and the starting of the tooth through it, but they pass off gradually; some time being required for the irritation and tumid state of the cervical glands to subside.

Causes.—Laryngeal suffocative asthma is perhaps in all cases dependent on the presence in the system of some one of those constitutional miasms which Hahnemann has shown to lie at the foundation of nearly all chronic diseases. In his great work on that subject he gives many cases gleaned from various authors, in which asthmatic suffocative diseases originated in repelled cutaneous eruptions, as itch, herpes, &c. Scrofula is one of the most widely-diffused miasms. See *Scrofula, Psora, and Blood, Diseased states of.*

Causes *of the Paroxysm.*—They consist in all influences which can close the glottis involuntarily. The breathlessness which commonly precedes the sonorous inspiration cannot arise from the closing of the rima glottidis, which in such cases is perfectly normal, but must depend on defective power in those agents whose office it is to open that narrow aperture. The "crowing inspiration which is nature's imperfect cure of the temporary suspension of breathing, arises from the glottis being

* Laryngismus Stridulus, by Hugh Ley, M. D., London, p. 480

partially open for the admission of air, and remaining so until some expulsive expiration, such as screaming crying, coughing, or belching shall mechanically burst open the flood-gates and perfect the recovery from the paroxysm."

Pathology.—The symptoms of this disease seem to show its spasmodic character; but it has been rendered more probable by observation "that the glottis is closed by the usual exertion of some of the ordinary functions, as swallowing, &c.," and that it remains "partially or totally closed from some want of vigor in those *antagonistic* powers which should again sufficiently open the glottis for the purpose of respiration." It is proved that children of strumous constitutions are *almost* the only ones affected with it; and whatever be the remote cause of the malady, the only pathological fact which exists in all the cases is *an enlargement of the thoracic or cervical absorbent glands.*

Relation between the Pathology of the Disease and its Symptoms. Charles Bell says: "the knowledge of the nerves of respiration distributed in the neck, throat, and thorax will enlighten the physician in distinguishing the symptoms of disease." In the present case we notice that the two clusters of glands subject to this enlargement or induration during infancy are in the neighborhood of vital organs; and when enlarged they must exert a pernicious influence on the parts with which they are in contact. In children the absorbent glands are seldom enlarged so as to press much upon the trachea, but may obstruct the lymphatics or interrupt the functions of the nerves, and there may be much enlargement of the glands at the root of the lungs before and behind the bronchia, blending with others on the arch of the aorta, and frequently between the origin of the carotids, which are but continuations of those that follow the course of the trachea downward. It is therefore probable that the recurrent nerve at its origin may be subjected to its injurious influence, as this nerve upon the right side turns round upon the subclavian artery as it emerges from the innominata, behind which the nerve passes close to the origin of the carotid upon the side; whilst the left recurrent nerve winds round the arch itself of the aorta, generally between the carotid and subclavian arteries, upon and about which these glands are situated.

If the deeper-seated chain of glands be enlarged, they may effect the recurrent in its course; for they lie in the cellular tissue and form a cushion for that nerve. Now what would be the precise effect of such pressure upon the recurrent? This much seems proved, "that this disease, the spasmodic character of which has been conceded without examination is *more allied to paralysis than to a convulsive movement.*" The symptoms are not those of excitement either of the par-vagum or of the recurrents, but resemble those which are proved by physiologists to result from an annihilation of the powers and attributes

of those nerves, as where they have been tied or divided, or the portion of a nerve excised.

TREATMENT.—1. Of the constitutional state which predisposes to laryngismus. This must be attempted by the antipsoric remedies best suited for each special case. See *Scrofula*, *Asthma*, *Sycosis*, *Psora*.

2. TREATMENT *of the Paroxysm.—Remedies.* Aconite, Bell., Ipecac., Sambucus, Arsenicum, Baryta-carb., Cham., Coffea, Cuprum, Moschus, Bry., Nux-vom., Puls., Sulph., Iod.-sul., Calc.-carb., Ammon-carb.

Sambucus.—Slumber with half open eyes and mouth; on awaking from it he could not draw a breath, and was compelled to sit up, whereupon respiration was very hurried, with wheezing in the chest, as if he should suffocate; he lashed about with his hands; the head and face were bloated and bluish; he was hot without thirst; weeping at the approach of a paroxysm; without cough; manifestations especially at night, from twelve to four o'clock.

Chlorine.—Dr. Carroll Dunham says, that chlorine gas in cold water produced in his own case the following symptoms: "*Inspiration* unimpeded and could be effected in the natural manner, but *expiration* was absolutely impossible, and the impossibility arose, not from any inability of the muscles of expiration, but from a closure of the rima glottidis, *expiration* being felt to be impossible, *inspiration* was again attempted, and was accomplished, fully and easily, although the act was attended by a slight *crowing* noise. Expiration which was again attempted, was impossible as before. By these successive operations the lungs became inflated to a most painful degree, but so firmly did the glottis appear to be closed, that it seemed as though air might pass through any part of the thoracic walls more readily than by the way of the larynx. This arrest of respiration having endured for about a minute, the face becoming turbid and livid, partial coma supervened, the spasm relaxed, and respiration became free again."

These symptoms had been excited by only washing the mouth with "a weak solution of chlorine gas in cold water." On another occasion he saw the same train of symptoms produced by inhalation of chlorine gas. In a proving of chlorine a similar effect is indicated. Pereira says: the attempt to inhale it "produces *spasm of the glottis*."

Dr. Dunham gives the following case:* "An infant seven months old, well developed and large; fourth child of healthy parents; was seized three weeks ago, with spasmodic affection of the respiratory organs; would suddenly, without warning, make a long inspiration with a slight crowing noise; attempt to exhale would fail; another crowing inspiration followed by forcible ineffectual effort to exhale. This succession of spasmodic efforts would follow each other till the child be-

* American Hom. Review, Vol. II., p. 20.

came blue around the mouth, and sank into partial unconsciousness; free respiration would then follow, and then a deep sleep. Sometimes convulsive movements appeared as the paroxysm was subsiding. Attacks came on after excitement, frequently during sleep, most common after midnight, as many as thirty or forty attacks in twenty-four hours. Emaciation progressing rapidly, losing appetite, strength and playfulness; face pale and bloated; eyes dull und glassy. Homœopathic treatment and change of air had failed; an older child of the same family had died during the past year with the same affection, terminating in four weeks in convulsions. In that case autopsy revealed no organic lesion; simply emaciation and atrophy. The disease had evidently advanced almost to the second or convulsive stage in which the prognosis is decidedly unfavorable.

A saturated solution of chlorine gas in water at 60° Fahrenheit was prepared; of this was made the first centesimal dilution, retaining still the odor of chlorine. Of this twenty drops were dissolved in four tablespoonfuls of water; a tea-spoonful to be given in a porcelain spoon, every two hours. A few drops to be placed in the mouth at the beginning of each paroxysm. Beginning at four, P. M, June 24th, when the child had had forty paroxysms within the last twenty-four hours.

"During the succeeding twenty-four hours there occurred but four paroxysms; only one of which began with any severity, and this one was instantly arrested midway by a few drops of the solution placed upon the child's tongue. During the night of the 26th not a single paroxysm. Appetite and playfulness returned, the bloated aspect of the face and dulness of the eye disappeared."

Genus V.—EPHIALTES.—ONEIRODYNIA.

I. ONEIRODYNIA GRAVANS.—INCUBUS.—NIGHTMARE.

Ephialtes was so called from the belief of the ancients, that a demon leaped upon the breast and prevented its expansion to draw in the breath.

Some nervous or indisposed persons are oppressed during sleep with a heavy pressing sensation on the chest, by which respiration is impeded, or the circulation of the blood intercepted to such a degree as to threaten suffocation. Frightful ideas are recollected on waking, which have occupied the dreaming mind. Frequent attempts are made to *cry out*, but often without effect, and the horrors and agitations felt by the patient are inexpressibly frightful. In the more severe cases, the patient seems at the commencement of the paroxysm in a profound sleep and suffering imaginary troubles in an unpleasant dream.

The uneasiness of the dream increases and ends with the conscious-

ness of being in bed and asleep; he feels oppressed with some weight that bears down and prevents breathing, and feels sensations the most painful that can be conceived. As he becomes partially awake, he makes violent efforts to move the limbs; but no muscle obeys the will; and every exertion exhausts the remaining strength, and appears to be the last; the heart beats rapidly, sometimes with palpitation; the countenance is ghastly; the eyes half-open. If let alone the sufferer remains a minute or two, and then recovers all at once the power of volition; he jumps out of bed or turns in it till quite awake. If this is not done, another paroxysm may be expected as the propensity to sleep is irresistible; and immediate sleep is surely followed by another paroxysm. Some hear singing in the ears and see spectres before the eyes; some acceleration of the pulse and palpitation of the heart remain; and if the patient does not fully awake, he may retain some remembrance of his horrible imaginings as of some fearful supernatural visitation. It is said, that the most intelligent persons have been deceived in this way, and could only avoid it by rousing themselves fully to a full consciousness of their condition. The amiable poet Cowper thought, he "was hunted by spiritual hounds every night;" and could not tell whether it arose from his state of health or the divine displeasure. When the digestive organs are in certain states of disease, there may be preternatural pulsations from one end of the alimentary canal to the other. A man of Cowper's morbid sensibilities might easily combine from his sensations and his dreams, a vision of spiritual hounds. Forestus thought himself pressed by a black dog, so that he could not move. Night-mare and its accompaniments may be expected by contemplative, hypochondriacal persons, subject to nervous diseases, when the stomach is over-loaded by indigestible substances.

Virgil, if not a sufferer from night-mare, was acquainted with it. He says: (Book 12, line 1213, Æneid,)

"And as when heavy sleep has closed the sight,
And sickly fancy labors in the night,
We seem to run; and destitute of force,
Our sinking limbs forsake us in our course;
In vain we heave for breath; in vain we cry;
The nerves unbraced their usual strength deny;
And on the tongue the faultering accents die."

Walter Scott also knew something of night-mare, which he thus describes in the "Lady of the Lake:"

"In broken dreams the image rose
Of various perils pains and woes:
His steed now founders in the brake;
Now sinks his barge upon the lake;
Now leader of a broken host,
His standards fall, his honor lost.

Then from his couch may heavenly light
Chase this dread phantom of the night."

CAUSES.—The distressing sensations of the patient in some cases originate in a large quantity of wind, or indigestible material in the stomach, which is oppressed with a full supper taken at a late hour The stomach expanded with acid-gas, presses against the diaphragm, preventing its descent, and thus impeding respiration. The stomach is generally acid in persons subject to this disease. Inflation of the intestines also produces disturbed respiration or mental perturbations. Sleeping on the back seems to have some influence in causing this disease. The patient seems to himself to be on his back, and to be kept down by some external power. The above are the causes which most commonly operate; but neither any one of these, nor yet the stopping of the circulation in the heart or of any particular part; neither a full stomach nor an empty one can always be charged with causing it.

TREATMENT.—Persons subject to it, should eat but little in the evening, and take light food at all times; drink no wine, beer, nor coffee. Weak black tea may be taken, but the free drinking of water is better. Milk and soup are both heavier for some dyspeptics than solids of proper quality and quantity. (See *Dyspepsia.*) The patient should bathe the head and neck in cold water in the evening in summer, or rub the face, neck and back of the head, throat, chest, &c., with a wet cloth or sponge, and drink cold water on going to bed.

REMEDIES.—*Nux-vomica.*—Disorder of digestion caused by spirituous liquors, strong-beer, too high living, sedentary habits. Take it every night.

Aconite.—When the disease occurs in children and women, and is accompanied by much heat, thirst, palpitation of heart, determination of blood to the head or chest; oppressed breathing, nervousness, uneasiness; also for headache, febrile excitement following the attacks.

Opium.—Paroxysms violent; patient lying with his eyes half closed, snoring, the mouth open, rattling in the throat, the breathing irregular, face much distorted, and covered with cold perspiration, extremities convulsed.

Pulsatilla.—Considerable derangement of the digestive apparatus from high living.

Sulphur and Silicea.—In occasional doses, when the attacks continue to recur after having taken the above remedies.

2. EPHIALTES APNŒATICA.—EPHIALTES FROM SUSPENDED RESPIRATION.

DIAGNOSIS.—This form of ephialtes occurs in persons of nervous temperament, who inherit certain psoric or other constitutional maladies, or have been broken down in health by the influences of malaria or

Mercury. There is generally derangement of digestion manifesting itself in a depraved appetite, craving for indigestible articles; disposition to chew paper, rags, or charcoal, &c. The sleep becomes at first disturbed, and then occasionally too sound, attended with troubled dreams. In the worst cases the patient after being somewhat wearied, or eaten a supper only a little heavier than usual, retires to rest in apparent health. Immediately after he becomes fully asleep, he begins to breathe gradually less and less deeply. The amount of air taken in at each expansion of the lungs is successively smaller, till he lies as in a profound stupor, breathing so faintly that the respirations can not be heard or counted. During the same time the beatings of the heart also have been becoming gradually fainter; and the pulse, which on going to sleep was full and strong, has diminished in force till the beats have become almost insensible. For the length of time that breathing can be dispensed with the patient seems in a profound trance, insensible to all ordinary noises or even to efforts of others to wake him. At length a struggle within to renew the act of breathing manifests the return of consciousness. Breathing is at first impossible, the face becomes darker under spasmodic, fruitless efforts to "catch the breath." The features are distorted and the whole frame convulsed with agony some seconds, which seem to observers very long ones; at last the first spasmodic expulsion of air is announced in a fearful *scream*, which thrills and rouses every body near, whilst the patient through convulsive and protracted efforts is succeeding in the restoration of ordinary respiration. The first paroxysm on going to sleep is ordinarily the most severe; but he is liable to others during the night, and at other times on falling asleep.

Pathology.—Sir Charles Bell* has sufficiently demonstrated the importance of the *Respiratory System of Nerves* in securing "a wide-spreading means of connexion between parts that are remote, to provide for freedom in the simple act of breathing."† He has also explained the process by which the act of respiration, which "proceeds so equally during sleep, is uninterrupted in the insensibility of apoplexy; and how it continues when the head of an animal is crushed, the brain deeply injured, or the head altogether removed." It is through the respiratory system of nerves that the processes of respiration and the other involuntary vital actions are carried on; and in health, they proceed as regularly during sleep as at any other time. But there are some diseased conditions in which the suspension of the *voluntary* actions is accompanied by the cessation of action in the *involuntary* nerves also.‡

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* British and Foreign Medico-Chir. Review, April, 1852, p. 396.

† Nervous System of the Human Body, pages 71, 72.

‡ Appendix, p 214.

A surgeon from the West Indies, who had suffered from a malignant fever with erysipelas, and had taken large quantities of Calomel, consulted Mr. Bell for the following spasmodic affection: "On falling asleep, just at the moment when *volition* and *sensibility* cease, the *involuntary* motions also stop, with a sensation of death, under which he awakes, generally convulsed.

"His medical friends have sat by him and watched him, and they have found that when sleep is overpowering him, the breathing becomes slower and weaker, the heart and pulse also fall low, and cease to beat as sleep comes on, and after a short time he awakes in tremor. This gentleman is very naturally in much apprehension that some of these attacks may terminate existence. But he is young, and I think the attack is essentially different from the case of *angina pectoris*. The case presents us a lively idea of what would result were the *involuntary* nerves subjected to the same law of the nerves of sense and volition; for then sleep, by overpowering both, would be death!"

We have met with a few cases of this character, in all of which the pathological condition corresponded in general with the case given by Mr. Bell. These patients all (but one) had resided in a malarious region; they had taken considerable quantities of Mercury and Sulph.-quinine to cure intermittent or remittent fevers; and the respiratory phenomena were nearly the same in all. The spasms came on at first exclusively during sleep, producing the greatest imaginable distress and terror. One of these cases was peculiarly severe, and caused the patient and friends extreme suffering and anxiety for several years.

This patient was a boy belonging to an intellectual and nervous family; he had had ague occasionally, and been cured under different modes of treatment. At the age of ten years he became subject to spasmodic attacks, commencing always in sleep. The whole progress and pathology of the case corresponded entirely with that given by Mr. Bell. It resisted all treatment for six-and-a-half years, and the boy ultimately died of another disease. The other cases referred to were cured by Nux-vomica and regulations of diet.

CLASS III.—DISEASES OF THE SANGUINOUS FUNCTION.

The heart is the most remarkable muscle of the body, lying obliquely in the chest between the two lungs, its base pointing upwards in the direction of the right shoulder, the apex pointing to the space between the fifth and sixth ribs. It is inclosed in a peculiar capsule, called the pericardium, consisting in a fibrous layer without, and a serous membrane within; the cavity between the heart and pericardium generally contains more or less fluid which lubricates the heart on the outside and renders its local motions easy.

The heart comprises four cavities, consisting of one auricle and ventricle on each side; the right pair of cavities being devoted to the circulation of the venous blood, the left pair to that of the arterial blood. The upper cavities, called the auricles, constitute the base of the heart, the ventricles which are much stronger than the auricles, form the apex.

The heart thus constructed is the prime-mover of the circulation of the blood. When this indispensable function is perfectly performed, the physician generally feels that, though something else *may be wrong*, the *centre of the blood-system* remains well balanced, and something may be done towards restoring the normal functions of other portions of the machinery. When the blood, which contains the elements of life, growth and reparation starts on its circuit to the remote portion of the organism, it sets out from the heart, beginning its journey at the *left ventricle*. By the contraction of that cavity the living fluid is forced into the aorta, from which it is to be distributed into all the high-ways and by-ways of the body. After ramifying through the remotest and finest capillary branches of the arteries, it finds its way into the minute corresponding tubules which constitute the beginnings of the veins; these, uniting with each other as they proceed towards the centre, pour all their contents into the two great trunks, called the venæ cavæ; and they unload themselves, moment by moment, into the right auricle. Though the blood has already reached the heart, it is not yet at the point from which it started, to reach which, another journey must be performed. The right auricle contracts on the blood and forces it into the right ventricle by which it is sent off through the pulmonary artery, to the lungs; and there it ramifies through the many minute branches of this artery, till it enters the finest vessels of the pulmonary veins. These collect it from all portions of the blood, and concentrate it in the four large venous trunks which pour it back into the left auricle of the heart; and this cavity at once contracts upon it and drives it through the opening valve into the left ventricle from

which the circuit was commenced. Such is a brief outline of the circulation of the blood in health. We proceed to treat in regular order of its principal accidents, modifications, and derangements generally spoken of as *Febrile and Inflammatory Diseases.*

ORDER I.—PYRECTICA.—FEVERS.

It has been estimated by good observers that one-half of all the human family have died from febrile diseases; and yet a clear and faultless definition of *Fever* has never been written. The acutest intellects in every age have been employed on the subject, but nothing important has been added to the analysis of its phenomena made by Hippocrates. The word signifying fever, in nearly all languages, signifies to *burn* or to *boil*, but heat alone does not constitute fever. Boerhaave endeavored to ascertain the essential characteristics of fever by collecting from all authors the symptoms of all the different fevers, and then throwing out all symptoms that did not appear in every fever. In this way he reduced the essential symptoms to three only,—*shivering, frequent pulse, heat.* But no one of these symptoms is always present. Shivering only occurs in cases that progress rapidly, the pulse may be slow instead of quick, even as low as thirty or forty beats per minute; the heat is often below that of health. Cullen added to Boerhaave's definition, "languor, lassitude, and other signs of debility, together with derangement of the functions, particularly a want of vigor in the limbs without any primary local affection." None of these symptoms are present in all cases. Wilson Philip (*On Fevers*, p. 10) endeavors to correct Cullen's definition, and gives the essential symptoms of fever in "languor, lassitude, and other signs of debility," all of which occur in other diseases as well as in fever. In our own day the following definition has been given by Dr. Wood of Philadelphia: "Fever is an acute affection of the system, in which all the functions are more or less deranged; the most striking phenomena being sensorial or nervous irregularity, increased frequency of pulse, increased heat, and disinclination for food. The essence of the affection is universal derangement of the functions." (*Practice of Medicine.*) Perhaps no definition yet given is more radically defective. Fever can not be defined in few words. We must take all the symptoms given by all the above authors, and admit that any one or more of them may be absent in an individual case. We must also distinguish between the phenomena usually expressed by the term *fever*, and those diseases called "fevers," in which this state occurs as the leading phenomenon. "Fever," says Dr. Smith of London, "is not an entity, it is a series of events, and our object in investigating it is not to discover what constitutes its essence; but what events invariably occur in the series, and in

what order they constantly occur. These will include all that we shall ever know of what is termed the nature of fever." We do not look for the events which constitute fever in "the external symptoms of internal and generally invisible conditions." We must look for them in the state of the organs. (*On Fevers*, p. 56.)

Functions deranged in Fever.—Dr. Smith says (p. 60): "The evidence is as complete as observation during life and inspection after death can make it that a morbid change does take place in a certain number of organs. These organs are: 1. the nervous system; 2. the circulating; 3. those organs that constitute the systems of secretion and excretion. The chain of diseased organs consists of the brain and spinal cord; the heart and arteries, especially their capillary extremities; the secreting and excreting organs, which in fact are composed essentially of the capillary extremities of the arteries; the secreting and excreting extremities of these arteries, especially as they terminate in the external skin and in the mucous membranes which form the internal skin." This is the circle of diseased actions. "There never was a case of fever in which all these organs and functions were not more or less in a disordered state; and this complete circle of organs were *never* in this morbid state without fever. A deviation from a healthy state in one or in two circles will not produce fever; there must be deviation in the three circles before fever can exist.

"Such are the common phenomena of fever, not only *invariably* in their occurrence, but in their concurrence in a particular order. Derangement of secretions and excretions is never first in the series, derangement of the nerves and sensorial functions never comes last; derangement of the circulatory system is never first, or last, but is always the second in the order of succession." (*Smith on Fevers*, London, p. 60.)

A majority of the profession at the present day, however, suppose with Cullen, that the prime causes which produce fevers, act directly upon the *nervous system*, and thus produce their pernicious results.

Our own opinion is, that fever is a *combination of symptoms* that may arise from a disturbance of any one or more parts of the body; that the primary impression is made upon the extreme nerves of the part acted on; and that the whole system is affected to a greater or less extent, secondarily, thus giving rise to that congeries of symptoms which constitute fever.

The skin, the nervous system, the circulation, the respiration, the secretions, and indeed the whole body partake more or less in the general disturbance.

We suppose that the causes which produce fevers, are *specific agents* which operate by being absorbed into the circulation, and conveyed to

those structures for which they have an affinity or attraction, thus imparting those peculiar and specific actions which induce fevers.

Diagnosis.—The external signs of the pathological condition which constitutes fever are variable in the different forms in which it appears. Though life and death depend on our correct discrimination between conditions which may require measures of treatment entirely opposite; though certain states of the vital organs, if allowed to remain long, must terminate in fatal changes of structure, and we know that certain remedies, if applied in due season, are capable of removing these conditions; a most intricate problem is presented to the mind of the practitioner in every case of fever. The external characters and the internal states exhibited to the mind in individual cases, demand for their analysis the clearest exercise of the intellect and the most extensive knowledge of the resources of science. "Fevers differ in different countries, in different seasons, and in different individuals. The circumstances which excite and develop these varieties of fevers are of the utmost importance, as they are often intimately connected with those causes which may render the disease mild in its character or fearfully mortal." The methods of distinguishing between the different febrile maladies will be given under the respective diseases.

Distinction between Fever and Inflammation.—Fever differs from inflammation in being an affection of the whole nervous and vascular systems; in inflammation there is an affection of those systems in some one organ; fever is an affection of the heart and large arteries, while inflammation is more an affection of the capillaries. In inflammation there is an enlargement of the diameter of the capillary vessels, with slower movement of the globules of the blood, and in this state the old practice of bleeding from the large veins was seen to reduce the action of the heart and arteries while the capillaries were but little influenced.

Pathology.—The question of the relations necessarily existing between fever and inflammation was first brought prominently before the medical profession by Broussais. This great pathologist, having found inflammation a more frequent attendant on fever than had been previously suspected, endeavored to prove that these two pathological states were so intimately related that the one must be, necessarily, the outgrowth of the other. The general experience of the profession has sanctioned a part without confirming the whole of the doctrines of Broussais. It is now believed that fever may sometimes be *essential*, or idiopathic, and sometimes *symptomatic*.

The probability is, that some causes act locally on one organ exclusively, others act generally on several organs, some universally on all. But when an essential fever arises from a cause acting upon a particular part, the first impression, after setting the febrile movement a-

going, is no longer absolutely necessary to it, and may cease altogether, otherwise the fever would be symptomatic of the local affection.

Causes of Fever.—The causes of fever are either *predisposing*, or *exciting*. Any thing which debilitates the organism, or impairs the tone and resisting power of the nervous or muscular system may be denominated a *predisposing* cause of disease. Under this head may be ranked excessive physical or mental exertion, protracted grief, anxiety, fear, chagrin, and disappointment, deprivation of well-ventilated dwellings, proper food, clothing and exercise, over-indulgence in the pleasures of the table, stimulating drinks, licentiousness, want of cleanliness, and finally congenital causes, and those connected with some hereditary predisposition.

Those causes which induce fever by a direct impression are termed *exciting* causes. Miasmata, contagious and epidemic effluvia, noxious gases, extreme and protracted heat or cold, and sudden changes of temperature; local injuries and inflammations, however excited; vicissitudes of temperature; exposure to great heats, cold, or damp air; too free use of stimulating food; electrical influences; atmospheric impurities; epidemic influence; miasmata.

All of the causes, however, which we have ranked under the head of *predisposing*, may, and often do become, under favorable circumstances, actual *exciting* causes of fever. See *Observations on the Causes of Disease.* p. 182.

It is equally true, also, as we have before observed, that what are called *exciting* causes, do not usually operate so as to produce fever, unless the system is prepared or rendered susceptible to their influence by debility, or some other predisposing cause.

The powers of the body may be taxed up to a certain point, by moral or physical, morbific or remedial agencies without exciting actual disease; but if the influence be carried beyond this point, an impaired condition of the capillaries acted on, will ensue, with the usual concomitants, inflammation and fever. Even the natural maladies, scarlet fever, measles, small-pox, chicken-pox, and hooping-cough, seldom make their attacks unless the system is predisposed to receive their impressions. Therefore, these disorders will often attack one member of a family, while all of the rest, who are equally exposed to the contagion, will escape.

The same rule holds good in regard to the operation of morbific, as of remedial agents, viz.: in proportion to the departure of the organs and tissues from their healthy standard, so will be the acquired susceptibilities of these structures to the influence of morbific agents.

The importance, then, of a constant and regular system of physical culture, and a rigid avoidance of all those things, which can in any way impair the normal integrity of the organism, will be recognized. In-

deed, we believe, that such a course *might* be pursued, as would secure an individual against disease until his system should succumb from old age. Such a course would involve a herculean task in our present state of physical degeneracy, yet it is not beyond the bounds of possibility.

A few of the means which we would recommend to accomplish this object would be

1. A proper system of physical education.

The first and most essential condition for the enjoyment of perfect health consists in a symmetrical and well-developed organization. In looking around upon the world, how few do we behold who can boast of unexceptionable physical conformations—how few who have not some imperfection, which might have been avoided by an early and proper attention to physical culture!

But how shall this bodily perfection be attained?

We reply, by the universal establishment of free, public gymnasiums, where those athletic exercises can be pursued which shall systematically develop and strengthen every part of the body; athletic sports, games, &c., should be established suitable for all ages and conditions; where the man of mature years may occupy agreeably an occasional leisure hour with physical and mental benefit; where the growing youth can correct all incipient bodily defects, and acquire that development and expansion in every part which will enable all of the organs to act in a free and healthy manner. Let us abolish "infant schools" for the education of infant *intellects*, and establish in their place infant gymnasiums for the culture of their infant *bodies*. Let is see no more intellectual "infant prodigies," with their pale, sickly faces, and their feeble and half developed forms, but show us in their stead, *physical* prodigies with their rosy cheeks, their plump, firm, and well-grown muscles, and with elasticity and buoyancy, reminding us constantly of perfect health. Show us your children of six, eight, or ten years of age wild, bouncing, and overflowing with animal spirits, rather than your prim, well-mannered, delicate, sickly, hot-house and band-box specimens.

All physiologists agree as to the vast importance to the young, of a great amount of exercise—free, spontaneous, and unrestrained. It is a principle of their natures, absolutely essential to their well-being, and we must not permit the artificial customs or restraints of society to prevent it.

Our remarks apply with more force to cities than to the country, for in the former every thing is forced and unnatural; children are born into hot-houses, heated with anthracite coal to the temperature of seventy-five or eighty degrees of Fahrenheit. Here do these unfortunates pass the best part of their existence, encompassed by every thing which is

unnatural and artificial, and inhaling an atmosphere deprived of a portion of its oxygen, and impregnated with carbonic and other noxious gases, until, while yet young in years, they arrive at conditions of old age, satiated with the displays and luxuries of life, and reduced to a miserable state of physical inefficiency.

It has been well remarked by physiologists, that if the large cities were not constantly supplied with healthy recruits from the country, they would soon become desert wastes. This remark is, beyond question, true, and it is only necessary to look into any of our large towns and behold the numerous worn-out and impotent wrecks of the wealthy families, who have been inhabitants for two or three generations, to be convinced of the fact.

The second means, which we would advise to secure health, would be a correct system of dietetics. The use of all kinds of animal and vegetable substances, which are not perfectly pure, digestible, and healthy, should be rigidly prohibited. In order to accomplish this object, we do not believe that better rules could be adopted, than those instituted and commanded by Moses for the Jews. Amongst the articles forbidden in the dietetic regulations of the great Hebrew law-giver, we find pork excluded, from the supposition that the swine is unclean and unhealthy. When we consider how frequently that animal is affected with that dreadful malady, scrofula, and also how filthy and disgusting are its habits, it is not surprising that any person who is at all particular as to the quality of food he consumes, and who possesses ordinary powers of observation, should denounce this offensive and diseased animal as unfit for food. But this abominable stuff in all its different forms is consumed by Christians everywhere. Lard constitutes the culinary expletive which serves to connect the ingredients of almost every dish in one greasy union.

Whether the uses of pork and its preparations have any agency in causing scrofula we leave for others to determine. An argument, however, which tends to establish the affirmative is in the fact, that amongst the strict Jews, and all of those nations where this animal is not used as food, this malady is scarcely known, while in every country where it constitutes an article of diet, scrofula abounds.

In brief, care in regard to the selection of proper articles of food, suitable methods of cookery, avoidance of fat and condiments, stimulant, narcotic, and hot drinks, and regularity in partaking of meals, will enable mankind to preserve the integrity and health of those organs, which are concerned in digestion and assimilation, and thus avoid the numerous evils which accrue from errors in diet. See *Remarks on Purity of Food* at pages 285, 286.

Finally, we would recommend the establishment of such a state of society as would recognize no pursuit or custom as legal or respectable,

except such as should conduce directly to the health, morals and general welfare of the community.

COLD.—CHILL.

INFLUENCE OF CHILL FROM SUDDEN EXPOSURE.

When a person becomes chilled from sudden exposure to cold and wet, he loses a large share of vital warmth and animal or vital galvanism. A common accident is a fall through the ice, followed by protracted exposure to cold air in the wet clothes. In such cases the clothes should be changed for dry ones, when possible, and when this is not, as much water should be squeezed out as may be done by the hands, and heat developed by active exercise.

The advantage to be gained by exercise consists in the free, full respiration and accelerated circulation of the blood. In extreme cold weather the wet clothes freeze on the outer surface, while the internal warmth generated by the exercise and rapid respiration produce perspiration, which has the effect of a vapor-bath; and injury from cold is prevented, if care be taken in a final change of clothing.

The *mere* change of clothing after exposure to cold and wet is not sufficient for safety, even if a warm room can be soon reached. If free circulation of the blood, and respiration and perspiration be not brought about by active exercise, there will be a sense of chilliness, alternating with flashes of fever, and these chills indicating congestions of some internal organs, liable to become established into more permanent local inflammation with fever may return at irregular intervals for several days or merge themselves in some more serious disease.

This condition of the blood-vessels is considered by some writers as a primary affection; by others, as by Dr. Wood, it is believed to be "always an effect of some pre-existing morbid state or action; and it is a partial view which is directed to this effect alone, without embracing the other elements that enter into the complex-phenomena presented by the part congested." There is probably no form of congestion which may not be traced to some one of the morbid effects already described, and its varieties have consequently been treated of along with the other phenomena or effects of these states respectively.

Sources of Active Congestion.—1. Irritation or inflammation; 2. depression; 3. physical agency. In every case of excessive capillary excitement there is an increased flow of blood to the part affected, and an accumulation in the vessels of that part; and any excessive or unhealthy excitement constitutes either irritation or inflammation, the latter beginning where the former ends. "Congestion, therefore, is nothing more than a phenomenon of one of these latter affections." But the term congestion should be restricted to "that condition in

which the vessels are merely engorged, and the peculiar features of congestion have not yet made their appearance." In this sense, congestion is simply a phenomenon of irritation. It is not the *disease itself*, but is merely the *sign* of a disease. The real seat of the morbid action is not in the blood; it must be in the vessels themselves "The disease is, in fact, some peculiar modification, not well understood, of the solid tissues, of which a change in the innervation always, probably, constitutes an essential part, and which is induced by the operation of some excitant, unhealthy either in its nature or degree. In other words it is an irritation." (*Wood.*)

Passive Congestion.—In this abnormal condition the blood accumulates in the vessels of a part, because it is not carried forward so rapidly as it enters by the ordinary movement of the circulation.

Causes.—1. Want of due degree of that action which is necessary to its transmission, that is from depression. 2. Physical difficulty or obstruction.

The depression which gives rise to congestion may be general, or confined to a particular organ. It is common in diseases attended with great and sudden prostration. The heart, participating in this prostration, is unable to transmit the blood so rapidly as it is conveyed towards it by the continued action of the capillaries, and by the forces which move the blood in the veins. This fluid, therefore, necessarily accumulates in the right side of the heart, and the great venous trunks and consequently in those organs with which these trunks more immediately communicate, viz: in the brain, liver, and through this latter organ, in the abdominal viscera generally. Thus: a blow upon the head, or any severe shock, temporarily paralyzing the cerebral actions; certain mental emotious tend to produce syncope; the chill of fevers, especially those of a typhous or malignant character, and the prostration of violent internal spasm of the stomach, all occasion internal congestions consequent upon depression in the movements of the heart. The alarming phenomena which attend these affections, the feeble pulse, the cold extremities, the pale and shrunken skin, and the frequently suspended or impaired intellectual functions are not *caused* by the congestion, for it "is a mere effect of the prostration, and ceases when the heart resumes its usual energy." The error of ascribing these alarming phenomena to the internal sanguinous engorgements, and directing the treatment accordingly has led many practitioners to overlook the collapse of the nervous system, and the feeble movement of the heart, though they are both overwhelmed by some powerfully depressing influence. The title of "*Congestive*," generally applied to those affections, in which that condition forms a prominent feature is objected to by Dr. Wood; but the nomenclature of diseases can scarcely be reformed in a satisfactory manner: and we still employ

this term, as well as all others, as they are universally known and understood.

BATHS.—COLD SHOWER-BATHS AFTER HOT-AIR-BATHS.

1. Pure experimentation proves that the primary action of the hot air-bath, of the temperature of from 110° to 140° Fahrenheit is to excite and stimulate the system; to raise the temperature of the body, to accelerate the pulse, and to produce a copious excretion from the pores of the skin. A sensation of oppression is for a moment felt, and disappears as soon as the perspiration begins to break out. This condition is soon superseded by the opposite group of phenomena, viz.: The prover experiences a chill, or cold sensation all over the body; he looks pale; the pulse is much reduced, is feeble and slow. He feels weak and depressed. He shivers, and collapse soon takes place. This condition constitutes the secondary action of the hot air-bath, or the reaction of the organism, *which may terminate in death.*

2d. That the primary action of a cold water-shower-bath, at the temperature of from 32° to 60°, or 80° produces a general sensation of frigidity all over the body; takes the pulse down; shortens the breath, when the shock is sudden; the face becomes pale; and the prover experiences more or less chills and shivering. An opposite group of symptoms occurs, which constitute its secondary action, viz.: a gradual restoration of the equilibrium of vital action, followed by an agreeable sensation of warmth all over the body. The pulse rises; the face becomes florid; the breath is free; and a copious discharge of urine ensues. These being the pathogenetic effects of heat and cold in the forms already expressed, it follows that the therapeutic properties of the latter are evidently manifested, when used immediately after the former; because, our therapeutic law teaches us, to treat pathological conditions, in their *primary* state, by administering a remedy whose *secondary* action is similar to the *primary* action of the case, and *vice versa.* The proof of this kind of action and reaction, which is a principle universal in nature, equally operative in therapeutics as in physics, will be found in the hundreds of remedies contained in our materia medica.

The effects of long-continued exposure to cold and moisture are quite different from those of sudden exposure. The powers of the body are at first diminished by the depressing powers of the cold; and many important functions are immediately deranged, diminished or completely arrested. At the same time, if some vital force is not expended in the processes of secretion and depuration, the system will become loaded with matters that should be thrown off; the accumulations of effete matters that the perfect performance of the secretory func-

tions would have carried off, now interfere with all the vital functions; and this too at a time when the powers of life are debilitated and depressed by cold or its consequent reactions.

The removal of the person who has been thus exposed to a room, warm enough to restore the animal heat, is far from being all he needs. The restoration of the heat itself is dangerous, if it be not slowly and carefully done. The diffusible stimulants commonly resorted to to restore the warmth of health, very often go beyond the mission entrusted to them and excite fever or inflammation which demand judicious treatment.

Classification of Fevers.

We shall arrange the various *febrile diseases* under the following general *divisions* or *genera:* I. Ephemeral fevers; those which arise from slight temporary causes; and which terminate spontaneously when their exciting cause is withdrawn.

II. Malarial or Autumnal Fever. Originating in malaria or marshmiasm; a specific form of disease, whether resembling other diseases in external symptoms or not. It subdivides in two species as commonly observed, though in their origin they are essentially the same.

III. Intermittent Fevers.

IV. Remittent Fevers.

V. Continued Fevers.

VI. Exanthemata.—Eruptive Fevers.

The different specific forms of fever will be treated of under one or another of these general heads.

In each of these fevers there are certain peculiar characteristics which serve to distinguish them from it and from all other maladies. Notwithstanding this, however, we scarcely ever find two cases of the same type, running precisely the same course, or presenting precisely the same symptoms. So many circumstances connected with the exciting cause, as climate age, sex, temperament, predispositions, habits, &c., tend to modify the character of each particular case, that all instances of the same malady must necessarily present different trains of symptoms. It will readily be perceived, therefore, how impossible it is to prescribe for the name of a disease instead of *symptoms.* It is therefore scarcely necessary to express our opinion, that any classification of diseases whatever, is valuable as an aid in diagnosis rather than in the exhibition of remedies.

The course of a fever sometimes varies during its progress from its commencement to its termination, and on this account divisions are made:

1. The forming stage.

2. The cold stage.
3. The hot stage.
4. The sweating stage.
5. Collapse.

This is a mere arbitrary division, which can by no means be relied upon, for many fevers run their course without the supervention of these stages. Let it ever be impressed upon the mind, then, that these classifications and divisions are entirely arbitrary and artificial, and can only be used for the purpose of facilitating diagnostic examinations.

Genus II.—MALARIOUS OR AUTUMNAL FEVER.

Of all fevers, those which have pervaded the world most extensively in all ages and countries have been attributed to one cause, now usually designated as *Miasm* or *Malaria*. This mysterious agency, which in ancient ages was regarded as a demon of darkness, continues to be developed under all the conditions that could bring it into being three thousand years ago; and it has no where been destroyed, except in small territories that have happened to come under a higher civilization than the nations have yet reached. If it be sometimes losing ground in one place it is always gaining elsewhere. In all the places where Febris, the goddess who anciently presided over fevers, was ever worshipped, the blighting influence of *Mal-aria* or *bad air*, continues to preside as the tutelary genius that human science has not yet been able to expel. From the Appenines in Italy to the sea shore, and for a distance of two hundred miles north and south her power is as great as when her temples were most honored; and, instead of improving under the influence of modern civilization, it has been gradually growing worse. Rome which in ancient times was uninhabitable for two months in every year is more noted for malignant intermittents than it was in the time of the Republic. From the Pontine marshes, fifty miles south of the city to the Tiber the intensity of the malaria has been long increasing. For two hundred years the Ague has resisted all the resources of science; and has held possession of the Palatine Hill, the Circus Maximus, the Forum and nearly the whole of the ancient city. It has outlived the throne of the Cæsars, and the Iron Crown of the Lombards, claims joint sovereignty in the Vatican, and promises well to outlive the Eternal City itself.

Malarious Fever in its various forms of Autumnal Intermittent, Remittent or Bilious Fevers, is extensively prevalent in all parts of the American Continent. In the United States it is seen annually in all the Territories between the Gulf of Mexico and the Rio Grande and the forty-fourth degree of North latitude. South of thirty-three degrees it extends from the Mountains to the Atlantic Ocean; farther north it

is less known east of the Alleghanies. In the south-west it is found in all the valleys on both sides of the Cordilleras of Mexico. In the Northern Territories of the United States, malarious diseases exist on all the fertile plains and forests of the Mississippi Valley, and on all the tributaries of the Missouri as far west as the western parts of Dacota, Nebraska, and the middle of Colorado, six-hundred miles above St. Louis.

In considering the conditions that impose geographical limits and give prevalence to autumnal fever, it is, says Dr. Drake "a safe generalization to affirm, that, all other circumstances being equal, autumnal fever prevails most where the amount of organic matter is greatest, and least where it is least."*

Conditions necessary to develop Malarious Fever.—These are:

1. *Decaying organic matter* for supplying the material for the generation of the poisonous agent, whatever that agent may be.

2. *Surface water*, which, by impregnating the air with water, gives a *high dew point*, promotes those chemical actions in certain soils supposed to generate malarious exhalations; favors the growth and decomposition of a luxurious vegetation, produces animalculæ and microscopic plants; and, through evaporation and condensation, produces electrical changes; all of which effects of surface water have been supposed to cause malarious fever.

3. *Elevated Temperature.*—These diseases prevail extensively and virulently in warm climates, and become milder and less general as we pass from the tropics towards the poles.

These conditions which combine to originate malarious diseases and the phenomena by which they are characterized, are essentially the same in all ages and countries. All observers have remarked the same general features of these diseases, wherever observed, differing only in the degree of condensation in which the marsh poison exists in the various localities. All observers have remarked the general vital degeneration produced on all the inhabitants of the malarious districts; and it has often been noticed that the most disastrous results may follow a residence in a marshy region in persons who have never suffered from intermittent fever in a regular form. The description given by Montfalcon, of the inhabitants of La Bresse, in France, is applicable to the residents in many portions of the American Republic. He says:

"Each child languishes and grows thin; a yellow tint tinges his skin and eyes; the viscera become engorged; and he probably dies before he has attained his seventh year; or if he reaches this age he does not live but vegetates, he continues cachectic, œdematous, subject to putrid

* Diseases of the Mississippi Valley.

and malignant fevers, to endless autumnal remittents, and to passive hæmorrhages, to ulcers of the extremities, which heal with great difficulty; and the miserable being is scarcely able to fight against the diseases which convert his life into a prolonged dying. The inhabitant of the Bresse, having perhaps arrived at his twentieth or thirtieth year, the disorganization commences, his faculties become enfeebled; and, generally, the age of fifty years is the limit of his life."

When a resident of the Pontine Marshes was asked how it was possible to live in so unhealthy a place, he replied:—"We do not live—we die!"

In localities where the marsh poison exists in a concentrated form we remark: an imperfection of physical development; engorgment of the abdominal viscera, especially of the spleen; general inertia, and torpor of intelligence; an appearance of apathy passing in some cases into idiocy; atony, and diminished power of reaction of the nervous centres; in short, all the physical, intellectual and emotional faculties are depressed, and the duration of life is diminished.

Characteristic Features of Malarious Fevers.—These vary in different seasons and in different localities. Besides the usual ensemble of symptoms commonly included under the term *fever*, the disease may simulate almost any other disease. We may have the external symptoms of cholera morbus, Asiatic cholera, dysentery, bilious diarrhœa, menorrhagia, enteritis, inflammation of the brain, or of any other organ. Even tetanus may be the only outward expression of a paroxysm of autumnal fever.

In those sudden and violent attacks properly called *congestive*, there is a collapse, a sinking of the dynamic powers similar to that seen in malignant cholera; though there is not the same exhaustion of the circulating fluids. In the congestive form of malarious fever the collapse is in the nervous and cerebral symptoms. "The cerebral and nervous influence is prostrated as a primary effect of the specific poison that causes the disease."

The diagnosis of autumnal fever does not rest on any generally observed assemblage of symptoms, but on the attendant circumstances which may accompany the accession of the disease in its origin. We may consider the locality in which the patient resides, his recent history, the season, the epidemic constitution of the atmosphere, and the exciting causes to which the attack may be attributed; and from these, with the concurring evidences of the existence of malaria presented by the case before us, the true nature of the disease may be determined.

Forms and Varieties of Malarious Fever.—In the United States, and especially throughout the Mississippi Valley, two great varieties of these fevers may be distinguished:

1. Fevers of open excitement.—2. Congestive Fever.

These forms of fever are not distinct diseases; they are only different manifestations of the same disease, operating in a different way, on different persons, according to their individual states of general health. It is observed by Dr. Monette, of Mississippi,* that "the tone of fibre, and degree of tension in the Northern constitution, resists the febrile influences, especially those of a debilitating or relaxing nature; whilst the natives of the South, whose systems are already relaxed and enervated by the climate, are obliged to take greater precautions to escape the endemic of the country. Strangers arriving from the North, are usually only attacked by the fever in its simplest form, with open excitement, which is easily subdued. But if the same person remains to be attacked after spending a second or third summer in the country, depletion will not be well borne; and, at a later period, after migration from the North, he will be more likely to be attacked by the fever in its congestive form."

Farther Northward, and in the region bordering on the North-Western lakes, we only observe that the effects of malaria are manifested in different degrees somewhat proportioned to the powers of the constitution to resist its influence.

When the atmosphere holds a large quantity of the specific poison, a few days, or even a few hours may be sufficient to develop the disease in some form. When the amount of poison in the air is smaller, it might require a year or two to bring the system so far under its influence that the common proximate causes of disease will excite malarious fever.

This fever, when established, may assume any one of the various types usually observed, thus:

1. When the atmosphere is strongly saturated with marsh-poison the most trifling exposure to vicissitudes of temperature or exhausting exercise will develop true intermittent fever, or "shaking ague."

2. When there is less malaria in the air, but other causes combine with it to derange the ordinary operations of the different organs, the disease produced is characterized by *less chill*, but this is followed by fever of longer duration. The intermission, if complete, is still very short; the chill and fever run more into each other; and we have the form of disease known in the West as "chill fever."

3. When the amount of malaria in the air is still smaller than in the locality where the last form is most prevalent, but the miasm is assisted by great exposure, extreme heat of the weather, or excessive bodily fatigue, the disease resulting is called "remitting fever," there being only a *remission*, no *intermission* of the fever.

4. When malaria, existing in a greater or less degree, is aided by ex-

* Fevers of Mississippi. Western Med. Journal, 1850

posure to cold air long continued, or other strong causes of disease, the effect of the marsh-poison is almost obliterated by the strength of the exciting causes of the attack, or some epidemic influence. The remission in this case is scarcely perceptible, and the case is called one of *continued fever*.

5. Any of the preceding forms of malarious fever, inefficiently treated, may terminate at the end of the first, or of the second week in a lower form called, though improperly, *typhoid fever*. The remission is not perceptible, or scarcely so.

6. An attack of fever in any of the foregoing types, occurring in an individual already greatly prostrated or exhausted by previous ill health is liable to assume the form much dreaded in the newer territories and known as *congestive fever*.

Sinking Chills, or Malignant intermittent Fever.—This form of disease is always mortal when not arrested by medical treatment; and it is a common remark that "none survive the third paroxysm." In some localities beyond the range of enlightened medical practice, it constitutes in autumn the principal outlet of human life.

1811 was a season of unusual sickness near the banks of the Mississippi and Missouri. The Missouri rose to an unusual height in June; the waters of the small rivers were backed far up in their channels, flooding their banks and covering quantities of luxuriant vegetation. This was succeeded by very dry hot weather. Bilious and intermittent fevers then commenced in a form of unusual severity.

In the years 1819, 1820, 1821, all the region bordering on the Mississippi, Illinois, and Missouri suffered much from malarious fever. Immigrants in immense numbers had recently arrived in the countries then being rapidly settled. Multitudes were living in new and open cabins of green timber; they were drinking the stagnant water from creeks and ponds; a luxuriant vegetation was growing and decaying around them; and they were suffering all the other evils attendant on the settlement of a new country. Of these people large numbers died. The summer of 1820 was the hottest and dryest ever known in the Western States. For weeks in succession the thermometer was at 96° in the shade, for hours in the day; not a cloud came over the sun. Fevers were unusually violent, malignant and unmanageable; in many cases at St. Louis and the adjoining country were seen every mark of yellow fever. Bilious fever appeared in its most malignant form. The contents of the stomach thrown up by vomiting were black and fœtid. Lake Creve Coeur, (seventeen miles from St. Louis and near the Missouri river, several miles long,) was entirely stagnant, covered with thick scum, sending forth a disgusting smell, and the fish died in it. The same general sickness prevailed in the South beyond Cape Girar-

deau, (150 miles distant, and along the Missouri above to the highest inhabited points, sixty miles above St. Louis.

At Vincennes and other points in Indiana, disease triumphed. A gentleman, who lived through those times says, "nothing was so disheartening as the cloudless sky and burning sun, which continued unchanged for weeks in succession. The small town of Hindostan, thirty-eight miles East of Vincennes, begun in 1819, contained seventy or eighty families at the beginning of 1820. The heavy beech, poplar and oak timber was cut down; the logs were left on the ground; the bark became loose, and intolerable stench proceeded from the timber. Fever was rapidly developed and about two-thirds of the people died, though there was no visible local cause for disease.

The summer of 1821 was a sickly one throughout the United States and in foreign countries. In the West it was less severe. St. Louis had a population of 5000, of which 136 died. The place had no police regulations; the people were crowded into poor and small dwellings, and filth accumulated. No such season has been known since. (*Rev. J. M. Peck of Illinois.*)

In 1820 and 1821, bilious fever was prevalent in all parts of the Union, even in the hilly and mountainous districts of Pennsylvania, Virginia, and the Green Mountains of Vermont.

INTERMITTENT FEVER.

Intermittent Fever.—We have observed, that each type of fever is marked by certain symptoms, which distinguish it from all other varieties. The type under consideration presents its chief features in a very characteristic manner. Indeed, so great is the difference between intermittent and other fevers, that some writers have withdrawn it from the list of febrile diseases, and ranked it with those connected with derangement of the cerebro-spinal system. The regularity and distinctness of the paroxysms, and the complete state of apyrexia between the periods of attack, certainly offer some reason for this course; but, on the other hand, as the combination of symptoms termed fever, is universally present during the paroxysms and since upon the whole it bears a closer resemblance to *febrile* than *neuralgic* or ganglionic affections, we will continue to employ the old classification.

In the different forms of intermittent fever, the interval which elapses between the commencement of one paroxysm and another, varies; some cases having an interval of twenty-four, forty-eight, and others seventy-two hours from one attack to another. From this circumstance the different types have been designated—*quoditian*, or twenty-four hour type; tertian, or forty-eight hour type, quartan, or seventy-two

hour type. These have also been subdivided into *double quartan*, double tertian, &c.

Diagnosis.—A paroxysm of intermittent fever is composed of three stages, viz.: first, the *cold*; second, the *hot*; third, the *sweat stages*.

Preceding the cold stage, there usually occur general feelings of lassitude, debility, uneasiness, and pains in the head, back or loins, and sometimes slight sensations of external and internal cold. There is also a loss of appetite, disinclination to bodily or mental exertion, and a constant disposition to stretch or yawn.

As the *cold stage* actually commences the extremities feel cold and contracted; the surface becomes pale, shrunken, rough, with diminished sensibility; a sensation of cold along the spine, extending into the thorax and abdomen; the coldness soon diffuses itself throughout the whole body; universal tremors, external and internal; chattering of the teeth; respiration laborious, rapid, and imperfect; oppression at the præcordia; countenance pale, leaden, earthy, or livid, shrunken, and expressive of anguish; eyes dull and sunken; lips livid; general sense of physical and mental prostration.

The pulse is variable; it may be slow, rapid, weak, oppressed, or intermitting.

The temperature of the body is usually natural, with the exception of the extremities.

The duration of this stage is exceedingly various; sometimes terminating in ten minutes, at other times, lasting four or five hours.

Paroxysms occasionally occur without any well-marked cold stage; a slight trembling only being experienced previous to the hot stage; at other times neuralgic or rheumatic pains, or coma, precede the second stage.

Hot Stage.—As soon as the chills begin to abate, flushes of heat commence passing over the body, until in a short time, the hot stage is fully developed.

This stage is characterized by hot and dry skin; countenance flushed and full; mouth dry; tongue parched; urgent thirst; headache; respiration rapid and anxious; general restlessness; pains in different parts of the body; more or less disturbance of the mind; pulse usually rapid, sharp and bounding. This stage also varies very much in duration, it rarely terminating in less than four, and often continuing twelve, and sixteen hours. In some instances the hot stage even continues several days, when it becomes a *continued* fever; or it may assume the remittent form.

Sweating Stage.—After the hot stage has run its course, a perspiration makes its appearance upon the forehead and extremities, which is soon diffused over the whole body. As the sweating becomes more and more profuse, the febrile symptoms, with the pains and un-

easy sensations gradually subside, until the paroxysm terminates in a perfect state of *apyrexia*, or *convalescence*.

The above is a general description of the ordinary course of a paroxysm of intermittent; but in some instances these stages are reversed, or one or more of them may be absent, or if present, only a few of the symptoms enumerated will be recognized.

Writers have divided intermittents into four varieties, viz.: first, the *inflammatory;* second, the *congestive;* third, the *gastric;* fourth, the *malignant* intermittents.

This division is made from the fact, that the different types, under certain circumstances, partake of the general character which these terms indicate. Thus, the *inflammatory* variety generally occurs during the winter and spring. *Quoditians* are more prone to partake of this modification than tertians or quartans. Patients laboring under this variety rarely enjoy perfect intermissions between the paroxysms, and they are often left with permanent disorders of the liver, lungs, &c.

The *congestive* variety is very uncommon. It seldom attacks any except persons of feeble, relaxed, and exhausted constitutions, in whom there is not sufficient vigor to accomplish a perfect reaction. The brain is the organ which usually suffers most, and coma often supervenes during the cold stage, which ends in death.

The *gastric* variety presents prominent symptoms of gastric derangement from the first, a superabundance of the biliary secretion, furred and bitter tongue, with nausea and vomiting. It is peculiar to temperate latitudes, and usually occurs in the autumn. In this variety the liver is much affected, and therefore, we find chronic enlargements of this organ often remaining after the paroxysms have been subdued.

The *malignant* intermittents are common in hot latitudes. They are attended with extreme debility from the onset; respiration is feebly and imperfectly performed, and the blood is only partially oxygenated, diarrhœa now and then ensues, and a rapid prostration of the powers of the system usually occurs, which in many instances speedily proves fatal. It has been noticed that chronic enlargements and indurations of the liver and spleen, affections of the lungs, dyspepsia, scirrhous indurations, &c., often succeed fever and ague. These affections have been looked upon as secondary consequences of fever, while in point of fact they are often *medicinal* diseases, superinduced by the abuse of Mercury and Bark.

These drugs are empirically employed by the allopath for the cure of this malady in all its various forms; whether inflammatory symptoms predominate, whether there is congestion of the brain, lungs, or liver, or whether the system is exhausted by previous debilitating causes, *Quinine* and *Calomel* in large doses are the grand, and we might almost say, the only remedies of allopathy. But do these violent drugs

actually *cure* the malady? When the paroxysms are arrested by the use of these herculean doses, are the seeds of the disease eradicated, and is there no danger of a relapse? Let the candid practitioner of the old school answer.

It is the opinion of some eminent allopaths that large doses of Quinine often suspend chills and fever, by superinducing in the liver or some other important viscus, a serious medicinal inflammation or congestion, which usurps temporarily, the place of the intermittent. The effect of this truly allopathic measure is, however, only of short duration, for the paroxysms return again as soon as the artificial disease has somewhat abated, or from some slight exciting cause. Thus will the paroxysms repeatedly return, and be as often temporarily suspended, until finally some permanent chronic malady will become fastened upon the system and thus supersede the original affection.

Critical Days.—Many accurate observers have noticed certain epochs of decline or determination of diseases, especially those of the febrile character. The most marked of these changes occur on the 3d, 7th, 11th, 14th and 21st days. Several partial crises are observed in the progress of the same case, each leaving it changed by the somewhat sudden depression or mitigation of some of the symptoms. Now, if under the current treatment each of these changes is, *on the whole*, a favorable one, and the final result happy, the several improvements and the final cure are not attributable merely to nature; and on the other hand, not merely to medicines given *immediately* before the access of the several changes. If others have been previously administered, they may have equal claims as the cause of the improvement or cure. If the physician neglects the observation of the critical days he may draw erroneous conclusions in regard to the curative influence of the drug. The quotidian changes are generally appreciated; the before mentioned critical days are also in regard to some symptoms and in some degrees, the days of exacerbation; and their neglect might vitiate the pathogenetic confirmation, though usually less than the therapeutic. (*Minor on Fever*, p. 213.)

Every regular continued fever has one or more quotidian exacerbations and remissions; and besides this, certain other uniform and stated revolutions. It does in fact pay regard to certain or definite periods at which there is more or less effort, and at which likewise the disease inclines to terminate either in the *beginning* of convalescence or in the sinking of the patient. Of these periods the 7th, 14th and 20th or 21st seem of primary importance, while the 5th and 9th are only of secondary importance. There is some effort on the 3d and 11th, but less likely to be successful. Crisis on the 4th day is very rare.

Those of the shorter periods are more important in fevers of only seven days duration than on those of fourteen days; and generally the

longer the duration of the fever is the more permanent are the critical efforts. The mildest continued fever seldom terminates, except at one of these periods, and the worst cases seldom end in sinking, except at one of these times.

A seven-days' case generally terminates on the 3d, 5th, or 9th day, and a fourteen-days' case on the 3d, 5th, 7th or 9th. Bad treatment is generally not obviously injurious, except at one of these periods; and good treatment leaves the patient to begin to convalesce at a critical period. At one of them the case is decided. Death waits for the crisis, except in malignant congestive intermittents, typhoid pneumonia, or dysentery, cholera, &c. The exhaustion in the first congestion may not leave vital power for reaction.

In a regular case of continued fever the crisis is not before the seventh day, nor after the fourteenth day. Accidental circumstances may extend it beyond or shorten it within it, or may change a fourteen-days case to three, or more rarely, four weeks; bad management still farther.

After the seventh they incline to go on to the 11th. What is called going beyond *this* is generally an irritation, depending on debility and morbid excitability. But acute cases, by proper treatment, should be made to follow the laws of acute fevers; bad treatment degenerates them into chronic diseases; as sub-acute disease of the lungs is followed by hectic; which, like an intermittent, has defined laws, but no definite period of duration.

By obtaining a perfect crisis we decide upon life and death; by partial crises we decide upon the duration, but not on the event. The ancients describe complete crisis as occurring *suddenly* upon a striking *exacerbation* of the most essential symptoms: as sweating, ptyalism, vomiting, purging, hæmorrhage from the nose, rectum or uterus, thick sediment in the urine, eruptions, tumors, &c., with or without treatment. Inert treatment permits diseases to follow their natural laws. Bad treatment may exhaust the vital powers and render the system too feeble to go through with it. Good treatment conducts the patient through the danger, moderating the force of the disease and saving the vital energies.

Causes.—The common, if not the only cause of intermittent fever is a peculiar miasm which arises during the progress of vegetable decomposition, and which some authors have termed *koino miasmata*. The term *marsh-miasm* is often used, but we deem it improper, as the miasms generated in *elevated* locations, are as capable of causing the disease as those formed in low *marshy* ground. The decompositition of vegetable matters by the aid of solar heat and moisture, is the only condition requisite to develop the morbific principle.

Other exciting causes occasionally give rise to fever and ague, as

intestinal irritation from indigestible food, as worms, sudden suppression of old discharges and atmospheric vicissitudes; but these causes seldom if ever produce a genuine, periodically recurring *ague*, except in persons fully imbued with the specific malarial poison.

The pernicious form of intermittent fever shows itself in its most violent and dangerous aspects in swampy countries, during hot and dry summers, in places where large quantities of vegetables decay. The poison displays itself in the humid air of marshy places, spreading rapidly after sunset, and accompanied by large numbers of flies and other insects. The danger of taking the disease is greater during sleep, especially after sunset, and windows should be shut from sunset to sunrise. The bed should never be near a wall. The dress should be warm, silk should be worn next the skin.

"Paludal fevers," says Boudin (*Geog. et Stat. Med. Carte phys. meteorol. du globe terre*) "extend in the northern hemisphere from the equator to a boreal limit which, at least on the old continent would correspond with the isothermal curve of 53 (Fahrenheit), but which in the Atlantic Ocean, might be represented by a line passing from Quebec, in Canada, to the coast of Norway, towards the 59th parallel. This line excludes Scotland, the Hebrides, the Orcades, the Shetlands, Faroe, and Seeland. In the Southern hemisphere, the domain is much more circumscribed, and its Southern limit does not even reach the isotherm of 59°. Paludal fevers extend high in Sweden, but are rare in Norway. South America, beyond the tropics, is very little affected by them, even where stagnant waters and marshes abound, and where the mean annual temperature is higher considerably than that of Southern Europe or Algeria. Corrientes, Montevideo, and the isles of the Uruguay river, where lagoons and pools of water are left after the overflow of the country, have been especially remarked for their exemption from fevers. (*Saurel. Theses de Montpellier*, 1851 and 1853.)

Malaria is most rapidly developed when the weather is hot, the wet surface of the marsh much exposed to light, covered with a rapidly growing vegetation, which upon the drying up of the water dies and becomes the food of a new race of cryptogamic fungi. These grow rapidly, but are extremely minute and of poisonous quality. Persons exposed during the night to the damp and chilly air, contaminated with malaria, or who drink impure water, soon lose their healthy color, look care-worn, exhausted and dyspeptic. The skin is now of a brownish-yellow color, the aspect of the countenance is that of a patient in collapse, and in detached places, bloated. Dropsy soon follows; the eyes are sunk in their orbits, the muscles are flabby and lose their motive power. Sometimes there are slight febrile symptoms; scurvy accompanies or follows dropsy; the mind becomes obtuse and even idiotic.

The doctrine of the *Correlation of Forces* has been applied to the

explanation of the theory of the origin of intermittents by Dr. Lord of Chicago. We can only here give a summary of his conclusions.*

"1. All physical changes, pathological, physiological or chemical are the result of force.

"2. Force manifests itself only through the vibration of molecules.

"3. Molecules aggregate only when compelled by extraneous force.

"4. Every mass of matter may have a force specific and peculiar to itself, or common to many other material bodies. Hence the force of one body may differ from that of another, or of all others.

"5. A dissimilar force will produce differing vibrations or oscillations, and of course produce different results.

"6. The human organism is subject to the same laws as other matter, in its every organ, tissue, ganglion and cell.

"7. The force of one mass may neutralize, modify or correllate that of any others. Thus the resident force of a ganglion may modify or correllate any passing force.

"8. Normal nerve force oscillates only through the axis cylinder of the nerve. Toxical forces, or those of the poisons proper, and zymotic, probably are confined to the same track.

"Imponderables seem to pass along the periphery. They may act mechanically, however, when in excess. Mechanical force pervades the entire cord, and has no specific or peculiar character, but may disorder different organs or tissues equally or unequally, alike or unlike, while the effects of electricity and the vegetable and mineral and animal poisons are each, under the same circumstances, uniform and specific, differing only in intensity until disorganization commences.

"All these forces when not correllated to nerve-force are disturbers of the economy; disease-producers; and essentially, though not technically, toxical.

"In this sense, however, I shall hereafter use the word toxical.

"9. Each of the ganglia has a resident and peculiar type-force, which modifies the character of the vibration passing through it. Thus the cardiac ganglion or plexus, that which goes to the heart, the semi-lunar, that to the stomach, &c., &c.

"10. Though the principal changes take place in the ganglia, doubtless the plexuses of each tissue have a general or common modifying power; while the connecting recti-linear nerve-trunks must pass the vibration almost or altogether unchanged.

"11. Several differing vibrations may obviously pass down the axis cylinder of a nerve at the same time with little or no interference.

"12. Differential or modified vibration, probably, depends for the most part on differential cell-form or molecular arrangement of its tissues, and the status of its connective or interstitial matter."

* Ill. State Med. Asso. Transact N. A. Jour. Homœop., Aug. 1863, p. 117.

PROGNOSIS.—When the constitution is good, intermittent fever should be always regarded as curable in every case. When there is a cachectic state, the case is more difficult; it is more stubborn in cases in which the paroxysm anticipates the hour of return, and such are inclining toward the severer or remittent type. Strong and lasting chills are symptoms of malignity; when the duration of the fever is long, the intermission is short, and the tendency is, first to remittent and then to typhoid continued fever; when perspiration is deficient, the tendency is to assume a worse form of the disease. Nursing babes suffering with this disease and dentition at the same time are liable to hydrocephalus; aged persons are in danger of the congestive or sinking chills, and pregnant females to abortion and its consequences. The disease neglected or inefficiently treated is likely to continue for many months, and relapses are more common than in almost any other disease.

"A simple intermittent fever, even when left to take its course, rarely, perhaps never, proves directly fatal; but it may derange the structure of some organ, or generate a kind of cachexia, or spanæmia, from which, as pathological causes, other, and, at last, fatal consequences may follow." Inflammatory intermittents, left to themselves, are not generally immediately fatal; but, by establishing a permanent inflammation in some vital organ they may end in the total derangement of health, and, finally, in death.

Inflammatory remittents are much more dangerous. Though not directly fatal, they are liable to run into a typhoid form, which, if it does not result in death immediately, must always be regarded as a serious form of disease, demanding immediate and proper treatment.

"Malignant intermittent fever is always fatal when not arrested by prompt and efficient treatment; and many die of it every autumn, its true character not being perceived in time, or the patient residing beyond the range of enlightened medical practice. Where this variety prevails, therefore, it constitutes in autumn the chief outlet of human life. Malignant remittents are not so common as intermittents, but more difficult of cure and, therefore, much oftener fatal."

ACCLIMATION.

Prophylactic Measures and Precautions.—The atmosphere in which man lives, besides the gases fitted for respiration, contains other emanations and deleterious agents which exert a disturbing influence on health. The human body is endowed with a power of reaction and resistance to these influences; and, in every act of resistance, increased energy and vigor are developed by the effort. "A man plunges into cold water, which disturbs the vital force; it recedes from the surface. If the impression is not too violent, it reacts. If the plunge is repeated

this impression is not so great, the resistance being greater. With every plunge the impression lessens, and resistance increases, until no disturbance is created. This increased power of resistance is the principle of acclimation." (*Bayard's Address*, 1853.) When we have long been accustomed to the atmosphere, and all the vicissitudes of temperature, and the endemic influences of a certain climate, the system, habituated to their impressions, has become so far invigorated by its reactive efforts that the deleterious agents without cease to produce any perceptible effect. If we now remove to a different climate we come in contact with a new series of subtle and deleterious influences which make new impressions on the sensitive organism, and provoke new resisting and reactive powers. When the powers of resistance are so far cultivated that the causes of disease peculiar to the new locality make no impression, beyond what they make on a native of the place, *acclimation* is said to be complete.

To enable emigrants to pass safely through the process of acclimation, many rules and systems of management have been proposed. In passing to a warmer and more unhealthy climate, attention should be paid to

1. DIET.—This should be of a lighter character than that formerly used; it should be plain, unirritating, and consisting chiefly of vegetables, particularly during the first summer. The old system of diet which prescribed *salt meats* in hot weather in the South, has cost thousands of lives. During the second summer, more freedom may be allowed; after full acclimation a generous diet is recommended, as it gives tone to the system and enables it to resist morbific influences.

2. DRINKS. All stimulants are highly injurious. The whole gastric system is already in a state of high stimulation. All direct stimulants retard acclimation and increase its dangers, aggravating all the deleterious effects of the hot climate.

Dr. Barton, of New Orleans, says that of 1226 deaths which occurred in the Charity House of that city in 1835, only nine had completed the process of acclimation. He says, he knows of no circumstance in which stimulating drinks are necessary in that climate for health, "whether in exposure to wet, heat, or fatigue," and believes them a "counterfeit good" in all cases. (*Address. Med. Col. Louisiana.*)

3. CLOTHING.—This should always be adapted to existing circumstances. In all climates, whatever malarious poisons may exist in the atmosphere, the influence of changes of temperature on the skin is the principal *exciting* cause of disease; and, in adapting the thickness of clothing to the state of the weather, the error most commonly committed is in dressing too light. In hot weather, when not exposed to direct action of the sun, light clothing is appropriate. But, when the external heat is greater than that of the human body, clothing, too light, should

be a bad conductor of caloric. Flannel should be worn next the skin in every climate, not only when the weather becomes suddenly colder, but *before the change occurs*, and in anticipation of it, by all who are liable to the diseases of an unhealthy climate. Clothing *sufficiently* warm is indispensible.

4. All habits of life which invigorate and promote health, are important.

General Prophylactic Measures.—1. Avoid all depressing passions. Fear, grief and anxiety cause the blood to recede from the surface, producing ashy paleness of the skin. 2. Avoid over-indulgence in food of any kind; over-distention of the alimentary canal produces congestion of the portal system (*Carpenter, Physiol.* p. 543.) All rich food containing fatty matter predisposes to fever. Fat contains 80 per cent. of carbon, peas and beans 37 per cent., potatoes 12, and bread 30. An excess of rich animal diet throws increased labor on the liver to carry off the excess of carbon. 3. Avoid the hot sun by day and the cold damp air of the night. When the dampness of the air is precipitated by frost, the danger of exposure is less. The air then becomes a bad conductor of electricity and heat, and has a bracing effect. Put on an extra amount of warm clothing as soon as the air begins to be colder. Prudent officers sailing in tropical climates always command their men to put on their flannel jackets at or before sunset. Those who do not obey are liable to be attacked with fever. Wherever malaria exists its baneful effects are always heightened by sudden changes of temperature; where the daily range of the thermometer is great these effects are most visible. By wearing flannel next the skin the system is shielded from the influence of these viscissitudes of temperature. 4. A warm fire made every evening in the apartment occupied is indispensible to health, whether it be needed for comfort or not. Pliny refers to the more ancient authorities of Empedocles and Hippocrates to prove its utility. Lascisci made the same observation at Rome. Sir J. Clarke says, "A person may sleep with perfect safety in the centre of the Pontine marshes, by having his room well heated by a fire during the night." (*Sanative influence of Climate*, p. 117.) Napoleon I. relied much upon the protective influence of fires when his armies were encamped in the worst districts of Italy. McCulloch says, "In Africa, a superintendent engaged in directing the cutting of wood erected thirty earthen furnaces on the spot where his men were at work, lighting them every day. Before this he had always from forty to forty-eight of his workmen sick; when in a short time they were reduced to twelve, then to four, and finally to one." (*On Malaria*, p. 285.) This fact with all others bearing upon the same point are easily explained on the cryptogamic theory of the origin of malarious fever. We also see how cooks, engineers and others who work near the fire, were exempt

from the sweating epidemic; and can explain the "danger of sleeping in mouldy sheets, and the sternutation excited by turning over old books and papers. No known poison but that of organic living fungi is capable of being disarmed of its virulence by dryness and great heat. *Hot weather* only promotes the growth of the poison. 5. In choosing a location, for a residence or temporary encampment, avoid all stagnant ponds of water, particularly those that are in process of drying up. In June, 1809, the British army marching through a dry, rocky and elevated country on the borders of Portugal, found the mountain streams dried up from long-continued hot weather, some of the regiments encamped near the stagnant pools yet remaining in the bed of the stream. Some of the men were attacked with remittent fever the next morning; and that type of fever continued exclusively among the troops that had bivouacked near those stagnant pools. After the battle of Talavera the army retreated to the plains of Estramadura and encamped along the banks of the Guadiana river, which was then so nearly dried up as to consist only of "lines of detached pools in the courses that had formerly been rivers." Here they were attacked by remittent fevers of such destructive malignity that the enemy and all Europe believed that the British host was extirpated. This fact, to which any desired number of the same character can be added, is given by Mr. Ferguson, of the British army, to prove the truth of a theory of his own. (*On Marsh Poison*, p. 5.) It at least illustrates the danger of exposure to an atmosphere saturated with malaria; and also that the dried bed of a nearly *obsolete* river furnishes the best possible ground for its rapid development.* (See *Yellow Fever—Causes.*)

Influence of Local Causes on the Health of Armies.—Camp diseases most abound near the muddy banks of large rivers, near swamps and ponds, and on grounds from which the timber has been recently removed. The distance to which the malaria of a swamp or of the margin of a river can be borne by currents of air, may not always be positively determined; but it is generally possible to either remove a camp out of the reach of the poison or to apply some remedies that may "weaken the force of its pernicious impressions."

"The remedies," says Dr. Robert Johnson, Inspector General of Hospitals of the English army,† "consist in the interposition of rising grounds, woods, or such other impediments as serve to break the current in its progress from the noxious source. It is an obvious fact that the noxious cause, or the exhalation in which it is enveloped, ascends as it traverses the adjacent plain, and that its impression is augmented by the adventitious force with which it strikes upon the subject of its action.

"It is thus that a position of 300 paces from the margin of a swamp,

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* See Amer. Homœop. Review, Nov. 1859, p. 50. † Report for the year 1846.

on a level with the swamp itself, or but moderately elevated, is less unhealthy than one at 600 paces on the same line of direction on an exposed height. The cause here strikes fully in its ascent; and as the atmosphere has a more varied temperature, and the succussions of the air are more irregular on the height than on the plain, the impression is more forcible, and the noxious effect more strongly marked. In accordance with this principle, it is almost uniformly true, *cæteris paribus*, that diseases are more common, at least more violent, in broken, irregular, and hilly countries, where the temperature is liable to sudden changes, and where blasts descend with fury from the mountains, than in large and extensive inclined plains under the action of equal and gentle breezes only.

"From this fact, it becomes an object of the first consideration, in selecting ground for encampment, to guard against the impression of strong winds on their own account, independently of their proceeding from swamps, and noxious soils.

"It is proved by experience, in armies as in civil life, that injury does not often result from simple wetting with rain when the person is fairly exposed in the open air, and habitually inured to the contingencies of weather. Irregular troops, which act in the advanced line of armies, and which have no other shelter from weather than a hedge or tree, rarely experience sickness—never, at least, the sickness which proceeds from contagion; hence it is inferred that the shelter of tents is not necessary for the preservation of health. Irregular troops, with contingent shelter only, are comparatively healthy, while sickness often rages with violence in the same scenæ, among those who have all the protection against the inclemencies of weather which can be furnished by canvas. The fact is verified by experience, and the cause of it is not difficult of explanation. When the earth is damp, the action of heat on its surface occasions the interior moisture to ascend. The heat of the bodies of a given number of men, confined within a tent of a given dimension, raises the temperature within the tent beyond the temperature of the common air outside the tent. The ascent of moisture is thus encouraged, generally by a change of temperature of the tent, and more particularly by the immediate or near contact of the heated bodies of men with the surface of the earth. Moisture, as exhaled from the earth, is considered by observers of fact to be a cause which acts injuriously on health. Produced artificially by the accumulation of individuals in close tents, it may reasonably be supposed to produce its usual effects on armies. A cause of contagious influence, of fatal effect, is thus generated by accumulating soldiers in close and crowded tents, under the pretext of defending them from the inclemencies of the weather; and hence it is, that the means which are provided for the preservation of health, are actually the causes of destruction of life.

"There are two causes which more evidently act upon the health of troops in the field than any other, namely, moisture exhaled direct from the surface of the earth in undue quantity, and emanations of a peculiar character arising from diseased action in the animal system in a mass of men crowded together. These are the principal, and they are important."

The following remedy is proposed: A carpet of painted canvas spread on the floor of the tent, prevents the exhalations of moisture from the surface of the earth; it is convenient, is always ready, it is less expensive than straw, and requires to be fresh painted only once a year. A light roof is a defense against the vertical sun, or rain falling perpendicularly; while side walls of moderate height are only employed as a protection against driving rains.

TREATMENT *of Intermittent Fever.*—Remove the patient, if the circumstances permit it, to a dry habitation in a healthy place, free from malaria. The rooms should be off the ground, the air pure, and rendered dry by fires; it should also have the benefit of the sun. The clothing should be warm, diet moderate, easy of digestion; alcoholic drinks and all intemperance in eating should be strictly forbidden. Before the expected paroxysm but little nourishment should be taken. During the chill the patient may have more covering and some warm teas, but no stimulants. The heat of the fire only increases the chill and the subsequent fever.

During the fever remove some of the covering to be put on again during the sweating stage, but regulating it with care, that unnecessary perspiration be not excited by excess of heat.

Selection of the Proper Remedy.—Dr. Baertl* says: A fever remedy must not only cover the cause of the fever, as it may now present itself, already complicated with artificial medicinal effects; but it must also reach the organic, the symptomatic and vital condition corresponding to the character and speciality of the fever in its physiological effects. Every fever remedy must act on the nervous system, and especially on the *vaso-motor* part of it; and it is only then, when such a remedy, although well chosen, does not effect a cure, that the antipsorics are indicated, as entering more deeply into the vegetative sphere of life, and thus enabling them to remove cachexias. The type of the fever gives no indication here; but we have to consider the relations between the chills, heat, sweating, thirst, and the other accompanying ailments; as also the time of the return and termination of the paroxysm. The whole disease, paroxysm and apyrexia, must be taken as a unit, for frequently the paroxysm itself is void of characteristic symptoms.

* Homœopathic Views and Experiences in the Treatment of Intermittent Fevers. By Dr. Joseph Baertl. Sondershausen, 1859.

Time of giving the Remedy.—The best time is at the expiration of the paroxysm, and when the interval is short, begin giving as soon as the perspiration commences; repeating it several hours before the next chill is expected. Or it may be given at regular intervals.

After the disease is broken, it is advisable to keep up the action of the remedy in lengthened intervals, to prevent a return of the disease If the remedy has failed to keep off the expected paroxysm, it must be repeated or another remedy chosen. Sometimes the proper remedy is followed by an aggravation of the paroxysm, and frequently a latent psora is aroused by the fever.

The remedies most commonly made use of in this malady, are *China* and *Arsenicum*. The following will also be found appropriate in many instances: *Ipecacuanha*, *Bryonia*, *Eupatorium-perfoliatum*, *Nux-vomica*, *Veratrum-alb.*, *Belladonna*, *Carbo-veg.*, *Pulsatilla*, *Antimonium-crudum*, *Ignatia*, *Cocculus*, *Lachesis*, *Sabadilla*, *Sulphur*, *Cina*, *Natrum-muriaticum*, *Capsicum*, *Apis*. *Cornine*, *Salicine*.

China.—Yellowish color of the skin and face; during the chill and heat, redness of the face, and distention of the veins of the face and head. "During the chill, bilious vomiting; palpitation of the heart; short cough." (*Hartlaub.*) During the intermission, yellowish, clay-colored countenance; weak eyes; fulness of the abdomen; cough; anasarca. In tertian fever, with thick, brown, yellow-coated tongue; countenance palish-yellow during the paroxysm and intermission; swelling in the region of the spleen; eyes red and sensitive." (*Knorre.*) Quotidian fevers with pale countenance; cold and pale hands and feet; and retching up of mucus during the chill; while during the fever there are red face, full, quick pulse, dry spasmodic cough. Paroxysm preceded by palpitation of the heart, sneezing, anguish, nausea, thirst, bulimia, headache, and colic. Thirst *before* and *after* the shiverings, or *during the sweating stage;* coldness in the region of the liver; easy perspiration during sleep, or when moving; short cough; for the most part no thirst during the *cold* or *hot* stages. Hartlaub has cured chills, external or internal, without thirst, followed by heat with thirst; and followed or not by sweat; or chills in some parts of the body, with shuddering and heat in the head, terminating in fever, intermingled with chills, attended with thirst and followed by sweat; or no chills, but fever with urgent thirst, and afterwards with perspiration. Hartmann advises *China*, when we have during the paroxysm throbbing pain in the head, extending to the orbits; vertigo; nausea; pain in the region of the liver; sharp pain in the chest; short cough; aching pain in the abdomen during the chill; pains in the loins and legs. During the intermission, confusion of the head; transient vertigo; variable appetite; thirst; drowsiness after meals; uneasy sensation in the pit of the stomach; nausea; constipation; general debility. Knorre has

cured the *quotidian* type, attended with vertigo; pale and cold hands and feet, and retching of mucus, during the chill; and pains in the head, both sides, and pit of the stomach; dry and jarring cough, and drowsiness during the fever, which is protracted and violent. Also, *tertian* fever with violent chills, heat and thirst, followed by perspiration. During the paroxysm and intermission, there were bitter taste eructations, and vomiting; aching pains in the pit of the stomach, and in the region of the spleen; yellow and sickly aspect. Also in *tertian* fever, when the chill is short and slight, but followed by violent aching pain in the forehead, in the right temple, and around the right eye; general heat; intense thirst; eyes hot, painful and sensitive to the light; paroxysm commences in the forenoon, lasts until evening, and is succeeded by perspiration during the night.

Confusion of ideas and drowsiness during the paroxysm and intermission; anxiety; discouragement; great activity of the mind; sometimes delirium.

Intermittent with want of strength, debility, and anæmia, deep affection of the blood-life, and super-irritation of the nervous system, (irritation of the spinal marrow, pressure on the spine between the shoulder-blades, painful, especially during the chill); great weakness also in the apyrexia, quick development of dropsy and axæmia, decomposition of the blood from urinary crystals and deposits, *swelling of the spleen and liver*. *China* is especially curative where a long-lasting impression of the *paludal miasma* acts depressingly upon the vegetative life and the preparation of the blood, over-irritating the nerves, producing swelling of the liver and spleen, sallow complexion, general cachexia, anæmia and hydræmia. (*Arsenicum*, *Ferrum*.) *All the stages clearly defined, severe and long-lasting.* Apyrexia, in the beginning without symptoms, or only symptoms of injured digestion, similar to the apyrexia of *Natrum-muriaticum*. Sweat predominant. Thirst between the chill and heat, or after the heat; sweat even in the apyrexia. Paludal intermittents, if not cured by a few doses of China, need always for their removal a few doses of the antipsorics. Intermittents appearing as pure neuroses, the so-called febris intermittens larvata, as paroxysmal cough, convulsions, paralysis, epilepsy, sopor or mania, if no other remedy corresponds better to the totality of the symptoms.

Symptoms produced by Cinchona, according to the old authors.— Oppression of the stomach; vomiting; diarrhœa; syncope; great debility, a form of jaundice; bitterness of the mouth; tension of the abdomen. It was for precisely these evils in cases of intermittents other authors recommend the Cinchona alone. Its power of curing exhaustion, indigestion and loss of appetite, resulting from acute fevers, (particularly when the fevers have been treated by venesection, eva-

cuants, and debilitants), depends on the faculty it possesses of *depressing excessively the vital powers, producing mental and bodily exhaustion, indigestion and loss of appetite.* (*Hahnemann, Mater. Med.* III.)

ADMINISTRATION.—One drop of the third dilution in a teaspoonful of water, may be given previous to the chill, and during the forming stage. Should this prove insufficient to remove the symptoms, the dose may be repeated every four hours during the intermissions.

Sulphate of Quinine.—The importance of this article in the hands of men of every school in the treatment of many forms of disease justifies an analysis of the researches hitherto made in view of ascertaining its true physiological action.

Quinine has a powerful affinity for the nervous system. It is a law of the animal economy that no function can be performed without loss of substance. Muscular motion implies the loss of fibrine; and any activity of the brain and nervous system involves a corresponding metamorphoses of this tissue. The waste of nervous tissue, or in other words, the activity of the function of innervation is usually accelerated, being in a direct ratio to the sum of the phosphates found in the urine.*

It has been proved by experiments that Quinine given in a state of health augments the amount of phosphates, and consequently, increases nervous action. Dr. Ranke (*Med. Times and Gazette*, May 30, 1857,) ascertained by experiment that the paroxysm of fever greatly increased the amount of phosphoric-acid; showing most clearly that the nervous system plays an important part in the paroxysm of ague. Dr. Hammond (*Amer. Jour. Med. Sciences*) found while experimenting on himself during an attack of intermittent fever, that on the day of the first paroxysm the amount of phosphoric-acid found in the urine was 69.18; next day, that of the intermission, 52.95. Third day (paroxysm) 72.95. Fourth day (intermission) 55.27. On this, fourth day, Quinine was taken. Next day, being the day for the paroxysm, and when the amount of phosphoric-acid, calculating from the average, would have been 71.06, it fell to 56.22, but a trifle above that excreted on the days of intermission.

But rapid disintegration of nervous tissue is not confined to intermittents. It is a permanent element in nearly all severer forms of fever. General debility, and non-performance of function are doubtless due to this case. Continued experiment led Dr. Hammond to the conclusion that "Quinine has the power to prevent much of this great waste of nerve-material." It not only prevents destruction of nerve-tissue, but, by its well-known effects on the function of nutrition, contributes greatly to the *reparative* process. It may therefore be

* Dr. Nevison, Amer. Jour. Med. Sciences, 1861, p. 51.

regarded as the great conservator of the nervous system in conditions of febrile excitement or nervous prostration.

Its Action on the Circulation.—It has the power of giving contractile action to the capillaries in every part of the system. Dr. Corrigan, physician in ordinary to the Queen in Ireland, says: It has the same power "in giving contractility to the capillaries in the lungs which we know it to possess in so marked a degree over the capillaries and venous radicles in the spleen."

This power gives control over nearly all forms of venous and capillary congestion which it is impossible to obtain by any other known agent. It approximates the pulsations to the healthy standard, rendering them slower when too quick, and quicker when too slow. It enters the blood-vessels and goes the round of the circulation. Tiedemann and Gmelin long ago found it in the blood of a patient to whom it had been administered; and in from three to twelve hours after it was taken, it appears in the urine, as shown by Dr. Bence Jones, M. Brignet and others.

Quinine diminishes the amount of uric-acid in the blood. Dr. Ranke tried it in three individuals in health, and found that under the influence of the Quinine the uric-acid was diminished nearly one-half. Dr. Hammond made a series of observations during an attack of intermittent fever, where, as in all fevers, the amount of uric-acid is always greatly increased. He found in this case the quantity promptly reduced more than one-half by the action of the Quinine.

But Quinine *defibrinates* the blood, rendering it fluid and uncoagulable. Dr. Samuel Garden shows this in the Dublin Quarterly for August, 1856. It is further proved by the experiments of Baldwin, Melier, Brignet and others, which may throw light on its power of subduing many forms of inflammation, arising under the influence of malaria.

The diseases to which Quinine is especially adapted contain an important neuropathic element. The innervation may be either deficient, irregular or excessive; all, however, imply the existence of, or ultimately produce *debility.* Many derangements of the circulation, nutrition, secretion, sensation and muscular motion are included as sequelæ. (Dr. Nevison.)

An example of excessive innervation is manifest in precocious children. The vivacity, intellectual and moral development indicate a degree of nervous activity altogether disproportioned to the restorative or nutritive function; early decay is the result. The diseases accompanied with derangement of the circulation are attended with general or local congestion, conspicuous among them are intermittent, remittent, continued and pernicious fevers, and many diseases usually regarded as inflammatory. Derangements of secretion, excretion and calorification

follow in the train of disordered circulation, and imply disturbance of the ganglionic system.

Sulphate of Quinine is in any dose in some way homœopathic to malarious bilious fever, of every grade in which there is merely irritation without *local inflammation*. It is adapted to the treatment of *open* fever where the high phlogistic symptoms have been subdued by other measures, or before local inflammation is established. But it is injurious in a high degree in the doses commonly employed in bilious fever, with gastro-intestinal irritation. In these cases the head suffers intensely from full doses of Quinine; and, where there is tendency to intestinal irritation, the Quinine speedily causes dryness of the mouth, dry and red tongue, with general irritation. It is safer in the early stages before the local irritation is established than after its has become fixed in local inflammation. The Callissaya-bark is superior to Quinine in all the bilious fevers, possessing powers very different.

Quinine in ordinary doses is injurious in cases of an asthenic character; in an impaired condition of the general system where there is an atonic state of the general circulation, and symptoms of adynamia, Quinine diminishes still farther the force of the circulation, and increases the frequency of the pulse with all signs of irritable debility. It is certainly wrong to call it a stimulant in such cases. It is injurious in all cases attended with pale skin, sallow complexion, feeble and quick, or weak and sluggish pulse; irregular biliary secretion, and in cases of extreme debility in which there is a tendency to syncope in the erect posture; throbbing in the head; tinnitus aurium; palpitation and vertigo. It is highly injurious in violent congestive fever with cerebral congestion; or the collapse stage of common remittent, malignant and typhus. In all of these cases Quinine never fails to induce a quicker and more irritable pulse, thirst and cerebral congestion; and whilst each dose of it increases the danger, Wine and Camphor sustain the failing powers.

In fevers of an opposite or phlogistic character, Quinine produces the ordinary effects of a stimulant, more decidedly than the Bark itself. Dr. Monette says: "A full dose is followed by increase of temperature of the surface and fulness of the vessels of the head. When full and frequent doses are taken, the countenance generally becomes flushed and the vessels of the head very full; there is confusion and heaviness of the head and ringing in the ears." In a few cases these effects go so far as to cause a singular form of delirium resembling that produced by an overdose of Stramonium.

MM. Itard and Piorry say, they have often known permanent and complete deafness follow the use of Quinine in large doses. All practitioners of large experience have seen the same thing.

M. Guersant says, a physician in France believed that Quinine only

failed to cure ague when the dose was too small. Such was the state of mind of our colleague when his wife was attacked with ague. He gave her sixteen grammes (92.604 grs.) of Sulph. Quinine in a very short space of time. The patient soon fell into a state of stupor with weight in the head, dazzling, and then blindness and deafness. M. Bazire, conceiving that these new symptoms were due to the approach of a new paroxysm of pernicious ague, gave his wife twenty-five grammes more of the drug. After the taking of this considerable dose the symptoms increased with frightful rapidity. The patient became more completely deaf and blind, her respiration embarrassed; pulse very bad, skin cold. At this time the physician was greatly alarmed by the great number of bad agues abounding in the province, and the failures he had experienced had thrown him into despair; he now saw in dismay the malady again triumphant; and the remedy he had thought invincible was utterly powerless; fortunately for the wife he took the disease himself; dosed himself as effectually as he had her, and ended the disease and his own life together. (*Dict. de Med.*)

Prophylactic Powers of Quinine.—In the years 1840—41 the English government sent an expedition into Africa to explore the sources of the Niger river. Two ships carried the party with all the materials that could promote the comfort of the men with extra contrivances to purify the air on board; and they were expected to make a protracted stay in that malarious region. Of these two ships' crews none escaped the African fever; and, after two years' struggle with malaria, a few returned alive to England. In 1854—55 the same government sent out another expedition of two ships designed to remain in the Niger two years. The men generally escaped the fever by taking Quinine. Each man was ordered to take five grains of Quinine every morning before exposure on the decks of the vessels, while in the river. After repeated trials it was found, that after leaving the river for the ocean it was necessary to continue the Quinine for fifteen days after leaving the river. This practice was continued for five months annually for two years. In December, 1858, the crew had been encamped twelve months on the Niger, and the men maintained robust health. In the malarious regions of the United States the use of Quinine has been tested as a prophylactic. Dr. de Saussure, of Charleston, S. C.,* mentions many cases of persons who took it regularly for many years, visiting the sickliest locations, as the rice-fields, every day. They all escaped the fever. When they became careless and omitted the antidote they had attacks of it. A rail-road contractor on the Charleston and Savannah R. R. had one hundred and fifty unacclimated North Carolina negroes at work in a notoriously unheal-

*Medical Intelligencer. Feb. 1860.

thy region. He carried with him some pounds of Quinine, took it daily, and compelled all his laborers to take it. He reported at the end of the season, that not one of the men had the fever. Dr. Livingstone says, by the aid of Quinine his party in Africa were able to "ward off the pernicious fevers of the country." Half grain doses have always in our hands proved effectual.

Modus operandi of Quinine in anticipating the Paroxysm of Ague.—Dr. Wood* says: "Every consideration in connection with the peculiarities of intermittent fever diseases leads to the conclusion that the paroxysms are produced by an influence acting through the cerebral centres; and if these can be preoccupied by a strong impression from some other source, they may be rendered insensible to the morbid influence, and the paroxysm is therefore set aside. Quinine is characterized by its disposition to act energetically on certain nervous centres, which are probably the same as those through which the cause on the disease operates. Quinine therefore interrupts the succession of paroxysms." The theory given by Hahnemann (*Organon of Medicine, Fourth Am. Edition*, 1860, Sect. 43, p. 115, &c.) is much more clear and satisfactory. Dr. Holcombe considers that the malaria and the Quinine act on the same tissue, in a more or less similar manner, and the stronger excludes the weaker. By inducing the Quinine disease within the interval, the ague disease can not act upon the pre-occupied tissue. He thinks the disease can be still more perfectly met by some additions to the Quinine; and that to render it certainly effectual the dose must be appreciable and the remedy thoroughly homœopathic.†

We prefer to correct the system first by other proper treatment, and then the case will be curable by this or some other remedy.

Arsenicum.—The internal use of Arsenic in the treatment of skin-diseases has often developed ague. M. Biet says, he has often observed "a certain *periodicity* in the symptoms following the use of it. It is well known that it frequently cures ague *neuralgia* and other intermittent diseases."

Symptoms.—Face puffed and earthy, or countenance anxious, sunken, and of a yellow tint; pendiculations and drawing in the limbs during the cold stage; pungent and burning feel of the skin during the fever; dropsical swelling; trembling of the limbs during the sweating stage; pulse irregular, or quick, weak, small, and frequent, or suppressed and trembling; tongue bluish, white, or bright red; diminished urine; night-sweats; face red during the fever, but pale and sunken during the intermission.—Aggravation of the existing symptoms just previous to, or during the attack; paroxysms imperfectly developed; chills and heat alternating; periods of attack regular, and generally

* Therapeutics. Vol. I. p. 261. † North Amer. Jour. Homœop. 1861. p. 16.

in the morning or evening; burning thirst, or adypsia; fever of either type; burning in the stomach, sharp pains in the limbs, chest, back and head, during the heat, with difficulty of breathing; during the sweating stage, heaviness of the head, buzzing and ringing in the ears between the cold and hot stage, drowsiness, languor, thirst, nausea, vomiting and hiccough; sweats during sleep, or on waking in the morning. Dr. Watzke has cured chills and thirst, followed by high fever, urgent thirst, dizziness, confusion in the head, and finally profuse perspiration without thirst. During the apyrexia, pains in the chest and head; weakness and faintness; small appetite; abdomen swollen, and affected with occasional colic pains. Dr. Hartlaub has cured chills without thirst, followed by fever with or without thirst, and then by perspiration; before the chill, vertigo; fainting; pains in the side, chest, abdomen and back; stretching and yawning; *during the chill*, anxiety; pains in the head, back, limbs, and pit of the stomach; stretching and yawning; prostration; nausea; vomiting; coldness of the abdomen; oppression of the chest; *during the fever*, delirium; pain in the head; vertigo on rising; nausea; bitter taste; aching pain in the region of the liver; aching and burning, extending from the pit of the stomach to the left hypochondrium; oppression of the chest; *during the intermission*, pale countenance; white tongue; swelling of the hypochondrium and abdomen; cold clammy sweat; throbbing pain in the forehead; thirst; no appetite; nausea; extreme debility; pains in the head, chest, back, and limbs. Depression of spirits, and irritability previous to the attack; anxiety, uneasiness, confusion of ideas, which gradually increase until the sweating commences; occasionally delirium during the hot stage.

Arsenicum has been found efficient in the cure of intermittent fever, which has lasted already some time, and withstood remedies seemingly indicated. In fevers with short chills, but protracted heat, or where the sweating did not occur; malarious paludal fevers accompanied by mucous and bilious vomiting, watery diarrhœa, burning sensations, especially in the pit of the stomach, syncope, great anxiety, remarkable collapse of the vital power, inquietude and great thirst, especially during the day and burning heat. Arsenicum is most appropriate when the whole vascular and nervous systems are deeply implicated, caused by malignant endemic or climatic influences, especially malaria, and producing disorganizations of the liver and spleen. The fever having already lasted some time, and, perhaps been maltreated with Quinine, has produced a general cachexia, especially a dropsical or putrid state. The paroxysms are long continued and severe, especially the heat; the apyrexia never complete. *Arsenicum produces no perfectly formed fever;* all the stages of the paroxysm are either ill-defined or one

of them is wanting; rapid sinking of the vital power; debility of a a torpid character.

M. Bodin, physician general of the French army in Algeria, says, he often failed to cure the agues of that country with Quinine, though he succeeded with Arsenic. With "a single dose that did not exceed $\frac{1}{100}$ of a grain" he "radically cured fevers contracted in Algeria or Senegal, and which had resisted various means of cure, including Sulph.-quinine, &c. He often succeeded in a short time in putting an end to the quotidian, tertian, and quartan agues contracted in latitudes the most various, often complicated with chronic engorgements of the abdominal viscera. (*Traite de Fiev. Intermit.* p. 280.) Of two hundred and sixty-six cases one hundred and eighty-one were cured by Arsenic, of these fifty-seven had resisted Quinine.

Administration.—Two drops of the sixth dilution in an ounce of water,—a dessert-spoonful once in six hours during the apyrexia, until the symptoms have disappeared. One dose of this remedy will often prove successful where allopathic doses of crude Cinchona and other articles, have produced no effect. We have, in two instances, succeeded in curing cases which have resisted the old school method for months, with a single drop of the thirtieth attenuation.

Remarks.—*Arsenicum* is appropriate in any type of intermittent, or fever and ague, provided the symptoms correspond, although several authors especially commend it in the *tertian* and *quartan* forms.

Ipecacuanha.—*At the beginning of Intermittents*, where the subjective difficulties of digestion and breathing have not yet got seated. *Intermittents caused by errors in diet.* Intermittents complicated with gastricismus, and in relapses, after abuse of China. It suits sensitive juvenile persons. Thirst totally wanting, or only trifling, during the chill. Chills predominant, with special irritation of the upper part of the spine (*China and Nux.*), therefore with occipital pains and tensive pressure of the neck, spasmodic dyspnœa, spasmodic cough. Heat trifling, more external, often with cold hands and feet, or only heat in the face. Sweating entirely missing (Arsenicum), or only appearing, sour smelling, about midnight. Reduced secretion of urine. Apyrexia with gastric symptoms.

Sallow Skin.—*Before* the shiverings, uneasiness, stretching and lassitude, with cold sweat on the forehead; tongue clean or loaded; *during the apyrexia*, countenance pale or yellowish. Slight chills, followed by much heat; or, severe chills with little heat; aggravation of the rigors from external heat; thirst only during the chill; nausea, vomiting, and other signs of *gastric disturbance*, manifest during the heat; also, constriction of the chest. Watzke advises Ipecac., when *chills* are attended with thirst, confusion of ideas, and dull pains in the head; the *hot stage*, with thirst and sharp pains in the head; the

sweating stage, with little or no thirst; the *apyrexia*, with want of appetite, bitter taste, oppression at the stomach, and pale face. Hartlaub has cured slight and short chills, without thirst, followed with violent fever, with thirst, and succeeded by profuse perspiration, or without perspiration.

Before the chill, pain in the back; *during the paroxysm*, headache, dulness of intellect, gastric derangement, nausea and vomiting, oppression, contraction, pain in the chest, and cough; *during the intermission*, bitter taste of food, much saliva, loss of appetite, vomiting after eating, lassitude, sleeplessness.

Before the chill, dulness of intellect and sleeplessness; during the chill confusion of ideas, irritability, impatience and indisposition to mental effort.

Administration.—Same as China.

Remarks.—This remedy has been most frequently used in fevers of the *quotidian* and tertian types. Lobethal, Hartmann, Boenninghausen, Schmidt, Fleischmann, Watzke, Madden, Trinks, Elwert and Rumel have expressed themselves strongly in favor of the low dilutions of *Ipecac.*, in this disease. Others have succeeded with higher potencies but in peculiar cases.

Apis-mellifica.—Wolf and Hering recommend Apis as *the specific against every sort* of *intermittent* fever, no matter how complicated the case. As intermittent fever-poison acts as an alterative on the whole sanguification, and on all the nerves, spinal as well as ganglionic. Apis-mellifica does the same. Its action is direct, whereas other fever remedies correspond only to certain individualities.

Bryonia.—Simultaneous affections of the organs of the chest and abdomen; chill and heat moderate; sweating predominant and lasting; thirst strong during the chill and heat; excruciating, dry, racking cough during the chill, with stitches in the chest; bilious symptoms; rheumatic pains in the extremities.

Pleuralgia.—*During* the shiverings, trembling and redness of the face; during the heat, nausea, and tendency to keep the recumbent posture; during the sweating period, frequent sighing and cough.

Pleuritic Ague.—Preceding the cold stage, vertigo, headache, and lassitude; first stage, ushered in with severe chills and trembling, with heat in the head; chilly stage, more violent than the hot or slight but protracted chills, and some thirst; second stage ushered in with flushes of heat and slight chills, in alternation in the first instance, afterwards burning heat and thirst; universal dry heat, external and internal; spasmodic cough; vertigo and headache during the fever; shooting pains in the side and abdomen; after the heat, profuse sweat; oppression in the chest, with dry cough; tendency to sweat night and morning; during the apyrexia, constipation, thirst, unhealthy, yellowish

complexion, and night sweats. Irascibility and disposition to look on the dark side of affairs.

Administration.—Two drops of the third dilution in an ounce of water,—a dessert spoonful two or three times during the apyrexia.

Eupatorium-perfoliatum.—This is a remedy which we have found highly serviceable in many cases which have been complicated by the abuse of Calomel and Quinine. It is particularly indicated when the liver is much implicated. An intelligent homœopathist who resides in a fever and ague district at the West, informs us that he has for many years past made use of a small quantity of an exceedingly *weak infusion* of this agent as a prophylactic against this disease, in his own family, and with complete success. He also assures me that he has often cured, with astonishing facility, cases which had baffled for months, the ordinary treatment, with a dose or two of an infusion very slightly bitter. We have often used it with success.

Yellow tinge of the skin and eyes; eyes dull, heavy and sunken; lips pale or bluish, dry and cracked.

Principal Symptoms.—Irregular development of the paroxysms; frequent slight chills previous to the commencement of the first stage; partial chills in the back and extremities; dizziness, heaviness and ringing in the head, during the cold stage; hot stage ushered in with slight chills, alternating with flushes of heat, until in a short time the heat becomes general, attended with headache, nausea, vomiting, pains in the chest and stomach; pains in the bones; tenderness of the abdomen on pressure; loss of appetite; sensation of fatigue, languor, and debility; constant inclination to sleep; nocturnal sweats.

Dr. Williamson advises *Eupatorium* in the *quotidian* and *tertian* types, when the following symptoms are present: paroxysm commencing in the morning; thirst several hours before the chill, continuing during the chill and heat; stiffness of the fingers during the chill; soreness in the bones; aching pain with moaning throughout the cold stage; a greater amount of shivering during the chill than is warranted by the degree of coldness; retching and vomiting at the conclusion of the chill; distressing pain in the scrobiculus cordis throughout the chill and heat; chill beginning at nine o'clock in the morning; throbbing headache during the chill and heat; violent pain in the head and back before the chill; inconsiderable perspiration, or none at all; fever in the forenoon, preceded by thirst early in the morning, but no chill; attended by fatiguing cough and not followed by sweat; loose cough in the intermission; cough in the night previous to the paroxysm; yellowness of the skin. During the paroxysm, confusion of ideas and ringing in the ears; discouragement; indifference to life; dullness of conception, and discontent during the apyrexia.

Administration.—One drop of the first dilution in a spoonful of

water during the apyrexia. As a prophylactic against intermittents, one drop of the tincture two or three times a week.

Nux-vomica.—During the chills, skin, hands, feet, face, and nails are cold and bluish; redness of one or both cheeks; spasmodic contractions in the limbs; yawnings and stretchings. Sweat profuse, sometimes with a disagreeable acid smell; partial or one-sided sweat; pulse hard, full and frequent, or small, quick and feeble, or intermittent; dryness of the lips; tongue coated white or yellow. First stage preceded by external and internal cold and yawning; chills usually *at night*, or in *the morning;* aggravated by motion, drinking, or excitement; pain and heat in the head; thirst for beer; pains in the back and loins; during the hot stage, headache, vertigo, thirst, nausea, pains in the chest; shivering on motion; debility; during the sweating stage the symptoms are mitigated; sweat and chills come alternately.

Watzke gives us the following indications: Chills with thirst; headache, loss of consciousness or delirium, painful and inflexible limbs, contracted feel of the muscles. Chills last four or five hours, and not followed by heat or perspiration. After the chill exhaustion; pains in the hypochondria from distention; thirst and want of appetite; tongue white; feet swollen; sensation of heaviness when walking. Or, chills followed by heat and sweats with thirst; anxiety; headache; slight cough, with burning sensation in the chest, worse during the chills and heat; constipated bowels; loss of appetite; craving for beer; weakness and faintness. Hartlaub has cured chills with or without external coldness, and without thirst; followed by fever with thirst, and succeeded or not by perspiration. The chill may be slight and short, or violent and protracted, with shaking and chattering of the teeth, and blue nails; fever attended with perspiration about the head and neck. Or, shaking chills with thirst, followed by fever with thirst, and by perspiration; chill preceded by thirst, coldness increased by drinking. Or, alternating chill and fever; motion during the fever or sweat causes chills; *during the chill*, pain in the back (sacrum); *during the fever*, headache, vertigo, red face, pain in the chest, vomiting of water, bile, slime and food; red urine; *during the intermission*, headache; vertigo; trembling of the head on motion; pain in the forehead; acid eructations; bad taste in the mouth, loss of appetite, disgust for food; much thirst; pain in the pit of the stomach after eating; distention and pain in the belly; constipation; pressing at the neck of the bladder after urinating; drawing in the limbs; weakness. Hartmann employs it when, at the commencement of the paroxysm, there are, paralytic, weakness of the limbs; disordered stomach; vertigo, and sudden prostration of strength.

During the chills, stupid or delirious; during the fever, anxious,

melancholy, sad, timid, apprehensive of death. Occasionally monomania during the progress of the disease.

The sphere of action of *Nux-vomica* is such that it is specific in primary affections of the spinal or the ganglionic system; gastric troubles with nervous origin, where the stomach, bowels and liver are so morbidly affected, that the apyrexia shows considerable evidences of deranged digestion, even to vomiting and constipation. Intermittents caused by taking cold, errors in diet in hot-headed irritable males, who easily get angry; also indicated in fevers with *primary affections of the spinal nerves* or the ganglionic system; when during the paroxysm, twitchings, tetanus, trembling, sacral pains, sensitiveness of the spine to pressure, paralytic feelings in the extremities, sleep between the chill and heat (Ignatia). Yellow skin, the person thin, dark colored, of choleric, sanguine temperament. After Arsenicum, Nux is one of the best remedies, even in paludal fevers. Also in malarial fevers with symptoms similar to those of Cina, constipation being a prominent symptom.

In the usual Nux-paroxysm the chill is predominant; every little motion, even drinking, aggravates the chill, with severe pressing headache and congestion. Hands and feet ice cold; blue nails; no thirst; then continuous heat, with pressive frontal headache; redness of the face and thirst, followed by sweating; apyrexia, vertigo, heaviness and dullness of the head; pressive throbbing headache in the sinciput and temples. Waxy paleness of the face; toothache; tongue clean or covered with a brown thick mucus; taste bitter, sour, or lost; malaise and bitter vomiting; stitches in the liver and in the right side of the chest; sensitiveness and painfulness of the stomach to the touch; bloating, pressive contractive pain in the stomach; painfulness and bloatedness of the left hypochondrium; enlargement of the spleen, bearing no touch, impossibility of lying on the left side. Constipation, stitches in the anus, dry cough at night, general ailments, loss of flesh; debility, anxiety, inconsolability, with bitter crying; touchiness, being easily excited to anger. Intermittent, with nervous symptoms, emanating from the spinal cord and reflecting themselves in other organs. Apoplectic intermittent with vertigo, anxiety, febrile shivering, delirium with lively visions and tension in the stomach.

Administration.—Two drops of the twelfth dilution in an ounce of water, a dessert-spoonful each night. If a cure is not effected at the end of a week, give a drop of the first dilution once in six hours, until the symptoms disappear.

Remarks.—*Nux* is particularly applicable to the quotidian and tertian types. If the individual has been an intemperate drinker or luxurious and sedentary in his habits, the indications are still stronger.

Arnica.—Inclination to remain quiet.

Principal Symptoms.—Chills occur in the evening; thirst; contraction of the features. In the hot stage, pain in the back and limbs; shiverings, from the slightest exposure; the hot and sweating stages are of short duration. In the apyrexia, pain in the stomach; loss of appetite and general appearance of wretchedness and debility. Obstinate; reckless; quarrelsome.

Administration.—Dr. Shue has been accustomed to exhibit this remedy in alternation with *Ipecacuanha* with marked benefit. It may be given at the first attenuation, a few drops every four hours during the apyrexia.

Veratrum-album.—One of the best remedies. Severe chills with feeling of internal heat or both together; cold sweat of the body, or only cold frontal sweat; great thirst, especially during the chill and sweating; paralytic debility; anxiety; quick collapse of the strength; slow pulse which seems to fade away; watery vomiting and diarrhœa; cadaveric color of the face; delirium; cramps. Most of the symptoms also in the apyrexia: decomposition of the blood with sugillations. In such dangerous cases, also in asphyctic intermittents, Veratrum is far preferable to Arsenicum.

Cholerine Ague—Cold and clammy perspiration on the forehead; shuddering. In the hot stage, coma and red or purplish cheeks; pulse slow and almost extinct, or small, quick and intermittent; tongue red and dry; general coldness of the whole body; cold stage of short duration, and attended with shivering; vertigo; nausea; pains in the back and loins; thirst for cold water. The second stage more protracted, and accompanied with headache; short, dry cough; fever with external coldness; urine dark colored; diarrhœa or constipation; coma. In the third stage, profuse perspiration with thirst and drowsiness.

Hermann prescribes *Veratrum* when the chills are followed by sweat and afterwards coldness. Or, chills followed by fever with thirst; vertigo; nausea, and pain in the back, succeeded by fever with delirium; flushed face, and tendency to sleep. After the paroxysm, morbid appetite. Or, cold stage, without the hot or sweating stage.

In the cold stage, confusion of ideas; in the hot stage, coma; during the apyrexia, restlessness and sometimes mental alienation.

Administration.—One drop of the first dilution in an ounce of water—a table-spoonful two or three times between the paroxysms.

Belladonna.—Face pale and bloated during the cold fit; eyes red and injected; face red; pulsations of the carotids; veins of the forehead swollen, and some perspiration during the heat; shiverings alternating; rigors, followed by heat; during the fever, burning thirst; headache; shootings in the temples; great sensibility to impressions; delirium; sweat only of the parts covered; stitches in the chest; dimness of sight; quarrelsome and passionate during the paroxysm, or great

agitation; mistrustful; constant dread of evil; visions of frightful or ludicrous objects; delirium. Predominant affection of the vascular system; fevers simulating nervous fever, or phrenitis; congestions to the brain during the fever; vertigo; redness of the face; heat of the head; delirium; sopor; dreams and phantasies; palpitation; pulsation of the arteries of the neck, heat predominating; spleen swollen and painful, especially during the chill; swelling of the whole abdomen, of the eyelids, and of the lower extremities; sallow face; nearly total prostration of the digestive and reproductive sphere; great irritability and crossness in persons usually very patient.

Administration.—A drop of the third dilution in water, every four hours between the paroxysms.

Pulsatilla.—Intermittent with chlorotic quality of the blood, and corresponding imperfection of nutrition, with nervous debility combined with irritability; dyspepsia and amenorrhœa, paroxysms beginning at night or in the evening. Characteristics of Pulsatilla are, *a long chill, little heat, and absence of thirst;* the different stages, except the chills, have no great power; they run into one-another. During the chill, paleness of the face, heaviness of head, and cephalalgia; anxiety; sometimes mucous vomiting, and oppression of the chest. During the heat, moderate thirst, headache, redness of the face, and bloated appearance; painfulness, sighing, and complaining, anxious breathing; chilliness in uncovering; nausea; diarrhœa, followed by sweat; vertigo; oppression of the chest; palpitation; pains in the sacrum and extremities; fainting spells; and in women, amenorrhœa. During the apyrexia, headache; seething of the blood; palpitations; different disorders of digestion; moist cough, and disposition to weep; urine plenty and pale; shivering during the apyrexia. Suitable in new cases, where the whole picture resembles chlorosis; paroxysms weakly developed and therefore easily overlooked. Dropsical swellings are cured by Pulsatilla only in the beginning of intermittents, but not when they are the sequelæ of the deeply-affected energy of the vascular life; sweating only on one side of the body.—Face pale during the hot stage; face red and bloated in the hot stage, sometimes with sweat on the face; swelling of the veins; anxious and rapid respiration; eyes dull and cloudy; inclination to remain in the recumbent posture; pulse quick and small, or full and slow, or feeble and suppressed; tongue coated, whitish, grayish, or yellowish; chills in the evening or afternoon; vertigo; pain and heaviness in the head; sensation of cold from slight exposure; irregular diffusion of heat, chiefly in the face, or on one side; absence of thirst; after the paroxysm, headache, oppression of the chest, moist cough, bitter taste. Or, chills without thirst, fever with thirst, and dull headache; sweating very slight. Or, chills commencing with vomiting, with slight thirst during the cold, hot and

sweating stages; diarrhœa; loss of appetite. During the paroxysm, anxiety; sadness; taciturnity; apprehension; dread of sudden death; great depression of spirits during the apyrexia.

ADMINISTRATION.—Two drops of the first dilution in an ounce of water,—a dessert-spoonful three or four times during the apyrexia.

REMARKS.—When the attacks have been incited by abuse of fat and indigestible food, or are connected with any derangement of the menstrual function, Pulsatilla is appropriate. It has been most frequently employed in the *quartan* type.

Case by *Dr. Pearson*, *Iowa*.—"In the months of August, September and October, 1859, I frequently prescribed for as many as thirty cases of chills and fever daily, and found no remedies equal to Pulsatilla and Cedron, at from the sixth to the thirtieth attenuations." And "when ague has been suppressed by *Quinine*, or more particularly with *Chinoidine*, and has again returned, there is no remedy so likely to effect a cure as Pulsatilla." In one violent case where Pulsatilla 6° was given, after a long allopathic course had failed, the chill returned with augmented severity. The same remedy 3° permitted it to return two hours sooner, the chill being extremely violent, and lasting three hours before reaction appeared. It was then prescribed at the thirtieth dilution, every three hours, and there was no other attack. (*U. S. Jour. Hom.*, vol. I., p. 480.)

Ignatia.—Purely nervous intermittent, especially if caused by fright or terror; apyrexia of the intermission complete; paroxysms short, changing, irregular, or the various stages running into each other; chills and heat occurring simultaneously in different parts of the body, most of the symptoms obscure or lightly displayed to outward appearance; sudden attacks; suitable for females. The fever begins often in the afternoon and lasts the whole night; the patient irascible, can not describe his sufferings, which are augmented by every noise. Compare with Cina.

During the chill, pale or sunken face; bilious vomiting; during the second stage, pale face, or one cheek red and the other pale; during the intermission, lips dry and cracked; countenance pale; hard, dry stools; nettle-rash; pulse variable; tongue white. Rigors, with thirst for cold water; nausea and vomiting; pain in the back and limbs; oppression at the chest; loose, short cough; coldness relieved by external heat; heat general during the second stage; vertigo; headache; pain in the back and limbs; drowsy; absence of thirst during the hot and sweating period; during the intermission, pressing and shooting pains in the head, back, and limbs; loss of appetite.

Occasionally delirious during the fever; suppressed grief, with sighing; timid, sad, irresolute, and inclined to weep during the apyrexia.

Administration.—Same as Belladonna.

Cocculus.—Trembling during the first stage; redness of the cheeks during the heat; pulse full, hard, and frequent; tongue clean or loaded.

Transient chills; skin hot to the touch, in the first stage; burning heat in the cheeks; cramps in the loins and stomach, and but slight fever in the second stage; apyrexia, accompanied with vertigo; dull pain in the head, and general debility.

Apprehension of approaching evil; fear of death, during the paroxysm; sadness and discouragement during the apyrexia.

Administration.—Two drops of the third dilution in an ounce of of water—a tablespoonful every four hours between the paroxysms.

Lachesis.—Face pale, or leaden, discolored or yellowish, during the cold stage and the intermission; red spots on the cheeks, while the fever is on; blue circle round the eyes; red swelling of the face; agitation and tossing in the cold and hot stages; pulse intermittent, or feeble and frequent; tongue dry in the second stage. Most of the time icy coldness of the limbs; rigors only partial; pains in the limbs; fever at night or in the evening, with headache.

Carbo-vegetabilis.—Thirst only during the chill, or diminishing during the heat; offensive-smelling perspiration; anxiety, despondency and despair; weak, scarcely perceptible pulse; cachexia, with increased irritability; burning pains; flatulency; abuse of Quinine; venous abdominal affections; oppression of the chest; rheumatic affections of the joints and bones; cold feet.

Before the chill, pale face; cold feet and hands; during the fever, red face; during the intermission, nocturnal sweat; cold sweat on the face and limbs.

Tertian type, kept up by awakened psora; rigors, preceded by throbbing of the temples; rending in the teeth and bones; and attended with thirst and sense of prostration; hot stage, attended with thirst or without thirst; headache; vertigo; impaired vision; nausea; pains in the stomach and chest; acid sweats in the morning; in the intermission, paleness; emaciation; distention of the stomach; headache; loss of appetite; lassitude and disturbed sleep. Anxiety and fear in in the evening; intellect dull.

Administration.—One grain of the third trituration in two ounces of water, a tablespoonful once in four hours during the apyrexia.

Remarks.—This remedy was supposed by Hahnemann to be of especial service, in those old and obstinate cases of intermittent fever, which appeared to be connected with a psoric miasm lurking in the system. Hartlaub has found it curative in similar cases. It is adapted to the tertian type. In the apyrexia, melancholy, violent jealousy;

weakness of memory; during the paroxysm, delirium; loquacity; irritability.

Administration.—One grain of the third trituration in two ounces of water—a dessert-spoonful every twelve hours until the desired effect is obstained.

Sabadilla.—The coldness predominates; affections of the spina marrow and digestive organs, with pains in the bones of extremities stretching, bloatedness of the stomach, oppression of the chest, spasmodic cough. During the apyrexia, bruised feeling all over. In the cold stage, trembling of the limbs, spasmodic cough; in the hot stage, yawning and stretching; pulse variable; tongue natural.

The different stages imperfectly developed; external coldness with shivering; dry cough, pains in the chest, limbs and bones in the first stage; during the apyrexia, dull pains, with sense of fatigue.

During the paroxysm, inability to collect or arrange the thoughts; delusions of the imagination with respect to ones self; delirium.

Remarks.—This remedy is useful when the malady has been preceded for some time by gastric derangement, or in cases complicated by abuse of Quinine.

Administration.—Same as Veratrum.

Sulphur.—Intermittent, coming on in the evening or night, with more or less chills; then thirst during the heat and sweating, headache, congestions of the chest, with dyspnœa, delirium, stitches and swelling of the spleen.

Intermittent with itching urticaria, appearing during the paroxysm; thirst before or during the chill; heat and sweating in persons who have had the itch; complexion sallow, yellow albuginea; pain, swelling and hardness of the spleen; white-coated tongue. Whenever the remedy seemingly well-indicated fails to break the fever, and psora may be justly suspected, and where the symptoms lead us to *Sulphur*, the use of this remedy, especially in the lower triturations, will hardly disappoint us.

Symptoms.—Countenance pale or hot during the first stage; circumscribed redness of the cheeks during the second stage; sweat upon the head, face, and hands; eruptions or scabs upon the face, hands, or limbs; pulse hard, full and quick; tongue natural.

Previous to the first stage, thirst and lassitude; chilliness in the evening or at *night*, and sometimes in the *afternoon*; shiverings in the back, chest and arms, with coldness of the hands, feet and nose heat attended with thirst; burning sensation in the hands and feet bruised and tired feelings in the limbs; palpitation of the heart; perspiration easily excited in the head, neck, hands, &c.

In the apyrexia, sadness, with frequent inclination to weep; during

the paroxysm, irritable and peevish; thoughts incline to religious subjects.

Administration.—One grain of the first trituration in four parts—a powder every twelve or twenty-four hours, until decided amendment or aggravation of symptoms ensue.

Remarks.—Sulphur has most often been employed in the quotidian type. In many cases of fever and ague occurring in psoric subjects, it will also prove eminently serviceable.

Natrum-muriaticum.—One of the best antipsorics. After abuse of China, even in malarious agues, if connected with psora, in tedious cases, but where the disorganization of the assimilative organs is not too far advanced. Terrible stitching headache, especially during the heat. Disturbances in the digestive organs, disorganization of the spleen. Thirst in all the stages of the fever; vomiting, continual chilliness even in the apyrexia. Twitchings of the extremities, ulceration round the lips, yawning, stretching, sleepiness, debility, sallow complexion.

Hartlaub commends this remedy in chills with little or no thirst; sharp pains in the forehead, back, and bones; short breath; yawning and sleepiness, followed by fever, with great thirst; severe rending or throbbing pains in the head and forehead; in the intermission, yellowish face; white tongue; hard and scanty stools; swollen stomach; headache; weak eyes; bitter taste; no appetite; great thirst; pit of the stomach painful to the touch; sleepy in the daytime, but sleepless at night; lassitude and debility. It also cures *tertian* and *quotidian* types with chills only.

Administration.—A drop of the first dilution once in four hours between the paroxysms.

Antimonium-crudum.—Face and eyes of a yellowish hue; yellow or whitish fur upon the tongue; pulse quick or slow.

Tertian type; short chills, followed by fever, with pain in the chest and pit of the stomach; predominance of gastric or bilious symptoms; frequent nausea and vomiting; bitter taste in the mouth; thirst; diarrhœa; distention of the stomach.

During the apyrexia, indifference to life; during the paroxysm peevish; dread of misfortune; out of humor.

Administration.—Two drops of the third dilution in an ounce of water,—a table-spoonful once in six hours during the intermission.

Cina.—*Malarial* intermittents with cholera symptoms. The *dilated pupil* and the *perfectly clean tongue* are characteristics. Intermittents with pale face and the predominating nervous affections similar to worm-attacks; itching in the nose; spasms combined with some choleraic symptoms; paroxysm in the afternoon, after meals. Before the chill, malaise; nausea; drawing in the extremities; sometimes vomiting of a

little fluid. During the chill, paleness and coldness of the face; chills all over the body; shortness of breath; stitches in the side; cold hands and feet; nausea; vomiting of food, bile and mucus. During the heat, delirium; headache; paleness of the face; vomiting; severe thirst for cold drinks; colic and watery serous diarrhœa, following one another quickly, and debilitating the patient. The sweating stage, either entirely wanting, or general sweat over the whole body; or partial on the face; or cold sweat on the hands and the feet. During the apyrexia, the collapsed state continues, but the tongue is clean, and the patient ravenous for food. Sometimes dry cough.

Hermann Gross, and others have found *Cina* curative when during the paroxysm there are, pale countenance; canine appetite; headache; nausea; foul breath; during the intermission, cold face; morbid appetite; lassitude; occasional sweats.

Capsicum.—Phlegmatic temperament; flabby mucous constitution; pleuritic pains, not relieved by *Bryonia;* chill predominant; thirst in the chill, or during the chill and heat.

Dr. Morgan of Ill., says: "Even when insufficient to cure, Capsicum 3d, in frequent doses, will often ameliorate the paroxysm of ague." Dr. Curtis published a "cured of soporose ague, evidently of a malignant character," with one drop doses of the mother tincture of Capsicum. (*N. A. Jour. Hom.*)

Symptoms.—Hartlaub advises it in chills with thirst; headache; mucous vomiting; flow of saliva; great and painful swelling of the spleen; rending pains in the back, loins and knees; yawning and stretching; fever, with or without thirst; headache; bad taste; cutting pains in the belly; pains in the chest, back, and legs; after the fever, slight or profuse sweat; in the intermission, ash-colored countenance; swelling of the spleen and the feet; constant chilliness and coldness; drawing pains in different parts when in the air; useful in relapses after abuses of Quinine.

Cedron.—Feverish paroxysm every day (quotidian) in some provers, and every other day (tertian) in others, towards 8 o'clock, P.M., preceded by depressed spirits, dulness of senses, and pressive headache at noon; cramps, then contracting and tearing pains in the upper and lower extremities, with a cold sensation in the hands and feet; mouth dry, great thirst, and desire for cold water; chills and shivering; sometimes very strong shuddering of the whole body; palpitation of the heart and hurried respiration; pulse weak and oppressed. These symptoms lasted from one to two hours, and varied much in intensity; they were followed by a sensation of dry heat, and then of a profuse perspiration, full and quick pulse with animated red face; cold and pale in the apyrexia; thirst and desire for warm drinks.

Hundreds of cases of intermittent fever, of different types, have

been successfully treated with *Cedron*, in different countries since 1847 many of which had resisted the action of other drugs, previously administered by physicians of both schools. Cedron was given immediately after the heat, and as soon as the sweat had commenced; and, again, from two to three hours before the usual time of return of the next paroxysm. It is homœopathic to agues, endemic to warm, damp, and low marshy regions, being capable of effecting the healthy organism precisely as the natural disease does. (*Casanova*, *Petroz.*)

Cedron is an efficient prophylactic to those forms of fever produced by malaria of warm seasons, in low marshy regions; when taken opportunely and in suitable doses, it prevents their development, as has often been demonstrated in Spain, Africa, and South America. This sort of antagonism certainly gives immunity to those constantly exposed to the deleterious disease-producing agents of those regions, whilst under the influence of the drug. But in using it as a prophylactic, care should be taken not to repeat the dose too frequently, otherwise pathogenetic effects will be produced by it.

Sepia.—General cold feeling, with pressure on the temples and over the eyes; during the heat, vertigo, even to insensibility; sweating over the whole body, with anxiety, without thirst, but with dryness in the throat; nightly perspiration; cold sweat on the chest, back and thighs at night; sour night-sweats; offensively-smelling sweat; urine brown and acridly smelling; perfect absence of thirst. See p. 412.

Staphysagria.—Evening chills without heat. Scurvy.

Taraxacum. — Quotidian intermittent with much perspiration. Nightly sweat, restless sleep, great thirst, loss of strength. Chills in the fresh air.

Thuya-occidentalis.—Chills and sweat without fever.

Opium.—Intermittent caused by fright, with cerebral symptoms prominent; sopor, coma, or convulsions. Congestive chills.

Rhus-toxicodendron. — Intermittent caused by getting wet, with great nervous depression and exhaustion; spinal irritability; digestive derangements, especially in the mucous membranes; therefore bad assimilation; catarrhs, coryza, gastric troubles, thirst, pains in the back and extremities; spasms; tearing pains in the head; sleeplessness, formication and sensation of paralysis in the extremities; general debility; urticaria; colic; diarrhœa; jaundice; sleeplessness, with tossing about; thirst at night; palpitations, with anxiety and pressure in the pit or the stomach.

Symptoms.—The character of the eruptions and the fever produced by Rhus are peculiar. Tractile feeling of the scalp as though one was pulled by the hair; disfigured and distorted face, the left side appeared contracted and the right elongated; black, inflamed, itching pustules covering the whole body; yellowish saliva.

Hydriodate of Potash.—Intermittent in a *scrofulous constitution.* Paroxysms severe; chill not mitigated by external heat; dryness in the mouth; *thirst during the chill;* heat and then sweat; ascites followed by general dropsy.

Laurocerasus.—(*Aq.-amydalus-amarar*). *Purely nervous intermittent; great thirst before the chill;* chill relieved by external warmth. (*Ignatia*). Dry cough with tickling in the throat during the chill; general heat with headache, but without thirst or cough. General sweat; urine pale. During the apyrexia, tongue clean; appetite good; bowels and sleep regular; spine not sensitive; general debility.

Lycopodium.—Malaise; sour vomiting; severe chills; hardly any heat, followed by dreamy sleep and sour-smelling sweat. Severe thirst after sweat; bloatedness of the face and hands after the chill; intermittent with anasarca.

Mezereum.—During the chill, dyspnœa, with constrictive feeling in the chest, front and back; dryness in part of the mouth; accumulation of saliva in the front part of the mouth, without thirst; sleepiness in a warm room during the chill; intermittents, consisting only of chills with thirst.

Coffea.—Chills and heat changing quickly; horripilations; restlessness; colic.

Ferrum.—Appropriate in cases similar to those suited with Arsenicum and China. Intermittent fever with pure debility; anæmia; decay of nutrition; congestions to the head and chest, with watery decomposition of the blood, especially after abuse of China, or long-lasting intermittent; paroxysm not severe, but long-lasting, especially the sweating; change of type; *large infarctus abdominis;* liver and spleen swollen; *muscular power visibly decreasing;* eyes red, lids swollen, with mucous secretion of meibomian glands; sweet taste in the mouth; black or dark-violet spots on the skin, sharply circumscribed; sometimes black discoloration of a whole extremity; debility, even to paralysis; general dropsy.

Ferri-percyanidum.—*Prussian-blue*, is the best of the preparation of iron for intermittent fever.

Hepar-sulphuris-calc.—Urticaria, with itching over the whole body; then chill, followed by heat and thirst; fluid evacuations from the bowels; borborygmi, slight bilious vomiting; bitter taste; sensation of formication in the arms; urine dark colored, with sediments.

Hyoscyamus.—Quartan and quotidian fevers, with spasms in the calves and stomach; insensibility, delirium, and during the apyrexia, fiery wheels before the eyes and hiccough; intermittent with dry nocturnal cough; afternoon chills, with spinal pains; epilepsy.

Sambucus.—*Profuse weakening perspiration*, even in the apyrexia, especially at night; chilly horripilations over the whole body, with fine

stitching formication; icy cold hands and feet, especially from the knee downward; burning hot feeling in the face, with moderately warm body and icy-cold feet, without thirst; a good many hours after dry heat has left, there is perspiration in the face; profuse sweat without thirst in the night; on awaking from sleep, perspiration all over.

Calcarea-carbonica. — Swelling of the abdominal glands; hard bloated abdomen; inclination to diarrhœa, alternating with obstruction; thirst, especially during the chill, with tearing pains in the lower extremities; spleen swollen and painful; headache during the fever; urine plentiful.

Camphor.—In doses of one drop only, given on the first appearance of the symptoms foreboding a chill, this remedy often arrests the paroxysm, and it does not return.*

It is admitted by all homœopathists, that, among the vast number of remedies known to be sometimes successful in the cure of intermittent fever, it is often difficult to select the *true specific*, which, in the finest dose, will be promptly effectual in a given case. It is still true, however, that there are many remedies which come near enough to almost every case of uncomplicated ague to overcome its worst features, and then either cure entirely by being repeated, or render the case promptly curable by the next remedy. It is true that "simple cases are essentially alike; and *China*, *Nux-vomica*, *Bryonia*, *Ipecac.*, *Arsenicum*, *Tartar.-em.*, *Gelseminum and Camphor* are efficient remedies." Of these it is known that *China*, *Quinine*, *Arsenicum or Nux-vomica*, in *some* attenuation and in a certain dose will cure, perhaps, every *simple* case.

Veratrum-viride.—General Local Effects.—Locally applied it is capable of producing irritation, rubefaction and even vesiccation of the surface. Snuffed into the nostrils the powder is a strong errhine and sternutatory; it produces an acrid impression on the mouth and fauces when chewed; when swallowed it causes uneasiness in the epigastrium, then nausea and vomiting; the latter effect often persists long, is attended with much retching, sometimes hiccough. Dr. Osgood says, the vomiting in his case was affected by spasmodic affection of the stomach itself, without help from the diaphragm or abdominal muscles; sensation of a ball rising to the throat, the result of spasmodic contraction of the tube; nausea not severe, but the prostration very striking; vomiting occurs only three-fourths of an hour after taking it. (Much longer than after *Veratrum-album;*) it seldom if ever purges.

General Symptoms.—Doses insufficient to vomit cause epigastric uneasiness; sometimes chilliness; diminution of the frequency of the pulse; sense of weakness in certain muscles, or want of due command

* Dr. Morgan, U. States Jour. Hom., vol. II., p. 500.

of them, through direct sedative influence upon the nerve-centres. The pulse has been reduced by this agent as low as thirty-five per minute without the least nausea or vomiting; feeling of numbness, tingling felt about the joints, previous to vomiting, during the process and after it. The farmers of New England formerly soaked corn with it and scattered it to poison the crows. After a short time the crows that had eaten it became incapable of rapid motion or flight and were readily caught. If left long undisturbed they recovered.

Effects on the Circulation.—When carried far enough to cause nausea and vomiting, the pulse falls from seventy-five or eighty to thirty-five or forty, becomes more small and feeble, occasionally almost imperceptible; surface pale, covered with cold sweat; sensation of chilliness, or tingling or numbness; headache; vertigo; dimness of vision; dilated pupils; faintness, feeling as of stiffness of certain muscles, want of command of them; prostration sometimes becomes alarming; though no fatal case is reported. These depressing effects on the nervous system are accompanied with stimulation of the secretory functions. Salivary, pulmonary, biliary, and urinary secretions are increased, when nausea and vomiting are excited, and that of the skin also during the continuance of the nausea. It does not appear to be a specific against plastic inflammation, but against vascular irritation and congestion.

Macrotin.—Macrotrys, Cimifuga, or Squaw-root, has many symptoms in which it resembles Quinine, both being given in large doses. When given freely it operates largely on the brain and nervous centres; it causes vertigo; dimness of vision; unpleasant feeling, even pain in the head; flushed face.

It has a decided and well-marked influence over the capillary system of vessels, moderately increasing all the secretions, particularly those of the skin, kidneys and bronchial mucous membrane.

It increases the amount of solids in the urine, without largely increasing the quantity of water.

As a parturifacient it was in general use among the Indians; it was early employed in New England to accelerate the parturient process, and for this it is recommended by Bigelow; it is now much used in place of Ergot.

Dr. Tully says in many instances it produced abortion when it had been prescribed for cough. All of the above effects are commonly known to result from Quinine.

In morbid heat and dryness of skin from irritative fever, it abates the irritation and is followed by relaxation and gentle moisture, its action in these cases corresponds well with Quinine, which in alternation with Opium is regarded by many practitioners as the most certain diaphoretic ever used.

CONGESTIVE INTERMITTENT FEVER.

SINKING CHILL.—MALIGNANT INTERMITTENT.

The name Congestive Fever is usually employed, not under the idea that *congestion* exists in this fever alone, but because the congestion, though only a symptom, is such a *prominent* one in this form of fever, that it constitutes its most striking feature.

By congestive fever is understood that form of autumnal disease in which the vital force is depressed by the influence of the miasmatic poison below the point of successful reaction. The heart, in consequence of this depression of vital force, is unable to give due circulation to the blood, which consequently becomes congested in the internal organs and large venous trunks. If the vital energies do not utterly fail in the first paroxysm, they become still more depressed in each succeeding one; the venous congestion becomes greater and more perilous, the struggles of the heart become fainter, till they cease altogether in the second or third paroxysm. In some cases the patient dies in the first paroxysm, without any fever supervening; in others the chill is followed by little or no febrile reaction, and this stage is succeeded by a fatal cold stage.

Congestive Intermittent is not a new disease, specifically distinct from ordinary intermittent, but a severe form of the same disease, occurring in a patient whose general health is already greatly prostrated and deranged. It is little more than the cold stage of an ordinary ague, deepened and prolonged in consequence of constitutional exhaustion of the vital powers from the effects of previous disease. Dr. Drake says: "The innervation is scathed, the circulation is enfeebled; the blood, largely withdrawn from the more external parts, circulates with difficulty through the internal or visceral system, which is rendered plethoric, and the great organs, as the stomach, spleen, liver, lungs, heart, and brain, are, respectively liable to pernicious engorgements or obstructions greatly increasing the danger. A failure in the function of respiration, in the co-operative action of the brain, and in the projectile power of the heart, combine to diminish the aëration of the blood, which, deteriorated in its constitution, contributes still further to sink the powers of life. This condition of the respiratory function diminishes the heat of the body, which is moreover reduced by the failure of the calorific function of the skin, from the combined lesions of the nervous and circulatory systems, while the ready transudation, which the relaxed integument permits, of the serous portion of the blood, and the copious exhalation which takes place, accelerates the cooling. The patient dies under the combined influence of depression of the vital forces, and that consequential engorgement of some important organ,

which has procured for this fever the epithet congestive. Or, should a partial reaction occur—should he survive two or three paroxysms to expire in a fourth or fifth, as occasionally happens, a low inflammation may be superadded to passive hyperæmia."

Symptoms.—The patient has the usual premonitions of ague, but feels peculiarly languid, restless and feeble; these warnings are perceptible in most cases for a day or two. The disease then more clearly announces itself with a chill; the patient feels restless and much oppressed; the skin is pale and shrivelled; the extremities become very cold; features contracted; lips purple; tongue pointed and of a leaden hue, or pale, cold and clammy; pulse feeble, quick, frequent, irregular, intermitting; tendons corded; occasional rigors, and sometimes shaking chills, though the patient rarely complains of coldness. There is no acute pain, but a dull, heavy aching in the head, back and limbs. There is generally great thirst with nausea and vomiting. The skin continues to grow colder and is bedewed with cold, unnatural perspiration; there are indescribable restlessness, oppression and disposition to throw the limbs about; if the patient rises he is giddy, staggers, perhaps falls. He feels oppressed with excessive heat, calls for ice, for cold water in his face and breast, and while his skin is cold and wet, wishes to be constantly fanned. A copious sweat suddenly breaks out, and as suddenly disappears; the skin becomes motley and bluish, its sensibility is impaired, the impress of the fingers remains some seconds after pressure is removed; sometimes there is ecchymosis in dependent parts; respiration is irregular, with frequent sighing, great anxiety, the countenance haggard; eyes suffused; harassing hiccough. In some cases there is a watery purging resembling Asiatic cholera, which sinks the patient rapidly. He always complains of a distressing sense of *sinking*, incubus of the chest or feeling of suffocation; he lies without breathing for a minute, and then gasps for breath; respires again in a hurried manner, says he "will die for want of breath;" rises and rushes towards the window, staggers and throws himself on another bed or on the floor; the pulse which had been a mere flutter, now ceases at the wrist; there is a moment of unusual anguish, then a gasp or two for breath; and the heart ceases to beat, the case terminating in death, six or eight hours from the access, the sufferer retaining his senses to the last. In other cases the patient lies unconsciously in a state of deep comatose sleep for some hours before death.

In those cases in which reaction is excited by the free use of stimulants, the fatal termination is delayed for some hours, at the end of which the patient dies comatose. When a partial reaction takes place from the natural efforts, the skin becomes warm, though the extremities are still cold. The pulse is 150 per minute, and may fall to 120. There is some mitigation of the patient's distress; he passes into a

series of uneasy, interrupted slumbers, until near twenty-four hours from the first attack; when another paroxysm comes on which only terminates in fatal collapse.

Diagnosis and Pathology.—The seat of the congestion is indicated by the severity of the symptoms pointing to the organ suffering most intensely. In many cases the *spleen* becomes engorged in a few hours to such an extent as to be found double the natural size. The same is partially true of the *liver*. Congestion of the *lungs* to some extent is always present, and is generally a fatal complication. It is known by great oppression, laborious breathing, heaving of the chest, sense of suffocation, and rapidly sinking into fatal collapse. Congestion of the *brain* is the most alarming of all local congestions. It is marked by deep coma; low muttering delirium; rolling of the head from side to side, and drawing it backwards; dilatation of the pupils, optical illusions; and raging delirium in the cases in which reaction is brought about by stimulants.

Consequences of a Protracted Hot Stage in a Severe Case.—1. A subsidence of the general fever is not always accompanied by a return of the congested viscera to a state approaching to health. It may happen that some one or more of the organs "will remain in a state of hyperæmia, and pass into inflammation. These are, generally the viscera of the abdomen, chiefly the spleen, liver, and gastro-enteric membrane.

"2. Splenitis," (says Dr. Drake) "is so common an accident of our autumnal fevers, especiall your inflammatory intermittents, as to suggest that we can no where look for the true anatomical character of that fever more successfully than in the spleen. Why it should be so great a sufferer cannot, perhaps, be told, except that it becomes greatly engorged in the forming stage of the fever.

"3. Next to the spleen, or equally with it, the liver is liable to fall into inflammation upon the accession of the hot stage; but this is more especially the case in the remittent type.

"4. The mucous membrane of the stomach and duodenum, with that of the common gall duct, are liable to pass into the same condition.

"Thus all the subdiaphragmatic viscera, except the pancreas, are subject to inflammation in this fever. Sometimes, however, from idiosyncracy, or the cooperative action of certain causes, inflammation of the brain, or its envelops, may happen; and when the fever makes its attack late in autumn, the combined action of vicissitudes of temperature and of the specific cause, developed at an earlier period, may determine the inflammation upon the lungs or pleura. Wherever the inflammation may be seated, it complicates the case, and creates a new kind of danger. Although it may abate with the subsidence of the hot stage, it does not cease. The affected organ shows signs of suffer-

ing during the apyrexia, which it renders imperfect. The succeeding exacerbation may be prolonged by it, and an intermittent may thus be converted into a remittent; while the latter, not unfrequently, as already said, passes nearly into a continued type, from the same pathological cause. But the most dreaded combination of this kind, which we meet with, is that in which an inflammation of an organ is associated with such a depression of the general forces of the system, that but a feeble reaction occurs. That this is a reality, both the symptoms and post-mortem appearances have shown. Such inflammations are never very acute. The organ is greatly engorged, but the actions which constitute inflammation are very feeble, and often more conspicuous than the vestiges of true inflammation. Between these cases and mere congestion of the organ, there is often but a shade of anatomical difference." (*Dr. Drake, Diseases of the Mississippi Valley.*)

Prognosis.—*Favorable Indications.*—The successive exacerbations of the fever become lighter and of shorter duration; the external heat and dryness of the skin diminish; the pulse, which had been above 100 per minute (in an adult), throughout the remission, is reduced to 88 and then to 72, showing complete absence of the fever; the gastric distress, pain and tenderness of the epigastrium, the pain in the head and back, are diminishing; the skin becomes soft and moist, the tongue less coated, the countenance more cheerful, and sleep is quiet and refreshing for some hours; the remissions become longer and more distinct till complete *intermission* is followed by protracted convalescence. *Unfavorable* progress of a severe case is manifested by the absence of any of these evidences of amelioration; and in their stead, there is progressive increase in the severity of the symptoms, which finally give place to those above mentioned as marking the approach to a fatal termination.

The remedies that have proved successful in the treatment of intermittents in every form are such as act primarily on the ganglionic system of nerves. Dr. Hale observes "that they may produce a congestion of some of the nervous centres and thus be capable of creating in healthy subjects symptoms analogous to ague. This explanation of their *modus operandi* would agree with Dr. Lord's theory, that intermittents arise from a retardation of nerve-force in the ganglia."* The remedies that have been used with success in congestive intermittents are limited in number. It is only necessary here to refer to *China*, *Arsenicum*, *Nux.*, *Opium.* (See p. 486, 492, 497, 506.) The *size of the dose* is the only difficulty. When the malarious poison is strong, and the quantity taken by the patient is large, the dose of the remedy, though a true *antidote*, *may* require to be larger. And this is evidently

* Transac. Ill. Med. Associa. 1862. p. 49. See p. 478 this volume.

true when the selected remedy is only partially homœopathic to the case. This subject is illustrated by the quantity of one narcotic poison required to antidote a large quantity of another narcotic to which it is only a partial similimum. We select a case showing the effect of poisonous doses of Opium in counteracting the effect of a poisonous dose of Aconite.*

A female patient in the Pennsylvania Hospital took by mistake a dessert-spoonful of tincture of the root of Aconite. She immediately complained of extreme prostration, and a peculiar feeling of numbness and tingling over the whole surface of the skin. She was found, three-fourths of an hour afterward by Dr. Benton, "lying in a sort of stupor, the pulse at the wrist imperceptible, countenance pallid, extremities cold and the surface bathed in a cold perspiration." An active emetic was given to evacuate the stomach. Then an ounce of brandy, with forty minims of Laudanum were given, and repeated every fifteen minutes, until five ounces of Brandy and about three drachms of Laudanum had been taken; when the pulse was found to have risen to sixty beats per minute, though still extremely intermittent. The Brandy and Laudanum were now given at intervals of half an hour, until, in the course of four hours from the commencement, she had taken five and a half drachms of Laudanum without any symptoms of narcotism. The pulse had now risen to ninety per minute, and warmth had returned to the extremities. The Brandy and Laudanum were then only given at longer intervals; next morning the pulse was eighty. The patient recovered without any bad symptoms.

Miasm is a poison that acts by depressing the vital force; but a given amount of miasm will not produce the same degree of prostration in all persons who are subject to its influence; therefore the quantity of a remedy only partially homœopathic to the case "must be proportioned to the susceptibility of the nervous centres to be acted upon,—the aptitude of the vital telegraph to convey the impression,—and the venous and nervous congestion to be overcome."

But, if we admit on theoretic grounds that there may be conditions in which massive doses of strong agents may be justifiably given, we can not apologize for the immense doses of Sulphate of Quinine now popularly given in the different forms of autumnal fever. When small doses do not succeed and do it without bad results, the largest will fail, or will at least produce injurious aggravations. If drug-symptoms are excited by small doses it is evident that still worse results will follow large ones. The following symptoms embrace the principle characteristic symptoms of Quinine, when given in too large doses in this disease: a swelling pulse, tingling in the ears; pushed farther, it pro-

* Med. and Surgical Reporter. Vol. VIII. p. 362.

duces: painful fulness of the brain, alarming sounds, ringing in the ears, deafness, slight delirium, twitching of the tendons and hiccough. Frequently repeated, heroic doses exhaust the vital powers, cause indirect debility and thus hasten that collapse which it is supposed to be capable of averting.

When taken in the unreasonable quantities of "twenty, forty, and one hundred grains" its effects are thus described: Its action on the brain becomes apparent. "Strange sounds distract the ears. The patient may imagine himself in a thunder-storm, with lightnings flashing in his closed eyes, and burning in his brain, and still be sinking all the time. The remedy, failing to counteract the disease, has attacked the vital organs, and is prostrating still further the vital force. A grain of Morphine will not give a moment's rest. Diffusible stimuli only add fuel to the flame that burns within. Rubefacients give no relief though used till the skin is sore; and the capillaries are injected till the surface is purple. The patient rolls from side to side; throws his limbs in every direction, calls for ice or cold water, which is rejected as soon as swallowed; he asks to be fanned, and for water to be thrown in his face."

The size of the dose, within reasonable limits, is less important than the accuracy of the prescriber in selecting the proper remedy. The true specific will cure in a minute dose; and many practitioners restrict themselves to the high potencies in the minutest doses. These doses are efficient in good hands.

Arsenicum.—Case by Dr. Pearson, Iowa.—A strong muscular man, of previous good health, except chills and fever some months previous, for which he had taken large doses of Quinine. Has now great distress from severe cramp-like burning pain in the region of the cardiac orifice of the stomach; the extremities are cold; the pulse quick, but not full; restlessness; disposition to change his position every few minutes; frequent attacks of nausea and vomiting. He took of Arsenicum, thirtieth, four drops in four ounces of water, two tea-spoonfuls, at first, and repeated it in fifteen minutes. In twenty minutes he was much better, and was entirely relieved in less than an hour. He took no other medicine, and there was no succeeding paroxysm.

Of the efficacy of Arsenicum in lower potencies we have the most ample proofs.

The complications of intermittents present us with the greatest difficulties in practice.

Intermittent complicated with catarrh of the stomach, Nux-v., Ipec., Puls., Natr.-mur., Sepia. Dr. Kapka reported, that "after the wars of 1850 and 1851, he treated a great many Austrian officers, who were suffering from obstinate intermittents, with chronic catarrh of the stomach, for which they had been maltreated with Quinine. He cured

them with Nux and Ipecac., and afterwards small doses of Quinine, first trituration, during the intermission. (*Report. Germ. Central-Verein.*)

When the catarrh involves the intestines—Cham., Ipecac., Phos., Puls., Verat., Arsen.

Catarrh involving the duodenum—Cham., Merc., China, Nux-vom., Sep., Sulph.

Anæmia following ague—China, Ferrum-cyan., Arsen., Calc., Puls.

Congestion and persistent turgescence of the spleen is a common attendant and consequence of intermittents. Besides its primary functions as a component part of the chylopœtic system, the spleen forms also a natural reservoir for the reception of extra portions of the blood when suddenly repelled from the external surface, and driven in upon interior organs; in this manner it shields the vessels of remote parts from sudden and excessive distention. It is therefore liable to morbid turgescence upon any sudden disturbance of the body, as after an amputation of a leg or an arm; but more frequently on the occurrence of the cold stage of fever. This is more conspicuous in persons who are already in a diseased state, and the spleen is inclined to atrophy, induration or inflammation from previous successive chills.

Treatment.—The best treatment for chronic enlargement of the spleen is that which permanently cures the ague with which it is connected. The remedies known to be most efficient in restoring this organ to its normal size and condition are: China and Natrum-muriaticum. We have seen abundant proofs of their power in this way. It is only necessary to continue them for a sufficient time in very small doses. Bromide of Potassium is also a remedy.

Genus IV.—REMITTENT FEVER.

1. BILIOUS REMITTENT.

Bilious remittent fever prevails in all countries and localities where paludal malaria is developed in the connection with a high degree of atmospherical temperature.

Diagnosis.—In general the *remissions* of the fever between the daily periods of high excitement are well marked, the patient feeling much relieved; in other cases the mitigation is but slight, and the fever has almost a continued form. There are always irritability of the stomach, a sense of oppression and distress at the epigastrium, pain in the head, back and limbs; and the prostration of strength progresses rapidly from the commencement of the disease.

The milder form of bilious remittent fever is generally preceded for some days, by listlessness, languor, bitter taste in the mouth, nausea, aversion from food; indescribable uneasiness and sense of fulness about

the epigastrium, torpor of the liver, constipation, heaviness of the head, pain over the eyes. The first appearance of active disease is the commencement of a slight chill or sense of coldness, which creeps up the back; it does not amount to *coldness* over the surface and extremities, but is much more unpleasant than mere want of heat. In the course of a few minutes the coldness is succeeded by flashes of heat; and in the course of one or two hours the whole surface becomes hot; "the skin is dry and constricted, the face flushed and turgid, the eyes red and suffused, the respiration hurried and uneven, the pulse quick and frequent, but rarely tense; there is great prostration of strength, with considerable restlessness and watchfulness. The patient complains of pain and a sense of fulness, weight, and tension of the head, pain of the back and extremities, particularly of the calves of the legs;—and there is a sense of weight or oppression, and often of pain at the epigastrium," which point is generally tender on pressure, even when no pain is complained of. The stomach is more or less irritable; in some cases the nausea is distressing, in others everything swallowed is instantly rejected. Vomiting is a common symptom from the commencement, but oftener it begins about the third day or later; the matters thrown up being yellow, greenish, or bright green. The tongue is at first moist, red at the edges, with a whitish, light-brown, or yellowish fur of considerable thickness on its upper surface, and there is constant thirst. The bowels are constipated, the urine diminished in quantity and high colored. After fever has lasted two or three days, the skin becomes yellow, the adnata of the eyes showing it first. The exacerbation lasts from eight to twelve hours, when there is abatement of the symptoms. In milder cases the skin becomes moist and the patient falls into a refreshing sleep; in cases more severe the skin continues hot and dry, and the patient is still restless and sleeps irregularly. After some hours of comparative comfort the patient finds the fever again rising; and this exacerbation progresses in intensity till it reaches the same height, or exceeds that of the previous day.

Inflammatory Form of Bilious Fever.—The symptoms are the same as in the ordinary form of the fever, just described, but they all appear in an aggravated degree. The paroxysm of fever is more violent and continues longer; the remission is shorter and less perceptible.

*Phenomena of the Hot Stage.**—1. The sensibilities, previously blunted become morbidly acute; pain occurs in parts not previously affected, and in parts where dull pain was previously felt it now becomes acute.

2. The circulation is quickened, the heart acts with increased force,

* Dr. Francis Condie—Addenda to Watson's Lectures, p. 502.

throwing the blood to the periphery, from which it rapidly returns towards the centre.

3. The heat-producing function is first restored, and then it speedily becomes excessive; intolerance of external heat is augmented.

4. The liver, which had been torpid and inactive before the com mencement of the attack (see page 400), becomes more active than in health, producing generally a large flow of bile; but the bilious hue becomes deeper, "showing that the bile is again absorbed into the blood, or its elements largely increased.

5. After the reaction has reached its height it gradually begins to abate, though in severe cases the skin remains hot and dry for a few hours; the action of the heart and arteries gradually subside in force and frequency, the skin becomes softer, and in the milder cases it relaxes into more or less perspiration. If this relaxation continues for many hours the case is considered a mild one. If it be but partial, of short duration, if the pulse continues frequent, (one hundred beats per minute in an adult), the pain in the head, though mitigated, continues to be felt, the fever does not *intermit*, but only *remits*, showing the case to be one of a more serious character than a regular intermittent. In the height of the exacerbation the skin is "intensely hot, the eyes are suffused, of a muddy, yellowish hue and often dull and languid; there are intense pain and a sense of insupportable weight and tension of the head; aversion from light and sound is ordinarily present, and occasionally delirium; there are great thirst, and a feeling, often almost insupportable, of oppression at the chest, the respiration being quick and laborious, frequently regular; the pains in the back and extremities are often of great severity; the pulse is quick, frequent, and more or less tense; occasionally it exhibits some degree of irregularity; the nausea and vomiting is generally peculiarly distressing—the matter discharged being a thick ropy fluid, of a yellow darkish brown, or green color; the bowels are costive, or if open, discharge with tenesmus and griping, a thin watery fluid: "There is always an intolerable sense of oppression or constriction at the epigastrium, accompanied by a degree of tenderness which renders the slightest amount of pressure insupportable—or a severe pain and burning, attended in many cases with great nausea, and frequent ineffectual efforts to vomit." There is great restlessness, agitation and watchfulness; the skin becomes gradually brownish, bronzed, or deeply yellow, which is more particularly marked upon the breast; there is also a constant hawking and spitting of small quantities of a tough glairy mucus.

When inflammatory bilious fever is permitted to go on for a few days uninfluenced by treatment, the powers of life begin to fail. The surface gradually becomes cool, and covered partially or generally with a cold clammy sweat; the pulse becomes smaller and weaker; the tongue

is covered with a dark thick coating, continuing dry and chapped to a late stage; the respiration short, quick, and difficult; the abdomen sometimes remaining swollen and tympanitic; but more frequently this state is reduced by dark dysenteric evacuations, which become a length more and more fluid; finally they are frequent, and in voluntary, while the patient sinks into a state of stupor, which only terminates in death.

In remittent as in intermittent fever there is a periodical exacerbation followed by a remission; and the paroxysms, like those of ague, though coming every day, are most violent on every second day. In the milder cases the exacerbation comes on successively later, day by day, as the disease recedes toward the intermittent type; in more serious cases, instead of being postponed beyond the regular hour, the paroxysm anticipates it, and the case assumes more and more the features of continued or typhoid fever; the remissions, then, become less and less observable, and the disease assumes that low form which when protracted beyond the second week is known in the West as *malarial typhoid fever.*

2. Gastric Remittent Fever.—*Characteristic Symptoms.*—"Bitter taste in the mouth; great thirst, with craving for cool and acidulated drinks; frequent vomiting of a green or dark-brown fluid; total loss of appetite and disgust for every kind of food; great weight and anxiety at the præcordia; pain and tenderness at the epigastrium; intense pain of the loins and knees; soreness of the calves of the legs; severe and constant pain of the forehead; tongue coated in the centre with a thick layer of yellowish mucus, and red at the sides and tip; the remissions are distinctly marked; bowels costive, or when discharges take place, these are thin and watery, often attended with griping and tenesmus; in the course of protracted cases the stools, not unfrequently, consist of a reddish fluid resembling the washing of meat." In a later stage the "tongue becomes dry, cracked, and covered with a dark-brown or blackish crust; upon the separation of which, the tongue presents a smooth, shining and red surface. In the advanced stage, there is often retention of urine, difficulty of swallowing fluids, meteorism of the abdomen;" and, in fatal cases, colliquative diarrhœa, exhaustion, coma, and death. In most fevers of the lower Mississippi, we have, first or last, irritation or subacute inflammation of the mucous membrane. In some cases it begins with the attack, in others it is to be the effect of common medical treatment. When it exists it becomes the source of the principal difficulty in the case. As inflammation becomes established the tongue assumes a clean dry, or glabrous and red appearance. When there is some degree of inflammation in the peritoneal coats of the abdomen and intestines at the onset as well as in the advanced stages of all continued or remittent fevers, the slightest ten-

derness over the peritoneum must warn us of these conditions. This sub-acute intestinal inflammation in the progress of fevers is often insidious in its approach. Pain or soreness is at first hardly perceptible. Dr. Armstrong says in this "secondary inflammation, the sensibility of the nervous system is mostly diminished before the occurrence of the inflammation." If not checked, it rapidly progresses and speedily involves the general nervous and arterial systems. It is often mistaken for asthenic excitement, and every common remedial measure accelerates the catastrophe. The patient dies, says Dr. Monette, "under excitement without local origin, and which we are unable to subdue."

When febrile irritable excitement continues more than a few days without apparent equivalent cause, we suspect sub-acute intestinal inflammation. A doughy feeling of the abdomen on pressure will prove it unequivocally, whether there is much pain or not. The treatment must be the same as that of peritonitis.

Of the abuse of blisters and purgatives in these cases, Dr. Monette says: "I have seen blisters applied to overcome irritation of the brain and of the general system, which would have been speedily relieved by a laxative, followed by an opiate in a little weak toddy. We often find cases of fever prostrated by a free use of purgatives or other antiphlogistics, which have only acted as causes of debility and irritation." These cases, he says, "require only rest, opiates and weak brandy-toddy, which would sustain the circulation and calm the nervous irritation, while antiphlogistics would increase all the dangers. Calomel is especially pernicious; but opiates in small quantities of the milder preparations indispensable. The prejudice against them only applies to extreme doses and improper cases." (*Monette, Fevers of Mississippi. W. Med. Jour.*, Feb. 1840, p. 125.)

Now these are the very cases in which we long ago found Opium an efficient remedy, and it was successful, because it is homœopathic to the torpor of the secretions and the nervous and mental stupor which form the chief characteristics of these cases.

Indications of the Tongue in Malarious Fever.—The tongue is the great index by which the physician estimates the pathological condition of the digestive organs, the whole mucous membrane, and to a great extent of the entire system. The tongue and the pulse may almost be called "the two eyes of diagnosis." The following indications of the tongue are the result of extensive observations.

1. *A pale moist tongue*, covered with mucus indicates great torpor in the portal circulation, or in the cœliac; a languid circulation and functional torpor in the viscera of the cœliac circle, especially the stomach and liver, sometimes torpor of the brain also, with deficient mental energy. In any stage of fever in which this condition is seen, stimulants are borne without injury. If the tongue begins to

show red edges, or become red and dry on its surface, whether rougher or smoother, all stimulants must be discontinued, and no drinks, but demulcents, diluents and mucilages can be allowed. The redness shows change from torpor to increased action and sensibility. In this condition irritant purgatives, Calomel and all carminative substances often given with it, are peculiarly injurious.

2. *White tongue*, or of a natural healthy color, but covered over with white fur, like white powder sprinkled over it, shows less visceral torpor and some irritation of the mucous membrane of the stomach; but the free exhibition of stimulants is certain to do great injury. Calomel in small doses, repeated, increases the irritation which tends to the development of inflammation and typhoid fever.

3. *Red tongue*, moist and raw, denotes extreme irritation of the mucous membrane of the stomach, almost reaching sub-acute inflammation, but without congestion of the viscera. When the other coats of the stomach are inflamed the tongue becomes dry and red, more intensely so at the edges. In this condition of the tongue, no matter what the general symptoms may be, no stimulating drinks or food can be borne. The inflammation which already exists will certainly become rapidly and fatally worse, if any alcoholic drinks, meats, richly seasoned food of any kind or spices or carminatives are allowed. Calomel in this state is still more injurious than in the last mentioned, and Quinine never fails to aggravate what appeared before as a remittent fever, exerting a most deleterious influence, and rendering the case far less manageable by proper treatment. (*Monette.*)

4. *Dry, red chapped tongue.*—This shows inflammation of phlegmasial character, affecting all the coats of the stomach or intestines or both. The treatment can only be that which is proper in acute gastritis, which see.

5. *Red, dry and smooth or glabrous Tongue.*—This indicates a condition similar to the last, but more especially inflammation of the mucous membrane, differing probably in degree. The treatment is the same.

6. *Brown Tongue, moist and covered with thick brown fur.*—This shows a high degree of irritation in the lower bowels, with rather defective action of the stomach. Here irritation has often been transferred from the stomach and small intestines; or the lower bowels are loaded with sordes accumulated during a stage of torpor of the secreting organs which formed the first stage of the fever. The treatment must be the same as proper in colitis, as given under that head.

Causes.—These are the same as the causes of intermittent fever. It is common for unacclimated persons to be attacked with remittent fever; and after some days to find it changed, naturally or by the influence of treatment, into regular intermittent. After residing for years

in a malarious region persons who have often suffered from *ague* are still liable to occasional attacks of it, on encountering too much fatigue or sudden exposure. But unacclimated persons would have remittent fever from less severe causes; and all of both classes might be subject to either form of malarious fever in seasons more than ordinarily sickly; but strangers would be likely to be more violently affected.

Treatment of Bilious Remittent and Gastric Fevers.—The following remedies will be successful in the different forms of remittent fever; for a given case it will be necessary to select a single remedy at a time according as the symptoms may be found to correspond. See the symptoms as given at the page referred to from each of the following remedies:

When the gastric symptoms are predominant: Ipecac., Nux-vomica, Puls., Bry., Cham., Lobelia, Eupatorium, Veratr.-alb., Tart.-emetic.

When the bilious symptoms predominate: Acon., Bry., Cham., Nux-vom., Puls., Arsen., Coloc., Ipec., Sulph.

When there is evident irritation of the mucous membrane of the stomach and bowels: Bell., Chin., Mercur., Puls., Rhus-tox., Arsenicum, Cham., Cina, Dulc., Nux-vomica.

When the symptoms denote the existence of worms: Cina, Cinnabar, Spigelia, Acon., Sulphur.

2. NON-MALARIOUS CONGESTIVE FEVER.

Diagnosis.—The precursory stage of congestive fever is characterized by restlessness, irritability, indisposition to mental or bodily exertion, fatigue from the slightest exercise, vertigo, giddiness, apprehension, pulse often below the natural standard. This stage continues from a few hours to six or seven days, when the second stage develops itself.

The symptoms will now be modified in accordance with the organ which sustains the violence of the attack. If the brain be the suffering structure, the patient will complain of headache, oppression or tightness in the head, pupils contracted or dilated, the ideas confused, the pulse slow and laboring, and finally, coma, paralysis, and convulsions may supervene.

When the bowels are the seat of the congestion, we shall observe an anxious and distressed expression of countenance, eyes sunken and glazed, more or less nausea and vomiting, bowels burning hot, and tender on pressure, while the extremities are cold; tongue slightly coated with a whitish or reddish fur; uneasiness, with constant desire to change position; frequent sighing; bowels constipated or relaxed; and, finally, spasms and stupor, with stertorous breathing.

If the disease concentrates in the lungs, there will be rapid, laborious

and obstructed respiration; pulse irregular or intermitting; cough; face and skin purple from imperfect decarbonization of the blood; surface cold, and pains in the chest.

In all of these varieties of congestion, the physical and mental energies of the system are below the natural standard, the pulse is generally unusually slow and feeble, the function of the lungs is imperfectly executed, there is an unequal distribution of heat, and diminution of sensibility throughout the body.

CAUSES.—Excessive cold, atmospheric changes, drinking large quantities of cold water when the body is heated, insufficient clothing, improper food, severe mental or physical exertion, sudden news, grief, fear, depression, disappointment, mortification, &c.

TREATMENT.—The remedies which have been used with most success in congestive fever, are, for the cerebral form, *Bell.*, *Acon.*, *Opium*, *Stram.*, *Hyoscyamus*, *Conium-mac.*, *Coffea.*, *Mosch.* and *Camphor.*

For the abdominal form, *Ipecac.*, *Veratr.*, *Arsen.*, *Nux*, *Cuprum*, *Mercur.*, *Phos.*, *Carbo-veg.*, *Secale-cor.*, *Rhus*, *Bry.*, *Ars.*

For the pulmonary form, *Bryon.*, *Acon.*, *Phos.*, *Lachesis*, *Senega*, *Rhus-tox.*, *Tart.-emet.*, *Hyos.*, *Ammonium-carb.*

ADMINISTRATION.—Congestive fevers often attack the organism suddenly and violently, and if not promptly arrested, run on to a speedy and fatal termination. In severe cases, therefore, as soon as the remedy has been selected which is homœopathic to the malady, it should be repeated at short intervals until a decided impression is made upon the symptoms. After a reasonable time, if no effects are apparent, give a still stronger dose or repeat the medicine.

Let it be remembered, in all violent maladies, that our object is, to produce a specific effect upon the diseased structure as soon as possible, in order that we may supersede the morbid by a healthy medicinal action. We need have no fear in this fever of creating too great a medicinal aggravation, for there is a low grade of erethism and impressibility of the whole organism, and we can readily apply an antidote to any over-action which may be excited, and thus control its influence, while, if we permit the natural affection to make progress from a too timid and sparing exhibition of remedies, disorganization will be likely to ensue.

In this form of fever, we generally employ the first, second, and third attenuations,—the dilutions in drop, and the triturations in grain doses.

3. IRRITATIVE FEVER.

Under this title are embraced all those cases of idiopathic fever which arise from causes of irritation that have nothing specific or peculiar in their mode of action. The cause may be trifling and may only

induce an over-excitement of one or more of the functions. This excitement may be propagated, by nervous communication or otherwise, to different parts of the system, and throw all the functions into a state of derangement which will be capable of sustaining itself for a longer or shorter time after the direct cause of excitement shall have ceased to operate. The fever does not depend, like the phlegmasiæ upon the continuance of any local disease; but, having been once excited, it it goes on by independent action to its natural termination. (*Wood.*) This termination may be reached in a very few hours, or may be postponed for several days; but when the disease runs on beyond the fourth or fifth day, it is generally attended by local inflammation, which will be most frequently found in the stomach and intestines.

For the Irritative Fever excited by Dentition, see page 227.

The treatment of Irritative Fever may be generally restricted to the removal of the exciting causes. The remedies ordinarily needed will be found at pages 228 and 525.

4. INFANTILE REMITTENT.

This is a disease peculiar to childhood and is usually caused by the use of unhealthy and indigestible food, the irritation of teething, worms, repelled eruptions, sudden drying up of ulcers, discharges, &c. The affection is characterized by prominent disorder of the stomach and intestines, in most instances, but occasionally the brain or lungs seem to be chiefly affected. In all cases, however, whichever part the disease may seize upon, there occur regular *remissions* and *exacerbations.*

Diagnosis.—The malady under consideration makes its appearance with the premonitory symptoms of ordinary fever, as slight chills, restlessness, thirst, and wandering pains in the back, bowels and limbs. When the hot stage is fully developed, the patient refers most of his sufferings to the stomach and intestines; they become painful, tender upon pressure, and there is either obstinate constipation or diarrhœa. The evacuations are usually darkish, offensive, and indicative of a deficiency of bile. When the disease is concentrated in the stomach, there is burning thirst with vomiting of liquids as soon as swallowed; the tongue is usually covered with a moist, whitish fur, and red at the edges. If the inflammation be not promptly arrested, but is permitted to progress without the aid of appropriate remedies, lesions will occur in the digestive tube, or disorder of the brain or lungs will be likely to supervene.

Causes.—Undue exposure to cold, sudden change of temperature, improper food, worms, teething, repelled eruptions, abrupt suppression of accustomed evacuations, and the injudicious use of irritating medicines.

TREATMENT.—The remedies suitable for the treatment of this affection are in the first stage the higher dilutions of *Aconite*, followed by those medicines which accord with the peculiar symptoms of each case. As soon as the fever has been sufficiently subdued by the former medicine, some of the following articles may be resorted to with advantage: *Ipecacuanha*, *Cina*, *Chamomilla*, *Mercurius*, *Belladonna*, *Arsenicum*, *Pulsatilla*, *Nux-vomica*, *Spigelia*, *Sulphur*.

Since in most instances the gastro-intestinal mucous membrane is the seat of the malady, it will be necessary to make a free use of *Ipecacuanha*, *Merc.*, *Pulsatilla*, *Nux*, *Cham.*, *Calcamara*. Should the brain or lungs become involved, *Belladonna*, *Bryonia*, *Nux*, *Opium* and *Stramonium* will prove efficient remedies.

Dr. Drysdale has found this fever, as it occurs in England, exceedingly intractable, notwithstanding the most assiduous care and attention on the part of both physician and friends. In children of scrofulous constitutions, it has been known to persist for months, in spite of every remedial measure. In cases of this description, he advises *Sulphur*, *Calcarea*, *Arsenicum* and *Silicea*.

In highly impressible and irritable children, we have often witnessed an almost constant tendency to febrile attacks during dentition. The alimentary canal, the brain and the nervous system, appear to remain in such a condition of erethism, that the slightest exciting causes, as errors in diet, worms, suddenly checked perspiration, &c., serve to develop the affection. In instances of this kind, *Aconite*, *Belladonna* and *Chamomilla* are peculiarly appropriate remedies, and will generally enable us to subdue permanently this morbid excitability. These remedies should be given in drop doses of the twelfth to the sixteenth dilution, once in twelve hours, until every sign of undue irritability has disappeared. Hartmann commends a few doses of *Coffea-cruda*, or of *Calcarea-carbonica*, when this erethism is obstinate, and has continued for a long time.

If the febrile attack has already made considerable progress, with excessive irritability of the stomach, and immediate ejection of every thing which enters it, however simple; distention, pain, and tenderness of the stomach and bowels upon pressure; hot and dry skin; burning thirst; tongue covered with a whitish fur, and red at the edges; great restlessness and irritability; loathing of food; dark, yellow, slimy, or green diarrhœa, we may give a grain of the third trituration of *Ipecacuanha*, or a drop of the sixth dilution of *Chamomilla*, once in two hours, as long as is deemed necessary.

If the disease is still farther advanced, and the countenance has assumed a pale, or dingy sunken and cadaverous aspect; dark and puffy appearance under the eyes; coldness and dryness of the skin, or cold clammy sweat; burning pain in the stomach and intestines; thirst;

constant nausea; the smallest quantity of food or drink, increasing the burning and distress, until they are rejected; watery diarrhœa, with smarting and tenesmus; great prostration; frightful dreams; anguish and uneasiness, especially at night; dark, dry and trembling tongue; black and dry lips; grinding of the teeth, we should employ *Arsenicum* at the twelfth dilution—a drop in a tea-spoonful of water every two hours, until the requisite effect is produced.

When in addition to the symptoms enumerated above, the child is exceedingly restless and sensitive to light, or the slightest noise; with flushed cheeks; red, glistening and protruded eyes; hot head; constant raising of the hands to the head; rolling of the head from side to side; sudden starts from sleep, with screams; spasmodic twitches in different parts; dilatated or contracted pupils; short and oppressed respiration, we should administer *Belladonna* at the twelfth dilution—a drop in water, every two hours, until a decided impression is evident.

When the fever is accompanied by obstinate constipation, frequent desire to urinate; burning heat of the whole body; morning exacerbations; rigidity of the limbs; or drawing, contractive sensations through the body; occasional spasms; frequent trembling both when sleeping and after an exertion; shudderings and chills from the least contact of cold air; great sensitiveness of the whole body; unpleasant symptoms often excited by motion of contact; and indications of gastric or bilious disorder, we may employ *Nux-vomica*, at the twelfth dilution —a drop in water, every two, three or four hours, as circumstances require.

When the malady has been caused by the irritation of worms, it will be necessary to use *Cina*, or *Spigelia*. These medicines may be employed at the third attenuation, and a dose given three times daily until the morbid disposition of the alimentary canal is corrected.

Bryonia is applicable in cases attended with disorder of the pulmonary tissues. In addition to biliary and gastric derangement, there should be dry racking cough; stitches in the chest and sides; painful, anxious, and hurried respiration; bruised pains, and soreness in the limbs; pains aggravated by motion or contact; hot skin; thirst; alternating heat and chills; nightly delirium; irritable and quarrelsome. This remedy may be used at the sixth dilution—a drop once in two to four hours.

Dulcamara is the specific when the fever can be traced to exposure to wet and cold which has caused a sudden check to the perspiration. In these cases the force of the disease is expended upon the mucous membranes of the digestive and respiratory organs, as is indicated by watery diarrhœa, pains in the stomach and bowels, oppression at the chest, dry coryza, cough and difficult respiration. Its administration is the same as *Bryonia*.

If the attack is attributable to abuse of fat, crude and indigestible food, and is accompanied with prominent gastric derangement, *Pulsatilla* should be employed at the sixth dilution—a drop every four hours until the disturbance is corrected.

5. CEREBRO-SPINAL MENINGITIS.—SPOTTED FEVER.

An epidemic known by the above names is prevailing at this time in some portions of the United States and is regarded as the same disease as was so extensively fatal in the years 1812—14, and again in Virginia in 1822. In more recent times, it appeared in Michigan during the winter of 1848—1849, and caused a large number of deaths in various places in that state. It was generally regarded as a typhoid congestive fever, and was treated with exciting stimulants on the surface, and muriated Tincture of Iron and Cantharides Tincture internally, aided by concentrated food of a stimulating nutritious character. Essence of beef and egg-nogg were favorite articles.

The present epidemic presents the same general features as it has appeared in different parts of the country. It has hitherto generally baffled the efforts of physicians, and proved fatal in a few hours.

Symptoms.—It commences with a chill, which had not been anticipated by any premonitory symptoms. The patient thinks he has the ague, and expects the cold stage to be followed by the usual degree of fever. Instead, however, of the common reaction and development of heat on the surface the chilly condition and the shrunken appearance of the skin and features continue for a long time; and the patient gradually sinks into a state of stupor from which he rarely revives. In the course of a few hours the muscles are observed to be rigid; the pupils of the eyes become insensible either to light or touch; the surface of the body becomes extremely sensitive to the touch; the head is drawn back, the jaws fixed; the breath is drawn forcibly, with a hissing sound, as if by great effort through the closed teeth; the patient is blind and deaf. In children, the stupor is liable to be broken by frequent convulsions. As the disease progresses the stupor increases; large dark spots rise upon the skin, some of them proceeding to form blisters. In some cases the patient lingers for some days, during which all the nerves of sensation, and those of motion belonging to the lower extremities, are paralyzed, and he is both deaf and blind. In some cases there is a partial revival from the stupor, and apparent convalescence begins; but in only an hour or two a fearful delirium follows; the stupor becomes gradually more profound than ever, and death speedily ensues. In the few cases in which recovery takes place, it is only after a protracted course of typhoid fever; and paralysis, loss of sight, or of hearing is generally permanent, if not remedied.

Case.—A boy, aged fifteen, was suddenly attacked by a chill in the

forepart of the day, and having the usual symptoms of a common form of ague, excited little attention; as several hours passed without reaction, the family became alarmed, and a physician was called, who arrived about 11, P. M. The boy was then lying in a state of partial stupor, from which he could be easily aroused to answer questions; there was hurried breathing; flushed face; pulse imperceptible; hands quite cold; head slightly thrown back; muscles of the neck somewhat rigid; pupils dilated; limbs and body covered with large spots, some of which were red and others purple or black; a few of the black spots elevated and resembling blisters. No reaction could be excited by the strong stimulants used, and the boy died in a short time; the face after death turned quite black.

In the same manner it is common for death to result upon the full development of the cold stage, no reaction following, except when brought about by stimulants. The characteristic symptom is the appearance of spots on the skin which give the popular name of "spotted fever." If the patient lives through the first stage of prostration, fever succeeds, which is of a strongly-marked typhoid character; there is then hurried breathing; pain in the back and head; flushed face of a dark, red, or purplish hue; tongue dry and brown or black; stupor and delirium; in nearly all cases there is evident disease of the spine.

CAUSES.—Cerebro-spinal meningitis is not a contagious disease, but depends remotely on a peculiar epidemic influence not yet understood. In the localities in which it has prevailed, it evidently has manifested its power in places where the common autumnal intermittents and remittents have already debilitated the constitution in most of the inhabitants; and then it selects from them such as are in a peculiar state of predisposition to be attacked by violent disease from any common cause. Such are the persons who, in other seasons in the same localities, are liable at almost any time to be suddenly overwhelmed by a *congestive chill* from which there may be no recovery or return of consciousness.

PATHOLOGY.—The pathological features of this disease can not be distinguished from those of congestive intermittent. There is the same adynamic condition of the patient previous to the attack, and the same organs are involved in the congestion. In cerebro-spinal meningitis there is generally a more complete concentration of the morbific influence on the brain and spinal column; and in the cases that live through the first stage these structures are the seat of inflammation, which becomes permanent instead of giving place to a new cold stage.

TREATMENT.—This must be conducted on the same general principles as we are governed by in congestive intermittent. During the parox-

ysm the reaction will be brought about by the same measures as are employed to remove a congestive chill.

General Remedies.—The following remedies have been used with success: Aconite, Bell., Arsenicum, Nux-vomica, Cantharides, Opium China, Bryonia.

Brandy.—For the purpose of supporting the vital powers, and preventing threatening collapse, or for arousing the system from that state, it is a universal practice to give Brandy; and this is generally done without much regard to the quantity that may be required. In general, small doses may be safely tried and the effect observed. When it is truly indicated, its homœopathicity to the case is evidenced by its soothing and restoring influence; and it is observed to quiet the irritated stomach, calm the excited brain, and render the pulse stronger and slower. It acts unfavorably when it causes nausea, pain in the stomach, headache or symptoms of intoxication.

Malignant Double Tertian of the Mississippi.—A severe paroxysm of chill at ten in the morning and a light one at four, P. M. on the following day. Some patients die in the first cold stage, sinking immediately into fatal collapse; and few survive the third chill without very active treatment has preceded it. In many cases the stomach and bowels take on a choleric action. Some after one or two convulsions sink into profound coma, and in these cases, where there is a show of reaction, it is feeble, irregular and terminates in icy coldness of the skin, the tongue moist, very pale and clean, or covered with a blue moist fur; little thirst. For *Treatment see Congestive Intermittent.*

This "sinking chill" has been mistaken for Armstrong's congestive typhus, but they are antipodes in pathological condition. (*Dr. Hogg, Fevers of Natchez*, 1836, &c.)

6. *Idiopathic Typhoid Fever of the South-Western States.*

Diagnosis.—*Typhoid Fever.*	*Typhus.*
More insidious in its approach than typhus.	Often seen at New-Orleans in the winter-mōnths.
Color of the eruption is different.	Initiatory stage more brief. The patient yields immediately to prostration.
Diarrhœa and intestinal hæmorrhage are common attendants.	Never present in typhus.
Expression of countenance that of intense anxiety.	Expression stolid, apathetic, amounting almost to idiocy.
Complexion clear, flush of bright pink.	Complexion thick, and flush of a dark, dusky red color.

Treatment.—In the initiatory stage, Dr. Kellogg succeeded with a few doses of Bryonia in the morning and Nux-vomica at night.

Second Stage.—Arsenicum and Rhus-tox. the chief remedies. These remedies with Belladonna, Bryonia, and China were always successful, with no other aids than occasional sponging with cold water.

Bilious Typhoid Fever.—Phosphoric-acid.—Dr. Pearson, of Mt. Pleasant, Iowa, gives a case: A young man, aged nineteen, having been sick ten days and abandoned by his physician as incurable.

Symptoms:—wild, muttering delirium, talking incoherently; inability to articulate distinctly, or to protrude his tongue, which was dry, covered with a dark fur, and tremulous; pulse weak, one hundred and fifty per minute; extremities cold; diarrhœic stools, which were passed involuntarily.

Phosphoric-acid, 12°, four drops in four ounces of water, two teaspoonfuls every two hours. In twelve hours improving; pulse one hundred and twenty, bowels better. There was then gradual improvement, so that in forty-eight hours consciousness was restored and the diarrhœa had entirely ceased. Recovered in less than three weeks. Took only Phosphoric-acid, 12°, Bryonia, 12°, and Rhus-toxicodendron, 12°.

A similar case which was regarded as an extreme one, was treated in the same manner. A girl, aged thirteen years, thoroughly drugged by two physicians, under whose care a sister had died, presented all the symptoms of typhus in the worst form: unconsciousness, involuntary diarrhœa; pulse weak, and one hundred and fifty per minute. This case was cured by the above remedies at the thirtieth attenuation. An obstinate cough, threatening consumption, remaining after recovery from the fever, required Sulphur and Iodine, 200°, in alternation every four hours. Four months after the last visit it was "impossible to recognize in the healthy looking girl, the slightest resemblance to the emaciated patient previously treated." Dr. Pearson says: "*Phosphoric-acid* is the only medicine I have ever found capable of making a speedy impression on the pulse in this disease; and whoever prescribes it below the 12th°, and continues to repeat it often, *will run the risk of losing his patient.* These conclusions cannot well be called hasty, since years of experience have amply confirmed them." Some diseases, both acute and chronic, appear to require for their successful treatment medicines as high at least as the twelfth attenuation. Among the former are some cases of typhoid, typhus, and lung fevers.

Genus V.—ENECIA.

CONTINUED FEVER.

In this division of fevers may be included those arising from *functional derangement*, from *inflammation*, from *congestion*, *typhus*, &c.

1. FEVER FROM FUNCTIONAL DERANGEMENT.

Diagnosis.—This is generally the mildest and least dangerous of all the continued fevers. It commences with slight chills, alternating with flushes of heat, lassitude, restless, nights, wandering pains in the head, back, and limbs, which are soon succeeded by increased action of the heart and arteries, dry and hot skin, thirst, furred tongue, scanty and high-colored urine, and moderate derangement of almost every function. If the malady is met at the onset with suitable remedies, its progress is cut short, and immediate convalescence ensues; but if it be allowed to continue unopposed, although it occasionally subsides spontaneously, it generally terminates in one or the other forms of continued fever.

Causes.—Overloading the stomach with fat, crude, and indigestible food, insufficient clothing, irregular habits, dwelling in damp and ill-ventilated houses, and the habitual and intemperate use of coffee, tea, and tobacco.

Treatment.—Aconite, from the first to the third dilution, if administered early, is sufficient to cure most cases of this form of fever; but if the disorder is neglected until inflammation or congestion occurs in some structure, then those medicines which operate specifically upon the parts affected, are to be employed, selecting those, of course, the pathogenetic symptoms of which cover the most perfectly those of the malady.

2. FEVER FROM INFLAMMATION. (SYNOCHA.)

Diagnosis.—In this form of fever the general symptoms, as hot and dry skin, rapid and full pulse, dyspnœa, thirst, nausea, oppression at the epigastrium, restlessness, furred and dry tongue, are present; but the symptoms which more particularly characterize the disease, are determined by the organ which is prominently affected.

When the inflammation is located in the membranes of the brain, the face becomes flushed, the eyes red and sparkling or protruded, staring, and distorted, the carotids throb violently, pupils contracted or dilated, expression unnatural, furious delirium, pulse full, rapid, and finally, if the disorder progresses, sopor, muttering delirium, subsultus tendinum, and convulsions.

If the disease attacks the lungs, we shall have rapid, anxious and oppressed respiration, shooting pains in the thorax, troublesome cough with difficult expectoration, pain and soreness during inspiration, and perhaps other symptoms pertaining to inflammation of the pulmonic structures.

If the gastro-intestinal membrane be affected, we shall have the signs

peculiar to inflammation of this tissue, as nausea and vomiting, pains in the bowels, increased on pressure, tongue red, countenance expressive of anguish, thirst, bowels hot and swollen.

Causes.—Atmospheric vicissitudes, extremes of cold or heat, errors in diet, and over-exertion. Inflammatory fever often succeeds neglected or mismanaged fevers from functional derangement, especially in cases where some organ has been previously debilitated, and in this manner rendered susceptible to inflammatory action. Indeed, it is probable that inflammations seldom occur in parts which are perfectly healthy and vigorous, but that when the exciting causes of fever operate in these cases, they merely give rise to slight and easily remedied functional derangements. Whenever, therefore, any structure of the organism is in a state of unnatural irritation or debility, this constitutes a powerful predisposing cause of inflammatory fever, which only requires some farther morbific influence to ensure its full development.

Treatment.—As in this form of fever there is an exaltation of most of the functions, and particularly of the circulatory vessels, *Aconite* is an indispensable remedy, always in the onset and frequently during the course of the malady.

This remedy, as all are aware, exerts a peculiar power over the action of the heart and arteries, and is, therefore, particularly appropriate in those cases distinguished from the first by full and rapid pulse, hot and dry skin, thirst, &c.

In those instances where cerebral disorder predominates, *Belladonna*, *Opium*, and *Stramonium* will be found essential in the treatment, either alone, or in alternation with *Aconite*.

If the pulmonary tissues are inflamed, suitable remedies may be found in *Bryonia*, *Tartar-emetic*, *Ipecacuanha*, and *Phosphorus*.

For gastro-enteritic inflammation, recourse must be had to one or more of the following medicines, viz.: *Merc.*, *Nux.*, *Ipecac.*, *Pulsatilla*, *Dulcamara*, *Chamomilla*, *Arsenicum*, and *Veratrum*.

Administration.—In the selection of remedies much depends upon the age, sex, temperament, as well as the peculiarities of each particular case. For children and adults who are very impressible, we advise the higher potencies; while in cases of vigorous and unsusceptible persons, the very lowest attenuations will prove most efficient.

In regard to the *repetition of doses*, no definite rules can be prescribed beforehand; every thing must of necessity depend upon the nature and violence of the disease, and the effect which each particular dose produces.

Gelseminum.—Fever resulting from atmospheric changes; or following sudden check of perspiration.

Symptoms.—General irritability, confusion of head and flying pains; soreness of the throat; irritation of the nasal passages; heat of face,

with injected conjunctiva; painful cough; cerebral headache, with a full, crowded sensation, worse in forehead and temple; pain in back and limbs; resembling lumbago; soreness of muscles; chills, increased by movement; skin dry and hot to the feel; restlessness; pulse accelerated, full and bounding; thirst and sleepnessness. A drenching perspiration often follows a dose of the third or twelfth attenuation, with long continued sleep; and the patient arouses, relieved of all his sufferings, except a feeling of prostration. Appetite deficient.

Mercury in Inflammatory Fever.—Mercurial fever is described by Dieterich as a form of fever "which comes on a few days after the use of large doses of Mercury, characterized by great restlessness, dryness of the mouth, headache, loss of appetite, nausea, hot and dry skin, quick pulse, red gums, and swollen tongue; it usually terminates in a critical discharge (as profuse salivation, purging or sweating). (*Pereira, Mat. Med.* Vol. I. p. 815) states that, during salivation by Mercury, the blood, when drawn from a vein, puts on the same appearances as it does in inflammatory diseases. Druitt thus describes mercurial fever: "Increased heat; preternaturally frequent, hard and vibratory pulse; pain and aching in the head, back and limbs, with a sense of lassitude and weakness; general deficiency of the secretions; dry and white tongue; thirst, nausea and loss of appetite; the blood generally buffed and cupped." (*Surgeon's Vade Mecum.* p. 5, *Druitt.*) "As the fever declines, if a favorable termination occur, the system not uncommonly relieves itself by a critical evacuation;—from the skin, by abundant acid perspiration; from the kidneys by the free deposition of lithates in the urine." (*Erichsen, Science and Art of Surgery*, p. 18.) "The preparations of Mercury act as direct antiphlogistic agents, lessening the quantity of fibrin in the blood, and equalizing the circulation." (*ibid.* p. 17.) Dr. Pereira says, Mercury is used "in inflammation most successfully, and this mineral is hence named an antiphlogistic; but its curative power is not satisfactorily accounted for by the equalization of the circulation, the augmentation of the secretions, or the increased activity of the absorbents." (*Mat. Med.* Vol. I. p. 826.)

Typhoid and Typhus Fevers, from the effect of Mercury, are thus decribed by Mr. Pearson and by Mr. Dieterich, under the name of "adynamic mercurial fever." "It is characterized by great depression of strength, a sense of anxiety about the præcordia, frequent sighing, trembling, partial or complete, a small, quick pulse, sometimes vomiting, a pale, contracted countenance, and a sense of coldness. When these symptoms are present, a sudden and violent exertion of the animal power will occasionally prove fatal." Dr. Christison states that Mercury produces an eruption of purple spots. (*On Poisons, Christison*, p. 407.)

Typhus and typhoid fevers commence very similarly to inflammatory

fever, but, instead of terminating in a critical discharge, increase in severity; and the essential symptoms are great prostration of strength, tendency to death, frequent, soft and compressible pulse, a pale, death-like countenance, dry tongue, and the eruption of a mulberry rash in typhus,—in typhoid, of rose-colored spots. Dr. Pereira has several times used mercurials as siliagogues in fever, and for the most par with advantage. (*Mater. Med.* Vol. I. p. 825.) Dr. Copland says, his impression is that death after salivation has been established is very rare. (*Dict. Pract. Med.* Vol. II. p. 929.) Dr. Macartney has never known it fail in arresting the progress of the disease, "provided the fever be not combined with visceral affections, or characterized from the beginning with unusual prostration of strength." (*Treatise on Inflammation*, p. 162.) The grand genus of *Continued Fevers* has been extended to embrace all the *Diseases of Irregular Febrile reaction.*

The reaction is sometimes intense, and may be promptly arrested, and subject to a thousand aberrations, as if the vital forces obeyed the *toxic cause*, which is invisible but powerful.

In these diseases the whole organism is affected, and at the end of a certain preparatory period, the affection manifests itself either upon the skin, or upon the mucous membrane, in an appreciable pathological product; the pathological product consists either in an eruption, a ganglion or flux.

The blood in all of these diseases suffers a profound alteration, a veritable decomposition. as has been well demonstrated by Prof. Andral and others.

This grand genus of Febrile diseases is divided into two groups.

Enecial Fevers.	Eruptive Fevers.
Typhus.	Small-pox.
Typhoid fever.	Measles.
Plague.	Scarlatina.
Yellow fever.	Urticaria febrilis.
Typhoid pneumonia.	Sudor Anglicus.
Hectic fever.	Anthrax.
	Pertussis.

Each of these diseases is the product of a peculiar infection, of a poisoning of the organism, of a profound alteration of the animal substance effected by a specific miasm or virus. The precise nature of these infections may not be perfectly known; but their effects are sufficiently characteristic to enable us to select the proper remedies in individual cases.

Each of these miasms is capable of producing a specific disease in a healthy person, even though he be living in accordance with the best of ordinary hygienic principles. Of the general characteristics of these diseases which manifest themselves in every case, a few are:

Profound alteration of the fluids of the body, before they produce any appreciable local lesion.

Depression or sometimes complete prostration; sometimes an aberration of the febrile reaction which seems to be controlled by a more powerful morbid force.

This deleterious agent controls, masters, crushes; destroying in a few days the most vigorous constitutions, and at other times sparing th most delicate.

The susceptibility of the patient to remove the impression of the poison varies in different persons, depending on some idiosyncracy, some peculiarity of the constitution, or some previously existing state of health. From the instant that the morbid leaven begins to operate the physiological laws are entirely changed. The vital reaction ceases to be a safe-guard to the organism. The curative effects of nature may be aided, but they are too feeble to be trusted. Our whole dependence must be upon specific remedies.

The effects of some specific poisons on the organism exposes to us in a partial degree the nature of the virus that causes these fevers. There is some resemblance between the plague and the bite of the viper:—between yellow fever and the bite of the Lachesis-trigonocephalus, and also of the Rattlesnake;—between vaccine and small-pox;—between poisoning by White Hellebore or preparations of Copper and cholera;—between the effects of small doses of Arsenic and typhoid fever.

The affinity and intimate relations which unite the exanthematous with the typhoid and pestilential group of fevers may be seen in many of their characteristic features; thus:

In the exanthematic fever the eruption is sometimes insignificant; and we often see in typhoid fevers the skin covered with vesicles or papillæ; and in cholera there is a constant alteration of Brunner's follicles.

The confluent small-pox, and typhus offer a very similar lesion of the intestinal glands. Rapou says, in one case the characteristics of typhus and small-pox were so blended that he could not distinguish between them. (*Rapou on Typhoid Fever.*)

The consecutive fever of cholera is a true typhoid fever; and cholera is also accompanied by sweat. We remember a case during the epidemic of 1834, where there was profuse perspiration from the beginning of the disease till death, and there was no other symptom observable, neither diarrhœa or vomiting.

3. TYPHUS.

Few diseases have attracted more attention, and been the cause of more bitter controversies in the medical world than typhus fever. While some have maintained that it is a malady peculiar to the cold seasons of temperate latitudes, and caused by exhalations of animal or vegetable matters in a state of putrefaction, (*Dewees*, *Bancroft*, &c.) others assert with equal confidence that it occurs in all climates, at all seasons, at every period from infancy to old age; and that it does not arise from any specific cause, (sui generis,) but may proceed from marsh miasms, animal exhalations, intense cold, errors in diet, over-exercise, and a variety of other causes. (*Nathan Smith*, *Mackintosh*, &c.) Some suppose it contagious, and others non-contagious.

The word *Typhus* was originally used to denote a fever, the prominent feature of which consisted of a state of stupor,—or, more correctly, a disease that "burns with a concealed and smothered flame." It appears to belong exclusively to the North temperate zone, and even here it avoids extreme latitudes. As yellow and intermittent fevers occur in warmer climates and near the level of the sea, so typhus fever and those resembling it have their base in a high latitude, and at a greater elevation. Typhus fever is seldom seen far beyond the parallel of 45° North. It is neither seen among the fur-stations of the Hudson's Bay Company, nor among the Esquimaux in their unventilated snow-huts. In Western Europe it prevails between the parallels of 44° and 60° North. In Siberia it has not been observed; it decreases with elevation, and to this cause has been attributed its absence from the hospital at Madrid, 1995 feet above the level of the sea. It occurs in every season, but is most prevalent in autumn and winter. In most of the cities of Europe typhus has become endemic, and it has never been absent from Vienna since the wars of the first French empire. It occasionally spreads as an epidemic, extending to distant continents. In New-York it has appeared, after crossing the Atlantic, in 1818, 1827, 1828, 1837, and 1846–1847. In the last-named year 1396 died of typhus, and 657 of dysentery in the hospitals, generally of a typhoid character. In one year 239,480 immigrants arrived in this country; bringing the fever with them in crowded and ill-ventilated ships, and carrying it into the tents and hovels which became their first homes in America. Some vessels had lost from thirty-five to one hundred on the passage. Of 100,000 persons who left the British Isles in one year, 5000 died at sea, 3389 at Grosse Isle; the whole number of deaths being more than 40,000. (*Report to Amer. Medical Association.* 1848.)

Of the 160,134 immigrants of the year 1847, who landed at New-York, 5,277 fever patients were admitted into the marine hospital at

Staten Island, and 662 died. The whole number of deaths from typhus that year at the quarantine hospital and in the city of New-York was estimated at scarcely less than 2000.

During the Crimean war, typhus fever commenced in the French and Russian armies in the summer of 1855; and soon after the capture of Sebastopol (in September) it began to assume an epidemic character. "From that time till May, 1856, it ravaged the armies of the Crimea with a fury unknown since the great epidemics of the imperial wars." (*Report on Diseases of the Army of the East.* 1856.)

Respecting its nature and seat, it has had the honor of being located by different medical writers in every part of the body from the crown of the head to the soles of the feet. At one time the whole world placed it in the blood; then, another generation of theorists arose who seated it in the solids; at another period Broussais, of France, made the discovery that its place was the gastro-intestinal mucous membrane, and that Hippocrates, Galen, Celsus, Stahl, Boerhaave, Cullen, Hoffmann, Brown, and other authors, had been laboring under a succession of errors, upon the subject for more than two thousand years. Still later, some theorists have found out that its position is in the brain and nervous system; while a few very sensible persons have arrived at the conclusion that the exact nature and seat of typhus is yet involved in obscurity.

At the present moment there are a great variety of opinions respecting it. One class of medical men suppose it to be a disease affecting principally the brain and ganglionic system of nerves. Another class suppose its action to be in "the mucous membranes and lymphatic glands, especially those of the ileum, whence it has been termed *typhus abdominalis.*" (*Hartmann.*) Others, still, suppose it to be a disease of a dynamic character, or an affection of the "vital properties" of the system. In regard to this last supposition it can not be confuted, because it means nothing at all. It is as senseless and absurd as it would be to attribute it to a derangement of the electric, magnetic, galvanic or any other "properties" which we may *assume* that the organism possesses.

The malady assumes different characteristics according to the predisposition of the individual when exposed to the influence of the contagion. If his system has been debilitated by over-exertion of body or mind, by grief, care, misfortune, disappointment or shame, the brain and nervous system will be prominently affected, and we shall be presented with that variety termed *cerebral typhus.*

Should the stomach and intestines happen to be in a state of irritation and debility when the contagion is absorbed, they will receive the impression, and we shall have what is denominated *abdominal typhus.*

If the organ predisposed be the lungs, the morbific agent will spend its effects at this point, and *pneumo-typhus* be the result.

So long, however, as the whole organism remains in a perfectly sound and vigorous condition, with the mind cheerful and moderately active, it will be able to resist the influence of the miasm, and in all probability escape the malady. The law is fundamental and cannot be too often inculcated, that just in proportion as the organism, or any part of it, diverges from the normal standard, in the same ratio will the susceptibility of such affected structures to morbific or remedial influences be increased.

Diagnosis.—The symptoms which appear at the commencement of typhus, are: lassitude, debility, sense of fatigue, impaired memory, slight chills, alternating with flushes of heat, dull pains in the head, back and limbs, loss of appetite, and melancholy. These symptoms often continue one or two weeks, the patient not feeling sick enough to take his bed, or sufficiently well to attend to his occupation, when he becomes more restless during the night, delirium sets in, he is obliged to keep his bed from debility, his tongue, which was at first coated with a thin, white fur, becomes dark, dry, and cracked, and as the disease advances, the old fur passes off, leaving the surface red, glazed, and dry. As the disease progresses, the eyes become suffused, the countenance loses its natural expression, the muscles are weak and tremulous, a viscid saliva is secreted, which collects and dries upon the lips and teeth, the surface acquires a dingy color, there are subsultus tendinum, defective vision, partial loss of hearing, a tendency to slide down to the foot of the bed, involuntary discharges from the bowels and bladder, picking at the bed-clothes, low muttering delirium, and, finally, coma, convulsions and death.

The symptoms and course of the complaint will, of course, be modified in accordance with the severity of the attack, the part affected, and the plan of treatment pursued.

If we may be allowed to judge from the opinions which have from time to time been expressed by some of the eldest, most experienced and distinguished members of the old school, upon this subject, we will say, that the course of treatment ordinarily recommended and pursued by allopathists, is productive of far more injury than benefit in typhus. In proof of this we quote from the work on typhus fever, by Prof. Nathan Smith of Yale College, published 1831.

After commenting upon the various contradictory methods of treatment advised by different authors, as the antiphlogistic, stimulant, tonic, derivative, &c., he says: "I am clearly of opinion that we had better leave the disease to cure itself, as remedies, especially powerful ones, are more likely to do harm than good."

In another place he declares, that "the use of powerful means, with a view of curing this disease is liable to do great mischief."

These are the matured sentiments of a man who was not only a man of books, but who enjoyed an immense practice in several of the different New England States for a period of more than forty years Many other, more recent authors have avowed similar views, and although they do not yet admit the truths of the new law and principles of cure, they entertain an entire lack of confidence in the therapeutical doctrines of the old system, so far as typhus, as well as many other maladies are concerned. It may, then, with much propriety be affirmed, that serious injury is often inflicted in typhus by allopathic treatment, and that many of the symptoms above enumerated are aggravated, if not actually superinduced by blood-letting, counter-irritants, and powerful drugs. For the distinguishing characteristics of typhus and typhoid see *Typhoid Fever.—Diagnosis.*

Causes.—The presumption is very strong that the cause of typhus is a specific agent, *sui generis*, and that it is set free from the animal body during the course of a fever, or when a number of individuals are crowded together in close, filthy, and ill-ventilated apartments. This specific poison rarely, if ever, makes a serious impression, unless the organism is previously predisposed to its influence. When all of the organs are in a normal condition, and operate in a healthy manner, an equilibrium is maintained throughout the system which enables it to resist the action of noxious agents. The ideas which we have here advanced in regard to the specific nature of typhus-contagion, were maintained by a number of medical men many years ago. Amongst whom there may be named Dr. Smith, of Conn., who gives the following reasons in support of this opinion: "On the Connecticut river, for two-hundred miles from north to south, and on all its tributary streams on both sides, for a hundred miles in width, there has been no instance of any person's having contracted the intermitting fever, from the first settlement of the country to the present time; and yet the typhus-fever has prevailed, more or less, in every township within that tract of country."

If, as many writers assert, the miasms of intermittent, yellow, and typhus fevers are analogous, should we not constantly witness these maladies running into each other, or assuming indiscriminately these different forms in the same location? But a still stronger reason is adduced by Dr. Smith in support of his position; he asserts that "there is a remarkable odor arising from a person affected with typhus, so peculiar, that I feel assured, that upon entering a room blindfolded, where a person has been confined for some length of time, I should be able to distinguish it from all other febrile affections. This is an additional circumstance in favor of the existence of the specific cause

assigned above, as several other diseases which arise from contagion are attended by an odor peculiar to each, which, when once fixed in the mind, enables a person to recognize their presence ever after. This is strongly evinced in small-pox, measles, malignant sore throat, &c."

It is also a fact worthy of note that typhus-fever was entirely unknown to the savage tribes of America previous to the settlement of the whites; and even at the present time, those bands which have not been contaminated by the *civilizing* aggressions of the usurpers of the soil, but continue their wild, roving, active and simple modes of life, are not at all subject to this fever. The moment, however, they forsake their simple and primitive customs, and adopt our dissipated and enervating habits, enclosing themselves in close, ill-ventilated, and heated apartments, drinking of spirituous liquors, using freely of condiments, tobacco, tea, coffee and rich, greasy and indigestible food, they become affected with contagious and miasmatic disorders, and often die in great numbers. This fact goes to prove that typhus is a disease pertaining exclusively to civilized life, and that it requires the unnatural and artificial customs and habits of the white race to ensure its production.

Typhus originates in circumstances tending to impair the essential or vital properties of the blood, more especially over-crowding, defective ventilation, insufficient nourishment, and hence its prevalence in times of scarcity and famine. Its accession is marked by no special symptoms, but such as occur in many acute diseases: chilliness, alternating with heat of skin; quickened pulse succeeded by muscular prostration; more or less sensorial disturbance; and between the fifth and eighth day, a peculiar morbillous-like eruption not fading on pressure, and persistent—the duration of the fever being about fourteen, seldom exceeding twenty-one days. In fatal cases, there is no specific lesion, congestion of the internal organs being the only change observed. If there be other lesions they are superadded or accidental. (*Tweedie.*)

Typhus is pre-eminently the type of a blood-disease; the fever-poison acting primarily on the blood, and leaving, after death, little trace of structural change; prevailing extensively as an epidemic; and when once established from whatever cause it may have been induced, it spreads by contagion, regardless of age, sex, or local circumstances.

But, as the constituents of animal and vegetable substances are so nearly identical, it has been supposed that the typhus-poison may also arise from vegetable decomposition in close and heated apartments. Of one thing we may be assured respecting both animal and vegetable matters: that when decomposition occurs in dark, damp, and confined places, a far more active and virulent miasm is generated, than when the same substances undergo transformations in the open air.

The effect of crowding men together in close quarters, badly ventilated, has been shown on a large scale in India. At one time the English government held in confinement 40,000 of the native Hindoos of whom from 4,000 to 10,000 died every year. The average mortality by crowded and unventilated barracks in the English army has sometimes been enormous, as at Barrackpore, where the number of deaths from fever and cholera seldom fell short of one-tenth of their whole number; while officers and other inhabitants who lived in well-ventilated houses, did not find the place particularly unhealthy. Among the marching regiments, the soldiers who were packed together at night, ten or twelve in one tent, lost from one-tenth to one-sixth of their number, when the thermometer was at 96°, while the officers and their wives were generally exempt from disease. In 1756, 140 British prisoners were confined for one night in the celebrated Black Hole in Calcutta, a prison only eighteen feet square with two small windows. The want of air caused the death of 123 prisoners out of the whole number. Most of those who survived till morning were seized with putrid fever and died within a few days more.

On the first of Dec. 1848, 150 deck-passengers of the steamer Londonderry were ordered below by the captain, and the hatches closed upon them; seventy were found dead the next morning.

CATALYSIS. SEPTIC DISEASES.—DISEASES OF FERMENTATION.

When we desire to render an animal insensible to the action of Worrara or Strychnine, placed where it can be absorbed, we try to lower its physical powers. If we desire to preserve it against contagious diseases we must increase those powers.

But these septic poisons are almost invariably organic substances, and are produced within the living organization. In some cases the poison is formed within a special apparatus, as in hydrophobia. (See that Disease.)

But there are other virulent diseases in which the blood really appears to contain the morbid principles. This is the case with glanders. And it is a well-known fact, that healthy horses, and even men, may be affected with the blood of a diseased horse, as well as with the slimy matter that escapes from the nose and mouth.

The animal secretions do not contain it, though at the same time the pathological fluids—the pus, the fluid contained in hydrocele and other morbid secretions do. For this reason alone are the autopsies performed in animals that die of the glanders attended with so much danger; the virus pervades the whole system, and the slightest wound is sufficient to inoculate the complaint.

Contagious pneumonia in horned cattle could not be communicated by inoculation of the blood, or any of the fluids of the body. That

virus chooses the lungs for its exclusive seat, and the liquids therein contained, pus, lymph, &c., are alone capable of communicating it. This virus is very virulent, as whatever part of the body is the seat of inoculation, becomes rapidly inflamed and mortified.

• *Process by which Putrid Affections are originated.*—Nothing is easier than to produce putrid diseases in animals. Thus, when transfusion is performed under ordinary conditions—when the blood is conveyed directly from one animal into the veins of another—no accident is produced; but if the blood is allowed to remain for a short space of time in contact with the atmosphere, and if the serum is then injected into the vessels, all the symptoms of putrid resorption are observed, and the animals die after exhibiting all the characteristic symptoms of putrid infection. (*Bernard.*)

The blood, therefore, is capable of acquiring toxic properties without the intervention of any foreign principle, merely through the modifications which take place when life is extinct. The same results may be excited without even drawing blood from the veins. If the blood of a fasting animal is directly injected into the veins of a healthy one, the latter is poisoned in the same manner as before, and yet the blood in this case has not undergone any previous decomposition. The introduction of foreign principles of course acts upon the blood with still more intensity; nearly all the substances known under the name of *Ferments* are endowed with the property of communicating a deleterious influence to this fluid. When yeast is introduced into an animal's veins, passive hæmorrhage and other adynamic symptoms are immediately produced and death takes place in a few days. Now if the animal blood is transfused in rapid succession, exactly the same effect is produced, as if yeast and not blood had been poured into the vessels.

It seems likely that in this case a series of decompositions takes place within the blood, and which give rise to other ferments. The well-known experiment related in Pringle's work on Army Diseases appears to correspond with our own experiments. In order to prove the influence of putrid emanations even at a distance on the chemical phenomena of life, he plunged a thread into the yolk of a rotten egg and then suspended it in a jar containing the yolk of another egg, and he found that under these circumstances, decomposition took place with far greater rapidity than usual. (*Claude Bernard.* 1860.)

We therefore see that all these series of phenomena hold intimate relation to that mysterious chemical process known under the name of *catalysis.* The theory of fermentation is at present imperfectly known, and there exists a whole series of diseases which evidently result from the chemical diseases that take place within the body.

By the operation of the principle of *catalysis*, one substance may be brought to so act upon another as to develop in it latent pow..s

and properties not hitherto seen. A few drops of diluted Sulphuric-acid boiled with starch, sets in operation an action which decomposes any quantity of starch, and causes these decomposed elements to re-arrange themselves in a new and different manner under the form of dextrine, and finally of cane-sugar. At the expiration of this process the acid may be removed unaltered in quantity or in quality. A few drops of *another* acid would not have answered the same purpose. This law of Catalysis holds good with regard to the operation of homoœpathic remedies. If in finitesimal atoms of homœopathic medicines can be brought into contact with tissues with which they have no relations or affinities, no special effects are observed; but when these atoms are brought to bear upon disordered parts with which they are *in homœopathic rapport*, we witness effects as wonderful as those of the magnet in vivifying unlimited numbers of atoms of unmagnetized steel. There must be a relation between the diseased part and the remedy. (See articles on this subject, *N. A. Journal of Homœop.*, Vol. II., p. 21, and Vol. VII., p. 81.)

Treatment.—In the management of inflammatory typhus the liberal use of cold water, both internally and externally, has been found highly beneficial, and there is no doubt of its immense power as a curative agent, when judiciously employed. As early as 1796 the free use of water was strenuously recommended by Dr. Nathan Smith. In speaking of the hot stage of typhus, he says: "The most effectual mode of reducing the temperature of the body, is by the use of cold water, which may be taken internally or applied externally," by which means "we may lessen the heat to any degree we please."

"The method which I have adopted is to turn down the bed-clothes, and to dash from a pint to a gallon of cold water on the patient's head, face and body, so as to wet both the bed and body-linen thoroughly. As soon as the linen and bed-clothes are dry, if the heat returns again, the water should be again applied until the heat is subdued."

We are aware that physicians have been deterred from the free external use of cold water in fevers, through fear of aggravating existing inflammation, causing metastases, congestions, &c., by repelling the blood from the surface to the internal organs, but the danger from this cause is purely imaginary; for cold water, externally applied, not only operates by abstracting the superfluous heat, and reducing the animal temperature, but it also acts as a *tonic*, imparting tone and vigor to the debilitated and relaxed capillaries in which the morbid action is supposed to reside.

In slight cases, frequent sponging of the surface will be sufficient to accomplish our object; but in more severe instances the method above recommended may be resorted to.

By adopting this course of treatment, while at the same time we ad

minister appropriate remedies, the disease will run a milder course, and most of the grave symptoms too often witnessed will be absent It has been a question whether typhus can ever be cut short by remedies; some maintaining that it may be broken up in the first stage, while others are of opinion, that it must have its course; upon this point, Dr. Drysdale observes: "We do not believe it possible to *cure* typhus; all we can do is, to conduct it to a favorable termination by carefully watching and curing all the intercurrent affections so apt to appear in it, by judicious management. At the same time we have always given the remedies usually recommended, especially *Rhus*, *Bryonia*, and *Arsenicum*, and we believe that convalescence will be much hastened by judicious treatment." Dr. D. advises the use of brandy and wine in addition to our remedies during the stage of collapse, "especially when there is great want of animal heat, and the pulse is very quick and small, attended with much trembling of the hands, and constant muttering delirium."

The appropriate remedies will be determined by the form the malady assumes, and the *exact nature of each particular case.*

Adeps.—Dr. Taylor (in his New Treatment of Febrile Diseases, 1850, London) says, he treated numerous cases of inflammatory and fevers, measles and other exanthemata by rubbing equal parts of lard and suet into the skin, and using no internal remedies. He says, it reduces the frequency of the pulse and wards off the typhoid condition; the dry and brown tongue becomes clean; the patient falls into a sound sleep; delirium and their symptoms subside. Repeat it two or three times a day.

TYPHUS CEREBRALIS.

Belladonna, *Bryonia*, *Opium*, and *Rhus*, will cover most of the symptoms which are ordinarily present in this form. The following are the indications for these medicines.

Belladonna.—Countenance flushed and bloated; eyes red and sparkling, or dull and turbid; or pale, brownish and glassy; wild expression, stupid, fixed, or wandering look; visible pulsation of the carotids; respiration irregular, short and quick or slow and deep; pupils contracted or dilated, generally immovable; pulse variable, but generally quick and resisting; tongue red, moist or dry, or yellowish white; breath offensive; urine brownish or red; spasm; distortion of the face and eyes; head very hot, while the extremities are cool.

Fulness and heavy pain in the head; strong pulsation of the carotids and arteries of the head; double vision, sparks before the eyes, or weak sight, humming in the ears; inflammation of the throat, chest and abdomen; pains, heaviness, or numbness of the limbs; palpitation of the heart; pressure and cramp-like pains in the stomach; dryness

of the mouth; adipsia or thirst; continued watchfulness or lethargy; constipation or diarrhœa with tenesmus; constant moaning.

Mental or Moral Symptoms.—State of mind apathetic; or irritability of temper; illusions of the senses, and frightful visions; or gloomy, suspicious; constant moaning, or drowsiness; profound coma

Administration.—A drop of the third dilution in water every two hours until the desired impression is produced. In many persons the higher dilutions are more prompt in their action.

Remarks.—Belladonna is indicated in typhus presenting a subsynochal character. It is contra-indicated in great depression of the cerebral and nervous energy; but applies in vascular and nervous erethism.

Bryonia.—Face swollen, red and burning; eyes red and swollen or dull, glassy, turbid or sparkling and suffused dryness of the nose; groans; respiration difficult, short, rapid, anxious, or sighing; thick and tenacious expectoration; petechiæ; mouth dry; tongue dry, and coated with a dirty or yellowish fur; lips brown and dry; trembling of the limbs and appearance of great weariness and debility; pulse variable; urine pale, or brownish without sediment.

Fulness, heaviness, and pressure in the head, from within outwards, worse on movement; confusion and dull pains in the head; vertigo; buzzing in the ears; dulness or acuteness of hearing: sensation of dryness in the throat; profuse sweat during heat; bitter, sour or putrid taste; thirst; nausea; hiccough or pressure at the stomach; constipation; abdomen inflated; weariness and pains in the back, loins and limbs, aggravated by motion; abdominal pains; drowsy during the *day;* restless in the *night*, with delirium.

Irascibility; passion; fear of the future; anxiety; fear; stupidity; delirium, with raving respecting business; visions on closing both eyes.

Administration.—Same as Belladonna.

Remarks.—Bryonia is applicable in the cerebral and abdominal varieties, and in typhoid pneumonia, especially in the first period before the muscular and nervous strength have become materially depressed. After the system is reduced to a certain extent, it may be alternated with one of the other remedies with benefit. Bryonia is often appropriate after Belladonna.

Aconite.—In the first stages of this as well as in most other maladies in which there is excessive action of the circulatory vessels, Aconite is an indispensable remedy. Its properties and uses are so well known and have already been so fully presented, that nothing further need be given here. Its powers in reducing the general febrile action may need the aid of some other measures in subduing important local inflammation.

Opium.—Face dark red, or brownish, hot and bloated; pupils di

lated and immovable; lower jaw hanging from relaxation; lethargy, with snoring; mouth and eyes open; irregular and slow respiration; pulse slow or suppressed; bluish color of the skin; convulsive movements of the limbs; offensive black fæces; involuntary evacuations; urine scanty, high colored, depositing a brick-dust sediment.

Sensation of great heaviness in the head, vertigo, dizziness, buzzing in the ears; general diminution, or entire loss of sensibility; cloudiness of sight; paralysis of the tongue; sensation of weight and pulsations in the stomach and abdomen; difficulty in evacuating the bladder; great oppression at the chest; hoarse, dry cough, with bloody expectoration; troublesome itching of the skin; convulsions.

Stupor; loss of consciousness; delirium; frightful visions.

ADMINISTRATION.—A drop of the third dilution in an ounce or more of water, a table-spoonful once in two hours, until a medicinal aggravation or amendment occurs,—afterwards repeat according to the exigencies of the case.

Rhus-toxicodendron.—Petechiæ; face red and swollen; blue circle around the eyes; nose pointed; lips dry, brownish or black; eyes red, with viscid secretion at the angles; eyes fixed and dull; nose dry, swollen, and tender when touched; tongue dry, red or dark; mouth filled with viscid mucus, which collects upon the teeth, forming sordes; constipation or diarrhœa; teeth dry, white and shining; color and consistence of fæces variable; retention or incontinence of urine; clear red, or turbid urine; paralysis of the lower extremities; pulse quick and small; coma, with snoring and moaning.

Stupefaction; vertigo; dizziness; bruised sensation within the head; soreness of the scalp; painful oppression in the stomach; pulsations in the epigastric region; spasms and pinchings in the abdomen; pains in different parts as if from a bruise, worse during repose, or at night, and relieved by movement; great weakness; tendency to faintness; pain and difficulty in swallowing; tenesmus, with loose slimy, frothy, sanguineous, white, yellow or red evacuations; constant and pressing desire to urinate; oppression at the chest, with difficult respiration; soreness in the limbs, back, and neck, when touched or at rest; raw feeling in the throat and chest; excessive weakness; trembling or sweats.

Muttering delirium, or coma somnolentum with snoring; anguish and digestion in the evening and at night; inclination to weep; fear of death; frequent sighing.

Rhus alone is not a specific for typhus fever, but it develops in the gastro-intestinal mucous membrane symptoms similar to those it produces on the skin. This condition is an extensive erythema with raising of the epithelium into pustules or serous vesicles.

This erythema is not just like that of typhus fever; these last are

like variola-pustules and have been compared to them: they run a fixed course. Hahnemann found Rhus effectual in curing the epidemic typhus of 1813.

It suits more particularly the pathological states which exist in what is called *typhoid* enteritis. Here the low typhoid state depends on the sympathetic effects of the acute inflammation of the skin and mucous membrane, when this inflammation affects a large number of nervous papillæ which are spread over these surfaces. Whereas in *typhus* the adynamia, coma, seem to constitute the foundation of the disease.

ADMINISTRATION. - A drop of the first dilution in an ounce of water; a dessert-spoonful every two hours; if no decided effect ensues after a reasonable time, give a drop of the mother tincture in a table-spoonful of water, repeating as may be necessary.

In many cases a higher dilution will do better than either of the above. We have seen the thirtieth of Rhus successful in a case in which the sixth did not appear to do well.

Mercurius-vivus.—Has been often successfully employed in cases where there is great weakness, rapid sinking of strength, profuse perspiration, fainting fits, trembling and numbness of the limbs, cramps and convulsive movements, great agitation and uneasiness of body and mind.

Acetic-acid is often the only remedy that is necessary, as has been proven in many epidemics prevailing in whole villages and cities. When the pulse and strength begin to fail, then Arnica may be used with great success in alternation with the acid.

Acetum.—Sponge the body with vinegar and water.

TYPHUS ABDOMINALIS.

TREATMENT.—From the close analogy of appearances produced upon the intestinal canal by fatal doses of *Arsenicum* and by fatal abdominal typhus, it would be a natural conclusion that Arsenicum is for this disease a valuable homœopathic remedy. There has been, however, a wide difference of opinion between some of our most eminent practitioners. Many, like Hausmann, Fleischmann, Gumpendorf, Stapf, Jahr, Henderson, Laurie, Currie, and Hartmann, have eulogized *Arsenicum* for this form of typhus, in the most enthusiastic manner; at the same time a few, as Wurmb, Lorentz, &c., have denied that it possesses any special curative properties in any stage of the malady.

The weight of testimony is in favor of *Arsenicum* when judiciously employed; and indeed we believe in those cases of ulceration of the mucous membrane of the ileum, Peyer's glands, &c., and in those instances where the blood becomes congested in different parts of the intestinal canal, giving rise eventually to spacelation if unopposed, that *Arsenicum* is a specific of positive and decided power. In support of this opinion, we refer with confidence to the numerous hospital and

private reports that have been published in Europe within a few years. In relation to the *cause* or *causes* of the ulcers so often discovered by the Hippocratics in autopsical examinations of those who have died of typhus abdominalis, an allopathic physician of forty years' standing in Massachusetts, Silas Brown, makes the following inquiries in the Boston Medical and Surgical Journal. After expressing himself as "fully persuaded that one of the great secrets of curing patients is not to kill them," he proceeds: "I should like to be informed whether there is not danger in giving inwardly, in any quantity, Strychnia, Creosote, Prussic Acid, Nitrate of Silver, and a host of other virulent caustic poisons; and whether some of them would not have a tendency to cauterize or constringe the delicate absorbents and other vessels of the digestive organs; and whether such medicines have congeniality or affinity enough with the membranous and vascular portions with which they come in contact, to become sanative medical agents; or whether they would not have a tendency to *produce obstructions and those ulcers which we meet with in the post-mortem examinations of those subjects who die of typhus fever.*" He requests an answer, and we venture the suggestion that he may safely adopt an affirmative one.

Arsenicum.—Skin dry or yellowish, or cold and bluish; reddish or dark spots on the skin; petechiæ; eyes dull, glazed, and sunken; pupils contracted; face shrunken, hollow, pale and cadaverous, or yellowish, bluish, or leaden colored; expression of countenance distorted and unnatural; cold sweat on the forehead; lips dark, dry, and cracked; teeth dry, white and shining; sordes upon the teeth; tongue dry, shrivelled, bluish or black, with trembling and inability to protrude it; fæces variable, generally loose, darkish or greenish, and fœtid; urine reddish, brownish, yellow, or turbid; tympanitis; guggling noise of liquids swallowed; respiration short and anxious; cramps in the legs; pulse irregular, or quick, weak, small and frequent, or feeble and trembling; voice sepulchral and tremulous; coma or low muttering delirium, trembling of the limbs; subsultus tendinum; sometimes deafness; hippocratic countenance; colliquative sweats; extreme debility or complete prostration; burning and heat at the pit of the stomach and epigastrium; nausea, and vomiting especially after eating or drinking; violent pains and burnings in the abdomen, generally on the left side; sometimes only pain on pressure; pains in the right hypochondrium; stitches in the side with anxious and difficult breathing; universal loss of strength and excessive restlessness; stools dark, greenish, putrid, fœtid and involuntary; head painful, weak, confused, as if stunned; distention of the abdomen; stiffness of the limbs. The patient is dissatisfied, restless, anxious, discouraged; or muttering; delirious; sleep disturbed, with unpleasant visions.

Administration.—In extreme cases, a grain of the second or third

trituration may be given every half hour, gradually lengthening the intervals as circumstances require.

Remarks.—*Arsenicum* is especially serviceable in the third stage of abdominal typhus, when ulcers have formed. It will also frequently apply in the second stage when the bowels become relaxed.

Belladonna.—Countenance flushed and bloated; eyes red and sparkling, or dull and turbid; or pale, brownish and glassy; wild expression, stupid, fixed, or wandering look; visible pulsation of the carotids; respiration irregular, short and quick, or slow and deep; pupils contracted or dilated, generally immovable; pulse variable, but generally quick and resisting; tongue red, moist or dry, or yellowish white; breath offensive; urine brownish or red; spasms; distortion of the face and eyes; head very hot while the extremities are cool.

Fulness and heavy pain in the head; vertigo; dizziness; violent throbbings in the head; strong pulsation of the carotids, and arteries of the head; double vision, sparks before the eyes, or weak sight; humming in the ears; inflammation of the throat, chest, and abdomen; pains, heaviness, or numbness of the limbs; palpitation of the heart; pressure and cramp-like pains in the stomach; dryness of the mouth; adipsia, or thirst; continued watchfulness or lethargy; constipation, or diarrhœa with tenesmus; constant moaning.

State of mind apathetic; or irritability of temper; illusions of the senses, and frightful visions; or gloomy, suspicious; constant moaning, or drowsiness; profound coma.

Administration.—A drop of the third dilution in water once in two hours until the desired impression is produced.

Remarks.—Belladonna is indicated in typhus, presenting a subsynochal character. It is contra-indicated in great depression of the cerebral and nervous energy; but applies in vascular and nervous erethism.

Bryonia.—Face red, burning, and swollen, or dull, glassy, turbid, or sparkling and suffused; dryness of the nose; groans; respiration difficult, short, rapid, anxious, or sighing; thick and tenacious expectoration; petechiæ; mouth dry, and coated with a dirty or yellowish fur; lips brown and dry; trembling of the limbs, and appearance of great weariness and debility; pulse variable; urine pale, or brownish and without sediment.

Fulness, heaviness, and pressure in the head, from within outwards, worse on movement; confusion and dull pains in the head; vertigo; buzzing in the ears; dulness or acuteness of hearing; sensation of dryness in the throat; profuse sweat during the heat; bitter, sour or putrid taste; thirst; nausea; hiccough, or pressure at the stomach; constipation; abdomen inflated; weariness and pains in the back, loins, and limbs, aggravated by motion; abdominal pains; drowsy during the *day;* restless in the *night*, with delirium.

Irascibility; passion; fear of the future; anxiety; fear; stupidity; delirium, with raving respecting business; visions on closing the eyes.

ADMINISTRATION.—Same as *Belladonna*.

REMARKS.—Bryonia is applicable in the cerebral and abdominal varieties, and in typhoid pneumonia, especially in the first period before the muscular and nervous strength have become materially depressed. After the nervous system is reduced to a certain extent, it may be alternated with one of the other remedies with benefit. *Bryonia* may often follow *Belladonna* with propriety.

Aconite.—In the first stages of this as well as in most other maladies in which there is excessive action of the circulatory vessels, *Aconite* is an indispensible remedy. Its properties are will be fully described under Inflammation. See *Index*. It is only necessary here to advise the young practitioner that while endeavoring to reduce the force of the general circulation, according to principles already explained, he should not neglect important local inflammations. It may be administered in the same manner as *Belladonna*.

Opium.—Face dark red, or brownish, hot and bloated; pupils dilated and immovable; lower jaw hanging from relaxation; lethargy, with snoring; mouth and eyes open; irregular and slow respiration; pulse slow or suppressed; bluish color of the skin; convulsive movements of the limbs; offensive black fæces; involuntary evacuations; urine scanty, high colored, depositing a brick-dust sediment; sensation of great heaviness in the head, vertigo, dizziness, buzzing in the ears general diminution, or entire loss of sensibility; cloudiness of sight; paralysis of the tongue; sensation of weight and pulsations in the stomach and abdomen; difficulty in evacuating the bladder; great oppression at the chest; hoarse dry cough, with bloody expectoration; troublesome itching of the skin; convulsions; stupor; loss of con sciousness; delirium; frightful visions.

ADMINISTRATION.—A drop of the third dilution in an ounce of water —a table-spoonful once in two hours until a medicinal aggravation or an amendment occurs,—afterwards repeat according to the exigencies of the case.

Rhus-toxicodendron.—This remedy is particularly adapted to the nervous forms of typhus, and may often be used with advantage in cerebral typhus after *Bryonia*, or *Aconite*, or in ganglionic typhus, when the following symptoms present themselves:

Petechiæ; face red and swollen; blue circle around the eyes; nose pointed; lips dry, browish or black; eyes red, with viscid secretion at the angles; eyes fixed and dull; nose dry, swollen, and tender when touched; tongue dry, red, or dark; mouth filled with viscid mucus, which collects upon the teeth, forming sordes; constipation or diar-

rhœa; teeth white, dry and shining; color and consistence of fæces variable; retention or incontinence of urine; clear, red, or turbid urine; paralysis of the lower extremities; pulse quick and small; coma, with snoring or moaning; stupefaction; vertigo; dizziness; bruised sensation within the head; soreness of the scalp; painful oppression in the stomach; pulsations in the epigastric region; spasms and pinchings in the abdomen; pains in different parts as if from a bruise, worse during repose, or at night, and relieved by movement; great weakness; tendency to faintness; pain and difficulty in swallowing; tenesmus, with loose, slimy, frothy, sanguineous, white, yellow, or red evacuations; constant and pressing desire to urinate; oppression at the chest, with difficult respiration; soreness in the limbs, back and neck, when touched or at rest; raw feeling in the throat and chest; excessive weakness, tremblings, sweats; muttering delirium, or coma somnolentum, with snoring; anguish and dejection in the evening and at night; inclination too weep; fear of death; frequent sighing.

Administration.—A drop of the first dilution in an ounce of water; a desert-spoonful every two or four hours. If no decided effect ensues after a reasonable time, give a drop of the mother tincture in a table-spoonful of water, repeating as may be necessary.

Mercurius-vivus has been successfully employed in cases where there is great weakness, rapid sinking of strength, profuse perspiration, fainting fits, trembling and numbness of the limbs, cramps and convulsive movements, great agitation and uneasiness of body and mind.

Camphor.—Huxham was highly successful with this remedy in the so-called *slow nervous fevers*, in which the temperature of the body is lowered, the sensibility is depressed, and the vital powers greatly diminished. He was enabled to succeed because Camphor is capable of producing *a state similar in every respect*, as observed by G. Alexander, Cullen, and F. Hoffmann.

Phosphoric-acid.—General stupor of all the organs, apathy, dizziness; tongue dry and cracked; teeth covered with a coating, lips black; cough frequent and dry; lying constantly on the back or side; continual delirium or dull mutterings; subsultus tendinum; fixed look, with hollow, glassy eyes; extreme slowness in replying the questions; petechia or clear brown spots; desire to escape; skin dry and burning; stools aqueous, abundant, and involuntary; scorbutic alteration of the buccal mucous membrane; cold perspiration on the face, hands, and pit of the stomach; pulse frequent, feeble and intermittent. This remedy was given by Rapou in injections to arrest intestinal hæmorrhage, a symptom of great danger. *Nitric-acid* is also effectual for the same purpose; four drops in two or three ounces of water.

Bryonia.—Cases assuming the form of cerebral typhus; violent delirium, with intense febrile heat, great thirst and dryness; vesicular

eruption in the mouth; abdomen swollen, epigastrium tender; urine dark; shooting pains in the sides of the chest, drowsiness during the day, restlessness at night, small and soft pulse; clammy perspiration; trembling of the hands. Dr. Anelli of Presburg, succeeded with this remedy in those cases in which a severe chill and vertigo were followed by persistent heat for two days. A diminution of heat was followed by delirium, loss of consciousness, reaching in the course of two weeks profound stupor. In these cases the abdominal symptoms were absent and a majority of them terminated fatally under allopathic treatment.

Rhus-toxicodendron.—Appropriate in all the stages of the disease, especially in cases that take the form of nervous fever, with stupor; also, when exhausting alvine discharges induce great prostration. Rhus moderates the fatal colliquative diarrhœa, and diminishes the cerebral congestion. Confusion and shooting pains in the head; dry, burning heat; tension and stiffness, or wandering pains in the nape of the neck and breasts, aggravated in the evening by motion; fatigue and lassitude; when the nervous symptoms appear and the tongue is coated; there is diarrhœa, with borborygmus, chills, vertigo, with irregular closing of the eyelids; alterations of the colors of the face; dryness of the throat, vomiting, yawning, heaviness of the head; pressure on the eyes; painful sensibility to light and noise; defective memory; tendency to delirium; underlip and tongue dark. *Rhus*, in the premonitory stage often presents the full development of the fever. (See *United States Journal of Homœopathy*, 1860, p. 590.)

Carbo-vegetabilis is also a remedy of importance in the last stages of abdominal, and in all stages of putrid typhus. In the former, it may sometimes be exhibited in alternation with *Arsenicum*, with good effect. The following are the symptoms: Hippocratic countenance; face pale, yellowish, or dingy; eyes sunken and glazed, with nocturnal agglutination; lips dry and cracked; tongue dry, dark and tremulous; position upon the back; cold, clammy sweat; pulse rapid, trembling, and almost imperceptible; tremblings and jerkings of the limbs; urine red and high colored; fæces putrid and offensive; an entire prostration of the animal powers; heavy, pressing, or drawing pains in the head; ulceration and bleeding of the gums; rattling in the throat; cramp-like pressing, or burning pains in the stomach and intestines; burning pains and oppression at the chest; rigidity or complete paralysis and relaxation of the nape of the neck and limbs; bowels swollen and tender on pressure; feet, legs and hands cold; numbness of the limbs; coma or sleeplessness, with muttering delirium, mind dull, confused, wandering, or stupid.

Administration.—A dose of the third trituration may be given in water, every half hour, in extreme cases, until the necessary impression is made.

Hartmann recommends *Staphysagria* in the first stage of the disease, when the following symptoms appear: "Sordes on the teeth, pale and bleeding gums, with painful swelling of the gums, and rapid decay of the teeth; vanishing of thoughts and ideas; weakness of memory; dulness of mind, great indifference and ill-humor; vertigo, with stupefying headache; dimness of the eyes, itching, stinging, and heat of the canthi; fulness in the pit of the stomach, with frequent hiccough and vomiting; tension across the hypochondria, oppressing the breathing; pressure, weight and tension in the abdomen; cutting pain in bowels, with nausea, copious diarrhœic stools."

Muriatic-acid is a highly important remedy in many cases of advanced typhus, when the patient is stupid, unconscious of surrounding occurrences, and extremely prostrate. Other symptoms are, constant tendency to settle down towards the foot of the bed, low muttering delirium, groaning in sleep, moaning, picking at the bed-clothes; inability to protrude the tongue, dry heat, with transient and partial sweats; general uneasiness, "depression of the lower jaw, digging with the head into the pillow, turning up the whites of the eyes, slavering, &c." (*Hempel.*) We may employ the first to the third dilution—a drop in a drachm of water, every two hours, as long as necessary.

Phosphorus.—Dr. Kidd says he has found Phosphorus a valuable remedy in the treatment of the typhus which devastated Ireland during the years 1847 and 48.

Rhus-tox., *Bryonia* and Arsenicum are also highly commended by Dr. Kidd when "from the very commencement, the heat of skin and acceleration of pulse are very inconsiderable, and in the middle and latter stages, are almost invariably below the natural standard. For two or three days the patient would labor under lassitude and languor, with loss of appetite and of sleep, the tongue being generally the first index of the probable mischief in store. About the fourth or fifth day, the disease being generally well marked, with a very slight heat of skin, which feels soft and clammy, being covered with moisture, (not like the ordinary feel of a perspiring skin, as if the skin were damped, and by some contrivance the evaporation prevented;) the pulse very little, if at all altered, except in strength, which even at this period would be somewhat deficient; the tongue presented a most characteristic appearance; in general dry, hard and glazed, like brown leather, or deeply covered with brown or blackish fur. In some cases it appeared soft, moist and tremulous, covered with a perfect and uniform layer of pure white paste or mucus, (this in generally omened a very severe and dangerous form of the disease;) the gums and teeth became covered with brownish incrustations; thirst being incessant and insatiable, with nausea and vomiting; in many cases abdominal symptoms, as tension and tympanitic resonance of the abdominal walls, with

tenderness and shooting pain over either iliac region, (in general the right;) bowels seldom costive, in general relaxed, with or without pain; urine in a few cases suppressed, in most unchanged; head in general implicated; in most from the beginning, with aching and heaviness at the forehead, throbbing at the temples, vertigo, sense of emptiness and bewilderment; delirium mostly at night, with low muttering, or with stupid, heavy insensibility and incoherence of speech. The eyes appeared dull, inanimate, and listless, with the head instinctively turned from the light. In a few cases towards their termination, a peculiar sort of stolid deafness supervened, which gradually disappeared as convalescence advanced.

"Almost invariably the lower extremities were complained of being dead and numbed, rendering the least motion impossible, (but without any actual pain,) the feet and legs feeling cold and damp.

"General debility and prostration set in early in the disease, and proved the most obstinate of the symptoms." (*Truths and their Reception*, &c., by *J. Kidd*, M. D. London, 1849.) Dr. K. relied upon the four medicines above named in this form of the malady, and the results show a mortality of less than two per-cent. His success in the numerous cases of continued fever which came under his care was no less gratifying. The low dilutions were employed for the most part; but in a few cases drop doses of the tinctures were deemed necessary.

The other medicines necessary in the treatment of certain stages of this, as well as the other forms of typhus are: *Rhus-tox.*, *Acid-nitr.*, *Nux-vom.*, *Secale-cor.*, *Mercur*, *Opium*, *Camph.*, *China*, *Nux-mos.*, *Valer.*, *Stram.*, *Hyos.*, and *Lach.* These remedies will all occasionally be called into requisition, so that their effects upon the human system should be well understood and appreciated.

It will be observed that we have divided typhus into but three varieties. Other authors add a *typhus putridus*, *typhus contagiousus*, *typhus lentus*, *typhus petechialis*, &c. In practice, however, we seldom find any one of these forms distinct and unmixed; but the brain, nervous system, lungs, and abnormal viscera partake more or less in the general disturbance, causing each particular case to present peculiar and diverse symptoms. So in regard to the treatment of this fever, it will often be found, from its commencement to its termination, to require one or more of the medicines which we have placed under each form of the malady. The systematic connections are so strongly pronounced, between the important organs in which the different varieties of typhus are located, that one can not be affected without imparting the disorder to others.

Physiologists note it as a curious fact, that no two human faces are exactly alike, and it may be asserted with equal safety, that no two in

stances of typhus fever ever presented, from first to last, *precisely the same symptoms.* Therefore it is, that in all cases of this as well as of other maladies, we must trust to *symptoms alone*, and be guided by them in the application of our remedies, rather than by the name of the disease. Our nomenclatures and classifications unquestionably facilitate the investigations and diagnosis of complicated cases, but they can be of very little importance in the practical exhibition of medicines.

Dr. Baertl who treated about thirty cases of this disease,* found it contagious, though commencing as an epidemic.

TREATMENT.—In the forming stage, Puls. and Nux.

When the fever and cerebral congestion are already manifest, Acon. and Bell., beginning with the former.

Merc.-dulc., third trituration,—Marked sensitiveness in the cœcal region; stools greenish, bloody, slimy, with tenesmus; burning in the anus; frequent pinching in the bowels, every two or three hours. In the course of twelve to twenty-four hours the stools become less frequent, more consistent, become yellowish or brownish. Other symptoms at the same time improve.

Calcarea-carbonica.—Dr. Baertl cured all his cases which progressed to the third stage with this remedy, giving only Bell., 12°, every six or three hours.

SYMPTOMS.—The diarrhœa increased and the strength declined; the delirium and waking visions became more prominent. If amendment did not soon occur, Calc.-carb., 6°, was given alone every six or three hours, one drop in a spoonful of water. Under this treatment the disease rarely lasted beyond the 21st day of the disease. Even the worst cases recovered under the use of these two last medicines, especially the Calcarea. In contrast we give a case of allopathic practice.

Case of Dr. Spurzheim.—He had been sick both in England and France, and had submitted to medical treatment; and from its effects he had inferred that it was not safe to place too much confidence in the skill of the faculty or the virtue of drugs. He said he was present when Cuvier was bled and protested against it, believing that literary men did not bear that evacuation well. He stated that his own constitution was very irritable, and from childhood he could never bear the powers of medicines. He was therefore in his last illness averse to all medicines. When over-persuaded he took one drachm of Epsom-salts, saying it would purge too much, which it did, and was checked with Opium.

Dr. Jackson who thenceforward attended him says: On the 30th October his tongue was perfectly dry, except a line on each side, dark

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* Hom. Vierteljahrsschrift, Vol. XII. Part. 1.

but not thickly coated; much thirst, no appetite; occasional purgatives had been given, pulse 96, firm, and with the hardness of age rather than disease, though he was only 55. Pulse intermitted frequently, though he said this had been the case for three years without any other symptom of diseased heart; respiration natural. Could expand his chest freely; he struck it and it resounded well; declared he had no symptom of disease of that cavity; skin rather soft but slightly hot and dry; free from pain; no bad feeling in the head; occasional uneasiness in the bowels, which he always removed at will with a lavement; nothing morbid in his evacuations; most distressing symptoms were, extreme restlessness, appearance of impatience, and very great watchfulness.

From this to Nov. 5th the symptoms gradually grew worse, without much change from day to day. On the 31st Oct., skin very moist, but no other amendment. Exacerbation again in the evening, continuing as usual to 3 or 4 A. M. Some sleep, though not more than three hours in the night; at times he showed great impatience and irritability of temper, of which there was nothing in his usual health. This state passed insensibly into delirium.

Nov. 5th he was plainly worse; pulse quicker, though retaining in a good degree its firmness. The tongue, which had been perfectly dry from the beginning, now diminished in volume as if its whole substance was dried; respiration somewhat irregular; frequent twitchings of the muscles; picking of the bed-clothes; delirium increased. Next day the bad symptoms much worse; disposed to coma with intervals of delirium; respiration more hurried and irregular, some rattle in the throat; pulse now 120, more feeble and unequal in force. From this time all the symptoms were of unfavorable character, till the night of Nov. 10th, he died a little after midnight.

The name of the disease was not perfectly decided. Dr. Jackson said: "Call it a continued fever, in which nervous symptoms predominated; there was no putrescency, no strong inflammatory symptoms. If called a pure typhus the name would mislead many. It may be called a synochus, though not without dispute." "I would describe the disease thus: It was a continued fever in which symptoms of the access came on insidiously and were alone for many days. The symptoms of the other stages were never permanent, those of crisis never appeared; there was no evidence of any inflammation any where; if it did exist it must be called latent. On the 30th of October he was in the third week of the fever, though he had not been confined to the house a week. In this advanced stage I have learned that medicine is not of any avail." (*Capen's Biography of Spurzheim*, p. 130. Boston, 1832.)

4. TYPHOID FEVER.

TYPHUS ABDOMINALIS EXANTHEMATICUS. ENTERIC FEVER.

General Symptoms.—Shooting, throbbing headache in the forehead and occiput; vertigo; dry cough, gradually becoming worse, increasing the headache; prostration, apparent from the patient's aspect; these symptoms followed by a general rigor, subsequently alternating with heat, finally ending in continuous dry burning heat; temperature of the skin much increased. Pulse from the commencement accelerated, full, though rather soft, 100 to 120 per minute. Rush of blood to the head; redness of the face; noise in the ears; tongue clean or furred white, subsequently becoming dry; impaired taste; pressure in the præcordial region, or especially in that of the spleen; no appetite, thirst, constipation or diarrhœa; evacuations of fluid, yellowish or greenish appearance; later these are mixed with flakes or with blood; pinching pain in the bowels, and often burning pain in the anus; in the third stage there is meteorism of the abdomen; pressure on the abdomen causes rumbling there, especially in the region of the cæcum.

Urine scanty, turning muddy after standing a short time, and depositing a copious sediment; and later in the disease is diminished in quantity.

In the latter part of the disease the lips, teeth and tongue are covered with brown sordes, are very dry, and the patient longs for water, the strength declines and the patient becomes emaciated.

As the disease progresses nervous symptoms become more prominent.

In this stage there is strong delirium, inducing many patients to get out of bed. The nights from the commencement were very restless as the patient lay in a stupefied state. This uneasiness increases with the delirium, till a soporous state terminates in entire unconsciousness; the tongue is then drier, the pulse becomes more rapid and weaker; the breathing more hurried and labored. A characteristic of this form of typhus is a kind of purpura on the surface, consisting of small red spots, some of which are elevated; they begin to come out on the abdomen, and in some cases extend over the limbs; it varies in depth of color, according to the severity of the disease from a pink to bluish-red. In the later stage the skin becomes cooler. In many cases the sputa were mixed with streaks of blood, and were expectorated with difficulty.

Causes.—Intestinal fever is a contagious disease. The following characteristic features distinguish contagious fevers:

1. There is in contagious fevers a latent period after the occurrence of the affection.

2. There is exemption conferred by one attack against any future attacks.

3. Large numbers of persons, though freely exposed to the fever-poison, yet remain proof against it.

The immunity conferred by one attack against a future one was first pointed out by Bretonneau. He said that in thirty years he never saw an instance of this fever occurring twice in one person. Chomel says, no authentic case has been recorded, although the number of cases of typhoid fever annually studied is large. M. Louis, the greatest authority on this subject, living or dead, says, the town of Caumont was twice swept by an epidemic of this fever, with an interval of eight years between, and all persons attacked by the first visitation were spared on the second. Dr. Budd says, he has sought for seven years for persons who in their lives had typhoid fever more than once. He has found four probable cases in all. But he remembered many who performed for weeks and sometimes for months together the office of nursing others, and were incapable of taking the disease themselves.

Conditions for the growth and development of the specific fever-poison. The operation of all the poisons belonging to this group is entirely dependent on their own reproduction in the living body. This has been proved in the case of small-pox by inoculations on the grandest scale. In regard to all other contagious diseases we may not be able to understand *all* that is involved in "the latest period." "But it is," says Dr. Budd, "as clear as day that its root lies in the infinitesimal *minuteness* of the dose, which inoculation experimentally shows to be sufficient to the speedy effect of the morbid poison; and to the intimate nature of the material conditions which protect for the remainder of life the body that has once gone through one of those diseases against any future attack from it, may, possibly, always transcend our means of research. The disease, called small-pox, occurs but once in life simply, because the small-pox-poison can not grow again in the body in which it has once bred. The same is true of intestinal fever."

The minute speck that is inserted by inoculation is so inappreciable that the inoculated body takes at first no distinct recognizance of its presence. It issues before long in a new stock sufficient to poison to death the body, in which it is propagated, and sufficient also to impart the seeds of death to myriads of others. Germ and offspring, seed and crop, lie both before us distinctly displayed, as the seed corn and the product of the farmer's cornfield.

In intestinal fever, as in small-pox, it is the act of growth (with all that is incident to it) that kills. "The living human body is the soil in which this specific poison breeds and multiplies; and that most specific of all processes which constitutes the fever itself is the process by which the multiplication is effected."

From what surface is the specific poison cast off by which the disease is propagated? All the emanations from the sick are infectious,

but what is thrown off from the intestines is comparatively more virulent than any thing else.

The only means of preventing their exciting the disease in other persons must consist in sufficient provision being made for preventing the discharges from the human intestines from contaminating the soil and air of the inhabited area. Without this the most complete ventilation is insufficient.

There is no safety but in good drains from houses, and water closets in the best condition. Otherwise the disorder, which possesses such virulent powers of propagation by contagion may become a most deadly scourge. The alvine evacuations should be swept far away from the house in which the sufferer lies. If this be not done, and the discharges are allowed to accumulate day by day upon the soil in which the dwelling stands, and to exhale their poison into the air breathed by the inmates, or to distil it slowly into the water they drink, most fatal results may be anticipated. The sanatary arrangement just named has power almost invariably to prevent the spread of fever, but in their absence every member of the family may be stricken down in succession. Like malignant cholera, dysentery, and yellow fever, intestinal fever is one that *infects the ground*, thus a quasi-miasmatic character attaches to them all.

All the morbid products thrown off by the intestinal fever patient contain matters in which the fever-poison has set its seal in the most consummate fashion. They are the most specific of all the exuvia from the diseased body. And the sewer, which is their common receptacle, is as the direct continuation of the diseased intestine.

As the poison that produces typhus fever acts on the blood alone, that which causes typhoid enteric fever operates on the blood, but also induces special lesions in the solids. It is a specific disease, not contagious in the proper sense of that word, and caused generally by vitiated air containing the emanations from large bodies of human beings crowded together, aided by mental and bodily fatigue.

The precise nature of those emanations which produce this fever are unknown. Impure air of every kind is unhealthy; but the offensive gases generated from decomposing animal or vegetable substances may cause disease, nausea, and great depression of the vital powers; yet this fever seldom results from any of them. Mr. Brown, of Chatham, (Eng.,) has endeavored to show that typhoid has always originated "from the application to the alimentary canal of the excretia of the intestines that have undergone alterations outside of the body." Thus "fæcal matters (altered in their nature) are swallowed in almost all towns and cities, and even in lone houses in the country, in consequence of the proximity of wells to privies and drains;" hence, "blood poisoning and disordered sympathetic nerve-force result, the skin and

glands of the small intestine become diseased," and "typhoid fever, which is essentially a privy-soil fever, is originated; but night soil can give rise to other diseases, as cholera, diarrhœa, and dysentery. Occasionally the opening of a long-closed privy is directly followed by typhoid fever of a malignant type." (*Brit. Med. Jour.* 1858.)

Typhoid fever is never absent from large cities. Where it has become endemic. At certain times its power is heightened by great meteorological or other changes; and, in imitation of plague, cholera, or yellow fever, it marches forth from its strong-hold, and reigns in both city and country as an epidemic.

It is generally admitted that typhus fever is induced by the respiring of air charged with a large per-centage of effete animal matters thrown off from the lungs or skin of masses of people occupying crowded apartments. It is essentially a product of over-crowding, and is different from typhoid fever. In one experiment "an animal extractive matter was obtained from the respiratory and cutaneous excretia of numerous individuals congregated in one apartment. This extractive matter was injected into the blood of a dog. The animal died of low fever in fourteen days; which it will be observed, constitutes the full period of typhus fever. (*Braithw. Retr.* 1858. p. 21.)

Distinction between Typhoid and Typhus Fever.

Typhoid or Enteric Fever.	Typhus.
Has less of an epidemic, and more of a local character.	Typhus is pre-eminently the type of a blood disease—the fever poison acting primarily on the blood, and leaving, after death, little trace of structural change; prevailing extensively as an epidemic; and, when once induced, it spreads by by contagion, regardless of age, sex or local circumstances. (*Tweedie.*)
Is known by its leaving well-marked traces on the organism after death.	
Epistaxis.	
Present in one-third of the cases.	Seldom or never occurs.
Hearing.	
Equally affected in both diseases.	Deafness more or less complete.
Eyes.	
Conjunctiva but slightly injected; pupils larger than natural.	Conjunctiva *much more* constantly and intensely injected; pupils abnormally contracted.
Tongue.	
Generally moist. When dry, it is often small, red, glazed, and	Covered with thin white mucus in the early stage; less frequently

Typhoid or Enteric Fever.	Typhus.
fissured; when brown, its hue is less deep,—yellowish, rather than blackish-brown, with red tip and edges; surface smooth, covered with pale brownish-yellow fur, and appearing red between the fissures. Scarcely able to protrude the tongue.	moist throughout the disease. Only one-fifth of a large number could protrude the tongue; showing extreme prostration. The tongue, teeth and lips were then covered with a dark-fuliginous incrustation, nearly black; surface shrivelled or fissured, sometimes coated with blood. The sordes exhibit blood discs from local hæmorrhage.
Intestinal Hæmorrhage.	
Occurs in one-third of the cases.	Seldom or never occurs except from hæmorrhoids. Constipation more persistent; no gurgling over the region of the cæcum. Constipation followed by watery diarrhœa with griping. Abdomen inflated; noise excited by pressure over the right iliac fossa.
Appetite and Thirst.	
No difference between the two diseases.	
Pulse.	
It fluctuates from day to day.	
Cough and Physical Signs.	
Sonorous râle present in eleven-twelfths of the cases.	In only one-third of the cases.
Dulness of the lung rare.	Dulness of the most depressing part of the chest, from intense congestion of the lung, is common.
Sloughing.	
Frequent in both diseases.	
Erysipelas.	
Occurs in nearly one-third of the cases.	In less than one-twentieth of the of the cases.
Cadaveric Rigidity.	
Continued longer.	Ceased quickly after death.
Discoloration of the Walls of the Abdomen, and of Skin covering large Veins.	
Seldom seen.	Very frequent.

Typhoid or Enteric Fever.	Typhus.
Emaciation.	
Progresses further than in typhus. In protracted cases it is extreme.	
Spots on the Skin.	
None visible after death.	Continue visible after death.
Head.	
After death, the vessels of the pia-mater were abnormally filled with blood in one-third of the cases; intensely injected in one of fifteen cases; the cerebral substance congested in one-seventh of the cases.	In many cases, no trace of disease discovered in any organ. The pia-mater and arachnoid separated with abnormal facility in nine of eleven cases; the vessels of the pia-mater were congested in nearly one-half, and intensely congested in one-fifth of the whole of the cases. Cerebral substance abnormally congested in one-half.
Age.	
More common in persons under forty years of age.	More common in persons over fifty.
Mode of Attack.	
Disease commences insidiously and progresses slowly. Heat of skin moderate or absent.	Heat more marked in the early stage and in the exacerbations. Early symptoms more violent; their accession more sudden.
Duration.	
Average duration in fatal cases, twenty-two days. In some instances it extends to forty, fifty, or sixty days.	In fatal cases fourteen days. Few or none live beyond the twentieth.
Eruption.	
Of a different character, though of a reddish hue. The spots disappear on pressure, last but for a few days only, and are succeeded by a fresh eruption as long as the disease continues.	Is known as the *mulberry rash.* It *all* comes out early in the disease; at first elevated, then darker. Is seen in three-fourths of the cases, and in all over twenty-two years old. Appears from the third to the seventh day, first on the trunk anteriorly, the spots varying in size from a point to three or four lines in diameter, having an irregular outline. Sometimes few

Typhoid or Enteric Fever.	Typhus.
	in number; oftener, numerous small spots uniting to form large ones. Color dusky-pinkish, afterwards more dark, each patch remaining till the disease terminates. The depth of the color is proportioned to the gravity of the fever.
Miliary Vesicles, or Sudaminæ.	
May be seen in both diseases in patients under forty years of age.	Not seen in patients over forty.
Expression, Manner, Hue of Face, &c.	
Not indicative of extreme prostration, countenance anxious, complexion clear, flush of brightish pink color on one or both cheeks, circumscribed.	Countenance less anxious, complexion thick and muddy, flush of the face uniform and of dusky red color.
Headache.	
It disappears only about the fourteenth or seventeenth day.	Rarely absent in the beginning. Disappears about the tenth or twelfth day, or after that time comes at intervals.
Delirium.	
In some cases it occurs before the fourteenth day, in others by the eighth; slowly increasing in severity.	Begins before the fourteenth, and is then less violent. Sometimes noisy, but more often low and muttering.
Somnolence.	
Begins after the fourteenth day.	Begins before the fourteenth day.
Coma-Vigil.	
Seldom or never occurs.	It occurs in one-fifth of the cases.
Spasmodic Movements.	
They occur in equal degree in both diseases.	
Involuntary Discharges from the Bladder and Bowels.	
Occur at a late period.	Occur at an early period.
Loss of Muscular Power.	
One-fourth of the patients keep the bed entirely before the seventh day. Prostration not great before the fourteenth to the twentieth.	Patients all keep their beds entirely before the seventh day. Prostration extreme by the ninth. Loss of expression of the face.

Typhoid or Enteric Fever.	Typhus.
Hæmorrhage into the Cavity of the Arachnoid.	
Not found in any case.	Occurs in one-eighth of the cases examined.
Pharynx.	
Ulcerated in one-third of the fatal cases.	Not seen in any case.
Œsophagus.	
Ulcerated in one-fifthteenth of the cases.	Free from ulceration.
Stomach.	
Mucous membrane not softened throughout its whole extent in any case of fifteen.	In a very few cases it is softened; in some all the coats of the stomach softened.
Small Intestines and Mesenteric Glands.	
Peyer's patches, and the corresponding mesenteric glands are invariably diseased. In sixty cases of typhoid fever in the Crimean hospitals, these glands were affected in fifty-nine.	Invariably normal.
Large Intestines.	
Mucous membrane found ulcerated after death in more than a a third of the cases.	In no instance found ulcerated.
Spleen.	
Enlarged in all cases; softened in one-third of the cases onlv.	Before the age of fifty it is enlarged; after fifty it is smaller; and softened as in typhoid. The bile is thicker and of dark green color. Kidneys, liver, and pancreas more flabby than in typhoid. Heart flabby, lining membrane darker red than in typhoid.

Pathology.—The first morbid change observed in the intestine in enteric fever is slight swelling of the mucous membrane, covering Peyer's patches; to this rapidly succeeds the deposit of typhous matter, which soon presents the appearance of a deep brown or yellow sloughy patch; this is in a short time detached, leaving a cavity or ulcer on the inner surface of the intestine, known by the name of a typhous ulcer.

The seat of the lesion is the lower third of the small intestine, the number and size of the ulcers increasing as they approach the cæcal valve.

The typhous ulcer, when it corresponds to the infiltration and detachment of a large Peyerian gland, is elliptical in form; when it corresponds to a solitary follicle, or a rounded patch, or to the partial detachment of a glandular plexus, it is round; when corresponding to a partial detachment, it is irregular or sinuous.

The ulcer varies in size from that of a hemp-seed or pea to that of a half crown.

The patches are placed opposite to the insertion of the mesentery, their long diameters being always parallel to the longitudinal axis of the intestines. The typhous ulcer was only seen by Rokitansky to form a zone in one instance out of many hundreds.

The base of the ulcer is formed by the delicate layer of sub-mucous tissue, which covers the muscular coat, a well-defined fringe of mucous membrane forming the margin.

Termination of the typhous ulceration.—Mild cases terminate in resolution; in severe ones the ulcers may cicatrize. In one or more patches in patients who have died from other causes, smooth polished ulcers have been seen near the cæcum. They were covered with a thin transparent pellicle, continuous with the sub-mucous tissue around the ulceration.

The conditions necessary for the favorable healing of the ulcers are: 1. the cessation of the deposition of the typhous matter, and complete extinction of the typhous dyscrasia; and 2., the holding out of the vital powers to withstand the exhaustion caused by the ulcerative process.

When cicatrization does not take place the destructive process of ulceration successively lays bare the mucous, the areolar and muscular coats, until the thin transparent peritoneum alone remains. When complete perforation takes place, the contents of the intestines escape into the peritonial cavity and give rise to acute peritonitis. The perforation is usually very small and is found in the centre of the ulcerated patch. This occurred in 20 out of 1820 cases in the London Fever Hospital. (*Tweedie, Lumleian Lectures*, 1858.)

Changes in the Blood.—In typhus and typhoid fevers the blood becomes altered in its chemical composition. The quantity of fibrin is never above the normal standard, but diminishes in proportion to the duration of the disease; the blood corpuscles increase; but the red color and fibrinous consistence are lost. That the blood is liable to alterations in its consistence in disease, will be shown under the head of diseased states of the blood. It was remarked by Borden, that blood is fluid flesh;" and it is known that it contains the same proximate principles as the solids of the body, and also that it is organized and apparently endowed with vitality. Dr. Stephens says, that he and other practitioners of the West Indies observed that in persons exposed to the fever-producing malaria, the blood was altered before other symptoms

of fever were discovered. From this altered state of the blood in typhous fevers arise the nasal and intestinal hæmorrhages that often occur before their termination. For *Treatment* see page 547.

5. YELLOW FEVER.

Mode of Attack.—In some cases it may strike its victim suddenly prostrate, overwhelming in its severity the whole system, and thus preventing any reaction of the capillary vessels; or it may advance mildly, differing but little from an ordinary attack of remitting fever. In some instances it bears a strong resemblance to the higher grades of bilious fever. Much depends upon the peculiar circumstances of the individual attacked. If he is recently from a temperate climate, and unaccustomed to hot regions, he will be more susceptible to the action of the poison than if he had been previously acclimated.

Medical men have supposed that after a certain period of exposure, the system becomes so completely accustomed to the miasm, that it loses all susceptibility to its influence, and in this manner the process of acclimation is accomplished. There is doubtless some truth in this idea, but there are other causes which exercise quite as important an influence in this process. Those persons who abandon a temperate for a tropical climate, do so in that physical condition which the requirements, habits and regimen of the former naturally generate. In a previous chapter we have seen, that in cold regions, where the atmosphere is highly condensed, a large amount of animal food is requisite to supply the system with sufficient carbon and hydrogen to resist and neutralize the action of the inspired oxygen. With these habits, appropriate only where a condensed atmosphere is respired, individuals seek the tropics with bodies abounding in carbon, and continuing, in most instances, their accustomed regimen of animal food and stimulants, thus burdening their systems with an amount of the elements of nutrition far greater than the oxygen contained in the rarefied air which they inhale can decompose. See page 186.

It is probable, therefore, that one of the chief predisposing causes of yellow fever, is the presence of a greater amount of carbon in the system than the inspired air can properly act upon. The exact equilibrium between the supply of the elements of the food and the absorbed oxygen, is disturbed; and the carbon predominates, and all of those derangements, which proceed from a superabundance of this agent necessarily ensue.

The inhabitants of tropical climates have comparatively but little desire for animal food, but prefer farinaceous diet, vegetables and fruits; in this manner naturally securing to themselves a due proportion between the elements assimilated and the oxygen absorbed; while the inhabitants of the north find it necessary to consume large quanti-

ties of meat and other articles abounding in the elements of nutrition in order to preserve a healthy equilibrium. We, therefore, strongly urge it upon persons who remove from cold to hot climates to adapt their systems, by appropriate regimen and strict temperance in all things, for the change, and we confidently predict that they will enjoy as great an immunity from this dreadful scourge as the natives themselves.

Premonitory Symptoms.—Giddiness, wandering pains in the back and limbs, "cold in the head," slight chills, nausea, headache and frequent sensations of faintness. Later appears a febrile paroxysm, followed by a perfect lull of the symptoms; subsequent appearance of jaundice, hæmorrhages, gastric irritability, dysuria.

Second Stage.—After early symptoms have continued a few hours, a decided reaction occurs; the circulation becomes excited, the face flushed, the eyes red, brilliant, injected; pulse from 100 to 130; there are violent pains in the head, back, loins and extremities, distress of the stomach, and vomiting of acid bilious matters; the surface becomes dry und burning hot; mouth and throat dry, with intense thirst and sometimes delirium; urine scanty and high colored; tongue covered with a pasty white coat, with red edges and apex; in some cases mucous or bilious vomiting.

The duration of this paroxysm is usually about twenty-four hours, although occasionally it continues, thirty-six hours or more, after which there is generally a remission of all the symptoms, except a distressing sensation in the stomach, with nausea and vomiting. The patient remains in this state with a considerable degree of comfort for a few hours, with partial perspiration, when there is a recurrence of many of the former symptoms in an aggravated form. The stomach now becomes extremely painful, burning and sensitive; vomiting is violent and incessant; flatulence, thirst, and nausea; the fluids ejected are of a darker color; there is often diarrhœa, generally constipation; the skin and eyes acquire a yellow lemon tinge; there is tossing and restlessness; dysuria; and the mind becomes confused and wandering. The pain in the head, back and limbs are less violent than before, and the pulse, tongue and skin may remain nearly natural; but the case is hourly becoming worse, and the fever assumes a typhoid character.

The duration of this second stage varies from twelve to forty-eight hours, with sometimes slight remissions towards the termination of the paroxysm, when the third or last stage sets in. This stage is characterized by greenish yellow, brownish or claret-colored vomiting; the complete development of the dreaded "*black vomit*" leaving but a ray of hope. At this period the temperature of the skin falls, and the powers of the system all sink rapidly; the pulse flags, and perhaps intermits; the tongue becomes dry, black and shrivelled; the breathing irregular

and laborious; cramps seize the calves of the legs and the bowels, the whole countenance loses its natural life-like expression; the extremities become cold; colliquative sweats, petechia in protracted cases; diarrhœa, hæmorrhages, loss of intellect and coma occur, and, finally, convulsions and dissolution end the scene.

This is only a brief outline of the more ordinary symptoms and course of the malady, and will, we trust, serve to aid the inexperienced practitioner in his diagnosis. Each case, however, must necessarily present modifications according to the predisposition, habits and peculiar circumstances of the individual attacked. We give a few memoranda of some of the earlier epidemics.

In 1825 the yellow fever was carried to Washington, Mississippi, by the people, flying from Natchez. Its course there is given by Dr. Monette: The commencement in almost every case was between midnight and morning, with stretching or uneasiness and yawning, slight sensation of cold, though not a chill; the rigors short and followed by ardent fever; skin hot and dry, harsh to the touch; countenance flushed, and scarlet color; indescribable anxiety; eyes watery or suffused with blood. Pain in various parts of the body, worst in the head, eye-balls and back; sensation of soreness in the left umbilical region; functional derangement extensive; disease hastening on to a fatal termination. During the first days of the disease, frequent eructation of wind; burning and distention of the stomach. The stage of excitement continued from 1½ to 3 days. Then the stage of collapse ensued; pulse became feeble, extremities and surface cold; when free stimulation can alone prevent extinction of life. A stupor generally prevailed from the commencement, with fulness in the head, tightness across the eye-brows, pain and soreness in the upper portion of the globe of the eye and levator muscles; the patient therefore lay with eyes closed, and inattentive to surrounding objects. Delirium in the lighter form common, but not furious. The tongue livid, in the first stage covered with white mucus; in advanced stage, brownish, dry and extremely rough. The surface hot and dry until collapse commenced; in severe cases no means succeeded in exciting favorable diaphoresis till the approach of death was shown by the clammy and cold sweat. Pulse, in first stage 90 to 120, full, frequent and soft; and this continued till death approached, when it became quicker, more feeble, progressively imperceptible. In some the pulse was diminished in activity by treatment. It then continued for 36 to 40 hours before death, slow, full and soft; apparently in all respects the pulse of perfect health, though death was rapidly approaching. The bowels were at first inactive; after purging was excited, the evacuations continued copious, numerous and watery, covered with white scum, seeming to be the mucous membrane of the bowels; great prostration and the hippo-

cratic countenance soon followed the operation of a purgative. No bile was passed from the stomach or bowels. The skin was not yellow in all cases. In some the whole body was deeply tinged like jaundice; especially just before death. The lungs are always deeply affected, and the disease seems to invade the body through the lungs.

Epidemic of 1839.—The population of Natchez in August was estimated at 5000, of these 255 died of yellow fever, besides a few more who were taken to the country. Many left the city on the commencement of the disease, and by the first of October not more than 1500 remained. Large numbers of the acclimated and blacks took the fever, of whom some died who had had it before. It commenced insidiously; many seemed exhilarated and boasted of their good health but a few hours before they were attacked. Others were greatly depressed, and indifferent to surrounding objects; horripilation increased till there was slight coldness of the hands and feet and sense of chilliness down the spine; lasting from a few minutes to some hours. In the mild cases the excitement was free; pulse from 85 to 100, full, firm, resisting. Skin hot and dry, and seldom yellow. Pain in the head, back and limbs moderate; restless, watchful, but rarely delirious; tongue moist and clean, or covered with thin white fur; considerable thirst; after a few hours the stomach irritable and sore to the touch; frequent vomiting of fluid resembling that of 1837; bowels slow; urine scanty and high colored; in fatal cases it was entirely suspended. In these soreness of the abdomen and vomiting increased; hiccough common; in some cases a morbid secretion of gas by the stomach was more distressing than the vomiting.

In more violent forms of the disease there was no appreciable chill; skin cool or moderately warm and of a leaden hue; excitement irregular, pulse varied from 100 to 130, with throbbing of the carotids; shrunk features; cold or cool extremeties; little pain; great oppression of the stomach, with soreness to the touch in some cases; tongue moist, pale, expanded, with a pale blue fur and red edges; thirst and distressing vomiting; constipation obstinate; evacuations, if procured, of a dark and muddy cast, or liquid and nearly colorless; urine scanty thick, dark; resembling black vomit, or totally suspended. In some cases black vomit early, and death occurred within three days. Many seemed to die without signs of inflammation; but from nervous exhaustion. In these there was no black vomit. The skin became invariably yellow after death.

Hæmorrhage from the nose was favorable, but from the mouth, bowels or kidneys always unfavorable, and generally followed by death.

The signs of convalescence or death were obscure. One man who had been sick six days was mortified, and death took place in ten hours more; though then, there were no symptoms of approaching

death. The mind was calm, pulse open, soft, 80 per minute, stomach quiet, but bowels liquid. No prophylactic but temperance was effectual. Calomel was relied on by many; but several were attacked when under its influence, and some died when highly salivated, though i was generally favorable. (Dr. *Hogg, W. Med. Jour.*, 1840, p. 418.)

Causes.—When animal and vegetable matters are submitted, for considerable length of time, to the daily influence of intense solar heat, and a certain amount of moisture in the crowded and filthy streets of cities, or other confined places a miasm is generated, which, under favorable circumstances, will cause yellow fever. Concerning the nature of this miasm, nothing is positively known; but it is evident that the continued high degree of temperature to which these substances are exposed, and the confinement of their noxious emanations within the limits of crowded cities develops a more virulent morbific agent than originates from a similar exposure of the same matters in the open country, or to a more irregular and less intense heat, such as usually occurs in more temperate localities. Among predisposing causes we mention:—too free use of animal food and stimulants; irregular habits, mental anxiety, depression of spirits, fear, grief, exposure to night air or to a burning sun, and, indeed, whatever else tends to debilitate the organism.

The nature of the specific poison that produces yellow fever, is still an enigma among medical philosophers. The opinion is gaining ground that the specific cause of this disease consists of minute fungous sporules. Mr. Hassell says, (*Lancet*, Feb., 1853,) that the matter of "black vomit," examined by him with the microscope, consisted of a vast number of irregular, brown-colored bodies, resembling blood discs, shrivelled and discolored, but insoluble in Acetic-acid. From this insolubility he inferred that they could not be blood discs, and that they must be sporules of a microscopic fungus, and that they might be importants agents in keeping up the vomiting.

The relation between yellow fever and intermittents will we think be found to consist in their being each produced by a specific malaria consisting of an infinitesimal fungus entirely distinct from all others, though in many respects they obey similar laws, as has been fully illustrated by Dr. J. K. Mitchell, of Philadelphia.

On no other theory yet proposed can we explain the introduction of yellow fever by means of trunks and unwashed clothing from infected places into new localities where it never appeared before. It has surely been often proved that yellow fever is a *non-contagious disease;* but it is equally well established that it can be introduced.

Thus, Dr. Holcombe, (*N. Amer. Jour. Homœop.*, 1856,) says he has seen enough in this year alone, to say nothing of two years previous, to convince him that the yellow fever as it appears on the banks of the

Mississippi, is "a palpably contagious disease, communicable by contact of a person's clothing. This little village of Waterproof, La., never presented a case of it until this year. It has raged above and below us, but never appeared amongst our population, the autumnal remittents and malignant intermittents when prevailing here were never known to turn into yellow fever, or be mistaken for it. A stranger from New-Orleans, sick of the disease, is landed from a boat, he convalesces and leaves; but in the course of a week others are taken, and very soon the constantly increasing virus infects the whole atmosphere, and we have more than 100 cases in the course of a month. A gentleman residing several miles out of Natchez rides into town to see his brother's family, sick of yellow fever, assured by the physician of its non-contagious nature. In a few days he sickens; next his wife, then the chamber-maid, then their children, and so on until 12 or 13 cases occur, all the persons in the place being exempt except those who came near the sick persons or the sick rooms. A negro accompanying his young master to college, is taken sick one night at a gentleman's country-seat remote from all towns and public roads, where every one else is and has been for weeks in perfect health. He gets well and goes away; but several of the family who were with him sicken, and three die of black vomit. It is now found that the same disease has also broken out at the place the negro started from, he having had the germs of the complaint in his system in a state of incubation. We need not adduce more examples. We have seen and heard of so many similar cases that we feel impelled to recommend unprotected, unacclimated persons to get out of its way, and to lend our cordial support to all sanatary, hygienic and quarantine regulations which may promise deliverance from its visitations."

These facts certainly prove that yellow fever can be conveyed from one place to another, and from one person to another; but we are also obliged to accept a vast number of other well-attested facts which would, if seen alone, prove that the disease is *not always* communicable by contact. We think, however, that all the facts on both sides of this long-debated question are explicable on the theory above alluded to. Yellow fever, if not always communicable by *contact*, is beyond all question a *communicable* disease; one that may be carried in trunks or clothing, in filth and animal impurities, which in darkness and dampness furnish the most favorable place for the growth of cell-spores. When thus carried to a northern city, these minute cryptogamic fungi encounter the usual difficulties of tropical plants attempting to establish themselves where the soil and climate are not the most favorable They *may* grow in New-York, though transplanted from Havana or Vera Cruz; but *if they do grow* it must be under the most favorable conditions; the soil, temperature, &c., on which the prosperity of the

whole tribe of fungi depends, must be favorable. The germs, when once ashore, may slowly migrate towards the land, and even by chance be wafted to other neighboring spots, where they may grow and create new *foci* of disease. As in such places yellow fever is an exotic, it cannot flourish as successfully as in its native climate; and it is always destroyed by the first frost. We thus see how it is that yellow fever, though *not contagious*, *can be imported;* that it spreads but little in northern villages; that it may become epidemic in cities in which great impurities are permitted to accumulate; that in the warmer cities of the South it *may* originate from cell-spores of the preceding season which the mild winter had not entirely destroyed.

It is then easy to understand how yellow fever *may* be imported, and we can also understand *why it is rarely done.* We may see why a disease *not contagious* may travel occasionally to a hamlet or village. And we may "account for its apparently spontaneous appearance in such places as Charleston, Savannah, and New-Orleans, in which the winter may not be severe enough to kill the germs, but may so effect them as to make their reaction difficult or partial." The New-Orleans Board of Health in the report of 1860, thus concludes:

"The data which precede are, we believe, amply sufficient to convince the most skeptical of the spontaneous occurrence of *sporadic* yellow fever in New-Orleans. We hope they will prove sufficient to men of the profession, as the medical history of the year 1860. The logical conclusion we may draw from the facts which we have cited, is, that it is of the utmost importance to protect the city from the *importation* of yellow fever, since the *imported* fever tends evidently to become *epidemic*, whilst indigenous yellow fever appears, on the contrary, to assume a sporadic character."

With the history of yellow fever before us, we are able to understand how a crew, perfectly healthy, may bring with them in the closed hold of their ship the germs of disease, which may afterwards infect those who unload the ship. These first cases may, after a few days be followed by other cases in the vicinity, originating from a new crop of cell-spores grown upon the land. On this theory we can explain, more satisfactorily than on any we have examined, the anomalies and inconsistencies of Asiatic cholera; "its progress along streams, its preference for the damp parts of cities, its domestication in India," its capricious choice of places in which to break out anew. We must presume that the specific causes of these two diseases are distinct from each other; but that the producing cause of each, most probably "consists of invisible organic spores, which are capable of being conveyed in the atmosphere, reproducing themselves where the proper soil is found in which they can grow, and dying out when this appropriate soil is not found." See "*Causes of Malarious and Epidemic Dis-*

eases," by J. K. Mitchell, M.D. Phila. 1847 and 1859. Also *Amer. Hom. Review.* Vol. II. p. 49.

PATHOLOGY.—Dissection of those who have died of this fever has shown no evidence of inflammation as the cause of death. Neither fibrinous effusions, adhesions, thickening, indurations or ulcerations, the common traces of inflammation have been found. The burning of the stomach, the tenderness on pressure are only evidence of "a perverted application of the nervous energies, emanating from the nervous centres," with depraved secretion, especially in the liver and kidneys. "The next remarkable effect, says Dr. Holcombe, "is the stasis of the blood; and when we recollect that the blood-vessels are supplied with nerves from the great sympathetic, we may readily conceive the dependence of this symptom, also, on the state of the ganglionic centres. The next symptom we might expect to be arrest of secretion, and so it is. A diseased organ already secreting badly, or abnormally, in which deteriorated blood stagnates, is not likely to secrete at all. The liver is generally the first to stop working; the kidneys the last. The matter vomited for some time previous to black vomit has seldom a trace of bile. Absorption, however, is still comparatively active. The bile last exuded from the hepatic cells, and stagnating in the radicles of the biliary duct, from absence of the *vis a tergo*, is taken up into the circulation, and gives the yellow tinge to the urine, skin, conjunctivæ. &c. The same thing happens in jaundice, and is a symptom of very little importance. The state of the liver, in yellow fever, is but one link in a long chain of morbid phenomena, and by no means the most essential one. The absorption of the last particles of urea, secreted in the cortical portion of the kidneys, is a more dangerous symptom, because urea is a prompt and fatal poison to the nerve centres." (*N. Amer. Jour. Hom.* Vol. III. p. 489.)

There is a progressive poisoning of the blood in yellow fever, as in other zymotic diseases. This "deterioration of the blood is not produced by the multiplication of virus in the molecular form." The virus enters the blood when the disease is propagated by contagion. It acts on the nerve centres as do other absorbed poisons, and the changes it produces there cause the vitiation of the blood that is seen in yellow fever. The change of color is often produced by apparently trifling causes. "A fit of passion produced almost instant jaundice, absorption of bile, effusion of yellow serum into the cellular tissue, conjunctivæ, &c., in Murat, when he was king of Naples."

The hæmorrhagic transudation of the second stage depends upon "the want of plasticity and arterialization of the blood, and the relaxed state of the capillaries, induced by their abnormal innervation." Black vomit, the most dreaded of these exudations is blood chemically modified by the gastric secretions. The vomiting preceding its appearance is

almost always intensely acid. The blood is poured out by a kind of *exosmosis;* for the membranes are free from any trace of rupture. The albuminous part of the effused fluid is coagulated into that finely-granulated state, compared to coffee-grounds, while the coloring matter, already dark by carbonaceous matters, is rendered pitch-black by the sulphuretted hydrogen and other chemical agents always present in the intestinal tube. This coffee-ground substance is only found in that tube, the hæmorrhages from other points being uniformly of dissolved, molasses-like blood." (*Holcombe on Yellow Fever.*)

Yellow fever shows itself in its most fatal form when concentrated, as on board a ship, and it can from such a point be propagated to an indefinite extent; but when it is diluted by being spread over a large part of a town, its virulence is greatly diminished; it then can only be propagated in the milder form, and is still further modified by being communicated from one person to another. The conclusions reached by Dr. Neidhard are:

1. That yellow fever will only show its most deadly effects when in its most concentrated form; 2. that there must be a peculiar susceptibility of the individual to this particular poison at the time of his exposure, in order to show its most fatal effects. These observations hold good with all epidemics.

The epidemic commenced in 1853 in Philadelphia, in the vicinity of a vessel which had arrived from Cuba, on the 12th of July. The crew were reported healthy on their arrival, but the hold emitted an offensive smell, when the bilge-water under her flooring was agitated by the pumps. The disease spread from the centre of South-street wharf, in the vicinity. The official reports showed 107 cases with a mortality of nearly eighty per-cent. Dr. Gilbert, the port-physician, and Drs. Sewell and Stokes reported, that black vomit occurred in twenty-six out of forty-four cases, and exhibited under the microscope the true blood corpuscles; the peculiar yellow, sometimes bronzed skin, was more apparent after death. The post-mortem examinations, made in eleven cases, showed invariably the yellow or ochre-colored liver, and the coffee-ground fluid or melanic blood in the stomach and intestines, as the true evidences of the malignant form of the fever.

Treatment.—The remedies most commonly applicable to the treatment of this affection are, *Ipecacuanha, Belladonna, Bryonia, Rhus, Arsenicum*, and *Aconite*. The other medicines likely to prove serviceable are *Nux-vomica, Mercurius, Veratrum, China, Sulphur, Cantharides, Carbo-vegetabilis*, and *Crotalus*. Dr. Taft, of New-Orleans, whose success in the treatment of yellow fever was so great as to attract the marked attention of a large number of citizens, and raised high expectations of important improvements in the management of this disease, relied chiefly upon the following remedies:

In the first stage: Aconite, Ipecacuanha, Belladonna, Bryonia, which were often used also in the next stage.—*Second and third stages.*—In addition to the above: *Rhus-tox., Arsenicum, Veratrum, Cantharides, Carbo-veg., Nux-vom.* These medicines were usually employed by Dr. Taft at the first attenuation, and frequently repeated, either singly or in alternation, as the circumstances of each case appeared to require.

Camphor.—In the cold stage tincture of Camphor, one drop every ten minutes, is effectual here as it is in the cold stage of epidemic cholera and of intermittent fever. Its *primary* effect "is a great reduction of animal temperature." The effect is but transient, it needs to be often repeated, and it is soon out of the way of the next remedy.

Aconite and Belladonna in alternation are the specific remedies for the first stage. "They are complements to each other in making out the whole morbid picture." These remedies followed by Ipecacuanha were sufficient for all the milder cases in late epidemics.

In the yellow fever of the Mississippi Drs. Holcombe and Davis of Natchez used, in addition to the above, the following remedies: Arsenicum, Lachesis, Crotalus, Mercurius, Colocynth, or Phosphorus. Veratrum for vomiting and abdominal pains. Tartar-emetic for prolonged and distressing nausea; also Chamomilla in cases of women and children. Cantharides for strangury, Nux-vomica in intemperate persons; Chamomilla, Sabina, or Secale generally caused the symptoms of threatened abortion to disappear. Rhus and Bryonia for the prostration, which followed the acute stage of the disease. Bell., Coffea, Hyoscyamus for nervous sleeplessness.

When the first symptoms declare themselves, as dizziness, slight chills, pains in the back and limbs, uneasy sensations at the epigastrium, with nausea, vomiting, and sensation of faintness, *Ipecacuanha,* at the third attenuation, should be immediately exhibited. This remedy may also be found serviceable during the second and third stages in alternation with some other article. During the further progress of the disease the following remedies will be found available.

Belladonna.—Glowing redness and bloated appearance of the face; eyes bright red and sparkling, or fixed, glistening and prominent; tongue loaded with whitish mucus, or yellowish, or brownish; pulse variable.

Dry burning heat; sharp, darting and shooting pains in the head; throbbings in the head; burning thirst; painful heaviness and cramplike pains in the back, loins, and legs; pressure, cramplike, and contractive pains in the stomach; inclination to vomit, or violent vomitings.

During the remission, melancholy; dejection; when reaction comes on, great agitation, with continual tossing and anguish.

ADMINISTRATION.—*Belladonna* is for the most part applicable to the first stage of yellow fever. One drop of the third potency may be given once in one, two, three, or four hours, according to the violence of the symptoms.

Bryonia.—Skin yellow; eyes red, or dull and glassy, or sparkling and filled with tears; pulse rapid, and full or weak.

Severe pain and sensation in the stomach, vomiting, particularly after drinking; burning thirst; pains in the back and limbs; headache aggravated by movement; eyes painful on motion; sense of fullness and oppression in the stomach and intestines.

Anxiety, with dread and apprehension respecting the future; loss of memory; delirium.

ADMINISTRATION.—Two drops of the first dilution in an ounce of water,—a dessert-spoonful every two hours until an impression is produced.

Rhus.—Surface of a dirty yellow color; eyes glazed and sunken; tongue dry and black; lips dry and brownish; pulse quick and small; loquacious delirium, or coma with stertorous breathing; constant moaning.

Distressing pain and burning in the stomach; nausea and vomiting; paralysis of the lower extremities; spasms in the abdomen; want of power over the abdominal muscles; colic; diarrhœa; difficulty in deglutition, and pain on swallowing.

Intellect dull and clouded; constant uneasiness; delirium.

ADMINISTRATION. Two drops of the third dilution in an ounce of water, a dessert-spoonful at intervals of one, two or three hours or more as the symptoms may require. When prompt effects are not observed from the third dilution, the first may be substituted in drop-doses. The higher dilutions in some cases are more effectual than the low.

Arsenicum.—Face of a yellowish or bluish color; eyes dull and sunken, with a dark mark under them; sclerotica yellow; nose pointed; coldness of the body, with cold and clammy sweat; lips and tongue brown or black; colliquative sweats; pulse irregular, or quick, weak, small and frequent, or suppressed and trembling.

Sense of extreme debility; dull throbbing, stunning or shooting pains in the head; burning or sharp and darting pain in the epigastrium or in the region of the liver; limbs feel stiff and useless; frequent evacuations with tenesmus, or painless and involuntary; oppression at the chest with rapid and anxious respiration; cramps in the calves of legs; great oppression at the stomach, with violent vomiting, especially after drinking; drawing and cramp-like pains in the abdomen; sensation as if a weight was pressing upon the abdomen.

Indifference; weakness of memory; stupidity; delirium, with great flow of ideas; loss of consciousness and of sense; raving.

ADMINISTRATION.—In urgent cases, a drop of the third dilution may be exhibited every half hour, until some change is produced in the symptoms. In less dangerous cases the intervals of administration may be lengthened as circumstances may require.

Aconite.—Suitable in the first and second stages, when there are burning and dry skin; red cheeks; full and rapid pulse; red and sensitive eyes; tongue natural or covered with a whitish slimy coat; lips and mouth dry; vomiting of mucus and bile; urine dark red.

Violent febrile reaction; sensation of intense heat; great thirst; acute pains in the temples, forehead, or on one side of the head; vertigo on rising; eyes weak and sensitive to light; pains and soreness in the back and limbs; nausea; general sense of debility; great heat and irritability of the stomach; short and anxious respiration.

When the fever is on, great anguish, anxiety, and restlessness; for the most part nightly delirium.

ADMINISTRATION.—A drop of the first dilution may be given in water every two hours, until the active febrile symptoms abate. *Aconite* and *Belladonna* may sometimes be alternated with benefit in the first periods of the disease.

REMARKS.—In a majority of cases a few doses of this remedy will be found indispensable during the first reaction. This corresponds with the experience of many physicians, who have treated the disease Aconite has been recommended as a specific for this disease.

Nux-vomica.—Skin yellow; face pale or yellowish; especially round the nose and mouth; lower part of the sclerotica yellow; eyes inflamed with redness of the conjunctiva; eyes surrounded with a dark circle and full of tears; tongue with a thick white or yellow fur, or dry, cracked and brown, with red edges; pulse variable.

Burning pains in the stomach; pressure or cramp-like pains in the epigastrium; vomiting of acid, bilious, or mucous matters; frequent and violent hiccough; eyes sensitive to light; vertigo, or pains in the head; tremors of the limbs; cramps in different parts; thirst for beer, brandy, or some stimulant; contraction of the abdominal muscles; loose discharges of slimy or bilious matters or blood; burning pains at the neck of the bladder, with difficulty in urinating; coldness, paralysis, and cramps in the legs; feet benumbed and cramped.

Excessive anxiety, uneasiness, fear of death; despair, or loss of consciousness and delirium, with moaning, or muttering.

ADMINISTRATION.—Two drops of the third dilution in one ounce of water,—a dessert-spoonful once in from two to six hours.

Mercurius.—Yellow color of the skin; eyes red, blood-vessels of sclerotica injected; eyes sensitive to light: paralysis of one or more limbs; tongue with moist thick white fur, or dry and brown mucus;

fæces variable; pulse irregular, or quick strong, and intermittent, or weak and trembling.

Excessive inclination to sleep, or restlessness from nervous irritation; sense of fatigue and debility; rapid loss of strength; dizziness, or violent pain in the head; violent convulsive vomiting of mucous and bilious matters; burning pain and tenderness of the stomach; constipation, or diarrhœa, with discharges of mucus, bile or blood; coldness of the arms and legs, with cramps; excitability and sensibility of all the organs.

Anguish and agitation; weakness of memory; apprehensions; discouragement; moroseness; raving.

ADMINISTRATION.—A grain of the third trituration in one ounce of water,—a dessert-spoonful every two, four, or six hours.

In a case of poisoning by Calomel, related by Hoffmann, black vomiting is mentioned as the chief symptom. This symptom is almost peculiar to yellow fever. Dr. Wood says, he "has employed Calomel in some bad cases of this disease, with the happiest results. In one of them the matter ejected from the stomach had begun to assume the flaky character of black vomit, and yet the patient recovered." (*Pract. Med.* Vol. I. p. 320.) It is only successful in homœopathic doses.

In the catarrhal bilious fever of 1838, Dr. Monette says, "the irritation of the bronchial tissue, upon the use of Calomel, was speedily transferred to the alimentary canal, and many fatal cases occurred under this practice."

In extreme irritation of the stomach from duodenal inflammation Calomel increases the intensity of the disease. It is the peculiar sensibility of this portion of the alimentary canal to Calomel that gives Calomel its importance in general practice. "In inflammation of the duodenum there is the most deadly sickness with efforts to vomit; tenderness over the region of the stomach; and the pylorus seems permanently constricted so as to prevent the passage of all ingesta. If the inflammation is severe or protracted, the skin becomes yellow. This symptom is present in duodenal inflammation, whether the case assumes the form of jaundice, bilious fever or yellow fever.

Veratrum-album.—Face of a yellowish or bluish color, cold and covered with cold perspiration; eyes dull, clouded, yellowish and watery; lips and tongue dry, brown and cracked; hiccough; coldness of the hands and feet; trembling and cramps of the feet, hands, and legs, evacuations loose, blackish or yellowish; pulse slow and almost extinct, or small, quick, and intermittent.

General prostration of strength; confusion of head or vertigo; deafness; difficult deglutition; intense thirst; violent vomiting of green bile and mucus, or black bile and blood; burning in the stomach; great exhaustion cramps in the stomach, abdomen and limbs; diarrhœa.

Timid; despondent; restless, loss of sense; coma or violent delirium.

Administration.—A drop of the third dilution in an ounce of water; a dessert-spoonful frequently repeated until an effect is apparent.

Sulphur.—External Indications.—Face pale, or yellowish; eyes red, or yellowish; aphthæ in the mouth; tongue dry, rough, and reddish, or with white or brownish, bloody or purulent saliva.

Physical Sensations.—Dizziness, or sharp pains in the head; itching and burning pain in the eyes; roaring in the ears; nausea, with trembling and weakness; vomiting of bilious, acid, bloody, or blackish matters; pressure and pain in the stomach; pains in the back and loins.

Mental and Moral Symptoms.—Melancholy; sad; timid; undecided; wandering.

Administration.—A grain of the third trituration in an ounce of water; a dessert-spoonful every four or six hours, extending or diminishing the intervals according to the exigencies of the case.

Tartar-emetic.—Dr. Leon, of New-York, formerly of New-Orleans, says, that in yellow fever he found the following symptoms yield readily to this remedy: nausea or vomiting, with a sense of sinking at the stomach, as if the patient would not survive a moment; general prostration of the whole system; white fur on the tongue; profuse cold perspiration; rapid and weak pulse; drowsiness, and disposition to go to stool. He gave one grain of the first trituration to six ounces of water, in doses of a dessert-spoonful every hour or two. This course generally subdued this group of symptoms within twenty-four hours. Dr. Leon also employed it with success in the bilious fever of Louisiana and Mexico.

Cantharides—is sometimes indicated in the third stage with complete insensibility, cramps in the abdominal muscles and legs, suppression of urine; hæmorrhages from the stomach and bowels, and cold sweat on the hands and feet. It may be employed at the first dilution, a drop every half hour, until a decided impression is produced.

Carbo-vegetabilis.—Has been employed with success in the third stage.

Nitrate of Silver.—Dr. Holcombe used it with success when the patient, in spite of the preceding remedies, was sinking; "the vomiting became worse, with brownish stains in the matter ejected," or appearances indicating hæmorrhage from the gastric mucous membrane. He used the second centesimal trituration. Even this small dose, of a teaspoonful from a half tumbler of water, in which had been dissolved "one ten-thousandth part of a grain of Nitrate of Silver," often produced the aggravation of nausea. When this remedy or Lachesis did not produce improvement the case was considered hopeless.

Sulphuric-acid.—Yellow fever, with hæmorrhage and symptoms resembling gastritis; large shreds of mucous membrane being ejected.

Crotalus-horridus.—Dr. Holcombe, in 1853, pointed out the resemblance of the symptoms of yellow fever to the pathogenetic effects produced by the virus of certain serpents, particularly Crotalus and Lachesis, and from the use of the latter substance he obtained satisfactory results.

The next year Dr. W. L. Humboldt said he had already tried the experiment of inoculating with the virus of the rattle-snake, as a prophylactic against yellow fever; and that, in the course of nine years, he had inoculated 1438 individuals in New-Orleans, of whom only seven afterwards took the disease, and two died. He says he derived the idea from the observation that galley-slaves, brought from Mexico to Vera Cruz, if bitten by vipers on the way, always had decided symptoms of yellow fever. His process consisted in inoculating with the virus of some serpent (not known to others), and treating the symptoms produced with the poison with a syrup of the Mikamia-guaco, the well-known antidote to all snake-poisons.

In 1854, Dr. Humboldt made his experiments of inoculation on a large scale, in Cuba, under the auspices of the Governor General.

Symptoms produced by Inoculation, as modified by the Guaco.—At the moment of inoculation, vertigo, which soon passes away; nervous trembling, which is rarer, but lasts a long time.

After seven hours the pulse is permanently modified; it is either too frequent or too slow, stronger or weaker. In eleven hours there is febrile heat. At the end of fourteen hours, headache, want of appetite, thirst. At the end of sixteen hours, red countenance, injection of the conjunctiva, epiphora.

The swelling of the gums is observed from the commencement, to which are added slight colic-pains produced by the remedy (Guaco), which the patient has taken immediately after inoculation.

At the end of eighteen hours, pain in the gums, the margins of which redden round the teeth; pain of the salivary glands and in the direction of the different nervous branches of the face and teeth.

In nineteen hours, pains in the lower jaw, and in the direction of the submaxillary nerve; lassitude.

In twenty hours, bitter taste; drowsiness, coryza, and œdema of the face.

In twenty-two hours, constrictive sensation of the throat, without visible alteration of the mucous membrane.

In twenty-three hours, yellow jaundice. In twenty-four hours, hæmorrhage from the gums.

In twenty-eight hours, yellowness of the sclerotica, and shivering.

In twenty-nine hours, angina tonsillaris. In thirty hours, pain in the kidneys.

In thirty-six hours, swelling of the eyelids. In thirty-eight hours, pain of the muscles and joints.

In forty hours, toothache. In seventy-two hours, swelling of the lower lip. At different hours, sexual excitement. During convalescence, itching of the cuticle; cutaneous eruptions of various kinds.

The inoculation always produced a decided effect on the pulse. In those who had naturally a quick pulse the inoculation caused a diminution of its frequency, while it accelerated the pulse in those in whom it was naturally slow. On the whole, the number of cases in which the pulse was diminished was greater than that in which it was accelerated in proportion of sixty-two to twelve. There was also a notable weakening of the force of the pulse in every case.

Headache was one of the most common symptoms. It lasted on an average twenty-one hours. It was usually seated in the frontal and orbital region. Increased heat of skin in all, whether the pulse was increased or diminished in frequency.

Deglutition was difficult in all cases, the tongue coated in most.

Itching of the skin was complained of after the acute symptoms had subsided.

Manzini, the reporter of Humboldt's experiments, arrives at the conclusion that "the inoculations produce a portrait of the most important phenomena of yellow fever. These consist of an expression of countenance of a peculiar kind, similar to that in eruptive forms; to which is joined a drunken appearance in the eyes, which are injected; after which come headache and pain in the loins, the changes in the gums, and, later, the jaundice, the hæmorrhages, and suppression of urine."

From the work of Dr. Neidhard, of Philadelphia, "On the Efficacy of Crotalus-horridus in Yellow Fever," &c. (New-York, Radde, 1860), we learn that the inoculations of Humboldt embraced 2477 individuals belonging to the Royal Army and Navy. The exact result of this is not given. On page 77 it is stated that "out of 701 inoculated at the Military Hospital, 121 were attacked by yellow fever, of whom 47 died."

Whether the inoculation was successful or not in its object, it at least furnished us with a well-defined group of symptoms, closely resembling yellow fever.

Dr. Neidhard had only the opportunity of observing the results of Crotalus on five cases during the epidemic of 1853; but the good effects he observed in these cases, from the use of Crotalus in the second and third trituration, leads him to believe it to be the sovereign remedy in yellow fever. He employs it only in triturations, as alcohol destroys the virus. He also had the opportunity of employing it in a few cases in 1858, where it was again efficacious, except in the case

of one patient, whose constitution had been undermined by intemperance, having taken six or seven glasses of brandy *per diem*.

Diet.—Arrow-root, rice water, black tea with a little sugar and cream in it, are proper in the first stage, as well as the second in which canine hunger is sometimes distressing. A teaspoonful of pure cream, at considerable intervals, is safe and agreeable. Small quantities of ice at a time, held in the mouth, relieve the thirst.

The results of homœopathic treatment are well shown by the experience of Drs. Holcombe and Davis in Natchez, in 1853. The former treated 140 cases of unequivocal yellow fever, losing 9 cases. Dr. F. A. W. Davis, who is called by Dr. Holcombe "the able pioneer of homœopathy in this region," treated 415 cases, of which 24 died. In subsequent years these cases were extended to 1016 cases in all, of which 55 died, equal to a mortality of 5.4 per cent.

6. COLD PLAGUE.—Pneumonia Typhoides.

This once dreaded epidemic has presented itself under different aspects in different parts of the American republic, and has now become so far domesticated as to have lost its original specific character.

Its first appearance was in Connecticut, in 1771; and next in Virginia, in 1796. In 1812 it made its appearance in New-York and several of the New-England States; and about 1814 spread over the new States of the West. In subsequent years it grew milder or less decided in its characteristic features, and attracted less attention. As late as 1823–4 some cases occurred in Missouri. Wherever it appeared all diseases immediately assumed its peculiar livery, and frequently terminated in death unexpectedly.

The *Typhoid Pneumonia*, called "cold plague," from the coldness and torpor of the skin in its first stage, was a pneumonia combined with a remittent bilious fever of a typhoid type. Sometimes the pneumonic feature predominated, sometimes those of typhus fever.

Symptoms.—The disease began with a chill of unusually long duration, and the danger was generally proportioned to its length. Sometimes there was sudden prostration of strength and perfect torpor of the skin. Sometimes there was congestion of the lungs, evinced by violent pain in the chest, difficulty of breathing, pain in the back, and in some one or all the limbs; nausea and vomiting of bilious matter; usual symptoms of bilious fever; yellow eyes, skin, and tongue; others had a dysenteric disease. But generally the pneumonic symptoms were the most alarming. The pain in the chest extremely acute in some, was only a heavy stricture and heaviness in others, with difficulty of respiration. The tongue at first coated with white, with yellow middle and lively red at the edges. Cough; expectoration tinged with blood.

In other cases the chest was less affected, but the symptoms showed extreme debility, disposition to syncope. The heat of the skin was sometimes diminished, seldom increased. The pulse was in many cases little altered, in others, it was slow, remittent, depressed; or, if frequent, not tense, but feeling like an elastic tube partially filled. The bowels were generally constipated, even when dysentery attended. The head was painful, delirious; there were false perception ending in stupor. Sickness of stomach and vomiting.

Diagnosis.—This was always sufficiently clear upon observing the chief symptoms already given, and recognizing the fact of the prevalence of the epidemic. In sporadic cases the decision might not be positive, but the features of prostration and coldness of the skin, long continued, were characteristic.

Causes.—The only remote cause must be sought in a peculiar epidemic state of the atmosphere, which can not be explained. It cannot depend on anything that is common to all places where the disease appeared, for it extended over large tracts of country in which no generally prevailing causes of disease could exist. Wherever its influence reached, all the inhabitants who lived within the territory invaded, became subject to some diseases bearing some part of its general character. Where it prevails it may be excited by all the usual causes of disease, which in some other situation would cause fever, ague, dysentery, pneumonia, or other disease. It is most likely to commence in warm damp weather; to attack those who live on poor diet, or wear insufficient clothing; young persons exposed in bad weather, or who have been debilitated by previous disease, are peculiarly liable to attack. But no class of persons can claim exemption from its power.

Pathology.—Dissection has shown the heart and large vessels, and particularly the lungs, engorged and distended with blood. The air cells were so congested that the air could not come in contact with the minute ramifications of the bronchia. This peculiar congestion of the lungs was the chief cause of sudden death in most cases. When life was prolonged a sufficient time it ended in inflammation. Congestion of the other viscera, ending also in inflammation, existed in bad cases in which the lungs suffered less. In all of these its pathology was almost identical with that of typhus fever.

Prognosis.—This was favorable if the treatment commenced early; but this was not general, and a large proportion, perhaps nearly one-third of the persons attacked, died. Among the unfavorable signs were: Heavy stupor and coma, in a case that had commenced with a protracted cold stage, with slow reaction; tongue covered with dark brown crust; purple or bluish spots about the lips, breasts, and arms, giving the disease the name of "spotted fever."

TREATMENT.—On this point it is only necessary now to refer to the remedies given below, and to the treatment of congestive malarial fever, p. 513.

7. PNEUMO TYPHUS.

The medicines which have proved most efficient in this form of disease are: *Aconite*, *Bryonia*, *Phosphorus*, *Ammonia-carb.*, *Acid-phosph.*, and *Merc.-viv.* When the affection is characterized by accelerated circulation, great heat of skin, thirst, difficult, anxious, short, and rapid breathing, with painful stitches in the chest and side, when inspiring; cough on motion; full, hard, and rapid pulse, *Aconite* should be administered. A dose of the third dilution, every hour or two, until an impression is made upon the symptoms.

After *Aconite* has been administered, and symptoms remain unsubdued, it will be necessary to resort to some of the following remedies, the instructions for which we proceed to describe.

Bryonia.—Symptoms the same as under *cerebral typhus*, p. 545.

Physical Sensations.—Confusion, fullness, heaviness, and swimming in the head; headache, aggravated by movement or opening the eyes; respiration difficult, short, anxious, rapid, or sighing; oppression of the chest; stinging in the chest when coughing or breathing deeply. Shooting pains in the chest, side, and abdomen; pains in the limbs on movement; nose swollen, dry, and painful to the touch; throat dry, with sharp pains when touched or in motion; nausea and oppression at the stomach; constipation and diarrhœa alternating, the one in the night, the other during the day; urine scanty and high colored; cough, with stingings and stitches in chest and side, with yellowish or bloody expectoration, or pains in the head; shooting pains under the left shoulder-blade when coughing; tongue dry, contracted, dark, or yellow; pulse rapid and full, or quick, weak, and irregular.

ADMINISTRATION.—Same as under *cerebral typhus*, p. 545.

Phosphorus. EXTERNAL INDICATIONS.—Yellow, brown, coppery, or bluish spots upon the skin; viscid secretion about the eyes, particularly at night; quivering of the eyelids; dryness and obstruction of the nose; face pale, dingy, or red and bloated; eyes sunken and surrounded by a dark circle; lips dry and bluish; ulcers at the corners of the mouth; tongue with a dry and dark, or whitish fur; pulse quick and hard.

Stunning headache, vertigo, and dizziness, worse in the morning; smarting or burning sensation in the eyes; throbbing in the ears; deafness; offensive discharge from the nose; dryness and raw sensation in the throat; nausea and pains in the stomach; uneasiness and painful contraction of the abdomen; stitches and roughness in the

chest; expectoration of mucus, slimy, sanguineous, or purulent matter; sharp pains in the shoulder-blades; stiffness of the neck; trembling, coldness, and numbness of the limbs; great oppression at the chest, with distressed and anxious respiration.

MENTAL AND MORAL SYMPTOMS.—Despondency, anguish, and fear, especially at night; disposition to weep or laugh.

ADMINISTRATION.—A drop of the third dilution in an ounce of water; a dessert-spoonful once in two to six hours, until an effect is perceptible.

Ammonium-carb.—Miliary eruptions, or redness of the skin; eyes dry; nose obstructed with dry coryza; face pale and bloated; lips dry and dark colored; fæces in small hard lumps; respiration short and anxious; breath offensive; tongue covered with slime or vesicles; pulse weak and rapid.

Great restlessness at night; drowsy during the day; disturbed sleep at night, with frightful dreams; pains in the head; nausea; ringing in the ears, worse at night; sensation of excoriation in the mouth and throat; constant thirst; constipation and itching at the anus; frequent desire to urinate during the night; hoarse, or short dry cough, with tickling and roughness in the throat; mucous and sanguineous expectoration; sharp pains in the chest and sides, on coughing, breathing, or moving; drawing pains in the nape of the neck and small of the back; extremities stiff and numb; cramps, coldness, and swelling of the feet; excessive weakness of the limbs; right side worse than the left.

Discouragement; anxiety; oppression; anguish; sad, weak, timid; mental distress, worse at night.

ADMINISTRATION.—A grain of the first trituration every two, four, or six hours, as the nature of the case requires.

Acidum-phosphoricum.—Eruption of small pimples on the skin; redness of the skin; coma; eyes dull, glassy, fixed, with pupils dilated; coryza, with redness of the nostrils; face pale, or covered with pimples; teeth yellow; gums swollen and bleeding; tongue covered with thick and adhesive mucus; fæces hard, knotted, and slimy; urine clear or white, depositing a white sediment; pulse quick and weak.

Great physical and mental prostration; pains in the chest, abdomen, and head, worse *during repose*, relieved by motion; head confused, bewildered, with pains when moving it; eyes weak and sensitive to candle-light; music painful to the ears; cheeks hot and burning; nausea and oppression at the stomach; diarrhœa; frequent inclination to urinate; tightness and oppression in the chest; cough, with purulent expectoration; sharp pains in the chest; burning sensation in the hands and feet.

Indifferent, taciturn, peevish, stupid.

Administration.—Suitable in some cases of advanced pneumo-typhus. A dose of the third dilution may be given once in four to six hours.

The following medicines may be named as appropriate under certain circumstances in pneumo-typhus, viz.: *Lachesis*, *Tart.-emet.*, *Senega Mercur.*, *Lobelia-inflata*, *Rhus*, *Arsenicum*.

8. HECTIC FEVER.

Diagnosis.—The ordinary symptoms of this fever are: daily febrile paroxysms, general debility, emaciation; skin pale, face often tinged with the "hectic flush," irritable stomach, loss of appetite, moderate thirst, night sweats, tendency to perspire through the day, diarrhœa, pulse quick, small, and sharp.

Causes.—The combination of symptoms denominated hectic fever in most cases, proceed from long-continued and profuse suppuration, but they may arise from protracted local irritation without suppuration. Some writers suppose that hectic can only proceed from the absorption of pus; but this is erroneous, as the symptoms of hectic often make their appearance before suppuration occurs. In nearly all instances it is a secondary affection, consequent upon either protracted disease in some vital part, some of the joints, or of some extensive surface. It proceeds more readily from diseases of the "bones, ligaments, and tendons, than from those of the muscles, skin, cellular membrane, &c." (*Sir A. Cooper.*)

It may, then, be considered as a constitutional disturbance, originated and kept up by some previous local disease, and which cannot be permanently cured until the original cause upon which it is dependent is eradicated or removed.

In those cases where it is kept up by the incurable diseases of the joints, bones of the extremities, or other parts which can be safely removed by the surgeon, amputation or excision should be at once resorted to, and the hectic symptoms will speedily disappear. Mr. Hunter remarks that "a hectic pulse at one hundred and twenty has been known to sink to ninety in a few hours after the removal of the hectic cause." Several instances have occurred in our own practice in which an almost immediate and entire cessation of the hectic symptoms, such as sleepless nights, febrile paroxysms, night sweats, diarrhœa, rapid pulse, &c., has resulted from amputation or excision of the offending parts.

When the original cause is a suppuration of some important organ, like the lungs, liver, stomach, &c., our prognosis must generally be unfavorable. In these instances it is of the utmost importance to the homœopathic practitioner that he make a thorough investigation of

all remote causes, in order to arrive at an accurate knowledge of the latent and original sources of the malady. He will thus be able to direct his remedial applications with judgment, and afford to his patients the only possible chance of cure.

TREATMENT.—In the selection of remedies everything must of necessity depend upon the original cause—its seat, nature, and violence and upon the secondary consequences to which it gives rise. It should always be a prime object to direct our most potent remedies with perseverence against the local affection, and if any latent or apparent influences exist, against these also.

If we are called to a case of hectic fever, proceeding from an inflammation of a scrofulous character, advantage will be derived from the use of some of the following medicines: *Sulphur*, *Aurum-mur.*, *Calcarea*, *China*, *Iodine*, *Ol.-jecor.-asel.*, *Acid.-nitr.*, *Acid.-mur.*, *Acid.-phos.*, *Phos.*, *Arsenicum*, *Silicea*, and *Mercurius*.

In cases proceeding from syphilitic or mercurial diseases of the bones, ligaments, &c., the medicines adapted to the cure of these disorders should be selected.

If a chronic miasm, whether psoric or otherwise, originated the disturbance, then strike deeply at the original cause with *anti-psorics*, as well as at present symptoms, and good results may accrue in apparently desperate cases.

ORDER II.—EXANTHEMATA.

Eruptive Fevers.

GENUS I.—FEBRILE CUTANEOUS DISEASES.

The general characteristics of the exanthemata are derived from:

1. The presence and course of the accompanying fever.
2. The course of the eruption, which is very likely to be symmetrical on both sides of the body.
3. From the law of universal susceptibility.
4. From the law of contagious origin.
5. From the law of non-recurrence.
6. From the law of epidemic diffusion.

The fever is almost always inflammatory, as in nineteen-twentieths of the cases of small-pox and measles. Low nervous fever characterizes scarlatina and erysipelas. Malignant fever appears in some cases of small-pox and scarlatina.

Origin of Eruptive Fevers.—It was believed long before the discovery of vaccination that eruptive fevers were originally derived from cattle. As late as 1844 small-pox, measles, and scarlet fever were unknown in Australia and Tasmania.

Communication by Contagion.—The infective poison or *materies morbi* may obtain access to the human body by three modes:

1. By inhalation of air tainted by the breath or perspiration of the patient. This is called infection, and is seen in small-pox, measles, plague, typhus, scarlatina.

2. Miasms gain access by solution in the fluids or humors, and subsequent application to the unbroken surface. In this way *psora*, *tinea capitis*, gonorrhœa, and venereal disease are communicated from one person to another. This mode is called *contagion*, *a contactu corporis*. In this case the materies morbi must be dissolved. The germ of disease is conveyed in the fluid form into the interior of the frame, where it mixes with and taints the blood.

3. Some of the morbid poisons are not admitted into the body unless they are applied to an abraded or wounded surface. Of this kind are hydrophobia, vaccinia, farcinoma or glanders.

Dr. Farr, in his Fourth Report proposes to call "all those diseases which have the property of communicating their own action and affecting analogous transformations, *zymotic diseases* (from ζυμοω, to ferment), and the disease itself *zymozio*. Zymotic diseases will comprehend all those associated under the names of epidemic, endemic, and contagious maladies."

One remarkable characteristic of zymotic miasms is, that they operate upon the healthy body without the aid of predisposing causes. A man in *perfect health* contracts small-pox or measles; and this state of the body is the best possible for insuring the success of inoculation and vaccination. There are then no predisposing causes of these diseases.

"All miasms of animal origin are capable of attaching themselves to *fomites*, and (provided they be excluded from the air,) of retaining their communicating property to a considerable length of time. This great law of nature is of universal application, and is the foundation of that important practical measure, *quarantine*. Thus tinea capitis spreads by means of hats, combs and brushes; Egyptian ophthalmia by towels and sponges; small-pox and typhus by clothes and bedding; plague by personal apparel, and all rags or substances of rough surface or downy texture. Forty days was formerly considered a sufficient period to permit the poison to develop itself into an active form; it is now known that the incubative stage of the plague never exceeds seven days. Therefore a week of quarantine would be sufficient; and two weeks should satisfy the most scrupulous anxiety. The poison may be carried in clothes of wool, cotton, leather, every kind of apparel. Metallic substances can not harbor contagion.

Each year is distinguished by the supremacy of some master-epidemic of either small-pox, measles, scarlatina, whooping cough, erysipelas. In some years, says Dr. Gregory, more die from one of these diseases,

in another year from another; but it is observed that about the same number in the aggregate die each year; as putting all together, 350,000 must annually die in England and Wales. The question has been asked, "Why this vicarious mortality?" It is answered that "the sickly hot house-plants of the nursery must be weeded out. If they don't die of one epidemic they must of the next."

Effects of the Matter of Contagion on the Human Organism.—1. *Palpable Contagions.*—In every form of *parasitic*, *fungous* or mere *cell* organization the poisons which are capable of reproducing themselves in the body have the power of exciting the most fearful commotions in its various organs. The lower organized beings of both the animal and vegetable world are always developed in the midst of previously existing disorganization, putrefaction, impurity. When transplanted to any soil suitable for their growth and propagation, they are always deleterious though they differ in the degree of their malignity. The injury caused by the lichens and mosses to trees on which they grow may be small. The strength of the live-oak of the South allows it to spare without *perceptible* injury the small amount of sap needed by the creeping *tillandsia usneoides*. A considerable degree of health may exist in persons whose intestines are infested with the lumbricus or other parasites. But we think they are always deleterious to some degree; and, generally, they are highly, fearfully so; and "many diseases are proved to be dependent upon or arise from parasites." (Mitchell.) Some parasites are peculiar to the human body, and have never been found any where else. In some diseases the true *materies morbi* is believed to consist of minute parisitic *animalculæ*, and in other diseases the poison is found in the form of minute fungous plants. Either when transplanted into a human body, "finds," says Dr. Dickson, "in the diseased body its nidus, its soil, its local habitat; its transference to a healthy body is followed by the production of such disease as fosters it and propagates and multiplies it infinitely."

A malignant, diseased or contagious *cell*, such as we have in a case of *cancer*, is always found in the animal body in connection with that specific form of disease. When it is transplanted to another body it can commence the work of multiplying itself or of transmitting the materials of growth and supply into a pernicious organized structure, every new cell of which will be like itself, and like it capable of self-multiplication. This mode of vegetable increase and germination has been supposed to be really a form of *fermentation*. In the case of each specific poison there is a peculiarity which distinguishes it from all others. See *Cancer*.

2. *Impalpable Contagions.*—These are known only by their powerful effects, being always invisible and imponderable, but efficiently active at considerable distances. They are chiefly, perhaps entirely,

confined to the febrile class of contagious or *infectious* diseases, whereas none of the non-febrile contagions are diffusible in the air, but require *contact*. In small-pox the atmosphere of the patient becomes charged with contagious atoms, which have been eliminated from the body and radiated from it. In some instances it may be supposed that the animal exhalations accumulating among the densely crowded population of cities, furnish all the elements essential to the germination and growth of the organic germs, whether fungous or animalcular, of which contagion consists; they may then multiply and propagate themselves in the atmosphere, and may extend widely, promptly among the crowded population of large cities. Diseases commonly contagious or infectious within short distances only, are then said to become *epidemic*, pestilentially prevalent. Healthy bodies may be infected in great numbers without any known approach to a diseased body. Dr. Dickson says, in 1847–48 he "attended forty patients with small-pox," not one of whom had been exposed to it. In none of these did it arise spontaneously; the seeds of the disease were imported from abroad. Among the diseases which display contagion in both the *palpable* and *impalpable* forms, we may enumerate small-pox, plague, erysipelas, hospital gangrene, varicella, scarlatina, measles, and some others. Glanders which always originates among horses, may be communicated among them by inoculation as well as by diffusion in the air; in common with vaccine and hydrophobia it is communicable to man only by inoculation or direct contact to an abraded surface. (*Amer. Jour.* July, 1849, p. 107–118.)

3. *Zymotic Diseases which are always Epidemic and sometimes Contagious.*—Here we may enumerate typhus, pertussis, puerpural fever, infectious dysentery, yellow fever, and cholera Asiatica. These diseases are all possessed of separate specific characters, are capable of diffusion in the atmosphere as epidemics; though they are contagious, at least communicable in some degree; they are self-multiplying; and the specific poison of each is capable of exciting its own peculiar fermentation by which it can radiate from a single centre the germs by which thousands can be infected from a single centre.

1. SCARLATINA.—SCARLET FEVER.

This fever has been divided into three varieties, namely:

1. *Scarlatina simplex;* 2. *Scarlatina anginosa;* 3. *Scarlatina maligna.*

In its simple form scarlet fever is not attended with danger, but runs its course mildly like a simple continued fever, and terminates in five or six days in convalescence.

In the other varieties, however, inflammations and congestions often

supervene soon after the attack, and if not promptly met by suitable remedies, gangrene, sloughing and fatal disorganizations occur in the throat, larynx and other important parts of the organism.

Scarlet fever is of much more frequent occurrence in the fall and winter than during the summer months. Its attacks are usually confined to children that have passed the nursing period, and persons under twenty years of age; but it may occur at any time of life from infancy to old age.

1. SCARLATINA SIMPLEX.

Diagnosis.—Shiverings, succeeded by heat, moderate thirst, frequent pulse, slight soreness of the throat, nausea, loss of appetite, headache. After these symptoms have continued about forty-eight hours, a scarlet eruption makes its appearance upon the face, extending gradually downwards to the neck, trunk and extremities. This eruption consists of an immense number of fine pimples. (aptly compared by Dr. Armstrong to a boiled lobster shell,) either running together and diffusing themselves uniformly over the skin, or appearing in patches in different parts of the body. Upon the appearance of this eruption many unpleasant symptoms, as nausea, oppression at the stomach, dyspnœa, &c., abate, and the case then progresses until the fourth or fifth day of the fever, when desquamation of the cuticle takes place, and a happy convalescence usually ensues.

II. SCARLATINA ANGINOSA.

Diagnosis.—The anginose variety of scarlet fever is ushered in with chilliness and shiverings, succeeded by intense heat and pungency of the skin, frequent and hard pulse, nausea, vomiting, headache, sore throat, painful deglutition, intense thirst, pain and tenderness of the epigastrium, abdomen tender; pain and stiffness of the neck; tongue covered with a whitish or yellowish fur, through which the papillæ are seen red, inflamed and prominent; fauces, throat and tonsils swollen, deep red, inflamed or ulcerated; eyes red and injected; voice thick and hoarse; sometimes dyspnœa and cough, and universal tenderness of the whole surface.

These symptoms continue for an indefinite period, varying from two to five days, when the eruption shows itself, being uniformly diffused over the body; the skin desquamates in from six to eight days from the commencement of the fever, the febrile symptoms all subside, the ulcers in the throat granulate kindly, and a speedy convalescence obtains. On the contrary, if the eruption prematurely disappears from the surface, the ulcers assume a foul and unhealthy appearance, secreting an an acrid and highly irritating fluid; while the fever continues to rage with unabated severity, we may have a supervention of abdominal,

bronchial, or cerebral inflammation, which will complicate the malady in a serious and perhaps fatal manner.

"In this fever," says Dr. Southwood Smith, "the temperature, as indicated by the thermometer, rises several degrees higher than in any other." The pulse is also more rapid and strong than in almost any other fever, indicating conclusively that it is an affection of an inflammatory character.

III. SCARLATINA MALIGNA.

Diagnosis.—*Scarlatina maligna* was formerly known in some parts of our country under the name of "putrid sore throat," and is at present designated by some writers as *scarlatina typhoides*. It is unquestionably one of the most dangerous maladies with which the physician has to contend. It generally commences with the common precursory symptoms of the anginose form, which, however, very soon give way to a train of symptoms bearing a close resemblance to typhus. The eruption is either entirely wanting, or makes its appearance only partially, in irregular blotches of a pale color; the heat of the skin often subsides below the natural standard; the pulse becomes very frequent and weak; the countenance assumes a besotted expression; the eyes become dull and suffused; the throat is filled with ash-colored ulcers; fauces, larynx and bronchia inflamed and swollen; an acrid discharge issues from the nostrils; the tongue, at first red, soon becomes dry and black; the surface in the advanced stages acquires a dark red or mahogany color, and petechia, diarrhœa and hæmorrhage finally ensue. The ulcers in the throat often slough, and extend in all directions, involving in their ravages the cartilages of the larynx and the soft parts within the nostrils.

If the disease seizes particularly upon the brain, lungs or abdominal viscera, there will be a predominance of those symptoms which characterize the disorders of these particular parts. From the tendency of this malady to these different organs, some authors have subdivided scarlatina maligna into the inflammatory, congestive, and mixed varieties. Examples have occasionally occurred in our own practice, in which, in the very onset of the malady, those symptoms have appeared, indicating congestion of the brain,—as coma; slow, oppressed and noisy respiration; sighing; face pale or livid; skin cold; pulse slow and irregular; pupils contracted or dilated. In these cases the eruption seldom comes out well, but is of a pale color, and shows itself irregularly in different parts of the body.

In other instances the inflammation seizes upon the laryngeal, bronchial, or intestinal mucous membranes, thus often deciding the case against the patient, when the local affection of the throat seemed to be progressing favorably.

Causes.—Scarlatina can only proceed from a specific morbific contagion, respecting the nature of which we are entirely ignorant. Whether this contagion is generated and diffused solely by those suffering under the disease, or whether, as some pathologists assert, it may be generated in the atmosphere independently of the animal body, is a question which admits of discussion, although we entertain the former opinion. Of this we are confident, that when the agent is *infinitesimally* diffused in the air, it is capable of being absorbed into the circulation or at least of making its morbific impression on the sentient extremities of the nerves of the air-passages, and thus producing its specific effect on the organism.

Some have doubted the contagiousness of this affection, because certain individuals of families occasionally escape, while others are affected; but let it be remembered, that this happens now and then in small-pox, plague, typhus, and all other maladies which are universally deemed contagious.

We have before observed, that the contagion of typhus can not make a serious impression upon the organism, so long as every part is in a state of perfect health and vigor. The same remark will apply with equal truth to scarlatina. In these cases the tissues on which the poison operates are stronger than the noxious influence, and are thus enabled to resist its action until some cause predisposes the system to receive the impression.

Treatment.—*Belladonna.*—The provings of Belladonna upon the healthy subject, as well as the numerous successful experiments made at the bed-side of the sick, have stamped it as a remedy of distinguished importance in the treatment of scarlet fever. It has even been extolled by eminent practitioners of the old school, and in some instances adopted, both as a remedy in this disease and as a valuable prophylactic against it.

In *scarlatina simplex*, an occasional dose of this medicine at the third attenuation, will suffice to conduct the patient safely through the malady. Should the fever run high, the *Belladonna* may be advantageously preceded by *Aconite*.

In the *anginose* form, where there is intense inflammatory excitement, swelling and soreness of the throat, painful deglutition, quick pulse, burning hot skin, nausea, tenderness of the epigastrium, *Belladonna* is still the grand remedy. If the fever assumes a violent character, evincing a tendency to excite the inflammatory action in any particular structure, *Aconite* may here also be administered with advantage, either by itself, or in alternation with *Belladonna*. So long as the local inflammation in the throat is retained within due bounds, and the eruption shows itself in a proper manner, remaining out a sufficient length of time, we shall receive ample aid from these potent

remedies. The following special symptoms of Belladonna are given by Drs. Curre, Hermann, Laurie, &c.:

Spots of a scarlet or deep red color on the face, or other parts of the body; swelling of the submaxillary glands, and those of the neck; eyes red, sparkling and convulsed, or fixed, shining and prominent; pupils dilated or contracted; tongue red, hot and dry, or white in the centre, with red edges; throat, tonsils, uvula and velum-palati dry, inflamed and swollen; suppuration of the tonsils; strong pulsations of the temporal arteries; inflammation of the stomach and abdomen; constipation, or involuntary evacuations; urine turbid, of a brownish red or yellow color with a red or whitish sediment; pulse small and quick, or strong and quick, or full and slow, or small and slow, or hard and tense; pulsations of the carotids; face hot, red and bloated; sweat with the heat, or after it.

Vertigo, confusion, fullness, heaviness, pressure; shooting or expansive pain in the head, aggravated by motion of the head or eyes, by contact, and by cold air, mitigated by holding the head back, and by supporting it; mouth dry and hot; dryness and burning in the throat, with painful and difficult deglutition; loss of appetite; nausea and vomiting; great thirst; sense of fullness and distention in the stomach and abdomen after eating; drawing pains in the back and shoulders; difficult respiration; violent cough; shiverings, alternating with heat, or followed by heat, worse in the evening or night; adypsia, or excessive thirst; dry, burning heat.

Great agitation and tossing about; anguish and inquietude in the afternoon and night; delirium, with muttering groans and cries; vivid and frightful dreams; starting from sleep with fright, groans and cries; ill humor and irritability.

In the seven cases, given by Pereira,* of poisoning by Bell., the symptoms seen were: "Dryness of the fauces, causing excessive difficulty of swallowing and alteration of the voice; second, scarlet eruption on the arms and legs. The boy† at Guy's Hospital poisoned with Belladonna-berries had swollen face, throat hot and dry, hands and face flushed; could not swallow. The man, aged seventy-five years, who took four or five grains extract of Bell. by mistake, lost the power of articulation; mouth and fauces as dry as a chip. The chief action of the Belladonna was on the medulla-oblongata.‡ In the case reported by Mr. Wade,§ the extract locally applied, caused "the mucous membrane from the posterior third of the palate, as far down as could be seen, to show a deep crimson color, and the tonsils were much enlarged." Christison speaks of "redness of the throat" in one case,

* Materia Med. Late Editions. † Taylor on Poisons.

‡ Provincial Med. and Surg. Association Proceedings.

§ Lond. Med. and Phys. Journal. Apr. 1827.

and aphthous inflammation of this part in two others. It seems therefore that this dryness of the throat is the result of the arrest of secretion which accompanies congestion and inflammation, and that Belladonna is a tissue irritant to this portion of the alimentary mucous membrane. Hence its therapeutic value in various forms of angina.

*Irritation of the Skin caused by Belladonna.**—It produces simple redness, redness with swelling, (usually in the face,) or scarlatinoid eruption.

Homœopathic use.—Belladonna easily cures erythema, simple non-vesicular erysipelas. Carbuncle, furuncle, and whitlow, are all of an erysipelatous nature, and all require Belladonna. Puerpural fever is partially under the control of Belladonna; and this curative power in this disease depends on the disease being related to erysipelas, having its location in the peritoneum. In scarlatina the essential symptoms, the rash, the angina, the delirium are under its control, the fever and renal inflammation are beyond its control. Its prophylactic power in this disease arises from the power all specifics possess of previously occupying the ground; thus all becoming prophylactic of those diseases in which they are curative, as Quinine is of ague, Cuprum of cholera, and Mercury of syphilis.

Antidotes to Belladonna poisoning.—Mineral alkalies—Ammonia, Potash, Soda, Opium. Its most nearly related medicines: Hyoscyamus and Stramonium. The three are thought by some chemists to possess a common active principle, like Ignatia and Nux-vomica. Opium is now regarded as the most certain antidote to the poison of Belladonna as well as Aconite. See p. 514.

Aconite.—Face red, hot and bloated, or alternately red and pale; skin dry and hot; forehead cold, and tips of the ears hot; deep redness of the throat; bilious or mucous vomitings; urine scanty, deep red, with brick-colored sediment; pulse hard, frequent; respiration rapid and difficult.

Physical Sensations.—Oppression or throbbing in the head, aggravated by motion; talking, rising up, &c.; better in the open air; great sensibility of affected parts to the touch, or on movement; pains in the joints and limbs; fainting and weakness; extreme thirst; coldness of the surface; with internal heat, or burning over the whole body; pain in the throat in swallowing; bitter or putrid taste; loss of appetite; sense of swelling, weight or pressure in the præcordial region; hot and burning urine; bruised pains in the loins, back, and nape of the neck.

Discouragement and agitation; noise appears insupportable; humor changeable; at one time sad, depressed, irritable, contradictory, des-

* Dr. Richard Hughes.

pairing, at other times excited, gay, and full of hope; inquietude under disease, and even despair respecting a cure.

Ipecacuanha.—If there is slight fever through the day, but an increase in the evening, with sleeplessness, sadness, despondency, and tears, Ipecacuanha is our remedy.

Face pale, sallow, yellowish, and bloated, with livid circles around the eyes; tongue loaded with a white or yellowish fur; profuse secretion of saliva; vomiting of green bilious, acid, slimy, or gelatinous matter; sweat; fœtid breath; turbid urine, with sediment like brick-dust.

Nausea and vomiting of drinks or food; no appetite; insipid and clammy taste; adypsia; violent itching of the skin; empty risings; great uneasiness in the stomach and epigastrium; feeling of emptiness and flaccidity in the stomach; sensation of debility in the bowels, worse on motion; colic with agitation; tossing, with cries; diarrhœa, with nausea; griping and vomiting.

Anxiety and fear of death; moroseness; cries, and howling; vague desire for different things.

Pulsatilla.—When the disease commences with prominent derangement of the stomach and bowels, headache, vertigo, shiverings, weakness, nausea, and bleeding at the nose, soon succeeded by hasty anxious and oppressed respiration, mucous vomiting, taste of food, longing for acids, spirits or beer, *Pulsatilla* is appropriate.

In scarlatina occurring in individuals of decidedly scrofulous dyscrasias, *Sulphur* or *Calcarea-carbonica* may be required.

Zinc.—This remedy has been recommended by Dr. Elb, of Dresden, in cases where paralysis of the brain is threatened, or where it already exists. He has also used it with success in the malignant form, with violent delirium, alternating with sopor; icy coldness of the skin from sunken vitality; small and frequent pulse, and fixed and stupid expression of the eyes. Dr. E. usually employed the first trituration in doses of one grain every two or six hours.

Mercurius.—Occasionally troublesome ulcers form in the mouth, throat, and upon the tonsils, covered with ash-colored sloughs; deglutition becomes exceedingly difficult, and is attended with a stinging pain; the fluids which the patient attempts to swallow, often escaping through his mouth and nose, with perhaps an acrid discharge from the nostrils, and profuse secretion of saliva. Under these circumstances *Mercurius* is the proper remedy.

Muriatic-acid.—In malignant scarlet fever, where in addition to the above symptoms, we have inflamed, swollen, and tender salivary glands, dark-colored ulcers, with a decided tendency to slough and extend, together with great debility, lassitude, tremors, obtuseness of intellect, cold extremities, amd other signs of a typhoid condition, *Muriatic-* or *Nitric-acid*, from the first to the third dilution should be exhibited.

Bryonia.—If in connection with the above symptoms there should be present a considerable amount of *pulmonary* or *cerebral* excitement, indicated by delirium, restlessness, contracted or dilated pupils, heaviness and dull pain in the head on motion, difficult, anxious, and sighing respiration, sensation of weight and pressure upon the chest, troublesome, hacking cough, with soreness and sensitiveness of the whole surface, *Bryonia*, the third dilution, or higher in some constitutions.

Arsenicum.—*Arsenicum* is a remedy of great power in the advanced stage of malignant scarlatina, where there are extreme prostration, pain in the stomach and abdomen, diarrhœa, eruption of a livid or mahogany color; ulcers dark and foul, tongue and lips dry and black, pulse extremely frequent and weak; cold and clammy sweats, hippocratic countenance. This remedy has often rescued patients from the grave who have been given over in despair by physicians of the old school.

Opium.—Should profound coma supervene during the course of the malady, with snoring, and open mouth, open and convulsed eyes, red and puffed face, hanging jaw, difficult slow or intermittent respiration, convulsive movements of different muscles, retention of urine, Opium will be found to be the best specific; and we are satisfied that it will rarely disappoint our expectations in cases of this description.

Recession of the Eruption.—When the rash suddenly disappears during the eruptive stage, Drs. Schmidt, Hartmann, and others recommend very highly *Acetat.-cuprum* as a specific against this symptom. *Sulphur*, *Iodine*, *Bryonia*, *Phosphorus*, and *Belladonna*, all deserve consideration, and will, in some cases promptly restore eruptions which have been prematurely repelled.

The other remedies which may be consulted in cases where those above described do not accord with the symptoms, are: *Cinna.*, *Nux-vom.*, *Carb.-veg.*, *Rhus-tox*, *Stram.*, *Phos.*, *Kreosote*, *Hyos.*

For the troublesome *sequelæ*, which sometimes follow scarlet fever, as *dropsical affections*, *purulent otorrhœa*, *deafness*, *furunculi*, *enlargements and suppuration* of the glands of the neck, axilla and groin, appropriate remedies may be found in *Apis-mel.*, *Arsen.*, *Dig.*, *Hellebore*, *Sulph.*, *Hepar*, *Senega*, *Cham.*, *Aur.-mur.*, and *Mercurius.*

Administration.—We most frequently employ the first, second and third attenuations, but in young and impressible children, we often resort to the higher dilutions with the most satisfactory result. Some cases are characterized from the commencement by a high state of vascular and nervous excitement, others evince a loss of vascular and nervous power, and a very low grade of impressibility. The propriety, therefore, of the employment of both the high and low attenuations in

different instances is evident. If dilutions are used, a drop may be given at a dose, in a drachm of water; but if the triturations are selected, one grain is a sufficient dose, given dry or in water. We advise a frequent repetition of the dose until decided changes arise from the remedy, or until we are satisfied that it is not producing the required effect upon the disordered structures.

Apis-mellifica.—Heat, redness, irritation of the skin, great restlessness and nervous agitation; sensitiveness of the entire surface of the body; œdematous and erythematous appearance around the ulcers in the throat; frequent and painful urination; redness, heat and burning of the tongue; disturbed sleep and thirst. The third dilution of Apis has given speedy relief in many cases.

For its use in the dropsy following scarlatina, see that article, page 603.

Arum-triphillum.—Case by Dr. Lippe, Phila.*—A boy, aged six years, had scarlatina, Feb. 14th, 1861. Began in the form common in severe cases; was treated with high dilutions of Belladonna (200), Tartar-emetic, Sulphur, &c. On the next morning he was covered by the eruption and appeared up to the 17th to be doing well. But then "his nose was stuffed up, corners of the mouth sore, could only breathe with his mouth open, Lycopodium, 200th." On the 18th he had had a bad night, very delirious, the nose had discharged a good deal of thin watery ichorous fluid, nose sore, lips very sore, cracked and bleeding, as well as the corners of the mouth, the mouth felt so sore inside that he was unwilling to drink; tongue red, papillæ swollen and standing up, between the abdomen and the legs sore moist places, the same on the os-coccygis, the sub-maxillary glands swollen, pulse 140, hard and full; voice hoarse. Arum-triphyllum six pellets, sixth, dissolved in a half tumblerful of water, one teaspoonful every two hours. On the 19th he was slightly better. Arum-tr., thirtieth. On the 20th still better, medicine continued. On the 21st improvement more decided; had passed quantities of pale urine and hawked up much mucus. Continued to improve without further treatment till March 13th, when he had violent coryza, cured by Nitric-acid 200, one dose. A week later had at night hoarse, dry, croupy cough, great hoarseness, cured by Hepar, 200. Chief indications for Arum-tr.:—great sore feeling of the mouth, red tongue, elevated papillæ, corners of the mouth and lips cracked; stoppage of the nose without much coryza; urine abundant and pale; submaxillary glands swollen; eruption all over the body; much itching and restlessness; great hoarseness, which continues to increase, though other symptoms improve.

Cuprum.—Rademacher gives the following case: "A man in the

* Amer. Hom. Review. Vol. III. p. 28.

flower of his age. On the first day of the fever the pulse was strong, full, quick; the angina moderate. Head painful; face red; eyes brilliant; urine clear and acid, and darker than natural. Natrum-nitricum was given. On the second day there appeared a slight redness on various spots of the body, and all the symptoms were aggravated. On the third day the symptoms were increased, the eyes wer reddened, and the urine darker, but still acid and growing turbid on cooling. The Nitrate of Soda was now given up. But the physician waited till next morning to learn more fully the character of the morbid state. On the following morning the indications were plain, but the life of the patient was in great danger. He could not rise in bed, his head was in the state that precedes delirium, or was in the first stage of it; the memory so weak that he could not find the desired words, though conscious that he used the wrong ones. The pulse quicker, but had lost its fullness. Eruption as before. The urine dark, acid, and turbid on cooling." Rademacher thought the whole phenomena, viz.: the peculiar state of the head, weakness of the muscles, and acid urine, pointed out a condition curable by Copper. He directed small doses of acetated tincture of Copper to be taken at regular intervals within twenty-four hours. The effect was remarkable on the same day. About twelve hours after commencing this remedy the progress of the disease was brought to a stand, and towards evening the head was evidently better. Next morning the patient was free from all dangerous symptoms.

Dr. Kissel says, on this subject: "The diseased process, arrived at a certain point, can thus be arrested by Copper, but the exanthema must run its course, though new eruptions of it and extension of the disease to the meninges can be prevented. In some cases of this disease, with diarrhœa, it is advised to give the Cuprum in an oleaginous emulsion.

In some epidemics of measles, varioloid, and erysipelas of the face, Cuprum-aceticum has been found the specific.

Adeps.—Dr. Schneemann, of Hanover, proposed the inunction of the body by lard. Dr. Ebers treated thirteen cases in this manner, of which he cured twelve, the remaining one being hopeless when commenced. At the same time he was engaged in treating nine other cases in the common (allopathic) method, of which he lost five and cured four. He concludes:

1. That inunction with lard does not interfere with the appearance of the eruption on the third day, and its decline on the fourth or fifth.

2. That other complications of the disease disappeared more favorably under this treatment than under any other.

3. Under this treatment there was no desquamation; and in no case was there any subsequent anasarca.

4. This treatment destroys the contagious principle. The lard should be well rubbed in warm on the skin, to be absorbed morning and evening.

Ammonium-carb.—When scarlatina assumes a typhoid character, and there is any tendency to decomposition of the blood, this is a remedy of great value. Many eminent physicians of our school rely upon this drug in nearly all cases of scarlatina maligna, and their success has been highly gratifying.

It should be prescribed in the first trituration—always recently prepared.

2. SCARLET RASH.

This appears to be a modified form of scarlatina. It is generally met with in complication with that disease, small-pox, or measles.

Diagnosis.—The eruption is darker than that of scarlet fever, being almost purple; the pressure of the finger leaves no white mark; and, on passing the finger over the skin, small grains are felt beneath it.

The disease does not run a regular and definite course, like other eruptive diseases. The efflorescence may disappear suddenly or may spread over the body; the parts of the surface covered by the eruption are liable to perspiration. Persons who have once suffered from it are not exempt from future attacks.

Prognosis.—It is not generally as dangerous as scarlatina. When the efflorescence disappears suddenly alarming symptoms sometimes follow. The sore throat is not generally as severe as in scarlatina; it is sometimes present when the eruption is wanting.

Treatment.—*Aconite* alone is generally sufficient to cure this disease when it is uncomplicated.

Coffea.—After Aconite, when there is restlessness, agitation, pain in the head or extremities.

Bell.—The scarlet rash complicated with true scarlet fever, sore throat, and pain in the head or delirium.

Ipecac.—The rash attended by nausea, vomiting, or diarrhœa.

Bryonia.—After Ipecac., in cases in which there is congestion of the chest, hurried respiration, pleuritic pain.

3. SEQUELÆ OF SCARLATINA.

Scarlatinal Nephritis. Post Scarlatinal Dropsy.

This disease appears in three different forms: 1. That in which the disease commences primarily from the state of the skin as disordered by the specific scarlatina poison, aggravated by exposure to cold.

This form of dropsy usually makes its appearance in from ten to twenty days after the subsidence of the original symptoms. The swelling is first observed in the face and upper part of the body, to which

it is sometimes confined, though more generally it extends over the whole body. In severe cases the urine is thick, scanty, and dark colored, passed only at intervals, or almost entirely suppressed. There is more or less fever, with night restlessness. In mild cases the condition of the urine is but little changed.

In the first stage the disease seems to consist in a dropsy of the subcutaneous cellular tissue; but in the second stage it generally involves more or less deeply some vital organ; the effusion is discovered on the brain, in the chest, within the pericardium, or in the abdomen; and the disease runs a rapid course, giving little time for efficient treatment. The extent of the anasarcous swelling does not always indicate the degree of danger, and, in many cases, the child is beyond the reach of medical skill before the parents are alarmed.

Causes.—This disease is generally excited by exposure to cold at too early a period after an imperfect recovery from scarlatina. It is remarked, too, that it quite commonly occurs in children who have had the original disease in a light form, especially in the milder epidemics. Tweedie says it has "never been observed to supervene in cases of malignant scarlatina."

The cause of post scarlatinal dropsy is attributable to the passage of the *debris* of the fever through the tubuli uriniferi, thus producing in them irritation, congestion, retention of urine, and the usual phenomena of albuminuria. The urine is usually albuminous, and the symptoms disappear as soon as the kidneys are relieved.

2. The second form of scarlatinal dropsy is that in which "the dropsy arises from disease of the kidneys themselves, consequent upon the scarlatina virus locating upon them, instead of being developed on the skin." In this form of the disease the danger consists, not in the concentration of the force of the virus upon some vital organ, as is common in the preceding variety, but from the deadly influence of the malignant poison exerting its power primarily upon the kidneys. These great eliminating organs fail immediately to perform their office; before the œdema has exerted any injurious influence in other parts of the body, death may supervene from reabsorption of the uræmic poison which they should have expelled from the system.*

3. *Scarlatinal Rheumatism.*†—In this form, about the time that the eruption is followed by desquamation, there becomes visible a peculiar inflammation, manifested by shining redness, swelling, and intense pains in the ankles and wrists. It resembles arthritic inflammation in its great tendency to metastasis to the heart; but it differs from all ordinary arthritic inflammation by its strong tendency to

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* Dr. J. H. Frost. Amer. Hom. Rev. Vol. II., p. 433.

† Braithwaite's Retrosp. No. 33, p. 30.

purulent effusion into the affected joints, and great swelling in the neck, enlargement of the submaxillary gland, and other marks of acute scrofulosis. It is sometimes epidemic.

Such cases are generally fatal.*

Pathology.—In scarlatinal, as in every other form of dropsy, the kidneys are more or less affected. And the concentration of the force of the disease upon these organs is the most insidious and dangerous form in which it can terminate. In the skin the capillary vessels are more or less congested and obstructed, even in mild cases; and the same inflammatory action which diminishes the secretion of urine prevents perspiration; this causes great increase in the fluid exhaled, as inflammation of the serous membranes, as the peritoneum usually causes dropsical accumulations in the cavity of the abdomen; and that of the arachnoid and its divisions produces hydrocephalus.†

Dropsy after scarlatina, says Tweedie, "is of an acute or sub-acute kind; arising from increased action of the sanguiferous system, the consequence of this increased action is the effusion of serous fluid into the external tissues of the body, or, where there is still greater vascular excitement, into one or other of these cavities."

"As the scarlatina subsides desquamation begins, and the urine becomes even more abundant than in health; but this desquamation, by preventing the return of the skin to the performance of its proper functions, perpetuates the evil influence exerted by the primary disease, and continues to impose a double duty on the kidneys—a burden evidently greater than they can long sustain. And so, when convalescence seems almost complete, dropsy ensues from the failure of the kidneys to carry off the unusual exhalation, while at the same time attempting to do their own work and that of the skin. Or, where from exposure to cold in this period, a still more serious impression is reflected from the tender skin upon the already over-burdened kidneys, they become congested and entirely obstructed; the uræmic poison, accumulating for a short time, and finding no outlet from the system, is suddenly reabsorbed, and coma, vomiting, and convulsions close the scene.‡

Dr. West, on diseases of children, says:

"The chief suffering, however, is referred to the chest from pulmonary œdema; the respiration is labored and accelerated, and the child is frequently unable to assume the recumbent posture, and is moreover distressed by a frequent hacking cough. Under these circumstances life is sometimes prolonged for several days, though in a state of extreme suffering, remedies proving unable either to increase the action

* Frost. † Cragie's Pathol. Anat. p. 190. ‡ Dr. Frost.

of the kidneys, or to relieve the dropsy. Death is sometimes preceded by a sudden aggravation of the signs of disorder of the respiratory organs, which assumes all the painful characteristics of œdema of the lungs; and in other cases, a comatose condition comes on, such as often precedes death from Bright's disease in the adult."

Dr. B. F. Joslin, Jr., gives some cases, treated at the Half-Orphan Asylum, N.-Y., winter of 1860. (*Amer. Homœop. Review*, 1860. p. 339.)

Charles Smith, aged six. Feb. 29th. Fever; red eruptions; vomiting; headache. Pulsatilla 30.—March 1st, white dry tongue; redness continues, Acon. 30. 2d, Pulsatilla 30. Doing well till the 16th. Then stiff neck; glands swollen, Bell. 30 and Merc. 30. 21st, inflammation in front of neck to the right side with deep swelling, Bell. 30. 23d, opened abcess on neck, Sulph. 30. 26th, œdema of face, Apis 30. 27th, seems better; pulse 92, Apis 30. 28th, face more swollen; no œdema of feet; pulse 80, irregularly intermittent, Apis 1. 29th, face not so much puffed; pulse 100, regular, Apis 1. April 2d, pulse 76, not quite regulur, Apis 1. 3d, less swelling of face, pulse 100, Apis 1. 5th, feels well; less swelling of face; pulse 92, not quite regular, Apis 1. 8th, skin hot; thirst; pulse 148; respiration good 32; the weather is to-day rainy and close, and has an unfavorable influence on his case, Acon. 30 and Bell. 30.

April 9th, feels well and appears so; pulse 96; had rapid respiration all night, but is now quite easy; last night, evacuation in bed, Acon. and Bell. 10th, Doing well; pulse 104, Apis 1. 11th, respiration good, still has some swelling of face, Apis 1. 12th, pulse 114, respiration 28, Apis 1. 13th, says he feels well, but does not appear quite so bright as usual; no appetite; pulse 116, Apis 1. 14th, appetite better; pulse 112, Apis. 16th, doing well; pulse 92, Apis 1. 17th, doing well, pulse 100, Apis 1. 18th, seems well, Hepar 30. Has remained well.

We have seen a case cured in the following manner. A boy of five years, whose brother had just died of the same form of disease, relapsed after a supposed recovery from scarlatina. Immediately the action of the kidneys was almost entirely suspended and the dropsical bloating commenced. The same allopathic physician under whose treatment the brother had died was now called. He proposed blisters, which were objected to; a homœopathist was called, who made his best efforts for four days, without any apparent result. The dropsical accumulation increased. At this stage a poultice of flax-seed of large size and warm was prescribed and it was applied to a large surface, covering the region of the kidneys, and demulcent drinks were given. Immediate improvement was seen. A free perspiration and

increased flow of urine commenced, the inflammatory and dropsical symptoms rapidly subsided, and the little boy speedily recovered.

See an interesting case of desquamative nephritis in the U. S. Journal of Homœopathy (Vol. I. p. 271.), cured by Arsen. 3° and Apis 3°.

4. RUBEOLA.—MEASLES.—MORBILLI.

Formerly, measles and scarlet fever were described and treated as one and the same disease, the differences which were observed in different cases being ascribed to modifications originating from peculiarities of constitution, the state of the atmosphere, and other accidental causes. About fifty years ago, however, Withering and several other writers recognized a distinction between them; and measles, for the first time, was accurately described and ranked as a distinct malady.

As it generally occurs, it is unattended with danger, unless interfered with by purgatives, emetics, and infusions. Fortunately, it is confined for the most part to children, for when adults are the subjects of attack, it is far more severe and dangerous. Like scarlatina, one attack renders the subject secure against any future operation of the contagion.

This disease frequently appears as an epidemic, especially in the spring. It is generally mild, though sometimes extremely violent and dangerous. It occurs in every climate, attacking principally children, though older persons are liable to it, if they have hitherto escaped it. The disease is generally communicated by contagion, and it breaks out ten or fifteen days after the infection.

Diagnosis.—Spots that are generally more or less raised on the skin; they are one or two lines in diameter, and at first they resemble flea-bites; they generally cluster in groups, having an irregular shape somewhat resembling a half moon. Several days previous to the appearance of the spots, the patient is affected with catarrhal symptoms, such as short dry cough, red eyes, with lachrymation, frequent sneezing; the spots remain upon the skin for three or four days, after which they scale off. While the spots are out the cough and redness of the eyes continue. The desquamation of the epidermis is sometimes the only sign by which we are able to recognize the existence of the eruption.

The disease runs its course in three stages:

1st Stage.—The Febrile Stage.—The febrile stage lasts three days and sometimes a little more. The fever is remittent and attended with the catarrhal symptoms; sensitiveness and light inflammation of the eyes; puffiness of the eyelids; lachrymation; photophobia; frequent sneezing and discharge of water from the nose; troublesome, short and dry cough, with hoarseness and difficulty of breathing, frequently ac-

companied by moaning; roughness and slight soreness of the fauces; pain in the back or epigastrium; aching in the forehead, delirium, spasmodic symptoms; diarrhœa; white-coated tongue, with bright red edges. During the period of dentition, and in children generally all the inflammatory symptoms are more violent than in full-grown persons; but the suffering and accompanying pulmonic or cerebral congestions, the oppression of the chest and the after phenomena which often render the disease formidable, are all more severe and threatening in adults. In all the more serious symptoms continue to increase in severity till the eruption appears on the skin.

2d Stage.—The Eruptive Stage.—The eruption appears at the end of the third or fourth day; generally in the face, arms and breast. The spots increase in number and distinctness for three or four days, and if they are very numerous, are attended with swelling of the face and hands. The fever and uneasiness increase, the eyes continue sensitive to light; the cough increases to bronchitis or pneumonia.

On the fourth day the symptoms abate; the eruption then grows paler, and if the fever should continue it must be because there is another complication, or because of the violent irritation of the skin, in consequence of the severity of the eruption.

3d Stage.—Desquamation.—The scaling off commences in the sixth or seventh day, and sometimes even later. If the eruption be slight, the scaling is scarcely perceptible; in its stead we perceive the healthy sweat, the critical urine and diarrhœa, terminating in the disappearance of all the remaining phenomena of the disease.

In this stage the patient is often exposed to real danger. The catarrh may increase to pneumonia, which is followed by hectic fever, hydrothorax, hæmoptysis, and in scrofulous subjects by real consumption. Measles may be likewise followed by other cachexias, such as otorrhœa, with pain and deafness, obstinate inflammation, &c.

During the fever, the cough is often very troublesome, and sometimes terminates in inflammation of the bronchia or lungs. Schroen thus describes the malady; "small red spots, in the centre of which we generally find a white pimple. These spots soon become confluent, and spread over the whole body after being preceded by *catarrhal fever* for three or four days, attended with redness of the mucous membrane of the mouth, with cough, catarrh, dread of light, and flow of tears. They disappear upon pressure, and develop themselves again from the centre towards the periphery after the pressure is removed. The pimple becomes a small yellow prominence in the course of sixteen hours, when a scurfy desquamation commences."

The attentive observer will have no difficulty in distinguishing this malady from scarlatina by the following diagnostic symptoms: The *primary* symptoms of measles are red and watery eyes, sneezing,

fluent coryza, short cough and some hoarseness. These signs, which are almost uniformly present in this disease, are usually wanting in scarlet fever. In the general character and appearance of the eruption there is also a marked difference. The scarlatina rash is composed of innumerable fine pimples, resembling in appearance the shell of a boiled lobster, uniformly diffused over the surface, and of a *bright scarlet color*. The eruption of measles appears in spots (sometimes papular) resembling flea-bites, which run together and form semi-lunar patches. There is a roughness or elevation where the eruption exists, perceptible to the touch; and which is not usually observed in scarlatina. But one of the best marks of distinction is the difference in the *color* of the rash, that of measles being a *purplish*, or *darkish scarlet*, while that of scarlet fever is a *light scarlet*.

Measles is a disease, which, under different circumstances, assumes a great variety of forms, both as to its general character and violence. During some seasons it prevails as a mild and simple affection, requiring little or no treatment; while at other periods it assumes a highly inflammatory, congestive or typhous character. Sometimes almost all cases seem to have a tendency to run on to pneumonia; at other times cerebral or typhoid symptoms predominate; in still other instances, gastric disorder prevails; but in the great mass of cases the malady is mild and tractable.

In contemplating the numerous varieties of this, as well as of most other diseases, the impartial physician must acknowledge the utter uncertainty and empiricism of prescriptions guided only by the *name* of the disease.

Causes.—In common with the other contagious disorders, measles arises from a specific morbific contagion. This has been amply proved by Home, Dewees, Speranza, and Majendie, who, in numerous instances, succeeded in communicating this affection by inoculation. The season of the year, the condition of the atmosphere, and the peculiar circumstances of the individuals exposed, exercise a powerful and perhaps controlling influence, in determining the character of the epidemic. When measles happens to prevail during seasons of *influenza*, *typhus*, or *dysentery*, the disease will partake of the peculiar character of the existing epidemic, and its course will be modified accordingly.

Treatment.—The most common medicines in the treatment of measles are *Aconite* and *Pulsatilla*; next in importance stand *Bryonia*, *Bell.*, *Ipecac.*, *Merc.*, *Sulph.*, *Cupr.-acet.*, *Rhus.*, *Acid.-phos.*, *Arsen.*, *Cham.* and *Stibium*.

Schroen recognizes five different varieties of measles, founded upon the characteristic symptoms present in each given case; viz., first the *simple* or *erethistic*, in which *Aconite* is the appropriate remedy: second, the *inflammatory*, requiring the use of *Aconite*, *Bryonia* and

Belladonna; third, the *gastric*, demanding the employment of *Bryonia*, *Pulsatilla*, *Chamomilla*, *Ipecacuanha*, and *Veratrum;* fourth, the *typhus*, or *irregular*, calling for *Rhus.-tox.*, *China*, *Nux-vom.*, and *Belladonna*; fifth, the *septic*, or *malignant*, corresponding with *Acid.-phos.*, *Acid.-sulph.*, *Acid.-mur.*, *Opii* and *Arsenicum.*

At the commencement of an attack, when heat, thirst, quick pulse, red, inflamed and watery eyes, sneezing, fluent coryza, cough, dyspnœa, oppression at the chest, and sore throat are present, *Aconite* at the third potency is the most suitable remedy. So long as the disease progresses mildly, running through its regular stages in due form, no other medicine will be requisite to complete the cure. Even in those complications which call for the use of other medicines, as pneumonia, croup, cerebral, or gastric disturbance, whether occurring before, during, or subsequent to the eruption, should the inflammatory excitement run high, *Aconite* will still be required. Its repetition must, of course, be subject to the circumstances of each particular case.

When there exists a predominance of catarrhal symptoms, and a tardiness in the appearance of the eruption, we have an appropriate remedy in *Pulsatilla.* This medicine may often succeed *Aconite* with peculiar advantage in the catarrhal forms of more than ordinary severity. In these cases some writers claim for this agent important prophylactic properties. It is also a valuable remedy in retrocession of measles, attended with one or more of the following symptoms: hoarseness, swelling of the parotids, puffiness of the face, pain in the ears, discharges from the ears, hardness of hearing, dry, short cough, great restlessness, pains in the head, back and loins, and mucous diarrhœa.

Dr. Croserio believes *Pulsatilla* to be especially adapted to measles, not only as a remedy, but as a prophylactic. He asserts that "it is to this disease almost what *Belladonna* is to scarlet fever. The precursory symptoms of measles accord perfectly with the febrile symptoms of *Pulsatilla*, viz.: chills, heat, lassitude, throbbing pains in the head, anxiety, nausea, vomiting of bile, or glairy mucous, violent coryza, red eyes, lachrymation, photophobia. Then follow pricking of the skin, red spots like flea-bites, excoriation and creeping in the throat, difficult deglutition, dry, fatiguing cough, epistaxis, &c. If given in the precursory stage, I have often seen the disease terminate in abundant perspiration in twenty-four hours."

Belladonna is indicated when the throat is much inflamed and swollen, with very painful and difficult deglutition, short, hacking, throat cough, inflamed eyes; nervous, uneasy, and sometimes delirious; hurried respiration; headache, intense thirst, dry, hot skin, and signs of cerebral disturbance. It has likewise been recommended in cases of sudden disappearance of the eruption, after having been out one or two days.

"When the eruption suddenly disappears and is succeeded by fever, violent headache and breathlessness, great benefit will be derived from the administration of *Aconite* and *Arsenicum* alternately; and afterwards, when the head appears to be the chief point of attack, indicated by excrutiating headache, screaming or moaning during the night, *Belladonna* and *Cuprum-aceticum*, repeated every hour or two, will afford marked relief." (*British Jour. of Hom.*, No. XXIV. p. 232.)

Bryonia will apply in cases attended with marked pectoral symptoms, like stitches or darting pains in the side and chest, anxious, sighing, difficult and painful respiration, and very great general uneasiness.

"Hartmann says that *Bryonia* "is also a powerful remedy in *retrocescent measles*, in reproducing the eruption on the surface, or in rendering its disappearance harmless. In these I give *Bryonia* in the fifteenth dilution, and notice that it is chiefly indicated, if after the retrocession of the eruption a morbid affection of the eyes supervenes, which resembles that which I lately noticed when speaking of ophthalmia."

Ipecacuanha should be administered when there is gastric disorder, indicated by nausea, vomiting, pain and oppression in the stomach, and inability to retain food or drinks.

For the ulcers which sometimes form in the mouth and throat, also the glandular swellings which occur in the neck, *Mercurius* is a valuable specific.

As a remedy for the restoration of retrocescent measles, as well as for the inflammatory affections of the eyes, which now and then remain as sequelæ of this malady, *Sulphur* is sometimes a remedy of the highest importance. Many cases, after having apparently run their courses in a mild and regular manner, leave the patient with some annoying *dregs*, like discharges from the ears, weak eyes, eruptions of various kinds, or chronic cough, with profuse expectoration; they are attributable to some miasm, which has been roused during the course of the disease. For the cure of cases of this kind, *Sulphur* is an indispensable agent.

We occasionally meet with nervous or typhoid symptoms which render the use of *Arsen.*, *Rhus-tox.*, *Stramonium*, *Op.* and *Phos.* necessary; whatever symptoms present themselves, the judicious physician will be able to select from the great number of medicines of which the pure effects are known.

Lachesis.—Case by Dr. C. Dunham.—A girl aged 9 years, had scarlatina three months ago very severely; it left her delicate and deaf. Exposed to measles; eruption appeared six days after, "*along with a copious discharge from the ears.*" Two days after the discharge and eruption suddenly ceased. She became immediately feeble and pros-

trate; there were wild, muttering delirium; thirst; singular, biting heat of the skin. Third day of the disease: She had lain in alternate stupor and delirium for 24 hours; delirium, low, muttering; pulse soft, wavy, hardly to be counted; calor mordax; respiration rapid, whistling, attended with moaning; occasional cough, and a grasping at the throat as if to tear the clothing from it. Pupils widely dilated; no stool for two days; urine scanty; countenance cadaverous; odor of breath putrescent. At 11 A. M. she took Lachesis 30°, six globules in water, a tea-spoonful every two hours.

At six P. M. she was sitting up in an arm-chair playing with some toys; rational; skin pleasant temperature; pulse 80, regular and soft. After the second dose she had slept quietly, had no more delirium or thirst. She took no more medicine; the rash did not re-appear; but she convalesced steadily from this point

5. PERTUSSIS.—Whooping Cough.

From the time of Autenreith, the relationship between whooping-cough and other acute exanthematous fevers has been suspected. Dr. Volz claims that pertussis should be classed among the exanthemata, for the following reasons: It often appears as an epidemic; it is contagious; children are more certain to be attacked by it than adults; it occurs but once in a life-time, and has *some* relation to measles; it pursues a regular and uninterrupted career in the individual; all of which peculiarities show a strong similitude between whooping cough and the exanthematous fevers. There is indeed seldom any *eruption* visible in this disease; but in many cases of the common exanthemata the eruption is wanting. Neumann has seen whooping cough accompanied by an eruption resembling measles in form, but having the color of scarlatina and appearing chiefly on the breast and arms. This eruption is rare, but it has been seen by others. The pathology of pertussis presents some changes in the glands of the mucous membrane of the intestinal canal, which Rokitansky regarded as peculiar to certain forms of disease, including the exanthemata. Volz concludes that pertussis is to be classed among the diseases produced by an abnormal change in the blood. He found no remedy but Belladonna available in its severity. (*Häser's Archiv*, Bd. IV.) Belladonna has often produced the eruption on the skin above mentioned, and entirely controlled the cough at the same time. This has been more successful when the aggravation is carried to the extent of "reddening the skin," than any other old school treatment. It reveals the nature of the disease, and shows at the same time that Belladonna is only a partial similimum to it.

For *History* and *Treatment*, see p. 438, 439.

6. ROSEOLA.

Diagnosis.—This is one of the mildest and least dangerous of all the eruptive fevers. It is characterized by an eruption or efflorescence of a rose color, preceded and accompanied by some slight symptoms of febrile disturbance. The rash shows itself on the third or fourth day of the fever, and comes out in distinct and irregular spots upon different parts of the surface, or the spots run together, giving to the skin an almost uniform redness. The cuticle is neither elevated, nor is there any appearance of papulæ; but a simple blush of a rose color characterizes the eruption, and serves as a mark of distinction between it and that of other diseases of this kind. The appearance of the rash is often attended with itching and tingling, which are present more or less until the eruption vanishes, which is usually in five or six days, without desquamation of the cuticle or any unpleasant after symptoms.

Causes.—Roseola is for the most part confined to infants and females. It arises from undue exposure to cold, after having been confined in a warm room, indigestible food, dentition, gastro-intestinal irritation, and the abuse of stimulating infusions, cathartics, &c.

Treatment.—Rigid dietetic regulations, a moderate, dry and equal temperature, mental and physical rest and quietness, and an entire exclusion of all "herb teas" and other "domestic remedies," will generally secure the patient from any ill consequences from this simple affection.

7. URTICARIA,—NETTLE RASH.

Diagnosis.—The primary symptoms of urticaria are, languor, oppression, and sickness at the stomach, foul tongue, bitter taste, giddiness, creeping chills, succeeded by preternatural heat of skin and thirst. During the early period of the disease, elevated, circular and florid spots or weals, each with a whitish spot or point in its centre, appear, sometimes in only one part of the body, at other times generally diffused over the whole surface. These weals are attended with an exceedingly annoying itching, stinging and burning sensation, somewhat resembling the stings of nettles. The itching, as well as the febrile excitement, is always worse in the evening or during the night; but when the eruption is upon the surface, the nausea and distress at the stomach abate, and do not return until another eruptive period, unless there is a sudden retrocession of the weals. Frequently the blotches are elevated, rough to the feel, numb and insensible, and resembling stings. When deep seated in the skin, they are brought to light by friction and scratching. Sometimes they appear in a few hours. They are exceedingly evanescent, and frequently appear and disappear on the same

day. Both in shape and sensation they resemble the blotches occasioned by nettles, and are distinguished by the peculiarity of disappearing in warm and coming out in cold weather. They are liable to constant changes of locality, to such a degree that a blotch does not in some cases remain in one spot an hour at a time. Their retrocession is seldom accompanied by any material alteration of health, but is sometimes attended by slight fainting and headache, with some degree of fever.

In some instances the eruption appears suddenly without any febrile or other premonitory symptoms, and without any apparent exciting cause. At other times, certain articles of food, like shell-fish, porgies, esculent vegetables, acid fruits, or stimulants, like wine, spirits, hot ptisans, condiments or frictions upon the skin, seem to become its exciting causes. It usually terminates in a few days, but now and then it persists many months, sometimes apparent upon the skin, at others suppressed.

"Its sudden disappearance without leaving a trace behind, and its equally sudden reappearance, are quite characteristic. Inclination to vomit is also present in all the varieties of this disease, and vomiting frequently occurs as a crisis." (*Schræn.*)

Some nosologists have divided this malady into two, and some into four varieties; and others, like Bateman, and a few of the older writers, have gone so far as to recognize and describe seven; but these fine and arbitrary distinctions are not founded in nature, and therefore offer no aid in diagnosis; while, on the other hand, there is danger that they may confuse and embarrass the inexperienced practitioner. We know that the eruption is very irregular in regard to the periods of its appearance, and also in the size, form, general aspect, and diffusion of the weals; yet we see no necessity for complicating our classification with so many varieties, for we might with as much propriety go on with divisions, *ad infinitum*, as to stop after having described six or seven genera, since the most acute nosologist will scarcely be able to discover any two cases presenting precisely the same symptoms in all respects.

If, however, we were to adopt any classification, it would be that of Schroen, who distinguished two forms of the malady, the *acute* and the *chronic*. Under the former he includes: first, *urticaria maculosa*, or spots of different degrees of redness, attended with sensation of formication and intense itching; second, *urticaria vesicularis*, or vesicular prominence, with empty and almost transparent apices; third, *urticaria tuberosa*, or hard, tense, and painful tuberosities, generally appearing in the night. Amongst the *chronic* varieties he ranks *urticaria evanida*, resembling the urticaria tuberosa, appearing on expo-

sure to cold, and disappearing on the application of warmth. This variety sometimes continues for weeks and even months.

Causes.—The remote cause of nettle-rash is supposed to consist of specific miasm, either generated within the organism or introduced from without, and which is liable to be roused into action by numerous exciting causes. The proofs of this are numerous, and we think satisfactory; for, if it were merely an effect or symptom of one of the various exciting causes, like indigestible food, certain kinds of fish, acid fruits, vegetables, wines, liquors, &c., it would disappear as soon as the exciting cause was withdrawn, and all irritation from this source obviated; but, in very many instances, no such result takes place, and, after the noxious article has been entirely removed, and the part previously deranged restored to its usual normal condition, there is a persistence of the urticaria for months, and even years—it appearing and disappearing at frequent intervals, without the slightest apparent reason.

Another fact which sustains this opinion is that, if the eruption be suddenly repelled by the use of lotions or cathartics, serious internal disorders frequently supervene as a consequence of the retrocession, which terminate, if the weals are not reproduced either spontaneously or artificially, in dissolution. A painful case, illustrative of this position, occurred under our observation a few years since. The patient was a lovely and highly interesting young lady, who for some slight exciting cause was afflicted with urticaria, although previously she had remained for many years in excellent health. The malady annoyed her by turns for more than three months, when, from the application of a lead water lotion, the external symptoms suddenly vanished, leaving in their place wandering pains in the chest and side, some cough, fits of oppression at the chest, and difficulty of breathing. These symptoms of pulmonary disturbance continued to increase, until she was pronounced by two eminent physicians of a neighboring city to be past cure with tubercular consumption. About this period the case came under our charge, in what seemed to be the last stages of consumption. Notwithstanding, however, the unpromising condition of affairs, the patient slowly but gradually recruited, so that in six or seven months the abscess which had existed in one lobe of her lungs was healed, and the lungs, with her whole system, were restored to a comparatively sound and healthy state. In this condition she continued for nearly two years, when a second attack of urticaria supervened, affording still farther relief for a few days from all remaining difficulties, and the rash permanently disappeared. From this time her symptoms were all aggravated, her old complaints returned, the lungs again became ulcerated, so that in a few months the malady advanced to a fatal termination. Is this an isolated instance? With-

out doubt the experience of almost every physician could furnish one or more cases of the same description.

This example offers conclusive evidence that an intimate connection existed between the two diseases, and that, whenever the rash was upon the surface, nothing disturbed the lungs; while, the moment retrocession ensued, pulmonary symptoms manifested themselves. If urticaria is a purely local disease, depending upon a distention or spasm of the extreme cutaneous vessels, how can the suppression of such local inflammation affect so seriously internal organs?

It must be confessed that our knowledge respecting the causes and intimate nature of cutaneous affections is at present quite limited; but when we take into consideration the fact that so many internal constitutional maladies take their exit through the surface in the form of eruption, we are constrained to believe that this is almost uniformly only a symptom of some internal disorder.

Treatment.—As it is of the first importance in all cutaneous diseases that the eruption should be urged and retained upon the surface, in order that the miasm may not fall upon any vital organ, we should select our remedies chiefly from those which exercise a specific action upon the skin.

Another point, of no less importance in the management of eruptive fevers, consists in securing for the patient a dry, moderate, and equable temperature. This precaution, combined with cleanliness, and a placid and composed frame of mind, will always aid us materially in our therapeutical measures.

The medicines which are the most appropriate for the treatment of this complaint are: *Acon.*, *Sulph.*, *Dulc.*, *Rhus.*, *Calc.-carb.*, *Lycop.*, *Natr.-mur.*, *Acid.-nitric.*, *Puls.*, *Ignat.*, *Ipecac.*

Aconite will only be required in those cases which are attended with undue febrile and nervous irritation. It may be administered as advised under measles.

Sulphur.—This medicine should always be prescribed in cases occurring in individuals of a marked scrofulous dyscrasia, when the following symptoms are present:

General appearance of debility; pale, sallow, and sickly expression of face; redness of the margins of the eyelids; swellings of the glands of the neck.

Eruption and violent itchings, occurring in the night from the heat of the bed, and occasionally from exposure to cold air; great sensitiveness to cold; dizziness and pains in the head; spasmodic twitchings of the eyelids; bad taste in the mouth; nausea; pyrosis; weakness and oppression at the chest.

Melancholy, sadness, irritability.

In a case in which there was fever at night, derangement of stomach,

itching eruption on the skin over most of the body, occasionally receding when it caused nausea and pain in the stomach, pains in the limbs. Aconite, followed by Sulphur, cured in a day or two. Relief in a few hours.

ADMINISTRATION.—One grain of the third trituration in two ounces of distilled water; a dessert-spoonful once in twelve hours.

Dulcamara is useful in urticaria which proceeds from taking cold, and is attended with nausea, vomiting, oppression at the stomach, heat of skin, thirst, bitter taste, diarrhœa, and great general uneasiness. The symptoms are aggravated at night, during repose, and by the heat of a room; but they disappear in the open air.

ADMINISTRATION.—A drop of the third dilution, in a small quantity of water, may be given once in six to twelve hours.

Rhus-tox.—Eruption, attended with itching and burning during inaction, or on entering a room from the open air; disappearance of the weals on exercise, followed by shifting rheumatic pains, pains and pressure in the stomach, difficult respiration and anguish. This medicine is particularly applicable in *urticaria vesicularis*.

ADMINISTRATION.—Same as *Dulcamara*.

Calcarea-carbonica is indicated in cases where the rash vanishes on going into the fresh air, and is excited by the application of cold water; face yellow, upper lip swollen, skin rough and covered with goose-pimples, stunning lateral pains in the head, with nausea and vertigo at night or in the morning on waking, with faintness; anxiety, anguish, apprehension.

REMARKS.—*Calcarea-carbonica* is suitable in obstinate *chronic* urticaria, especially when occurring in scrofulous or cachectic constitutions. It is sometimes necessary to persist in the use of this remedy for several weeks.

ADMINISTRATION.—A drop of the third dilution in an ounce of water; a dessert spoonful once or twice in the twenty-four hours.

Lycopodium.—Rash and itching during repose, headache in the afternoon or at night, smarting of the eyes by candlelight, nausea when in a hot room, relieved in the air, silent and peevish.

ADMINISTRATION.—Same as *Calcarea-carbonica*.

Natrum-muriaticum, at the sixth potency, may be prescribed when there are languor, uneasiness, nausea, headache, weakness when lying down at night, relieved on rising in the morning, eruption coming out after violent exercise.

Nitric-acid, third dilution, will be proper for patients of a debilitating night-sweats, weak, enfeebled, subject to hæmorrhages from the bowels, lungs, nose, &c., and rash caused by exposure and cold air. A drop should be prescribed, two or three times daily.

Pulsatilla, sixth dilution, when the elevations are redder than the

skin, when the itching is of a burning or pricking character, worse at night in bed, in a hot room, or by scratching; better in the open air, worse every other evening; heaviness and disposition to numbness in the limbs; great sensibility to the open air.

Ignatia, sixth dilution, is particularly adapted to attacks occurring in nervous and hysterical females; the eruption is brought out by exercise, and is often preceded by nervous symptoms; there is also fullness and pressure of the head, with sparks before the eyes; also sighing and irregular respirations.

Ipecacuanha, third trituration, is useful in cases attended with excessive vomiting, oppression at the chest, and dyspnœa; it is also a valuable remedy in asthma from suppressed urticaria.

Other remedies worthy of consideration are: *Arsenicum*, *Balsam-copaibæ*, *Iodine*, and *Bryonia*, in the chronic forms; and in the acute varieties, *Clematis*, *Staphysagria*, and *Belladonna*, for *urticaria vesicularis*; *Urtica* and *Hepar-sulphur*, for *urticaria tuberosa*; *Mercurius*, *Iodine*, *Aurum-muriaticum*, and *Sepia* for *urticaria maculosa*.

Administration.—The above remedies may be given dissolved in pure water. They may be repeated in six, eight, or twelve hours, according to the urgency of the symptoms. In all cases of this description, where a latent miasm is suspected to exist, a persevering and judicious course of anti-psoric treatment should be adopted after the eruption has disappeared and the acute symptoms have subsided.

Urticaria, *pemphigus*, *as well as herpes zoster*, being often dependent on the sycotic poison, are sometimes very obstinate. In some cases Dr. Wolf succeeded with Thuja, 30°, where Apis had failed, though the latter had cured urticaria in various forms.

Genus II.—EMPLYSIS.—Achorous Exanthem.

1. MILIARIA.—Miliary Fever.

Diagnosis.—This disease is ushered in with lassitude, slight creeping chills, pain in the loins and lower extremities, oppression at the præcordia, cough, general uneasiness, more or less heat and thirst, rapid pulse, and high-colored urine. These precursory symptoms continue about five days, when a very fine eruption, resembling millet seeds, makes its appearance on different parts of the body. The little vesicles which compose this eruption are round, hard, and transparent, becoming after a time opaque. As they are about coming out there is an itching, stinging, and burning sensation in the skin, the oppression at the chest and stomach is increased in severity, and, in general, a profuse perspiration, of a disagreeable sour odor, breaks out over the

whole surface. After two or three days the vesicles become opaque, then soon dry up and fall off in the form of a scurf.

Some writers consider miliary fever as a purely *symptomatic* affection, while others, with equal tenacity, maintain that it often occurs idiopathically. According to our own opinion it is not improbable that it may be dependent upon some latent miasm, which only requires an exciting cause, like puerperal fever, heating and stimulating ptisans, undue exposure in heated and close rooms, &c., to call it into action. We are confirmed in this opinion from the fact that in nearly every case with which we have been made acquainted, where the eruption has retroceded, whether by improper use of external lotions or otherwise, there has been a supervention of some serious internal disorder.

If this view of the cause of the malady be correct the therapeutical indications are evident, and the prudent physician will use every means which our specific medicines afford to aid nature in casting off the poison from the system through the medium of the skin.

Treatment.—In conjunction with our internal remedies, it is essential that the patient be kept in a dry apartment, of uniform temperature, and be confined to a strict dietetic regimen. By these means we shall prevent the retrocession of the rash from the sudden application of external cold, and avoid those unpleasant complications which errors in diet are so apt to induce. A strict adherence to the above rules, with an occasional dose of *Aconite* of the third dilution, will generally suffice for the cure of this complaint.

After the eruption has manifested itself, if the patient is troubled with a train of nervous symptoms—like sleeplessness, general uneasiness, partial loss of power over the voluntary muscles, spasmodic twitchings, and constant desire to change position—a dose of the sixth dilution of *Hyoscyamus* may be given, and repeated as circumstances require.

Should the brain become affected in any stage of the disease, *Belladonna* may be exhibited, in the same manner as advised under measles.

Chamomilla, at the tenth potency, should be administered when infants and children are the subjects of attack. If the malady commences with strong febrile excitement, this medicine may be preceded by *Aconite*.

Bryonia is also highly recommended in cases of miliaria in infants and parturient women. It may be administered in the same manner as *Belladonna*.

Ipecacuanha will apply when the eruption is accompanied with laborious and noisy respiration, nausea or vomiting, groaning, aversion to food, chilliness alternating with flushes of heat, and sweet, insipid taste. The third trituration should be employed—one grain every four or six hours, until the symptoms yield.

2. VACCINIA.—Cow-Pox.

The genuine cow-pox appears on the teats of the cow in the form of vesicles of a blue color, approaching to livid. These vesicles are elevated at the margin and depressed in the centre. They are surrounded with inflammation. The fluid they contain is limpid. The animals are indisposed; and the secretion of milk is lessened. They are locally treated by solution of Sulphate of Zinc and Copper, otherwise they would degenerate into ulcers which are exceedingly troublesome. Saccharum-saturni would probably be better as a wash. Similar effects were induced on the hands of the milkers. They have some fever and swelling of the glands of the axillæ. The active matter may excite the disease if applied anywhere to the abraded surface.

Mode of performing Vaccination.—Make a very oblique puncture with the point of the lancet in the arm, near the insertion of the deltoid muscle, the lancet being charged with the fluid matter. To render the infection more certain, take more of the virus and draw it across the puncture. Sometimes it is inserted in more than one place.

Dr. Hoffmann, of Poughkeepsie, N.-Y., says:*

He has succeeded in different ways; one is "to grasp the arm of the child, so as to tighten the skin on the part selected, (perhaps over the lower part of the body of the deltoid muscle, and, with the point of a sharp lancet, charged with the fluid matter, make a very small oblique puncture in the skin. If the puncture be small, causing only the *appearance* but no flow of blood, the virus, being deposited beneath a valve-like portion of the skin, is very likely to be absorbed." But, in order to render the infection more certain, the lancet may be charged again and an additional amount of the virus laid upon the puncture. The small amount of fluid, including a minute quantity of blood, that now lies within and upon the puncture should be permitted to remain exposed to the air till it coagulates or dries. It should then be shielded from pressure or disturbance. A small piece of court-plaster may be placed over the wound, but, if it can be shielded by sufficient care without this, it is perhaps better.

Second Mode.—Having obtained some of the fluid virus fresh, or (if not able to get it,) pulverized a small amount of the scab with a drop of water on the bottom of a glass or plate; proceed by charging the point of a sharp lancet with the virus, and making in rapid succession five or six scarifications in one direction, then crossing them by the same number, and finally rubbing the flat blade smoothly over.

The Time for taking the Virus.—It may answer as soon as the

* U. S. Jour. Homœop. Vol. II. p. 334.

matter is formed; but if taken too early, the vesicle may be injured. It is better to leave it untouched till the eighth day, when its power is at its best degree of perfection. At an earlier period it may be used with safety, yet with less certainty of success.

Course of the Vaccine Disease.—The first sign of infection begins about the third day. A small red spot rather elevated appears at the place where the puncture was made. It may be retarded by various causes, and may be prevented by any other disorder, as dentition or debility.

Too much inflammation occurring within two or three days after inoculation often attends when the operation is unsuccessful.

The areola begins to enlarge about the ninth day and declines about the eleventh and twelfth day when it begins to dry. The drying process begins with a brown spot in the centre. In proportion as this enlarges, the surrounding efflorescence increases till at length nothing remains but the circular scab of the dark brown mahogany color approaching to black.

The true, genuine cow-pox pustule, which is a reliable proof of the prophylactic virtue of the vaccine, is "flat and depressed in the centre; and on the eighth or ninth day is surrounded with an inflammatory redness, which is the chief sign that the organism has been thoroughly infected with the vaccine. If the pustule be full and convex, and if it begin to rise three or four days after vaccination was performed, the prophylactic power of the virus can not be relied upon; the matter was perhaps too old, or was otherwise not good.

Permanent Evidence of successful Vaccination.—1. The proper vaccine scar should be distinctly defined after a lapse of twenty years; in order to this it is indispensable that the scab should remain on, or that cicatrization should not be completed till the twenty-first day. In some it is completed by fourteen or fifteen. Then "vaccination is imperfect."

2. The true and perfect vaccine scar is circular or nearly so. When common inflammation supervenes early, the scar is irregular in form and the system is still open to small-pox more or less modified. The diameter of the circular scar is not material; but we think the largest compatible with safety equal to a dime in size.

3. The vaccine scar should be indented and radiate; though this mark is not insisted on as a *sine-qua-non*, in proof of perfect vaccination.

Sources of Imperfection of Vaccination.—1. Effete virus. Always use fresh matter, or from scabs perfectly preserved. 2. Pre-occupation of the system by some other important diseased process, as dentition, vesicular inflammation, fever, whooping-cough, porrigo favosa, or

herpes. 3. Lastly, advanced period of life when vaccination is performed.

The real virus from the cow is so difficult to procure, that the safest method is to select it from the healthiest child of the healthies parents. There is grea difference in the power of the scabs in producing the vaccine disease. The best and most reliable are of a dark brown color, easily pulverized, and as brittle as glass. Those of poorer quality are pale, will bend but not break; they are with difficulty pulverized, and are composed chiefly of fibrine.

Observations on many thousands of cases lead to the following conclusions:

1. That every individual is subject to vaccination. 2. Re-vaccination is not necessary before puberty. 3. At puberty the system undergoes a change which makes vaccination again necessary. 4. Vaccination when perfect is a sure preventative of small-pox. 5. Re-vaccination is a sure preventative of varioloid. 6. The third vaccination is inert. 7. The system is susceptible of varioloid after puberty whenever the individual without re-vaccination is exposed to small-pox. 8. Re-vaccination is not generally necessary if the first operation was performed after puberty. 9. Those who disregard vaccination are always liable to small-pox when exposed to it. 10. That if every individual were perfectly vaccinated before puberty, and re-vaccinated afterwards, small-pox would disappear from the earth.

Of the Period at which Vaccination may be performed with the hope of preventing Small-pox.—The infection when communicated is not indicated by any perceptible symptoms; and it is, therefore, impossible to define the period when vaccination will no longer be able to ward off the small-pox. Hartmann says: "If small-pox shall have attacked one member of a family and other members of the family have not been vaccinated, vaccination will prove inefficient to protect them from the disease." We have seen vaccination effectual in saving a whole family, one of whom already had the small-pox and was lying in their midst.

Irregular Course of Vaccine Disease.—Hartmann says, he has seen "on the seventh day of vaccination metastasis to glandular organs." This is not dangerous though the diseased action be transferred to the testicles or parotid glands; as it generally disappears of itself on the ninth or eleventh day, when the nervous and vesicular excitement has subsided. It has frequently happened, that "morbid symptoms which would not yield to any remedy, such as chronic inflammation of the meibomian glands, or the discharge of badly-smelling pus from the ears, ceased entirely after vaccination." In such cases the vaccine disease ran its regular course, and was accompanied by more fever than usual.

Bad Results of Vaccination.—A Massachusetts paper of April, 1860, says: "A large number of persons in Westport, Mass., recently inoculated with vaccine matter obtained from the city physician of Boston, have been afflicted in an extraodinary manner. A Mr. Fletcher died in a few days after being vaccinated. His arm commenced swelling and mortification soon took place."

Dr. Williams, of the Cleveland Medical College, says: "A few years ago the City Council of Cleveland passed an order requiring the positive vaccination of all persons who had not been previously vaccinated. The order made no distinction among cases and was indiscriminately carried into execution. The results were in some cases truly alarming. In several children terrific ulcerations and disorganizing inflammations followed which ended in death. Others recovered, but retained for a long time malignant sores, extending to the bone, or nearly laying it bare around the arm. Those who performed the vaccination claimed that the matter they used was perfectly pure." (*N. A. Jour. Homœop.* Nov. 1857. p. 153.)

Bad Results of Vaccination from the diseased Condition of the Patient.—A physician of Poughkeepsie, N.-Y., vaccinated an apparently healthy child and in a week was summoned to look at the child. "It was covered with deep, ugly looking ulcers, secreting thin, acrid pus. It had hitherto been the picture of health; it was now feeble, emaciated, its voice having a piping sound." The virus was known to be from a healthy child whose parents were also healthy; other children had been vaccinated with the best results from the same virus. The physician found in this case that the parents of the child were more or less diseased, the father confessing to have syphilis when young.

The matter for the performance of vaccination should be only taken from healthy subjects, free from all eruptions or glandular diseases. But the best matter may excite a latent dyscrasia in a patient supposed to be healthy. Hence proper antipsoric treatment should precede as well as follow vaccination.

Distinction between Vaccinia and true Small-pox.—In claiming the appropriateness of the vaccine disease as a remedy to prevent small-pox it is not pretended that the two diseases are precisely *alike* in their nature. Indeed, they are not *alike* but only *similar*. The distinction is thus drawn by Dr. Henderson, of Edinburgh. 1. The mildest case of modified small-pox in which only a half dozen pocks occur on the skin is capable of producing by inoculation or contagion nothing but small-pox; and it *may* produce severe and even fatal small-pox in others, vaccinia may be said, however, to be still milder than the mildest small-pox.

2. Dilute small-pox virus with water and thus weaken it to the lowest

potency; it is still capable of acting by inoculation, and it will still produce small-pox, not a solitary vaccine vesicle.

3. Dilute small-pox virus with cow's milk and it is said, by Dr. Basil Thiele, that according to 3000 experiments, made by him, inoculation with the mixture will produce the vaccine vesicle and not the small-pox eruption; the two diseases then are not identical. If only similar, *very similar* it may be, the conclusion manifestly is that vaccination, by producing a disease *similar* to the small-pox, and which can occur only once in a life, prevents the occurrence of small-pox; that in a word, vaccination acts *homœopathically*, or according to the law of similars. (*On Homœopathy*, p. 240.)

Vaccination, says Hahnemann, can not protect us from small-pox by acting otherwise than homœopathically. The diseases are similar in appearing generally but once in the course of a person's life; they leave behind cicatrices equally deep; they both occasion tumefaction of the axillary glands; they have fevers that are analogous; an inflamed areola around each pock; and finally ophthalmia and convulsions. Other traits of close resemblance often exist between the two maladies.

"The cow-pox would even destroy the small-pox on its first appearance, that is, it would cure this disease when already present were not the small-pox stronger than it. To produce this effect, then it only wants the excess of power, which according to the law of nature ought to accompany the homœopathic resemblance, in order to effect a cure. (§ CLVIII.) Vaccination, considered as a homœopathic remedy, cannot, therefore, prove efficacious except when employed previous to the appearance of the small-pox, which is the stronger of the two."

"When so employed, it excites a disease very analogous (and consequently homœopathic) to the small-pox, after whose course, the human body, which as usual, can only be attacked once with a disease of this nature, is henceforward protected against a similar contagion.*

How much Benefit has Vaccination conferred on the World? In 1806 the bills of mortality seemed to show that the average duration of human life was twenty-eight years; in 1836 a committee of the New-York Medical Society estimated the average duration of life at thirty-three years, and they credited vaccination with having done more than any other sanatary measure for thus adding five years to the length of human life. Before vaccination was discovered, one-tenth of the whole human race died of small-pox taken in the natural way. Only

* This mode of homœopathic cure *in antecessum* (which is called preservation or prophylaxis) also appears possible in many other cases. For example, by carrying on our persons Sulphur, we think we are preserved from the itch, which is so common among wool-workers; and by taking the smallest possible dose of Belladonna, we are protected from scarlet fever. (*Organon.*)

three years before Jenner's discovery 36,000 died in England in one year. His discovery promised to banish the most fatal of the diseases which preyed upon the health and happiness of the human family. And now, after the experiments of three-score years medical testimony proves that vaccination is the only protective means for guarding against small-pox, and that when the system is fully under the vaccine influence the protection is perfect. When this is doubtful, there is as yet no resource known but *re-vaccination*; and, if after trying it there be a doubt remaining, there is no resource but to repeat the operation till the best vaccine virus that can be found can produce no effect upon the system. Let re-vaccination be tried on all who have been vaccinated in infancy or youth; let the matter be selected with care; and the protection given may be regarded as complete. It can not be said that a single vaccination gives that perfect protection. The longer the interval since vaccination has been practiced, the greater chance of exciting true vaccine disease by re-vaccination. The influence of the vaccine is not certainly for life, but for a term of years, which varies in different constitutions, from ten to fifteen years, often much longer; in some persons it extends through life. Lorette's experiments led to the conclusion "that matter taken from a secondary pustule will produce a full and complete primary vaccine disease. We see the same in small-pox, where the varioloid often communicates confluent small-pox."

Permanence of the Power of Vaccination.—I. "Is the preservative virtue of the vaccine virus absolute, or only temporary?"

In 1842 the French Academy des Sciences offered prizes for the settlement of this question; and it required that if the latter opinion should be reached the answer to the question should "determine by precise experiments and authentic facts the period during which vaccination preserves from variola." The answer which was accepted by the Society was given by M. Serres. He says:

"The comparison of results enables us to draw three conclusions:—

1. The preservative power of vaccination is absolute and general for eight or nine years after its performance, and even to the tenth or twelfth year in a great proportion of cases.

2. When this period is passed, and especially under the influence of epidemics, a part of the number vaccinated, and a part only are liable to variola.

3. The greater number of the vaccinated are probably protected for life.

II. "Has the cow-pox a more certain or permanent preservative power than virus already employed during the greater or less number of successive re-vaccinations?"

ANSWER.—The local effects of the new virus are more marked; but the preservative power is not proportionate to these.

1. Small-pox, says Serres, appeared at the college of Sorèze and attacked forty pupils of whom only two had been vaccinated. All the remaining pupils, two hundred in number, were vaccinated and small-pox ceased.

2. In 1821 small-pox attacked twelve children at Mantua foundling hospital, the remaining two hundred were vaccinated, and the disease disappeared.

III. "Supposing the preservative power of the vaccine to become enfeebled by lapse of time, should we renew it, and by what means?"

Means proposed for Renewal of the Virus.—Inoculate the cow with the grease from the heel of the horse, or with true small-pox from the human subject. Both of these expedients have often failed, but they have often succeeded. It is best to seek the true vaccine virus at its source as proposed by Jenner.

IV. "Is it necessary to vaccinate the same person several times? And if so, after how long an interval?"

ANSWER.—The preservation is almost absolute up to the period of adolescence. After that period certain of the vaccinated are liable to attacks of variola until the age of thirty or forty years. After that period their preservation is almost absolute and certain. The only reliance to arrest epidemics is in *re-vaccination*. The fact that the vaccine disease may be excited by re-vaccination is no evidence that the patient would have taken the small-pox. But the process of re-vaccination does arrest epidemic small-pox; and this fact, fairly and frequently observed, has silenced the opposition of all Europe.

To ensure the safety of the army the Prussian government issued an order March 6th, 1831, demanding the re-vaccination of all who entered the army. The order was made absolute; and all surgeons were compelled to report their results to the royal military council every year. The report for 1833 concludes: that "there were strong grounds of doubt of the extent of the protective agency of vaccination. Either from the possible failure of the original operation, or from the effect wearing out by lapse of time, enough had been proved to justify the re-vaccination; and that after the re-vaccination of all doubtful men there were no cases of small-pox or varioloid, though the men had been closely in contact with very many cases of small-pox."

In France the Academy of Medicine appointed a committee to investigate the same point. M. Lorette reported that he re-vaccinated 3600 persons. In one canton where epidemic varioloid prevailed, out of eighty-six re-vaccinated, twelve presented examples of a second eruption so regular and perfect that it was impossible to distinguish it from the primary disease. Of these he says two-thirds presented vaccine cica-

trices too deep and well defined to leave any doubt of the perfection of the primary vaccination; therefore these individuals exhibited examples of two distinct and perfect eruptions of vaccina.

The period after the first vaccination influences the success of a second trial. Before the age of ten years, re-vaccination only produced false vaccinia. Another committee decided that "re-vaccination was most successful for the young and middle aged." Hufeland says: "Varioloid attacks almost exclusively adult subjects, or those who have been vaccinated from ten to twenty years."

A committee of New-York physicians in 1836 reported that the persons attacked with varioloid in the United States "were such as had been vaccinated from fifteen to thirty-five years before; and hardly in any case did it affect those who had been vaccinated within ten years.

Characteristics of False or Imperfect Vaccine Disease.—It begins by the first or second day, is developed with such rapidity that it attains its height by the time the genuine begins to show itself. The pustule presents no central depression, is without a silvery lustre, and has no elevated rim; it rises nicely to a point, and thus becomes crowned with a yellow or dirty layer, which bursts and gives out a single flake of matter; this when dried resembles gum in appearance; and this is all accomplished in eight or ten days at farthest. There is now little doubt that the false vaccine is owing to matter too far advanced, or to the resistance offered by the economy from previous vaccination or variolation.

3. VARICELLA.—Chicken-Pox.

Diagnosis.—There are a few points of similarity between milder cases of small-pox and the more severe forms of varicella which require an acute observer to discriminate between them during the early part of the attack. Both diseases commence with similar primary fever, which continues until the eruption makes its re-appearance; the pustules in both instances resemble each other; both are alike contagious, and communicable by inocculation.

At the eruptive period, however, an attentive observer will perceive that the resemblance usually ceases, for the pustules of variola make their appearance in a uniform manner, first on the face, then successively upon the neck, arms, breast, body and lower extremities, occupying usually but twenty-four hours for the completion of the eruption, we have seen it take several days, while the pustules of varicella come out in repeated series, first upon the breast, then upon the face, head, arms, body and lower extremities, and require three or four days before the eruption is complete. Therefore we often observe during the progress

of the latter, some vesicles drying up, some in a state of partial development, while others are but making their first appearance. The vesicles of chicken-pox contain a whitish or yellowish lymph, which seldom advances far towards the suppurating stage, and even in those cases where pus is formed, there is never any secondary or suppurative fever as in variola.

Causes.—Varicella, like other contagious diseases, is a distinct affection, and proceeds from a peculiar specific cause. This is apparent from the fact that inoculation with varicellous matter never gives rise to any other malady than varicella itself.

It is not only a much milder disease than small-pox or varioloid, but is of much shorter duration, running its course generally in six or seven days, when the pocks all disappear, leaving smooth surfaces.

Treatment.—Varicella, as it commonly occurs, requires no medicinal treatment. A due regard to diet, avoidance of exposure to cold, dampness, &c., being only necessary to ensure its safe progress.

In cases where the malady assumes unusual severity, manifested by a high grade of febrile excitement, determinations of blood to the brain, lungs or abdominal organs, then the medicines that are homœopathic to the existing symptoms may be administered.

The remedies most frequently used in such cases are, *Aconite*, *Coff.*, *Bell.*, *Merc.*, *Rhus-tox.*, and *Sulphur*. The strength of the medicines as well as the repetitions of the doses, the same as under varioloid.

4. PELAGRA.

Dr. James Johnson, one of the "most accomplished medical scholars in the world," thus describes this disease, known as "the scourge of Italy:"* The phenomena which result from the physical operation of climate on the human race, and which are equally curious and melancholy to contemplate, may be seen in a large scale in the great hospital of Milan—the pelagra of the Lombardo-Venetian plains.

This horrible malady has been observed since the middle of the last century, and is rapidly increasing. It has been supposed that one-seventh of the population may be affected by it.

It begins by an erysipelatous eruption on the skin which breaks out in the spring, continues till autumn, and disappears in winter, chiefly affecting those parts of the surface that are habitually exposed to the air or sun. This cutaneous symbol of an internal disorder is accompanied or preceded by remarkable debility lassitude, melancholy, moroseness, hypochondriasm, and sometimes a strong propensity to suicide. Year after year the cutaneous eruption and annual disorder

* Johnson, On Change of Air, p. 54.

become more and more aggravated, with shorter and shorter intervals in winter. At length the surface ceases to clear itself. becomes permanently enveloped in a thick, livid, leprous crust somewhat resembling the dried and black skin of a fish. By this time the vital functions are reduced to a low ebb, and frequently the intellectual faculties also. The miserable victim loses the use of his limbs, particularly the inferior extremities; he is tormented with violent colic, headache, nausea, flatulence and heartburn—the appetite being either weak or voracious. The countenance is sombre; teeth rotton, inside of the mouth ulcerated. Mucous membrane highly irritable; diarrhœa; burning pain in the head and along the spine, from whence it radiates to various other parts, but more especially to the palms of the hands and soles of the feet, tormenting the wretched victim by day, and depriving him completely from sleep at night! He frequently feels as if an electric spark darted from the brain, and flew to the eye-balls, the ears and nostrils, burning and consuming these parts. To these seven afflictions of the body are often added hallucinations of mind. The patient fancies he hears the incessant noise of mill-stones grinding near him,—of hammers resounding on anvils, of bells ringing, or the discordant cries of various animals. Advancing further the disease sometimes takes the form of various other maladies, as tetanus, convulsions, epilepsy, dropsy, marasmus, mania. Over the beds of the Milan hospital are written the compound names atropia pelagrina, hydrops pelagrina, paralysis pelagrina, &c. The patient at last ceases to suffer and death relieves him when disease has reduced him to an appearance resembling a mummy. Many anticipate a fearful death by the dreadful expedient of suicide, and the tendency to self-destruction by drowning is so general that the suicidal disposition was called by one writer "Hydromania." Pelagra most frequently affects persons living in the country, including the lower classes of the people; it may effect persons of every age down to children. It is found in the whole of the flat country on both sides of the Po, especially the level plain between that river and the Alps. It has been described by many native authors, including Strambi, Trapolli, Soler, Zanati.

Such is a disease which afflicts one seventh of the population of that delightful land, the climate of which has been eulogized by every ancient and modern poet, painter, novelist and romantic tourist. Wordsworth saw the beauties of external nature, and enjoyed them as Virgil has taught all men to appreciate them nineteen centuries ago. Rogers found among the same scenes only the sunniest spot of earth:

——— "Where the world danced,
Listening to Monto quaffing gramolete,
And reading in the eyes that sparkled round,
Ten thousand love adventures written there." (*Rogers' Italy.*)

Causes.—The cause of this frightful malady is no more known than the cause "of hepatitis on the coast of Coromandel, of elephantiasis in Malabar, beriberi in Ceylon, barbadoes-leg in the Antilles, goitre among the Alps, the plica polonica in Poland, cretinism in the Valais, or malaria in the Campagna di Roma. It is an emanation from the soil, whether conveyed in the air, the food, or the water. If any of these endemics above named originated in the filthy habits of the people, we ought to have them in Sion, or the Jew's quarter in Rome, the narrow lanes of Naples, and the allies of filth in all Italian towns and cities. But the Jew's quarter of Rome is the filthiest and the healthiest spot in that famous city. The inhabitants of some wretched Neapolitan villages are eaten up with dirt, starvation and malaria; but no goitre, elephantiasis or cretinism is ever seen there. Each country then which produces its peculiar endemic, produces them from hidden sources that human sagacity has not yet been able to penetrate. Medical men have generally thought palagria in Lombardy to result from the poverty and wretched condition of the poor. No doubt this poverty and the filthy habits of the people in many places contribute to call forth and perpetuate a disease which proper sanitary conditions and correct medical treatment ought to exterminate.

Genus III.—EMPYESIS.—PUSTULOUS EXANTHEM.

1. VARIOLA.—Small-Pox.

The Greeks and Romans knew nothing of small-pox. The first notice of any disease that presents any of the chief features of small-pox occurs in a chapter of Procopius in *Bello Bersico* (lib. II., chap. 22,) where he describes a dreadful pestilence which began at Pelusium in Egypt in about the year 544 A. D., or 1318 years ago. It spread towards Alexandria on one side and Palestine on the other. A very short time afterwards unequivocal traces of small-pox are seen in the countries bordering on the Mediterranean. Bruce, the traveller in Abyssinia, supposes it to have first appeared in the year A. D. 522. But it was not clearly described till it was done by Rhazes of Bagdad in the year 900. From the east small-pox travelled westward, and reached England just before the year 900. (*Lectures on the Exanthemata, by Dr. George Gregory, St. Thomas Hospital*, 1843.) In 1527 it was brought to America.

So long as no means were known of mitigating the severity of small-pox the number of deaths from this disease was enormous in every country to which it had found its way. Before the introduction of *inoculation*, and when the disease was always taken in the natural way, the number of deaths was one in six, and a large proportion of those who escaped with life were dreadfully disfigured. Under the influence

of inoculation the deaths were reduced to one in fifty; and further improvement in the treatment by physicians reduced the deaths to one in two hundred. But the disease was more widely diffused by these efforts to diminish its mortality. There were more sources from which small-pox could be taken in the natural way. Inoculation therefore made its way to public confidence through much opposition; and it was not fully established in the public mind after eighty years of discussion and experiment. In England alone 40,000 persons annually died of small-pox. Dr. Lettsom estimated the deaths in Europe at 210,000 per annum; and Bernoulli made the annual number of deaths in the world at 600,000.

A half century before the discovery of inoculation, 72 persons out of every 1000 of the population died of small-pox. In forty years after this discovery, or after 1770, the deaths rose to 85 per 1000 inhabitants. And such was the condition of the world when Jenner began his experiments on the powers of vaccination to supercede small-pox. In 1798 he performed his grand experiment of inoculating Sir James Phipps with small-pox, relying on only a previous vaccination to protect him from the more fatal disease. The result was successful. The patient found himself insusceptible to the small-pox poison; and the world rejoiced in the hope that the most loathesome and dangerous of known diseases was about to be banished from the world.

Varieties of Small-pox.—Two varieties of this disease have generally been recognized by nosologists; one termed *distinct*, the other *confluent*.

1. The former of these is more mild and less dangerous than the latter, being attended with less severe constitutional disturbance, and having detached, distinct pustules, fewer in number, and which are surrounded by a pale-red areola.

2. The *confluent* variety is distinguished by the pustules running together and meeting each other, the surface presenting the appearance of a uniform and homogeneous swelling.

Diagnosis.—An eruption consisting of acuminated pustules which first appear on the third, fourth or fifth day of the contagious fever in the shape of red spots; these spots gradually elevate themselves into pustules during three days, suppurate for three other days, after which they dry up and form scabs, which in falling off leave small irregular cicatrices. This is the course of a single pock. As the breaking out of the fresh pocks continues for three days, the period of dessication terminates about a fortnight after the appearance of the first pock.

Small-pox may be divided into the following stages or periods, viz: 1. The *primary fever;* 2. the *eruptive stage;* 3. the *maturing period;* 4. the *period of exsiccation.*

1. The *primary fever* in the *distinct* variety is ushered in with

lassitude, rigors, pains in the head, back and loins, slight sore throat, soon followed by *nausea and vomiting*, *pain at the epigastrium*, often severe, with *tenderness on pressure*, hot and dry skin, thirst, scanty and high-colored urine; these symptoms continue for about three days, when the *eruptive stage* begins.

Eruptive Stage.—The eruption first comes out in small red spots or points, which in the course of forty-eight hours become rounded into pimples with vesicles upon their tops and slight depressions in the centre. They show themselves first upon the face, and then in irregular succession upon the scalp, neck, arms, breast, body, and lower extremities, requiring about twenty-four hours for the full development of the eruption. After this period, there is a marked remission of all the febrile symptoms, which continues for three or four days.

The Maturing or Supurative Stage now commences. There is now a renewal of the febrile disturbance still more violent than at first, which commonly continues during the remaining course of the disease. This period continues from three to five days, when the serous fluid within the pustules acquires a purulent character, becoming thick and yellow. On the tenth or eleventh day, the pustules burst, giving vent to the matter which collects upon the surface of the pock, forming dark scabs or crusts, which in a few days fall off, leaving the skin scurfy and sometimes pitted.

Now commences the *period of exsiccation*, which occupies from three to five days; after which, if the malady has pursued a moderate course, the morbid symptoms all subside, and convalescence ensues. Thus it will be perceived that the regular course of the disease occupies about fifteen days; this course, however, is subject to modifications from a great variety of causes, such as the supervention of pneumonia, bronchitis, ophthalmia, abdominal inflammations, disease of the glands, retrocession of the eruption, &c.

Confluent Variety. - In this variety the primary fever is of a more violent character, the eruptive period more irregular, usually commencing at the end of two days from the onset of the malady; there are often spasmodic twitchings of the muscles, at, or previous to the appearance of the pustules, the secondary or suppurative fever frequently assumes a typhoid form, salivation occurs about the period of the eruption, after which the tongue, mouth, and throat become dry and dark; pocks form in the mouth, throat, larynx, pharynx, rectum, and urethra; and occasionally symptoms manifest themselves which indicate a high degree of malignancy. The face is often much swollen and disfigured from the pustules running into each other, so that the eyes become entirely closed, and the nostrils obstructed. The matter of the pustules is of a dusky color, and is sometimes so acrid as to irritate the surrounding skin.

What has been denominated *varioloid* is nothing more or less than an exceedingly mild form of small-pox, modified by previous vaccination, or some other accidental influence. The primary fever is very mild, the eruption distributed over the body in patches, the suppurating process slight and imperfect, attended with little or no secon dary fever.

Causes.—All agree that small-pox variola proceeds from a specific morbific poison, *sui generis*. There are, however, causes constantly in operation, which exert a powerful influence in modifying or aggravating the character of the malady, respecting the nature of which authors are not so well acquainted. At some periods small-pox is characterized by a high degree of putridity, the symptoms assuming a low typhoid form, and a majority of the cases proving speedily fatal in spite of all remedial measures. At other seasons we may have a predominance of pulmonary or cerebral symptoms, attended with a high grade of synochal fever, and requiring a very different course of treatment from the form above mentioned. Again it may run its course in a regular and moderate manner, without serious complication from disturbance of any capital organs, and demanding but little aid from remedial agents. Some writers have supposed that these different modifications were owing to certain occult conditions in the atmosphere, and also that the existence at the same time of other epidemics, has a material influence over the character and progress of small-pox. This is no doubt true; but there are other causes more under our control, which are of no less importance, as predisposing agents to the more violent forms of the malady. The most prominent of these are small and ill-ventilated dwellings, a lack of healthy and nutritious food, want of cleanliness, insufficient clothing, immoderate use of ales and impure intoxicating liquors; and the pernicious custom of crowding together in the same apartments, a number of individuals, who thus inhale, a good part of the time, a vitiated and unhealthy atmosphere. The fatality of small-pox when it seizes upon this degraded class, indicates the importance of the influences just enumerated in aggravating the character of the malady. Does it not then behoove the guardians of the public health during the prevalence of contagious affections to look well to these deleterious agencies and remove from their towns the filth, dissipation and corruption of these hot-beds of contagion.

Dr. Granger, of St. Louis, has employed both variolin, and vaccinin, extensively as remedies in variola, and with excellent results. He informs us, that under their use the pustules shrink away before arriving at maturity, and that the severity and duration of the disease is much diminished. He also observes that it is rare that indentations follow the use of these medicines. He employs the second and third triturations.

TREATMENT.—The following are the ordinary medicines, used in the *treatment of small-pox: Aconite, Belladonna, Rhus-tox., Vaccinin, Variolin, Sulphur, Opium, Mercurius, Bryonia, Pulsatilla, Nux-vom., Carbo-veg., Arsenicum, Stibium.*

Aconite, second or third dilution, is the proper medicine during the primary fever, provided the attack is regular, and there exists no tendency to inflammation or congestion of any important organ.

In case the eruption is slow in making its appearance, or the process should be attended with great internal oppression, either *Rhus* or Sulphur, third attenuation, may be exhibited; a dose every three or four hours.

Belladonna is the specific, when, during any part of the malady, inflammation or congestion attacks the brain. In cases of this description this remedy exercises a twofold effect; first, by its special action upon the cerebral organs, and second, by its power of forcing and of retaining the eruption upon the surface. The third dilution may be used in these instances—one drop every two hours until amelioration of the symptoms is evident.

Tartar-emetic.—The identity of the Tartar-emetic pustule with that of small-pox induced Dr. Liedbeck, of Stockholm, to try its effect in this disease. He says, he has never seen a case of small-pox terminate fatally when treated by Tartar-emetic. In small doses it moderates the fever and the pustules run their course without leaving a vestige of their presence. He gives one-half to a grain, dissolved in a pint of water, a table-spoonful every four hours. The first dose often makes the tongue clear, the fever subsides, and the difficulty of swallowing is less. Dr. Berg says, it is the only remedy to be relied upon when there is irritation of the respiratory mucous membrane.

In the epidemic of Stockholm, of 1838, this complication caused all the deaths. After nine years further experience he would refer to administration of tartarized antimony as the substitute for vaccination. In confluent small-pox, it reduces the fever, allays the irritation of the skin better than any other remedy. Dr. Stewart, of Natchez, says, he has used it in small-pox for several years.

CASE.—J. H——, a boy aged four years, has had fever for four days; eruption slowly appearing. Fever too high to the full development of the eruption. Aconite and Tartar-emetic. The next day the eruption was more full; the third day fever less; urine still deficient and high colored. Epigastrium full, bloated; eruption maturing. Fifth day, the fever high; eruption very full over the whole surface; body and limbs swollen; eruption confluent over the face and some other parts. From this time the Tartar-emetic was given constantly, and Bryonia only one day. There was a steady progression in the maturation and

then in the dessication of the pustules. On the fourteenth day the fever was gone, the scabs separated, the skin only remaining tender.

Sulphur.—At the commencement of the attack, and about the period of dessication, it will often prove exceedingly serviceable in determining the eruption to the surface, and in disposing it to progress kindly. In individuals who suffer from a psoric taint, it cannot well be dispensed with. It may be administered at the third trituration, in grain doses, and repeated sufficiently often to ensure the favorable appearance of the eruption. It has been used to prevent the pitting of the skin.

Vaccinin and *Variolin* have been highly extolled as a remedy in all stages of this affection. It is said, that by the use of these agents variola is rendered a very mild and harmless disease. It is claimed by those who have made considerable use of them, that all of the stages of the malady are shortened in duration, and that a majority of the cases thus treated resemble varioloid rather than real small-pox. These medicines have been used in the form of trituration of the third attenuation.

Variolin is an isopathic remedy. Hartmann says: "after controlling the eruptive fever, congestion of the brain, delirium, burning heat of the skin, dryness of the tongue, thirst, &c., by Bell. I have succeeded in shortening the course of the eruption and preventing the excessive suppuration with Variolin."

Mercur.—Fever violent, nose throat, eyes severely affected. Ptyalism. See p. 634.

When there is much swelling of the face, fomentations of tepid milk.

Camphor.—Sudden dessication of the pustules and disappearance of swelling of the face are indications of approaching death. Repeated doses of Camphor will rouse the system. It is only possible to maintain life by the use of stimulants.

Prognosis.—Small-pox is a most painful, dangerous and disgusting disease. The more numerous the pocks, particularly in the face, the more complicated the disease.

Old or enfeebled persons, and pregnant women, are particularly liable to death from small-pox. The disease is more fatal when it appears in an epidemic form; is more so at the middle of the epidemic than at its beginning or end. Convulsions occurring before the eruption appears do not indicate danger; but they are highly dangerous when they occur during the period of dessication. There is great danger when the eruption appears very suddenly, and in clusters, or when the pocks are depressed, pale, discolored or sanguinous. Discharges of blood from the kidneys and bowels are highly dangerous.

Consequences of Small-pox. — *Chronic Ophthalmia.* — Hepar-sulph., Digitalis, Sulphur, Rhus, Arsenicum, Merc.-hyd., and Euphrasia.

Frequently recurring Boils.—Sulphur, Mercurius, Cinna, Kali-hyd.

Caries after Small-pox.—Asarum, Silicea, Mezereum, Aurum, Phos., Nitric-acid.

Convulsions occurring in children during the eruptive and febrile stage. Expose to cool air; give Aconite and Belladonna at short intervals; enemas of tepid water. If the child be pale, with cold extremities, frequent emission of pale urine, there is a nervous disposition predisposing to spasms. Put the patient in a warm bath and administer Zinc, third trituration one dose every hour.

If the convulsions depend on gastric irritation or worms, treat those conditions.

In the eruptive stage more than any other the pocks incline to become malignant by combining with typhoid or putrid symptoms, or disappear suddenly. In these cases *Arsenicum*, *Ammonia-carb.*, *Rhus-tox.*, *Bryonia*, and *Nitric-acid.* will be required.

2. VARIOLOID.—Modified Small-Pox

After Jenner and his followers had succeeded in the course of a thirty years' war in convincing the public of both hemispheres that vaccination was the true and perfect preventive of small-pox, it was thought that the grand desideratum was reached, and nobody feared the dying out again of the virtue of the remedy. But a new disease began to show itself, attacking those who had been protected by vaccination. It was called *varioloid*, from its *resemblance* to true *variola*. The question was asked, "*What is varioloid?*"

A multitude of indubitable facts warrant us to conclude that it is merely a modification of small-pox; that it produces in unprotected persons genuine variola; in a few instances it has produced the confluent form of the disease and even death. It then appears that vaccination is not a *perfect preservative* against small-pox. The question arises, "To what extent is it to be relied upon?" Physicians have been unwilling to admit failure or imperfection in any thing that has been generally advocated. And the opinion given by Dr. John Bell in a dissertation that obtained the Boylston prize for the year 1825 continues to receive the sanction of the profession. He says: "Reason and probability are highly in favor of the truth of Dr. Jenner's opinion that the security which vaccination offers is in direct proportion to the degree of perfection of the vaccine process; and that in consequence it is advisable re re-vaccinate as long as any effect is produced." It is claimed that this advice of Jenner, if followed, would keep varioloid out of the world.

Bryonia will be called for if pneumonic symptoms obtain. This

remedy will also prove serviceable in typhoid forms, attended with gastric or biliary derangements.

Bryonia may be administered in mild cases, at the third dilution, and in severe congestive forms at the first—a drop every two or three hours in water.

Mercurius-viv., third trituration, should be administered, if salivation, ulcerated throat, or diarrhœa with bloody stools, and tenesmus occur. It is also a remedy of value during the suppurative stage, and in the ophthalmias which often accompany and succeed the variolous attack.

Opium, at the third dilution, will always be appropriate whenever coma and nervous sensibility, stertorous respiration, convulsive movements, and impaired muscular action supervene during the progress of the malady.

In cases of great malignancy, with a tendency to gangrene and other symptoms evincing a low typhous grade, *Carbo-veg.*, *Acid-nitr.*, *Acid-mur.*, or *Arsenicum* may prove serviceable when all hopes from other remedies have been abandoned. From the first to the third attenuations should be employed in these instances. The age, sex, temperament, and the peculiar circumstances connected with each particular case, must determine the proper strength of the medicine and the frequency of its repetition.

Thuja.—Concerning the three miasms, psora, syphilis and sycosis, it is true that we have no certain means of distinguishing between them so as to be certain in a given case which predominates. For a large majority of the symptoms in chronic diseases are such as are found among the symptoms of all three of the miasms, and we have not yet been able to make a sifting and separation of them. Bœnninghausen says he was the first to discover the almost specific power of Thuja in small-pox, in diabetes mellitus, in certain malignant aphthæ, in children, in volvulus, &c. He says the identity of variola with sycosis seems sufficiently demonstrated; the great extension of the miasm through the process of inoculation is placed beyond a doubt; and the treatment of numerous chronic diseases, of which psora has hitherto erroneously been regarded as the anamnesis has taken quite another aspect, and has become much more certain.

It is believed that small-pox, as well as the vaccina, are of sycotic origin. The vaccine is the result of the inoculation of the cow with small-pox matter. Dr. Wolf says, "Sycotic patients are greatly disposed to infection by small-pox. Thuja is the true antidote against small-pox virus; and after vaccination a dose of Thuja should be given as soon as possible to antidote the poison."

Tartar-emetic is as successful in varioloid as in variola.

3. THE BLACK DEATH OF THE FOURTEENTH CENTURY.

This disease was the same as the oriental plague. It was marked by inflammatory boils and tumors of the glands, imposthumes on the thighs and arms, which proceeded to suppuration, discharging offensive matter. Buboes formed in the groin, an infallible sign of the oriental plague. In some cases there were blisters and black spots over the body, separate or confluent. In many, one of these symptoms alone caused death. Others recovered after passing through them all. Some became stupefied and fell into deep sleep, losing the power of speech from palsy of the tongue; others remained sleepless without rest; fauces and tongue black as if diffused with blood; burning thirst which no drink would quench; some ended their own lives in despair. The disease was contagious; it spread from the attendants of the sick through whole families, till, often, the last one died. All of this is common in the oriental plague. But the black death presented other symptoms not generally seen before or since. The organs of respiration were seized with putrid inflammation; there was violent pain in the chest, expectoration of blood; the breath giving a pestiferous odor. In some an ardent fever with evacuations of blood were fatal in three days. Buboes, inflammatory tumors did not at first appear; but the disease in form of a carbuncular affection of the lungs destroyed life before other symptoms could be developed. Later, there were buboes in the axillæ and groins, inflammatory boils over the body; and it was not till after seven months that some patients recovered from matured buboes. In Egypt the inflammation of the lungs was predominant and destroyed life quickly and infallibly, with burning heat and expectoration of blood. In Florence the buboes or pest-boils were predominant in the beginning; they were as large as an apple, beginning in the groin, then coming out on other parts; black and blue spots were thickly diffused over the body, and they proved equally fatal with the pest-boils. No power of medicine brought relief; nearly all died after these signs appeared, in the first three days, and without appearance of fever.

In Germany the symptoms were the same. In Austria is was specially malignant at Vienna: red spots, black boils or tumid glands portended death as early as the third day. In France many were struck as if by lightning and died on the spot. Those with tumors buboes, &c. died on the third day.

In England the symptoms were nearly as alarming; spitting or vomiting of blood was sometimes fatal immediately, or in twelve hours, always within two days; boils on the surface portended certain death. Authors describe buboes, boils, "knobs or swellings in the groin or axilla, blains, blisters, pimples, wheals or plague sores." In some a vesicle scarcely perceptible gave little distress, but it was a lodgement

for the poison which spread inwardly and soon brought out the fatal boils, or carbuncular inflammation fell upon the most important viscera; epistaxis, coughing up of blood, hæmaturia, fluxes of blood from the bowels are mentioned as fatal symptoms by the only two medical authors whose descriptions have reached us. They saw the disease in 1348, 1360, 1373, 1382.

After its first fury was spent the pestilence passed into the oriental plague.

Causes.—The black death was, no doubt, dependent on a specific poison, whether this was or was not the same as that which originated the oriental plague. It certainly showed itself in increased virulence as its sphere of operation enlarged and degenerated into the more ordinary form of plague about the time that it withdrew from Europe. It is probable that the filthy lodging and bad food of the people of Europe, their imperfect clothing, the severe seasons and absolute scarcity in that century favored the spread of the pestilence in an aggravated form.

Like the plague of the East it was marked by being highly contagious, affecting animals as well as man; the breath of the sick communicated the infection to all who approached them. Parents abandoned their children, children their parents; those who fled from the city carried the seeds of disease to the country. Sailors at sea found death in the air of their favorite element. Ships were seen drifting about the seas and dashing against the shores; and when land was reached their crews had perished to the last man.

It is supposed that the plague in some form has often appeared in Europe, though the histories that have reached us are quite imperfect; and that improved modes of living among the various nations have banished it in latter times. Everything connected with food, clothing and lodging, even among the poorest, has been greatly improved beyond all that any body could have thought possible 500 years ago. The plague prevailed in Edinburgh in 1513–14, in 1520, 1568, 1574, 1585, 1604, 1606, and for the last time in 1645. In England it has appeared at later dates. In 1665 it made its final appearance and carried off 68,000 of the inhabitants of London; the next year the great fire destroyed the greater portion of the ill-ventilated dwellings of the crowded parts. The introduction of water into the city and improved buildings afterwards probably contributed to the banishment of the plague from Britain. (See *Epidemics of the Middle Ages.* B. Hecker. Berlin, 1833. 12mo. p. 205. *Webster's History of Epidemics*, 1800.)

4. THE PLAGUE.—PESTIS.

The plague is said to resemble in many respects malignant typhus. The only phenomena which serve to distinguish it from this fever, being

the numerous buboes and carbuncles which appear on the body. By many it is supposed to be really nothing more or less than a genuine typhus fever, rendered peculiarly putrid and malignant by the atmospheric and other influences which prevail in Egypt and the other oriental nations in which it has prevailed. As in the worst grades of typhus, maculæ, petechiæ, diarrhœa, hæmorrhages from the bowels, &c., generally supervene in the advanced stages of the disorder, in addition to the buboes and carbuncles. The enforcement of quarantine laws has banished the plague from Constantinople since 1837.

Our knowledge in relation to this disease is so limited, it being derived from the imperfect descriptions we have seen by other writers that no attempt will here be made to detail its symptoms. But if we may be allowed to judge of its nature from those phenomena which seem to be characteristic, we suppose the following remedies will correspond with its manifestations, and prove to it homœopathic, namely: *Arsen.*, *Acid-nitr.*, *Rhus-tox.*, *Veratrum*, *Merc.*, *Bell.*, *Chin.*, *Ipecac.*, *Carbo-veg.*

ORDER III.—PHLOGISTICA

Inflammatory Diseases

INFLAMMATION.

Structure of the Capillary Vessels.—These minute terminations of the larger blood-vessels are always the seat of inflammation. Their walls are so exquisitely thin and transparent that it is almost impossible to see them; and the precise point at which the arteries terminate and the veins begin can not be determined. We will, therefore, seek an analogy in the excretory duct of the liver, and trace it into the organ. At first, it consists plainly enough of two tunics, which, as they extend into the liver, become so excessively attenuated, that we are unable to separate them or distinguish them from the surrounding structures. The inner coat must extend to the extreme end of the tube, or the acrid bile would too much irritate the delicate surface it covers. We may presume that in all these fine structures both tubes are preserved. Bichat and Beclard thought otherwise, and that the capillary vessel was formed entirely from the inner coat of the blood-vessels, excluding the others. We think, however, that both tubes are retained, though we are unable to demonstrate them to the eye, and that the capillaries are nourished and animated, like the rest of the vascular system, by vessels still more minute, and nerves so excessively delicate, as to elude the most powerful microscope. (*Grves, Elements.*) This view is confirmed by the later observations of Muller, (*Elements of Physiol.* p. 877,) and the researches of Schwann, with

magnifying glasses of high powers, on the arteries of the mesentery of the frog. He says, "Muller decides the question as to the capillaries having distinct parietes;" and their circular fibres are arranged as they are in arteries."

PHENOMENA OF INFLAMMATION.—Increased sensibility is produced by some hurtful agent. The system tries to dislodge it by reflecting the local impression on the brain and nerves, and through them to the heart, which is excited to increased action and sympathy. The heart next sends more blood than natural to the part, and the capillaries are perceptibly enlarged. These fine vessels have the power of contracting and dilating, but they have no vermicular motion, and are therefore unable to carry on the circulation without the propulsive action of the heart. The action of the heart increases slowly, but the increase is soon perceptible. (See p. 196.)

Inflammation may be studied under its different aspects in three stages: 1. *The Stage of Incubation.* We see this stage displayed, when we irritate the fin of a fish, or the web of a frog's foot. In health these parts show under the microscope numerous vessels filled with red blood, rolling along in beautiful order. If the part be now irritated with hot water or alcohol, the vessel will be enlarged by the crowding of the blood into them by the increased sympathetic action of the heart. Hundreds of vessels, previously invisible, shoot out in different directions, connecting themselves with the sides of the former ones. These vessels were there before, and only become visible on the red blood being forced into them. The blood globules travel with difficulty till they reach the extremities of the veins, which, being larger, the blood-globules rush into them as into a vortex. If the exciting cause be now removed, the part becomes gradually restored to health.

Second Stage.—Congestion.—If the exciting cause continues in operation an increased determination to the irritated part continues to accumulate in it an unnatural quantity of blood. After a short stage of congestion or engorgement the *third stage* or that of inflammation proper ensues. There is now an excessive reaction; increased heat, redness, pain, fulness of the vessels, increase of bulk of the whole part affected. This proceeds to terminate in suppuration or gangrene, if it should not first subside by resolution.

When it has progressed to the point of exhausting the vital powers, the circulation ceases, the blood assumes a dark color, and the coats of the vessels become so soft as to give way at the slightest pressure: and the healthy actions are finally suspended. The part is now red, not, painful, tumid, and its molecular intervals are filled with coagulating lymph. The capillaries contain thick, viscid, partially clotted blood, adhering with great tenacity to the inner surface, preventing artificial injections or the removal of the blood by washing or by pressure. In

violent cases the blood flows through the vessels and forms new ones along the cellular tissue, and through these new vessels it afterwards circulates. This last phenomenon, which was noticed by Klackenbrunner in the mesentery of the rabbit, is analogous to what occurs in the organization of adventitious membranes. Contrary to what might be expected, he found that it took longer to excite inflammation in highly vascular organs, as the lungs and peritoneum, than in those of slower circulation, as the liver and kidneys; but, when it is once established in the organs of high vascularity it progresses with the greatest rapidity.

The distended Condition of the Part.—This arises from the increased quantity of blood attracted to it. The blood is dark, thick and viscid, rendering artificial injections difficult. The force of the arteries in urging forwards the blood is not increased in the vicinity of the inflammation, but the intensity is generally greater at the centre, and gradually diminishes as we recede from that point to the surrounding textures.

The cause of all active congestion resides in a condition of evanescent or enduring paralysis of the blood-vessels, as we can not discover, in any mechanical obstacle occurring at any point of the circle of circulation, adequate cause for the determination to any other point of a greater sanguineous afflux. All local hyperæmia may with propriety be referred to the supervising regulation of the peripheral circulation—that is to say, of the nerves which supply the blood-vessels. (*Journal de Physiologie, by Brown Sequard.*) "It is no less true that local anæmia may equally result from irritation of these same nerves; but as their action is transitory, their excitation must be sustained, in order that the effects produced shall maintain an equal degree of intensity. As a prototype of such active congestion, we may cite the redness and pallor of the face, inasmuch as, by their appearance and disappearance, they show themselves to be directly under the control of nervous influence." In such a locality congestion is a trifling thing; in other organs it becomes far more serious. "There are viscera, enveloped in thin, inextensible membranes," as the brain, the medulla, the lungs, liver, spleen, kidneys, &c." It is only necessary to recall their structure and functions to be satisfied that such phenomena, simple and inoffensive though they may be elsewhere, may here involve the gravest consequences.

The Seats of Inflammation.—Inflammations are very frequent in almost every structure of the body. Even the nails, epidermis, and hair seem to possess their fine capillary vessels, though their existence has often been denied. And these structures are also susceptible of inflammation. In children the skin and mucous structures are in a high degree more liable to inflammation than the cellular or serous

tissue; and it is usually well marked, violent, and rapid in is course. The synovial membranes, the fibrous ligaments, bones, and cartilages inflame with difficulty, but when they do the suffering is very great. The blood-vessels, nerves and absorbents may become inflamed, but their conservative powers are remarkable; as in gangrene they often retain their vitality while the surrounding parts are passing rapidly into a state of putrefaction. The organs most commonly affected in this country are the lungs, spleen, liver, uterus, and brain. The heart, ovaries, thyroid body, pancreas, prostate gland, testicles, and kidneys are less commonly inflamed.

Products of Inflammation.—*Organic or Structural Disease.*—Under this title is included all permanent changes in the texture of an organ; and all temporary changes in the tissues. It is doubted by many, whether there can be any mere *functional* disease; as all physiological change may be presumed to be accompanied by, at least, temporary change in the anatomical elements. (*Gross.*)

All organic changes are believed to be the result of acute or chronic inflammation; or of other less known modes of altered action, which, like inflammation, can change the nature of the products of nutrition and secretion, and thus create pathological products of peculiar and permanent character.

Every inflammation, irritation or morbid action is originally *local* or *partial.* It always makes its first impression upon some particular part, and this impression, after having continued awhile extends to some other. Morbid action, or irritation of the mucous membrane of the stomach is at first local, or more properly, partial, and may afterwards extend to the sub-mucous cellular tissue, then to the muscular-fibrous and finally to the peritoneal covering. Thus that which was at first a partial becomes a general disease.

The period of life, in which inflammation is most common and most dangerous is from its very beginning to the age of ten years; nearly one-half the entire mortality occurs within this period. Fatal affections of the skin, mucous, and lymphatic systems carry off immense numbers of children, and inflammation of the arachnoid membrane are almost equally frequent. Pleuritis, pneumonitis, cerebritis, hepatitis, carditis, phlebitis, arteritis are frequent before manhood, and afterwards not uncommon. At the age of puberty the hitherto dormant genital organs are roused into activity; and then, diseases of these structures become very common; and these organs also deeply sympathize with the viscera, developing organic diseases of the uterus, ovaries, mammæ and testicles. Diseases of the bladder are rare in the young, but very common in the old.

The Effusion of Coagulable Lymph is always an important result of the process of inflammation. It is usually of a slight opaline cast

though sometimes pale or milky white, or reddish from admixture of hæmatorine. When first deposited it is a soft, fluid, somewhat ropy in consistence, throwing itself out in small filaments. After some time its watery particles are absorbed, it becomes more consistent, and is finally converted, in many cases, into a firm, dense structure, having the attributes of cellular tissue, fibrous membrane, or even cartilage or bone. The time required to effect this change varies from a few weeks to many months. Fibrine of the blood is only one of the elements of coagulable lymph, but the most important for the albumen of the serum is also a part of its composition. It is not a mere *excretion* extravasated from the blood-vessels, but a *secretion* formed out of the blood, and discharged from the capillaries. The red globules may contribute to its production and they, although altered to make it harmonize with their alterated elements of the fluid, may aid in that spontaneous formation of red blood in the effused lymph.

The object of the effusion of coagulable lymph with fibrine is to establish the union or adhesion of normal surfaces, which adhesions we think are excited by the irritation of the coagulum. Carswell and other pathologists think the adhesions of fibrine identical with the adhesions of the polypi in the heart to the columnæ carneæ, a mode in which, it is probable, vegetations of the valves of the heart are formed Carswell admits two genera of analogous formations, one from coagu lable lymph, the other from fibrine; while Gross admits only the latter The analogous tissues which Gross admits are: the cellular, serous, mu cous, cutaneous, vascular, including the erectile, adipose, horny, includ ing the cuticle, hair and nails,—fibrous, cartilaginous, and osseous, each of which may be in connexion with its archetype in the healthy system.

Lymphization has been generally considered as nature's standing prescription for incised wounds: cut arteries, lacerated wounds, attended necessarily with sloughing, are to be filled up by this process, broken bones are to be re-united and necrosed bones replaced; diffusion of pus restrained; and tubercular cavities are occasionally filled. The fatal effects of internal mortifications and sloughing may be averted; aneurism of the arteries obliterated; great surgical operations rendered admissible; and the stumps of amputated limbs healed.

"Each component cell of a texture is an organism of itself. It absorbs, by endesmotic action, through its slender wall, the oxygen from the blood-tide, and the nutrient materials from the liquor sanguinis. Itself a microscopical object, it performs the double function of histogenetic respiration and assimilation. When either of these functions is impaired, the integrity of the tissues will sooner or later be blasted, and one or another variety of structural lesion be the necessary result. Tuberculosis, scrofula, and the various forms of cancer are held to be but manifestations of diseased action involving the solids, and having

their origin in some such source. Do not understand us as teaching that these disorders consist essentially of morbid alterations in the forms, or even in a derangement of function in the individual component cells of the muscular, nervous, cellular, or other tissues—for we do not accept any such material doctrine in explanation of the nature of diseased processes, but simply that the first evidence which we may have of the existence of certain maladies is a structural lesion which renders it plain to be seen that the healthy organization of the parts is endangered." Thus although the "morbid anatomy of tuberculosis and of cancer is not all there is of the disease, it will nevertheless afford us the most substantial token of its existence and ravages."

Through this beautiful process of cell-growth must be made all nutritive repairs by which structural lesions of whatever variety are remedied; repairs in the bones, the ligaments, the muscles, the nerves, the blood-vessels, or in the cutaneous or mucous surfaces, must be effected through it. The old doctrine of the restitution of injured parts by "the exudation of coagulable lymph," is exploded; and we now learn that these little cells first select and then so appropriate their structural elements as to carry the newly organizing bone through the successive steps of mucous, cartiliginous and finally to the osseous or perfect stage.*

Healthy cicatrization "depends, therefore, upon the development of healthy granulations in cell-form. The marginal skin stretches and draws nearer the centre of the wound, while the capillaries inosculate with those of adjacent tissues."

Sometimes the adhesive and plastic character of the lymph, and its long-continued contraction and shrinking up are the sources of difficulties. After extensive loss of skin by sloughing from fire, the new texture often produces deformity. Also, in inflammations of the cheek, adhesions and indurations compress the jaws against each other from the same cause. The eyelid may become agglutinated to the ball, the larynx fatally closed up with false membrane, the urethra nearly obliterated; the intestines combined into a compact mass; the lungs and pleura cemented to each other, and the viscera compressed till they become atrophied.

Serous Effusion.—This result of inflammation constitutes one of the modes by which *resolution* or *discussion* is effected. Serous effusion is the result of inflammation of a mild grade. An apparent objection to this statement is found in the fact that effusion sometimes occurs when there is simply an obstruction in the circulation. Thus, anasarca of the legs from obstruction of the femoral artery; and the face, neck and arms may be loaded with serum from compression of the

* Dr. Ludlam, Lecture, Homœop. Clinique, Chicago, 1862.

veins conveying the blood from these parts; abdominal dropsy follows obstruction of the portal veins. Contraction of the *auriculo-ventricular* orifice impeding the flow of blood produces dropsy, and also œdema of the legs and feet. It is questioned whether these conditions are the results of inflammation, or of obstruction without it. The exact condition of the vessels is not easily known. In ascites we have a large collection of water following obvious inflammation, without any trace of inflammation being perceptible after death. But in some cases the signs of inflammation, the discoloration, &c.,—vanish at the approach of death or during the last struggles of life; and in others these changes take place long before. Want of redness does not prove the absence of inflammation, which is certainly shown by accumulations of water and opacity of the affected membrane. If there be specks, patches, or bands of fibrine, all doubt ceases.

Can obstruction, to the extent necessary to cause effusion, exist without producing a state identical with inflammation or identical with it? To this it is answered that the condition required is impossible. The obstruction must cause congestion in all the parts from which the vessel should return the blood; and this state can not long exist without producing inflammation,—an altered condition of the sensibility of the parts, redness and effusion of serum.

Objects of Inflammation.—Inflammation, granulation and pus may arise for two distinct objects: 1. For the cure of mechanical injury; for the discharge of sloughs and foreign substances from the solid textures; and, secondly, as a means of cure in disordered plasma.

1. In injuries to the common tissue, wounds, ulcerations, contusions and fractures, the process of reparation comprises inflammation, granulation, suppuration, and ulceration. New blood-vessels are formed without bleeding, and there are discharges of pus. If physical hindrances interpose, the process is protracted and made chronic until these are removed. If they can not be removed, the life of the person is endangered and may be destroyed, unless amputation be performed.

In the diseased conditions of the blood from unwholesomeness of food, privations or other causes, re-actions of some kind arise for its depuration. These also comprise inflammation, granulations, suppuration, and ulceration; furuncles, boils, pustules, eruptions and gout.

If hindrances interpose,—if the causes of distemperature of the blood from the above causes be not abated, the process is protracted and made chronic, until they are removed, and in many cases the qualities of the plasma must be altered or improved by thorough change of diet or habits of life.

In surgical cases, comprising injuries of the solid texture, the reactions arise for the healing of wounds, the discharge of sloughs, dead matter and foreign bodies. There is direct evidence of what occasions

the action, what it accomplishes, and why it is protracted or dangerous. In the other group,—disorders of the blood (or medical cases) the influence of the re-action, the qualities of the fluid of the blood can only be inferred from the collateral events; and these in gout, small-pox and other exanthematous fevers point unequivocally to the therapeutical characters of inflammation. The surgeon may sometimes go directly to the bottom of an unhealthy ulcerating wound and remove some obstacle to entire recovery, by an operation which nature was not competent to perform, and the patient is restored to health.

In other cases of severe injury, as of a compound fracture, or a crushed joint, the surgeon surveys the whole of the injured parts, and he has time and opportunity before therapeutical re-action,—that is before inflammation, suppuration, granulation and ulceration have commenced,—to estimate the true extent of the injury. He weighs carefully in his mind the powers of nature, the degree of general health of the patient, and decides upon the question whether nature is competent to perform a full reparation of the injury, or whether she would make such bad work of it, that it is safer to amputate the limb, leaving her an easier task to perform.

The inflammations encountered by the physician depend much on the qualities of the blood itself. And here he must take the constitution as he finds it with its impure or imperfect fluids, and try by remedies to restore them to a state compatible with a return of the organism to a state of health.

This is the finishing stage of the adhesive process, and the completion of the process of granulation. It is rapid in proportion as the diameter of the ulcer is small, the surface level, and the secretion of pus diminished. A reason of the difficulty with which a sinus heals is the advanced secretion of pus from its surface. Others are, its limited contact with the skin, and the non-development of granulations, which immediately appear as soon as the sinus is laid open. When an ulcer has formed upon an old cicatrix, its healing is usually tedious. This is owing to the defective quantity of surrounding free cellular membrane for the formation of granulation, and to the imperfect condition of the circulation in secondary formations. Mr. Travers says, the *skin* which forms on the surface of an ulcer, abscess, or wound is always formed from the vessels of the skin of the margin of the wound, and never by the vessels of the granulation. We always observe it "gradually advancing from the margin, and equally reducing the diameter of the sore from day to day;" and we never see the skinning process without this preparation of the border. The process is quicker or slower in proportion to the distance of the skin from the centre; the insular patches observed upon the bed of an ulcer, especially unhealthy ones, may always be traced to a portion of undestroyed skin; and, finally, "the

cicatrization beneath the surface, as of abscesses and fistulæ, is not by the formation of skin, or of proper granulation, but by an adhesive process, which tacks the skin to the subjacent cellular texture condensed by inflammation, drawing it inwards into folds and puckers; in short, a process similar to that which we see in obliteration of cists by pressure, and in the formation of solid tumors to which the skin becomes adherent during their growth."

In those cases in which the skin forms rapidly over an ulcer it has been supposed that the vessels of the surface indirectly aid in the process. This results from the contraction of the granulations, in their union and levelling, giving a glazed appearance to their surface as the secretion ceases and the pellicle begins to form. But the act of cicatrization consists not in any fresh deposit; it is simply the last stage or completion of vascularization which renders the transparent lymph surface nebulous or opaque, and this always commences from the margin, whence the vessels are derived, and is progressive from the circumference to the centre. The actual formation of membrane is never accomplished, such as could be separated by fair dissection at any stage, from a cicatrix: "it is a permanently opaque, unsecreting surface, a condensation of the new lymph with the cellular texture beneath or surrounding it, serving the negative purpose of a semi-organized covering, simply the protection of the part. Like all other new structures, it is a copy, and differs, as all copies do, whether of nature or art, from the original." (*Traver's Physiol. of Inflamm.*, p. 207.)

Cicatrices, diseased states of.—The structure is imperfect, but generally not painful; though when large and deep-seated, and when connected with parts affected by any disease, they become more painful than surrounding parts, and are more sensitive to changes of weather, needing more protection. When situated over moveable parts, the movement of muscles pains the cicatrix. It passes easily into inflammation, and an erythema progresses readily to ulceration. The inflammation often ends in gangrene. After a certain period many of the arteries of the structure become hardened into cords and impermeable to the finest fluids. Varicose veins sometimes ramify in cicatrices or beneath them. These imperfect structures may be involved in œdema, in ecchymosis, and in hypertrophy of its own substance or of the neighboring skin. They may be the seat of conical elevations like corns, but which can be removed by thorough washing; and also, of other horny substances of large size. M. Hutin saw one in form of a spiral horn, ten centimetres in length. They are usually smaller, being hard at their extremity and softer near the point of implantation. They often arise from the extremity of the stump after amputation, and chiefly of the thigh, where the cicatrice had been subject to much pressure.

Mr. Hawkins has described a *warty* affection of cicatrices. M. Hutin says, he found one of these as large as a small nut, and resembling the warts of the fingers; another resembled fungus hæmatodes and grew from a portion of the cicatrice of a large ulcer of the leg. It may be that these growths are forms of cancer, which often attack the cicatrices of the lower extremity.

A soldier who had received some wounds on the left ear and left shoulder had some vegetations from the bottoms of the wounds, which were mistaken for granulations which were restrained by nitrate of silver. In forty days the wounds healed, but the vegetations continued to grow and were removed some years afterwards; but they were reproduced with the same activity, though in thirteen other wounds nothing of the kind was seen.

We may also in cicatrices have *cysts, cartilaginous and osseous deposits*; the latter are surrounded by cellular membrane as a *periosteum*.

Contusions lead to rapid ulceration in this tissue. *Wounds* of cicatrices may heal by the first intention, but the reparation is often defective; and suppuration is likely to destroy all the old cicatrix.—(*Hutin's Prize Essay, Memoires de l'Acad. Imperial.* Paris, 1855.)

Morbid Blastema giving rise to Tissues endowed with Abnormal Properties.—Those general dispositions of the economy known under the name of *diatheses*, are of this kind. They are supposed, in the first instance, to be accidentally produced (for disease must begin somewhere), but which, once called into existence, possess the power of maintaining themselves in being.

Thus when food, insufficient in quantity, or of an unwholesome kind, has reduced an animal, previously in good health, to a consumptive state, its offspring often inherits the morbid disposition which in the parent was purely accidental, and syphilis, that well-known source of heteromorphous production, is frequently transmitted from parent to child.

Some of these pathological dispositions or diatheses are the result of a profound change in the fluids of the economy; sometimes they originate in the introduction of particular poisons, which, when they have once penetrated into the system, can in no way be expelled. If the poison be one that none of the organism can eliminate it is clear that, after penetrating into the torrent of the circulation, if it nowhere find an issue, it remains to become the origin of permanent modifications in the economy.

Thus Iodine, when once introduced into the blood, is not eliminated for a long space of time, on account of the affinity which the salivary glands exhibit for this substance. We have then an instance of a body which cannot (for a time, at least) be expelled, and the animal is during this period laid under the iodic diathesis. Individuals affected

with cancer are not properly in a state of disease so long as the organ in which it is situated is not essential to life; a cancer of a limb may *possibly* be removed without bringing the general system into imminent danger. When cancer attacks the *liver*, if the disease is no extensive, the morbid productions are separated by large tracts of sound tissue, which continue, as usual, to secrete the bile, and grap sugar still exists within the glandular tissue. But, at a later period by the disintegration of the elements which constitute the morbid production, the whole economy has become poisoned by pouring into the general circulation of fluids impregnated with the noxious principles; then, indeed, the affection becomes a general disease, and its nature entirely changes. The cancer is not a diathesis in itself, but the consequent cachectic state is that properly so called.

Results of Imperfect Nutrition.—After each meal, when absorption has taken place, the epithelium which covers the villosities fall off, and is renewed during the interval which elapses before food is again introduced into the digestive apparatus. A remarkable instance of the rapidity with which tissue may be produced.

But when, through some agency of disease, epithelium is no longer secreted, what results?

No obstacle is henceforth opposed to serous exudation from the vessels; no protecting surface resists the introduction of various poisons into the blood, and no regulating power of absorption exists. In this manner many diseases are traced back to suspended activity of animal evolution as their primary cause.

Chronic inflammation of the trachea and bronchial tubes likewise destroys the epithelium of the parts, the utility of which is well known.

Other diseases arise, not from interrupted, but from perverted evolution. Cells that pursue a regular course in their development comprise three distinct elements: 1. An envelop or cellular paries, the physical properties of which take a permanent share in its action; 2. Liquid contents, the importance of which is principally derived from their chemical composition; and lastly, 3. A nucleus in which the powers of development appear to reside.

As soon as a morbid state of nutrition supervenes, the contents of the cell are liable to alteration. Whether pigment or fatty substances, or calcareous salts are therein deposited, morbid tissues are gradually formed, and disease is introduced into the system; it may then be presumed that all heteromorphous tissues entirely resemble normal ones, and are subject to the same natural laws.

This great principle was first explained by Muller, who is styled the creator of cellular pathology. Virchow has since extended discovery in the same direction.

The intercellular tissue, or blastema, says Virchow, constitutes the

"territory of the cells." In order that it should be able to develop the cells it is necessary that it should contain the elements necessary for this purpose. It must always contain glycose, albumen, and fat; the absence of a single one of these three substances is a barrier to cell evolution. And we therefore constantly find them existing in the tissues of the embryo as well as of the adult.

Bichat, in his great work on Life and Death, undertook to inform us of the many ways of dying, but there still remains another, that of dying from imperfect nutrition. Patients often die without showing after death the slightest modification in the anatomical condition of the organs. In physiological experiments on dogs, death is often caused by complete exhaustion. We see them arrive at the last stage of emaciation, although the appetite continues unimpaired till the last moment, and the lacteals are found gorged with chyle, though after death no pathological changes are perceptible.

What is the latent cause of this singular process? Nutrition, when considered in the depths of our organs, is, in fact, nothing more than a peculiar mode of evolution. The economy produces within itself substances indispensable to life. Glycogenous matter affords us an example of this; formed within the body by a special process, it plays an immense part in histological phenomena. As soons as it fails to be supplied, epithelium is no longer produced; various diseases are the immediate result, and, under similar circumstances, life is inevitably brought to a close. The physiological act called *nutrition* comprehends, therefore, two distinct parts: formation of cells is the first, creation of blastema the second. And the latter is no less indispensable than the former; as soon as pathological influence arrests either the one or the other, death is the consequence.

There exist, therefore, two distinct modes of dying: 1. Life is cut short at once by an important injury to some essential organ; or,

2. It gradually fails through imperfect nutrition; and this latter termination is the ordinary result in acute diseases. In certain cases glycogenous matter is no longer produced; and, after a given space of time, the patient dies, although the appetite remains unimpaired till the last moment. In making the post-mortem examination the lacteals are found in a state of repletion; but, when analyzed, the fluids of the economy no longer present the slightest vestige of sugar. Death then supervenes, and is the mere result of suspended activity in organs for which proper nourishment is no longer provided.

We now conclude that we shall not find the system of laws governing the animal economy peculiar to its pathological condition, but that the laws of physiology of health, fairly interpreted, are sufficient to explain the philosophy of all vital phenomena whether of health or disease.

Remote Causes of Inflammatory Diseases.—We find in animals various predispositions, which not only modify the action of medicines administered to them, but also render them liable to diseases entirely different when suffering from causes entirely similar. "Being about to perform certain experiments on animals kept fasting for a long space of time, I left some dogs without food for several days; but, during the late severe frosts, these animals died unexpectedly. In making the autopsy, we discovered pneumonia in one case, pleuritis in another, and inflammation of the bowels in the last two. Thus under conditions perfectly identical, these animals were afflicted with totally different diseases. But similar results may be obtained at will by the physiologist. When rabbits are placed under total abstinence they generally live a fortnight or three weeks; but, when certain branches of the sympathetic nerve have been previously divided, the animals die within a few days, when deprived of food, through acute inflammation of the viscera connected with the nervous twigs that have been divided. When, some time ago, I commenced this series of experiments, I discovered that the section of large divisions of the sympathetic nerve was apparently unattended with the slightest inconvenience as long as the health of these animals remained perfect. Some of them even became pregnant, and brought forth their young; but, as soon as a general debilitation of the system arose from want of proper nourishment, acute inflammation was produced in the organs deprived of nervous influence. We had therefore succeeded in artificially producing particular idiosyncrasies in these animals, and could predict with perfect certainty that as soon as health failed disease would arise on a given point.

"Morbid predispositions must, therefore, be viewed in the light of peculiar physiological conditions, which, in most cases, depend upon the nervous system; and an immense progress would be realized in medicine if it were possible to diagnosticate in a state of health the predisposition to disease, and foretell the coming danger." (*Claud Bernard on Experimental Physiology.* Lecture V.)

Treatment of Inflammation.—Turning now to the therapeutics of inflammation it is clear that we may attack it in two ways. Through the medium of the vaso-motor nerves we may act on the blood-vessels, and through that of the cerebro-spinal nerves, or directly upon the inflamed tissue. The rule according to which we prescribe would lead us in the former case to select such remedies as are known to produce primary contraction and secondary dilation of the arteries of the part, whose effects therefrom would accordingly be stated in our provings to be congestion. According to the second mode we should choose a counter-irritant of the part affected, which, according to the law of similars, would extinguish the irritation already existing. Thus, in

gastritis we might give Belladonna, which is a vaso-motor excitant, or Arsenic, which is a tissue-irritant to the gastric mucous membrane. And perhaps a better effect would be obtained by alternating the two than by giving either singly.

"It appears from this that there are at least two modes in whicl drugs, chosen according to the rule 'similia similibus,' act in the re cesses of the organism. In the case of tissue-irritants there is a real substitution of a drug-action, similar to the morbid process going on in the part, for the latter action itself, and an extinguishment of it thereby. This is Hahnemann's own earlier rationale of homœopathic cure, and so far appears to be correct. But when vaso-motor excitants are given to relieve inflammation, the theory of Fletcher holds good, and their action (save in the first brief stage of contraction, which rarely comes under treatment) is really antipathic, although the law of similars will suffice to guide in their selection. And a very important rule for the dose will form a corollary to these principles. When we are treating inflammation of any part with its proper tissue-irritant the dose must be small, and may be infinitesimal. When we are exhibiting a vaso-motor excitant the dose must be moderately large. The instance of gastritis elsewhere cited may again serve to illustrate this rule: Dr. Hughes says, "during my earlier inquiries into homœopathy I had a case of acute gastritis under my care which I treated with five drop doses of tincture of Belladonna. Shortly after commencing to practice homœopathy I met with a similar case, for which I prescribed Arsenicum, 12. On comparing the two cases I hardly know which was cured with the most gratifying rapidity. Consider what would have been the result had I reversed the proportions of dose, and the value of the rule will become still more apparent."

Of the remedies for inflammation we shall here speak of *Aconite* only. Other remedies will be considered under the separate diseases.

Aconite.—The views of the various homœopathic authors may be thus summarily presented:

Dr. Scroen says, Aconite "supplies the place of the whole antiphlogistic apparatus of the antiphlogistic school," is far superior to bloodletting, salts, mercurials, and fomentations, in certainty as well as in harmlessness. He regards it as "an indispensable remedy in all those cases in which, through violent reaction of the organism, there is added to the primary affection of a single system or organ, a general febrile disturbance, which is manifested by precursory, often deep-seated shaking chills, followed by local or general long-continued heat, hot dry red skin, quick full pulse, bright eyes, violent continuing thirst, total loss of appetite, hot urine, restlessness, sleeplessness, exhaustion, more or less violent delirium, with distinctly marked paroxysms and remissions." (*Hygea*, V., 97.)

Heicheheim says, "Aconite is the specific remedy," "in all phlegmonous inflammatory diseases in which the arterial capillary system is more particularly affected, and the inflammation itself exhibits proportionate reaction of the vital power." "The more distinctly marked in the given case is the increase of the arterial circulation, if it be limited by the affected organ—as, for example, in inflammation of the lungs and heart, or by the constitutional structure of the individual affected—so much the more certainly will Aconite prove a curative remedy." (*Hygea*, V., 203.)

Griesselich says its proportionate field of action is, in "acute diseases, marked by excessive and preponderating activity of the arterial system. Its operation on the arterial system is unmistakeable; its reaction upon the nervous and lymphatic systems easily substantiated from physiological principles. Aconite corresponds most to individuals with a prominent phlogistic tendency."

Wurm says that, in addition to allaying fever in inflammation of the lungs, "it acts specifically upon the parenchyma of the lungs, and that this action is greatly assisted by the powerful influence it possesses upon the arterial blood current." (*Hygea*, IX., 53.)

"In pleuritic effusion, if the plastic material predominates, Aconite should be given; not that it 'acts upon the pleuritic effusion itself,' but because it is necessary 'in breaking up the fever.'" Wolff says, the utility of Aconite in inflammation does not depend on "its specific relation to the totality of the inflammatory process, but only to one factor of it, the morbid movements of the blood and its stagnation." (*Hygea*, XVIII., 253.) Diez says, Aconite "corresponds to the first stage of inflammation; as such, and apart from its various modifications, it occupies the foremost rank among all the medical plants that have been proved up to the present time."

According to Meyer, "Aconite's sphere of action is manifested principally in the ganglionic system, and exercises here its special influence upon the nerves of the capillary vessels, exciting fevers, congestions, and inflammations. It is subordinate in its action to the apparatus of the motor nerves, where—apparently in consequence of congestion—it sometimes excites convulsions and a paralytic condition. In the sphere of the sensory nerves it increases, on the one hand, their activity, and calls forth a variety of painful sensations; and, on the other hand, depresses their sensibility till it reaches total extinction. On the central nerve fibres, or upon the mind and disposition, it produces an elevating effect, producing depression only in its reciprocal action. For the rest it seems to have a special relation to the secretion and separation of bile." (*Homœop. Vierteljahrsch.*, I., 390.)

Schneider thus sums up the principal forms of the condition produced by Aconite:

"1. Synocha and inflammation, arising from primordial irritation of the nerves of the central vessels, as distinguished from exanthematous and traumatic irritation, which proceeds from original irritation of the nerves of the vessels of the periphery.

"2. Rheumatism; viz.: Those congestive or inflammatory painful affections of the joints, muscles, or sensory nerves which arise in consequence of cold.

"3. Gastroses; also with predominant affections of the liver, amounting to jaundice.

"4. Paralysis of the nerves of the blood-vessels, as in cholera.

"5. *Convulsions;* but we regard all kinds of convulsions as consecutive, proceeding from *anæmia* or *hyperæmia* in the centre of the higher nerve life.

"6. Paralysis in the sphere of the physical nervous system." (*Handbuch der reinen Pharmacodynamik*, I., 39.)

Genus I.—APOSTEMA.—1. ABSCESS.

From *abscedere*, to depart, to separate; because parts which were before contiguous become separated. *Abscessio*, *imposthume:* a collection of pus in the cellular membrane, the viscera, or the bones, preceded by inflammation. Abscesses receive different names according to the position in which they are situated. The disease is always the effect of a preceding inflammation.

General Remarks.—When an *inflammation* begins the temperature of the part is increased, its vessels are injected with more blood, which at first extends only to the vessels which previously carried red blood; the vessels are distended and their powers of resistance lessened; the more fluid parts of the red fluid escape into the texture of the part, rendering it more compact, but more friable or capable of laceration. As inflammation progresses the tissues pass from a dense but friable state to that of softening, proceeding to a pulpy condition as more and more of the fluid parts of the blood are infiltrated into inflamed substance; soon the molecules of the tissues become combined with the infiltrated fluid, and all distinct traces of a proper organization are lost. The fluid poured out from the extreme capillaries gradually distends the surrounding parts, partially dissolving the tissues in which it is effused. A limit is set to the extension of the cavity, now forming, by effusion of coagulable lymph from the vessels, which, being less highly involved in the disease, retain more of their vital energy. The lymph thus thrown out presents a barrier to the wider diffusion of the fluid forming within the cavity. In cachectic or debilitated subjects the vital powers of the adjoining parts are too feeble to permit this effusion of coagulable lymph, and the *pus* or fluid matter

formed in the abscess may diffuse itself in the cellular membrane, like water in anasarca.

The formation of pus is effected by the collection in the central point of the inflamed structure of minute portions of sero-albuminous or sero-sanguinous matter. These minute collections become more abundant, approach each other, the intervening tissue becomes softened, and the small cells unite in one cavity; the effused fluid changes from thin albuminous lymph to *pus;* having lost its coloring matter, and dissolved the fragments of the disorganized tissues, it forms a homogeneous whitish fluid, which produces little irritating effect on the tender surface of the cavity containing it. This surface becomes covered with a grayish pellicle, presenting all the appearance of a true membrane, which in dense structures becomes very dense, forming thick *cysts.* It acts as a secreting and absorbing surface, and through it the more fluid parts of the pus are absorbed, and further modifications of its character effected.

Second Form of Abscess; Spreading or Diffuse Abscess.—In debilitated or cachectic constitutions the regular course of abscess is modified by the operation of certain noxious causes, which entirely change its course and termination. These causes are: the presence of various animal poisons; animal and vegetable matter in a state of putrefaction, which produce a septic effect on the living textures. The effect of these influences is that the inflammatory action, and the formation of pus is not circumscribed by the boundary of coagulable lymph which is poured out by vessels around an abscess in a healthier subject, and the pus formed may be widely diffused in the cellular membrane. In these imperfectly formed abscesses we see inflammation in the *ataxic* or asthenic form; it is conspicuous in some kinds of erysipelas, or after wounds inoculated with animal poisons, and characterized by want of vital resistance, and a speedy solution of vital cohesion in the affected tissues. The influence of the nerves is rapidly destroyed, and the fluid parts of the blood are effused into the relaxed tissues in the form of a watery or puriform sanies.

Diffusive abscess may commence in the cellular tissue, and more rarely in the liver, lungs, or other internal viscera. As it progresses the nervous powers presiding over the organic and assimilating functions are much depressed; the watery or putrid sero-sanguinous or albuminous effusion commences very early; the whole process of the formation of pus is rapidly completed; the sanious fluid flows extensively through the feeble resisting force of the debilitated cellular membrane and adjoining textures, which become gangrenous and are dissolved in the effused fluid.

The pus secreted in this form of abscess is sometimes limpid, red dened, and highly fluid; sometimes white, again more highly colored,

brownish, and sometimes of a green color, becoming more offensive in odor in proportion as air is admitted to the diseased surface.

Third Form of Abscess.—In lymphatic temperaments and scrofulous constitutions deep-seated or superficial and fluctuating tumors and purulent collections are formed without much appearance of active inflammation. In chronic cases the appearance of the pus formed is frequently yellowish, serous, and transparent, containing albuminous or fibrinous flocculi; and the external skin remains free, moveable, and unaltered.

Fourth Form of Abscess.—The pus formed in indolent abscesses frequently finds its way through the interstices of the cellular membrane to distinct parts. This is common in diseases of the hip-joint, and in abscesses formed in the vertebra or their fibro-cartilages. In these cases it may travel beneath the pleura to a more depending position, or descend behind the peritoneum, under the crural arch, and sometimes through the inguinal ring. Many other forms are often seen.

Consecutive Abscess.—Sometimes the pus formed by suppuration in one part is absorbed, and the absorption is followed by a deposition of similar matter in some other organ. In puerpural cases inflammation of the uterus and its veins is sometimes fatal; and, on dissection, collections of pus are found in various remote organs. After injuries of the head abscesses are found in the liver or lungs. In many other diseases similar collections of pus are found. In all of these cases the energies and vital powers of the system are impaired by previous ill health, and the prostration is increased by the inflammation and subsequent suppuration, and by the poisonous influence of the putrid matter absorbed.

The process by which a deep-seated abscess progresses towards the surface of the body is highly interesting and important in a practical point of view. As the inflammatory action and the secretion of purulent matter proceed, the extension of morbid action advances most rapidly on that side on which the structures are most distended and and stretched by the accumulating fluid. The inflammatory action thus induced in the adjoining texture leads to the pouring out of lymph which, with the pressure of the swelling, causes adhesion of the abscess to the adjoining part, the absorption of the solid elements, with attenuation, and lastly ulceration. When the morbid process is approaching the surface we see marks of inflammatory irritation, and infer that the adhesion has taken place beneath; and that an incision may safely be made to the centre of the abscess below, if we begin in the centre of the inflamed integuments. In this progressive manner we see an abscess of the liver make its way gradually through the membranes and textures of the parietes of the abdomen to the external skin; and in some cases taking an opposite direction, we observe its gradual extension

through the diaphragm, and the lungs to empty itself into the bronchii. In its course it produces adhesion between the liver and diaphragm, then ulceration of the diaphragm, adhesion of that membrane to the lung adjoining, then inflammation and suppuration of that organ. The parts thus successively invaded undergo the inflammatory and softening process in succession; the purulent matter finds its way to a distant outlet in that direction in which the inflammatory action most readily advances; and the successive "reddening, inflammation, adhesion, softening, and absorption of the various structures, as the tumor advances exteriorly, are the guides to treatment in these formations." The progress and spontaneous opening of abscesses which have progressed from the interior to the surface terminates in the erosion of the attenuated integuments, and the discharge, at intervals of the accumulated contents.

Diagnosis.—Inflammation intense in degree, rapid in its progress, in any part in which the cellular tissue is a prominent part may be presumed to be progressing towards suppuration when a throbbing, pulsative pain has continued for some time, and is slowly diminishing. The repulsations are isochronous with the heart's action; weight and tension of the part; diminution of febrile action, succeeded by "large, broad, open, soft, or undulating pulse; irregular chills or rigors, extending along the back, loins or lower extremities. If the matter be not now soon evacuated there are symptoms of chronic irritation; frequent and small pulse, heat or burning of the palms of the hands and soles of the feet; irregular fits of perspiration, and night sweats; loss of strength and all the characteristics of hectic fever; this is ultimately followed by colliquative diarrhœa, and other signs of permanent irritation and constitutional contamination of the blood and rapid sinking of the vital powers.

When the inflammation has terminated in suppuration the tumefied part becomes changed in appearance. It is less diffused, smaller in circumference, and more concentrated, elevated, prominent and softened at the centre of the surface. The more prominent part acquires a dark red, and afterwards, a bluish tint. A distinct fluctuation may be felt beneath it; though this not always very distinct. But the external signs may be assisted in pointing out the existence, the stage and the serious character of an abscess, by the constitutional predisposition to form purulent collections of matter in many persons whose vital energies are depressed. In patients of the lymphatic temperament, pale visage, who have been debilitated by previous disease, in those in whom the suppurative has continued for some time and been suddenly checked by an operation, the tendency to form abscesses is strong. A sudden suppression of any secretion predisposes to abscess as the drying up

of the mammary secretion often originates an abscess without any other perceptible cause.

Prognosis.—The danger from abscesses is in proportion to their size, and the severity of the disease by which they have been occasioned; the extent of their internal surface; depth at which they are seated; the indolence of their action; deficiency of vital powers of the constitution; the intensity of the symptoms accompanying or produced by them; importance of the viscera in which they are seated; the direction they take, the chances of their evacuation; and the means of renovation and repair possessed by the constitution. Consecutive abscesses are always dangerous from the exhaustion dependent on the primary disease.

Treatment.—*Indications of Cure.*—First, to remove the purulent collection. Second, to procure the obliteration of the cavity in which it was lodged.

1. Matter may be absorbed from the interior surface of an abscess, conveyed through the circulation and eliminated from the system by the various excretory organs. The means usually resorted to to promote this object are: Frictions with stimulating substances, as Ammoniacum, Iodine, Iodide of Potassium, cold, warm, or tepid affusions on the part. A great variety of stimulating, discutient liniments, &c., are in common use; but their powers are only applicable to a small proportion of the cases that commonly occur. Abscesses preceded by acute or active inflammation can very seldom be removed by any local excitants, and the opening of them is therefore inevitable. The subsidence of inflammatory action does not generally follow the formation of pus, and general and local treatment must still be directed to its more complete removal. So long as pain, redness, heat, tension of the skin remain, leeches, or other modes of capillary depletion may be useful. Emollient and astringent applications may also be necessary to reduce the inflammation of the surrounding tissue, favor the resolution of the parts not yet suppurated, limit the quantity of the morbid secretion, and prepare the abscess for being opened with the best prospect of success. Even these measures sometimes favor the absorption of pus; and this soothing course will promote the favorable suppuration and lessen the general irritation till the thinning of the skin at the most prominent part of the tumor indicates the necessity of opening it.

Consecutive and spreading abscesses arising in unhealthy constitutions enfeebled by previous disease, ataxic inflammation from a specific cause, inflammation of the veins or morbid secretions of purulent matter absorbed into the circulation, require a restorative treatment, combined with all the means that promote the healthy action of the digestive organs.

When the puriform matter is not likely to be immediately absorbed

the abscess should be opened by an incision of the necessary size and depth. The operation should be more promptly performed in proportion to the irritation produced by the accumulating pus; its deleterious effects on the general health; its depth, and the danger of discharging itself internally; and the vicinity of important organs, blood-vessels or nerves, which are injuriously affected by the increasing pressure of the abscess. In many cases it is necessary to exercise the greatest care in opening large collections of puriform matter, as in lumbar abscess and some others. When large incisions are at once made, and large evacuations encouraged, the vacuity left is immediately filled by atmospheric air, and an increased state of irritation of the lining membrane of the abscess is produced. To avert this injurious effect of the admission of air, Dupuytren advised that abscesses of this character should be opened "by successive punctures, the margins of which should be immediately closed, upon the evacuation of that part of the contents which are first expelled by the reaction of their parietes."

2. Abscess, Secondary.—Secondary abscesses of a severe and even fatal character often follow injuries and surgical operations which were not dangerous of themselves. These secondary collections of pus take place in distant parts of the body, and often in organs essential to life; they seem not to be necessarily connected with any previous external injury, and are sometimes induced spontaneously, and independent of any injury or operation. It has been shown that the usual pathological appearances found after death, in these cases, consist "in deposits of purulent matter, inflammatory congestions, effusions of coagulable lymph, sero-purulent effusions, effusions of sanies or bloody serum, adhesions of contiguous surfaces, ulcerations and disorganizations of different structures, as of the eye and of the tissues about the joints." (*Dr. Lee's Note to Copland's Dictionary.* Vol. I., p. 26.) The organs most frequently affected are the lungs, liver, brain, spleen, the knee and shoulder-joints. In such cases the inner coats of the veins in the neighborhood of the primary injury are found inflamed, and purulent matter is generally found within the cavity of the veins. There is, therefore, reason to believe that phlebitis is always attended with secondary local affections. The secondary abscesses are known to occur in connection with phlebitis, whether the pus in the veins is free to enter the circulation or is circumscribed by a barrier of lymph, thrown out to prevent the pus from contaminating the blood. Dr. Watson, in the *American Journal of Med. Sciences* (Vol. XXI., pp. 37, 74), has shown that the existence of pus within the free cavity of the veins does not necessarily lead to the formation of secondary abscesses elsewhere; and that the secondary disorders of a different character which often follow operations, the high inflammatory excitement, and the exhausting influence of hectic fever, may result in consequences in

no way connected with the disease of the veins. He shows that the secondary depositions of pus are not always, if they ever are, the result of the absorption of matter from one place and its transportation to another locality; "and that, as they occur in all parts of the body, without any definite relation to the part primarily affected, they cannot be attributed to any special sympathies between the parts first diseased and those subsequently involved." He therefore believes secondary abscesses can only arise from the effects of "a vitiated condition of the blood, induced by the purulent matter, or other morbid exhalations of inflamed veins, mixing with the blood, and thus exciting local inflammation in the parts secondarily diseased."

Treatment of Abscesses in General.—For Acute Abscesses.—*Arsenicum.*—Intolerable burning pains during the fever; or, the abscess threatens to become gangrenous, or is accompanied by great debility.

Asarum.—Abscesses discharging a colorless serous pus; violent pains on contact, and great sensitiveness of the surrounding parts.

Bell.—Pressure, burning, and stinging in the abscess; cheesy and flocculent pus. Hepatic abscess following inflammation.

Bryonia.—The tumor is either very red or very pale, with tensive pain.

Mezereum.—Abscesses of *fibrous parts* and *tendons;* or following the abuse of Mercury.

Pulsatilla.—The abscess bleeds readily, with stinging or cutting pains; or there are *itching,* burning, and stinging in the surrounding parts. Abscess originating in varices.

Rhus-tox.—Abscesses of the axillary or parotid glands; the swelling is painful to the touch, or discharges a bloody serous pus.

Chronic Abscesses.—*Remedies:* Asarum, Aurum, Calc., Carb.-veg., Con., Hep., Iod., Laur., Lycopod., Mangan., Merc.-corr., Nitr.-acid., Phos., Sepia, Silicea, Sulph.

3. CELLULAR INFLAMMATION.—Inflammation of the Cellular Membrane.

That fever often excites inflammation is well known. These secondary local inflammations generally arise during the fever, and often lead to fatal results.

In the decline of certain cases of autumnal fever, we often meet with a form of inflammation affecting the extremities called "fever sores," boils, abscesses, &c. They are generally considered signs of a favorable termination of the fever; but they are not *causes* of recovery, and occur generally in cases that convalesce slowly, and manifest much irritability; death may follow from extensive suppuration. We give a case by Dr. Drake of Cincinnati:

An engineer after ague had febrile and inflammatory symptoms which came out in furuncles and inflammations of the cellular tissue on the head and neck, fore-arm, on the scapula, between the fifth and sixth rib near the sternum; some suppurated, others remained solid. Near the heart was strong pulsation; the disease then attacked the brain. There were jactitation, headache, heat of scalp, fierce expression of the eye, delirium, insanity, vigilance, coma, variable pulse; later there were spasmodic twitchings of the eyelids; convulsions; partial hemiplegia; after some suppuration took place the vehement action of the right carotid abated, but the left took on a similar increased action, with contraction of the eye of that side which became engorged with blood. Under the antiphlogistic treatment he declined, though suppuration was protracted; he became extremely emaciated; cordials, tonics, anodynes were all injurious and the patient died. On dissection, the cellular substance from the forehead to the clavicle, from the chin and occiput was filled with pus; a great portion of the vessels, nerves and muscles converted into an unorganized putrid mass, especially at the angle of the jaw; parotid gland not distinguishable; cellular substance over parietal and part of the temporal bone disorganized; also over cervical vertebra. Carotid artery had lost its cellular coat, its substance inflamed; extremity of the maxillary bone without and within denuded of its periosteum; other abscesses contained only pus. The pulsating tumor near the heart was found to consist of an abscess within the sternum and the cartilages of the ribs, resting on the pericardium, having the pleura within and the attenuated walls of the chest without; the pulsation had been transmitted through the tumor from the impulse of the heart.

Treatment.—*Counter-irritation* has long been regarded by old school physicians as an important resource; and even the homœopathist may admit that it is to a limited extent useful. The following are in general in use: sinapisms, rubefacients, frictions, moxas, caustics, issues, hot baths, as well as cold ones; and, in a wider sense, counter-irritants may include emetics, purgatives, and even mental impressions. These agents are used to excite a powerful impression upon the system, which in many cases proves beneficial and removes the morbid action.

Cayenne pepper produces redness and burning pain when applied to the healthy fauces, but acts as a sedative in the sore throat of scarlet fever. A concentrated solution of acetate of lead, applied to the skin, denuded of its epidermis, or to mucous membranes, creates irritation and pain; the same, when sufficiently diluted, is a soothing and sedative application, when this state is the result of disease or injury. Remedies, p. 658.

4. *Frost Bites.*—Cold when applied to a part to the extent of diminishing the temperature below the common healthy standard always acts as a *sedative* or *depressant*. It has been known from the earliest ages

that cold is capable of producing entire sensibility; but it was not employed for this purpose as a means of preventing the pain of surgical operations till its power and safety in producing entire sensibility was demonstrated by Dr. Arnott in 1848.

Excessive cold first causes extreme redness as the result of the relaxed condition of the walls of the blood-vessels; this is followed by a peculiar biting or stinging pain, induced by the pressure of the distended vessels upon the nerve branches, and also by the influence of the cold directly on the nerves themselves.

After still farther exposure of the part to intense cold the extreme redness with a portion of the congestion disappears, until there is a sudden sting and the part becomes white, painless, stiff, and is frozen. All the vital processes cease. Innervation, circulation, sensation and all the usual functions of vitality are entirely obliterated. The liquids and semi-solids become solid, crystalize and consequently expand and press upon the more compact structures, which, only when exposed for a longer time still, will become frozen also.

The process of congelation commences on the surface, extending from the surface and the point of exposure inwardly; the freezing of the plasma taking place more readily than that of the floating corpuscles, which are driven away from the parts frozen, thus giving the bloodless appearance ordinarily observed in frozen tissues.

Recovery from the Effects of great Cold.—As the freezing commenced on the surface, driving the floating solids of the blood towards the heart, the thawing should commence from within and progress toward the surface, so that the part last frozen should be first thawed, else there may be a stratum of unthawed structure between the surface and the actively vital structures, thus cutting off all innervation and allowing chemical changes to commence uncontrolled by vital force, which chemical changes occur speedily in animal structures whenever the vital force is withdrawn. When the thawing takes place from within, innervation follows, and the parts are under the influence of the vital force, as fast as they can thaw; the nerve aura can then penetrate by degrees through the reviving portion of the member which may be restored to a healthy condition with far less injury than might be anticipated.

Treatment.—Rub the part for a few minutes with snow just in the process of thawing, or which is light and feathery, having recently fallen; but this only when the patient has been brought into a room in which the temperature is above the freezing point; and it must be continued for only a short time, as the frozen part must become warmer than snow before vital action can be restored in it. When the snow is too cold it rather increases and perpetuates the injury. When it is less than the freezing temperature it may be applied with advantage,

as it retards the thawing of the surface till the natural heat of the body within can slowly penetrate the frozen structures, bringing warmth and vitality toward the surface. But even melting snow should not be applied by friction; and any other substance which can, without freezing more deeply, just retard the process of thawing on the surface, will be quite as good, often better and safer than snow. When the nose, cheeks, forehead, or ears are frozen, a shawl, coat collar, or the cap drawn over the part will usually protect it till it gradually thaws. The foot or hand, when frozen, should remain covered with some woolen fabric, and no more heat should be applied to them than the rest of the system requires. They should be kept near the freezing point, and the circulation gradually and cautiously permitted to reëstablish itself. The *rubbing* of frozen parts with snow, as commonly practiced, is uniformly injurious. Rubbing with the warm hand may restore the heat of the frozen *surface*, but cannot cause blood to flow through vessels that are congealed and closed with frozen crystals further inward.

Frost-bites should be treated without mechanical pressure, friction, or manipulation; and protected from rapid elevation of temperature of the surface by enveloping the part in soft and melting snow enclosed in a piece of flannel, silk, or linen. Moisture itself does no good, though a cloth wet with cold water may be better than the warmer air of the room.

The temperature must be gradually permitted to rise to that of health, but without any friction or unnecessary disturbance. Usually, if a part has been frozen quite solid, when vitality is established the epidermis becomes separated from the dermis, and blebs or blisters are formed by the exudation of the serum of the blood through the injured vessels. These blisters may be treated as blisters formed by scalds and burns.

When a frost-bite has been very severe and deep, unless the utmost care is taken to have it thaw properly and slowly, the parts are quite apt to slough. Such slough must be managed according to the general principles of surgery. If a bone or a part of a bone has been frozen it is quite likely to die, although the frozen portion may never be detached from that which remains alive, but it may become diaphonous, and require amputation or removal.

5. Panaris, Whitlow.—The remedies hitherto found most efficacious in checking the progress of whitlow are:

Hepar: Arsenicum, Calc., Phos.-ac., Nitr.-ac., Petrol., Sepia, Caus.

Lachesis: Panaritia under the nail; between the tendons.

Silicea: Inflammation of the tendons and their sheaths.

Sulphur, alternated with Silicea every eight days, to prevent recurrence of the disease.

Merc.-cor., followed by Hepar.

Alum, if abscess forms.

Dispensary Case.—A lady, aged forty-one, has felon on the right fore-finger. The deep-seated, excruciating, and long-persistent pain shows that the inflammation is seated *beneath the periosteum*. I already involves the first joint, and is extending upwards; the pain runs up to the shoulder. No sleep last night. Incision half an inch long, with the bistoury, penetrating to the bone. Poultice. Next day discharging slowly. Slept last night. Poultice continued. Recovery rapid.

A groom at a livery stable has whitlow, involving first and second joint of right middle finger. Pain has prevented quiet sleep for two or three days. Whole finger largely swollen. Inflammation would continue to extend along the bone, and could not for two or three weeks relieve itself by perforating the periosteum. Incision to the bone, from near the first joint, a half inch, reaching the bone. Poultice continued two or three days more. Recovery rapid.

6. Contusions. *Arnica.*—Persons who have received a *blow* or *contusion* feel pains in the side, a desire to vomit, lancinating and burning pains in the hypochondria, all of which are accompanied with anxiety, tremors, and involuntary starts, similar to those produced by an electric shock, formication in the parts that have received the injury, &c.

As *Arnica-montana* produces similar symptoms, according to the observations of Meza, Vicat, Crichton, Collins, Anskow, Stoll, and J. C. Lange,* it may be easily conceived that this plant will cure the effects of a blow, fall, or contusion, as is familiar to the experience of a host of physicians, and even of whole nations, for centuries past.

7. Sprains.—A limb after a fall or other violence is painful, does not admit of being moved, swells, and turns red.

Treatment.—Apply a lotion of cold water containing Arnica, and give it internally. *Bryonia* or *Rhus* may be used after the more acute symptoms have subsided.

Dislocations, Luxations.—The removal of the head of a bone from its corresponding articular cavity. It is characterized by violent pain, loss of motion, swelling, alteration in the shape, length, and direction of the limb. There is an unnatural depression or prominence in the vicinity of the injured joint, and a peculiar rigidity of the limb. The deformity is apparent on comparing the injured with the sound limb.

The treatment consists in setting the limb; then giving Arnica, or Aconite if the injured part be becoming red and inflamed. Apply cold water or diluted Arnica. This will be occasionally repeated till the inflammation has subsided; after this the limb must be occasionally moved to ensure against the joint growing stiff.

* Hahnemann, Mat. Med., I.

8. PERIOSTOSIS.

Diagnosis.

Acute Periostosis.	Acute Rheumatism.
Inflammatory fever; the swelling, if the disease be in the tibia or femur, is diffused: not limited to the larger joints—ankle or knee; but it occupies a wider range, and is œdematous in its character.	High inflammatory fever, with swelling of the limb and grea pain, increased by pressure, so that the patient is nearly helpless, and shrinks from the touch of the surgeon, in dread of the torture to be inflicted by an examination.

Pain.

The chief diagnostic mark is found in the *seat of the pain*. In this disease little or no pain is caused by pressure, unless it be made over the seat of the disease in the course of the infected bone. In the early stage you may move the limb, at the knee or the ankle, and press the ligaments and tendons without producing pain; but the slightest pressure on the bone excites intense suffering, and the pain cannot be borne for a moment.	Pressure over the bone, as the tibia or the muscles of the thigh, or around the femur, in rheumatism, rarely causes much pain, but moving the limb causes intense pain.
The attack usually succeeds to injury.	The attack not caused by injury.

Treatment.—The hospital surgeons content themselves at the onset of the disease, when the bone affected lies near the surface (as the tibia), with local applications. These, however, cannot be relied on when the affected bone is deep seated.

Incisions.—The only reliance of unquestionable power in true periostosis, by which the extension of the ulceration along the bone can be arrested and further mischief averted, is a *free incision*, extending through the periosteum to the bone. In a case in which *no fluctuation is perceptible* it is best to cut down boldly, through the thick vastus externus to the bone, if there is full evidence that the periosteum of the femur is acutely inflamed. In such a case, Dr. Curling says, "the incision revealed a small quantity of pus confined beneath the muscle. The membrane was partly detached, and in a few hours extensive mischief would have ensued. This was arrested by the incision, the pain and inflammatory fever rapidly subsided, and health was speedily restored."

In another case the periosteum was extensively detached, and so

distended by the pus effused beneath it that, when an opening was made, the matter gushed out with force over the surgeon's clothes. The necrosis in this case was very extensive, the inflammation had affected the cancellous structure in the lower end of the tibia, jeopardizing the safety of the ankle-joint; additional incisions were required, after which the inflammation in the periosteum and the necrosis ceased to extend, and the work of restoration was set up.

Periostosis consequent on injury is a common cause of necrosis in the long bones. When only a small portion of the bone is denuded by the injury and the subsequent inflammation, and the wound, after discharging pus a few days, gradually fills up till a small sinus is left, no further treatment is generally directed, even if a small portion of the bone remain denuded. But such treatment generally ends in further trouble. When more permanent treatment is demanded, the following may be necessary: cut down to the bone, and chisel away a small portion, so as to enlarge the aperture, extract any loose pieces of bone, and chisel away such parts of the bone as are unsound.

Ruta-grav.—It is the distinguishing, and perhaps peculiar feature of Ruta, that it produces, in an eminent degree, pains of a pressive and bruised character in the muscles, and especially in the periosteum and bones. Many drugs produce pain in the back and limbs, apparently in the periosteum or bones. But these pains from other drugs seem not to be directly upon the periosteum or bones, but indirectly through the spinal column and nervous system. The pains are sympathetic, are attended by different trains of concomitant symptoms, and are of quite a different pathological character. But the pains of Ruta seem to be the direct effect of the drug upon the periosteum and bones. Thus the pain of the os coccygis, as if bruised.

Stone Bruise.*—A disease of the feet, usually caused by walking or jumping on the stones, and occurring in young persons who go without shoes during the warm season. Persons liable to this disease acquire generally, by going barefooted, a thick sole to the foot, on which slight pressure, even blows, can make but small impression. But severe pressure, or the bruise caused by jumping on stones, though not injuring the skin, may bruise the parts beneath, even the periosteum, and cause deep-seated inflammation and suppuration in the plantar fascia, or in the cushion of the under surface of the toes or of the bed of the foot. Such an abscess progresses slowly, may be less painful than a boil or carbuncle, and less liable to produce constitutional disturbance, and yet it may demand surgical treatment.

If a deep-seated inflammation commences in the toes, the plantar surface of the foot, or the heel, the foot should be soaked for a long

* Jour. of Rational Medicine. Cincinnati, March, 1862. p. 83.

time in a quite warm and weak solution of alkali, as saleratus. This will partially dissolve or soften the thickened cuticle, which may then be scraped off, and the skin shaved over the central portion of the inflammation. The persistent use of a hot alkaline foot-bath, with due efforts to scrape off the hardened skin, will put a stop to the inflammation; at least we may thus diminish the extent of it.

The limb should be now kept in a horizontal position, foot enveloped in water slightly warm and alkaline. If, in spite of this treatment, an abscess form, the pus must be let out by the abscess lancet or bistoury. After this some cauterize the abscess by inserting to its bottom a stick of Nitrate of Silver, evacuating the pus by repeated injections of warm water, warm infusion of Arnica leaves, or, still better, of *Calendula*. Some inject into the cavity Lugol's solution of Iodide of Potassium, to start a new action in its interior surface.

Ulceration of the Cartilages of the Joints.—This formidable disease does not always reveal in its outward symptoms its real character. It may at first be only regarded as an ordinary abscess, with little inflammatory excitement, heat, or local tenderness; but it excites suspicion by the degree of *lameness* of the foot, and by some of the common phenomena of stone bruise or of ordinary abscess.

It may be caused by the extension to the cartilages of the inflammation of a bunion, ganglion, an abscess, or constitutional derangement. When it involves the cartilages of the foot it is often very obstinate and difficult to cure.

Anatomy.—Four distinct varieties of cartilage are recognized: 1. That of ossification of the bones of the cranium; 2. That which precedes the ossification of the long and short bones, the patellæ, and the bones of the tarsus; 3. The cartilage of adults, as over the nasal bones, at the ends of the ribs, joining them to the sternum, and between the vertebræ of the spine; and, 4. The *fibroid* variety, into which that at the end of the ribs changes in old persons, and in the canaliculi which are analogous to the haversian canals in bones.

The first and second varieties contain a few blood-vessels, but neither the third nor fourth varieties, while in a healthy condition, ever contain any blood-vessels.

The cartilages that enter into the structure of the feet are of the second variety, which may be found in children, even after the second dentition. If from direct injury or constitutional cause the cartilages of the foot of a child less than ten years old become diseased and ulcerate, the minute blood-vessels will swell, and the foot manifest the usual symptoms of inflammation; and being difficult of access, as well as liable to constant irritation and injury, the disease will be liable to be of long standing, and at the best to result in a permanent deformity of the foot, and anchylosis of the bones.

Treatment.—This must be directed to the correction of the psoric or scrofulous condition of the constitution. The foot must be kept at rest; pus when it forms must be removed by incision; and then local treatment can be employed to wash out and excite to healthy action in the interior of the abscess. If some part, as a tendon, cartilage, or bone, is apparently dying or dead, it may be touched with a minute quantity of strong Nitric-acid, applied by a probe or stick. If a broken blood-vessel is inclined to bleed, the Perchloride of Iron may be applied to restrain it.

Internally we endeavor to meet the constitutional condition by antipsoric remedies. After some trial of these, homœopathic attenuations of Hypophosphate of Lime, or Hypophosphate of Iron, will keep up the strength, promote the digestive power, and produce some specific effect in promoting ossification and curing the periostosis, which inclines to extend along the bones. A firm bony union of the cartilaginous surfaces is often the best thing the case admits of; and it is best to promote this result by good and pure diet, perfect rest, and invigorating internal treatment.

10. Poisoned Wounds, Bite of the Rattlesnake.—*Bromine, Bibron's Antidote.*—The composition was thus given to Prince Paul of Wirtemburg, in his travels in 1854:

R.—Potassii-iodidi, 4 grs.
Hydrar.-chlor., 2 grs.
Brominii, 4 drachms.

Give ten drops of this mixture, diluted with a table-spoonful of brandy or wine, to be repeated if necessary. It must be kept in glass stoppered vials, well secured. Prince Paul says, Prof. Bibron allowed a rattlesnake to bite him in the lips and cheeks; and then, by taking his antidote, he prevented all unpleasant or alarming symptoms:

In 1857, in the course of an expedition to the Rocky Mountains, some experiments were made with this remedy, afterwards reported by Dr. W. A. Hammond, since Surgeon General U. S. Army.

1. July 2, the Hospital Steward was bitten by a large rattlesnake (crotalus confluentus) which inflicted a deep wound, and hung by his fangs to the finger for a second or two before he could be detached. Four minutes afterwards a dose of the antidote was given. The symptoms almost immediately disappeared. After forty minutes the pain and swelling returned, attended with much throbbing. Repeated the antidote. In less than five minutes the finger regained its natural appearance, and all pain and pulsation had vanished. The man resumed his duties an hour from the accident.

2. A large rattlesnake was made to bite a wolf (canis occidentalis) about three months old, wounding the animal severely in the left flank. In fifteen minutes the leg was much swollen; the wolf showed signs

of great uneasiness, yawning, stretching, and looking about in an anxious manner. The symptoms increased in intensity; it became unable to stand, drowsy, slightly convulsed. Thirty minutes from the infliction of the wound gave six drops of the antidote. Almost instantaneously the symptoms disappeared. In a few minutes the animal ate a large piece of meat.

3. The following day the same snake was made to bite the wolf three times in the space of five minutes, in the flank, neck, and cheek. In two minutes the wolf was unable to stand; gasping respiration, a fixed expression of the countenance showed the effect of the poison. Some delay in getting the antidote ready; before it was given all signs of life had apparently ceased. Nevertheless six drops were placed far down the throat, where it apparently remained, as there was no effort to swallow. In one minute respiration again commenced, and the heart could be felt to pulsate. But the wolf lived twenty-seven minutes, and then died comatose.

4. A large crotalus confluentus brought from the Rocky Mountains was made to bite a dog, five months old, in the right shoulder. In ten minutes the poison caused gasping respiration, inability to stand. Before the antidote could be given the dog became unable to swallow, and he was perfectly senseless, dying in forty-five minutes after the infliction of the bite; very slight swelling observed in the wounded part.

5. Only forty-five minutes after the last experiment the same snake was made to bite another dog, of the same age as the last, in the lower jaw, near the mouth. At the end of three minutes, and before any violent symptoms ensued, a dose of the antidote was given. The dog swallowed it readily. In five minutes he seemed uneasy. Respiration was accelerated; he preferred to lie down in the shade. At the end of fifteen minutes he could stand with difficulty, and the effect of the poison seemed to increase. Another dose was given, nearly half of which was lost. Slight swelling of the face and neck; when roused he would walk a few yards, though with difficulty; he preferred to rest. In an hour from the bite he seemed better; took some milk; in two hours he appeared well, a small swelling remaining under the jaw, which disappeared by next morning. (See *Brit. and For. Med. Chir. Review*, 1858, p. 403.—*Gen. Marcy's Prairie Traveller*, &c.)

Dissection Wounds.—*Case by Dr. C. Dunham.—Lachesis.*—Dissection wound in the index finger, received in making autopsy of a woman who died of puerpural peritonitis. In a week the finger had quadrupled in size; hand and forearm much swollen and œdematous; a hard and red line extends from the wrist to the axilla; axillary glands swollen; arm and hand intensely painful; whole left side partially paralyzed. Extreme prostration causes the disease to be mistaken for typhus; low muttering delirium at night; marked aggravation, suffering, and prostration

on awaking from sleep. General condition growing steadily worse; abscesses forming under the deep fibrous tissues of the finger and hand. Allopathic surgeons in attendance advised Calomel and Opium, and gave a discouraging prognosis. Dr. Dunham refused their advice; took Lachesis, 12, the first dose on the third day, and repeated it thrice daily for five days. The constitutional symptoms had now vanished. The recovery of the finger was slow but complete.

Bites of Insects.—*Collodion.*—This is the best application to the poisoned wounds made by insects. It gives perfect relief to the bites of mosquitoes, and is also the best application to the stings of bees. Arnicated Collod. is the best. Other remedies are: Brom., Amm., Caust.

One of the very best local applications for the bites of insects is the tincture of Apis-mellifica. It usually affords prompt relief.

11. Malignant Pustule, Charbon.—In addition to a peculiar predisposition on the part of the patient, Larrey thought the disease was caused by "the general or partial absorption of certain deleterious gaseous effluvia, very abundant in some marshy districts in the middle of France. These mephitic emanations are formed more frequently when the first heats of summer open the pores of the earth, and cause the decomposition of the animal and vegetable substances." "The places most exposed to these emanations are the sewers or cemeteries which remain covered with snow during the winter, the neighborhood of stagnant waters, or those temporary ponds formed by the melting snows or rains of winter, in which are engendered a great quantity of reptiles. These ponds, in drying up, leave a prodigious number of animalculæ, which putrefying, generate these pernicious exhalations." Persons exposed to the impure atmosphere of such localities; or butchers, tanners, cooks, &c., who come in contact with the flesh or skins of animals that have died from malignant diseases are liable to be attacked with this disease. There have been instances of the infection being conveyed by flies from diseased animals to the human race.

A symptomatic variety attacks persons who are predisposed to such diseases and are then exposed to malaria which excites this pustule or some analogous disease.

Symptoms.—The disease commences with a disagreeable itching, with shooting pains in the place where the tumor was forming, and following the course of the nerves. This point becomes red and slightly swollen; the patient thinks he has been bitten by some poisonous insect. Soon yellow vesicles appear on the spot, filled with lemon-colored serum. An areola forms around it, at first red, then livid, and producing vesicles like the first. The swelling extends to surrounding parts; the vesicles burst, and the fluid escapes. The dermoid tissue in the centre now becomes black, dried up, and hard like

a piece of black leather, it is sunken, and adheres strongly to the parts beneath, while the areola enlarges, assumes a livid color, and becomes gangrenous. It often attacks the genitals of children.

The itching with which the affection begins is followed by tension, numbness, and slight throbbing pains; and there is general uneasiness; pains follow in the head; vertigo and disposition to vomit; no appetite; disturbed sleep, dreams and delirium. Pulse at first weak and slow, and lessening as the disease advances; respiration labored; urine deficient; constipation; hiccough; moral faculties disordered. In malignant cases the symptoms rapidly increase; the slough spreads; the vesicles break and discharge a green or reddish fluid.

The tumor is elevated; the general functions disordered. When the vital powers are too much depressed to form the circumscribing of true inflammation around the tumor, and confine the disease to one spot, the *dry* form of gangrene extends rapidly in depth and breadth; the gangrenous matter is absorbed by the lymphatics; the patient becomes prostrated, having frequent faintings, hiccough, oppressed respiration; palpitation of the heart, and greater depression of the pulse; then follow drowsiness, vertigo, suspension of the intellectual faculties, and finally death.

Pathology.—In the fatal cases the carbuncle is found "gangrenous, the stomach and intestines filled with tainted gas, and spotted with points of gangrene; epiploon yellow and flabby; whole venous system gorged with liquid blood." (*Larrey.*)

Diagnosis.

Malignant Pustule.	Carbuncle.
The skin is primarily, and the cellular tissue secondarily involved. May occur on any part of the body, but always in relation to the epithelium, whether on the skin or mucous membrane.	Generally appears on the back of the neck or in the loins, where there is a dense fibrous fascia; and it arises in connection with the areolar tissue beneath such fascia.
Generally young or middle-aged persons.	Commonly old persons, seldom middle-aged.
Commences in forming a vesicle.	No vesicle is formed.
Not *many* openings; there is *one*, but it is larger, and without defined edge.	Small pin-hole openings communicate with the gangrene beneath, and discharging drops of matter.

Carbuncle.—Anthrax.—A painful, hard, flattened, circumscribed tumor, but slightly elevated above the skin, extending through the entire cuticle, and even beneath it, so as at times to be an inch or more deep. The surface is red, of a mahogany tint, then purple, then livid; and after the parts heal up the skin still remains red or of a deep brown, and the discoloration remains for some weeks.

The pain is peculiar, throbbing, and burning; when the carbuncle is fully formed the surface is livid or purple, the cuticle becomes raised into blisters, there are numerous points of pustulation, and as the pus escapes the cuticle appears to be pierced with small perforations, through which a core beneath may be seen. The core is made up of a slough of the fibrous tissue of the inner part of the skin, and as it loses its vitality that tissue appears to be converted into a grayish or whitish pulp, apparently soft and mixed with an ichorous purulent fluid. The entire surface of the carbuncle is filled with the perforations through which this fluid oozes. Or a considerable space of the skin may lose its vitality, turn black, slough, and leave a large opening in the core. Carbuncles vary in size from an inch to several inches in diameter, and are from an inch to an inch and a half in depth. They are always attended with more or less danger from the great and long-continued pain they cause, from the exhaustion of the sloughing process, from the febrile excitement, from its aptitude to excite erysipelas, and from the fact that the disease usually occurs in those already in feeble health.*

Causes.—The Registrar-General of Scotland, in his Report for 1862, says that from the breaking out of pleuro-pneumonia among the cattle in that country a few years ago, carbuncle, a disease formerly very rare, has become comparatively common. Dr. Livingston observed in Africa that, if the flesh of animals that die of disease be eaten it causes carbuncle in the persons who eat it; and that neither boiling nor roasting the flesh, nor cooking it in any way, gets rid of the poison. Though the cattle affected by the disease be killed before they die of it, "still the poison is in them." The Report suggests the possibility of the origin of diphtheria from the use of diseased flesh.

Treatment.—The most prompt and certain relief is given by making a crucial incision quite through the diseased structure, and even extending a little beyond its boundary into the sound part. The patient is generally relieved almost instantaneously from the distressing shooting pains. In dividing the tumor it seems as if the knife passed through a honeycomb. A soothing poultice should be applied to promote the full discharge.

Medical Treatment.—The remedies are: *Rhus-tox.*, Arnica.

Arsenicum: Carbuncle taken from cattle. Bell., Hyos., Nitr.-ac.

Calcarea-muriatica: Silicea, Sulph.

Chloride of Lime: Calendula.

Dr. Helmuth says, he treated three severe cases, in one of which 'the disease extended over the whole forehead, and required crucial incisions three or four inches in length. In the second case a large

* Jour. Rational Med. March, 1862. p. 83.

and extremely painful anthrax appeared just above the tendon of the quadriceps extensor, and involved the tissues beneath to such a degree that an abscess formed underneath and threatened the joint. And, in the third, three large and painful tumors developed themselves on the neck. The internal treatment was *Arsenicum* for the intense burning, and, in an early stage, free incisions, the parts being constantly covered with a thick compress, saturated with a hot solution of *Calendula* and water. The effect of the remedy in hastening the generally tardy separation of the slough, in allaying the pain, and more particularly in bringing the disease to a speedy termination, was surprising. Moreover the aqueous solution of Calendula can be poured into deep wounds with great benefit, and with much alleviation of pain."

Calcarea-muriatica was recommended by Rademacher in 1832. Dr. Kallenbach of Utrecht says that he had been for near twenty years afflicted with boils every three or four years, which, under the use of "Arnica, Hepar and poultices," tormented him "ten or fourteen days before the so-called core" could be extracted. On a late occasion "a boil the size of an apple formed in the perinæum, and after eight days" in spite of the usual remedies he was confined to bed and unable to move. "The formation of matter (my age being 65) went on slowly, and the fluctuations were barely perceptible, so that from past experience I counted on another eight days delay. Then came into my memory Rademacher's recommendation, and I began to apply a solution of Muriate of Lime, two drachms to three ounces of water. The same night was quiet and almost free from pain. In twelve hours the boil opened of itself, and discharged about one-third of its volume of thin bloody pus. Under the continuance of the same application the opening closed in a few hours, and the remainder of the swelling was dispersed by resolution in a few days, instead of passing into suppuration." (*Homœop. Klinik.* May, 1861.)

Chloroform.—Dr. Hardy reports some interesting cases of prompt relief to most violent pain in carbuncle, hæmorrhoids, irritable bladder, difficult menstruation, ulceration of the os uteri, cancer of the rectum, &c., by the topical application of the vapor of chloroform. Intense pain, even when it does not cause death, may interfere with the action of remedies; and it is proper to relieve or remove it by any reasonable means in our power.

Carbonate of Lead.— White Lead.—As an external application, in a case of a huge carbuncle on the loins of a man rapidly extending in spite of free incisions, linseed poultices, and common general treatment, a thick wide circle of white lead in linseed oil was applied. From that time there was no advance of the disease; the centre rapidly broke up, and recovery followed. Warm poultices often increase the inflammation of carbuncles.

The white lead seems to act in two ways: 1. It effectually excludes the air which is a great irritant; 2. It is a direct homœopathic sedative to the sentient nerve filaments, rendering them less disposed to become involved in the progressive inflammation.

12. ERYSIPELAS.—ST. ANTHONY'S FIRE.

Erysipelas presents itself under so many different aspects, and so often makes its appearance in connection with other morbid conditions of the system, that any description which shall cover all its various phases, is scarcely possible. The structures upon which it seizes are the skin, the cellular tissue, and the internal organs, especially the brain and the lungs. It may exist in a *chronic* form, unattended by febrile, or other constitutional disturbance, and persist for a long period —displaying itself at intervals. upon the surface, in the form of slight superficial inflammations; or sometimes passing to an internal organ, and producing temporary derangement of function; while at other times it will remain latent and inactive. But it very frequently appears in an *acute* form, either as an *idiopathic* or a *symptomatic* affection. It is in this active condition that erysipelas has proved so formidable to the old-school physician and surgeon. It was in this form of the malady, that the late celebrated Liston, conscious of the inefficiency of allopathic remedies, was induced to adopt homœopathic treatment in the numerous symptomatic cases from surgical operations, wounds, &c., which came under his care, the results of which were so satisfactory to Mr. Liston and the friends of homœopathy. (See *Reports of North London Hospital*, 1836.—7 and 8.)

Erysipelas prevails most commonly in the spring and autumn, and not unfrequently it assumes an epidemic character. Females are likewise more subject to its attacks than males.

The circumstances which operate to modify the character and course of the malady are very numerous. In some instances a peculiar state of the atmosphere exists, which serves to develop the affection in a highly malignant form, in those who are predisposed to its influence. At other times, the effluvia arising from those who are suffering from the disease, appears to possess contagious qualities, and to be capable of communicating the morbid influence to those who came within its reach. Cases of this kind are usually severe and malignant—attacking the cellular tissue with a low grade of inflammation, which is exceedingly prone to terminate in gangrene, and not unfrequently to extend its ravages to the brain and lungs. The habits and constitution of the individual likewise exercise an important influence in determining the character of the disease. Excessive indulgence in malt-liquors and impure spirits and the exclusive use of fresh meat, reduce the system to a con-

dition peculiarly favorable to the development of malignant erysipelas, whenever slight exciting causes operate. So also general debility, a dropsical tendency, a scrofulous or scorbutic habit, or any other dyscrasia, will be likely to determine a dangerous form of the complaint.

Diagnosis.—*Erysipelas* is sometimes preceded by general lassitude, depression of spirits, and protracted rigors, followed by accelerated circulation, hot skin, thirst, headache, wandering pains in the back and limbs, and general restlessness; or it may make its appearance without any premonitory symptoms, except perhaps slight chills, succeeded in a few days by fever; or it may occur during an attack of pneumonia, typhus, bilious or gastric fever; or after wounds, or other injuries, in different parts of the body, especially of the scalp; or it may arise suddenly from violent mental emotions, as terror, joy, anger, &c. When the inflammation is confined to the skin, the malady runs its course in a mild and simple manner, and the accompanying symptoms will be merely stiff, heavy, burning, or pungent sensation in the part affected, impaired appetite, slight febrile disturbance, and noctural restlessness. The inflammation generally comes out in blotches, which sometimes run together, and after a few days, are covered with vesicles filled with a limpid or yellowish fluid. These blotches vary from a light red to a dark red, or purplish color, becoming white under pressure, but again resuming their original appearance as soon as the pressure is removed As the disease is about subsiding, the color of these spots changes to a pale or dirty yellow, after which desquamation of the cuticle takes place.

When the malady is complicated by gastric or biliary derangement, we may have a high grade of febrile excitement, and the other phenomena which usually attend affections of this kind. In these instances, the erysipelatous inflammation is apt to be more violent, and to extend deeper, than when no complications exist. The tumefaction is more extensive and deep-seated, the inflammation is more intense, the hardness greater, and the pain more profound, in this variety, than in that first described. Some authors have designated this variety the *erysipelas phlegmonodes.* The most common seat of this phlegmon is in the face and head, although it occasionally attacks other parts of the body.

Another and highly malignant variety of erysipelas prevails at certain seasons, and attacking more particularly females after confinement, and individuals who have already been enfeebled by other diseases. The tumefaction in these instances is more soft and spongy than in the preceding varieties—often pitting on pressure; the skin assumes a pale, waxen, or sallow color; the temperature of the parts is sometimes above and at other times below the natural standard; the skin of the affected parts presents a smooth and glossy appearance; vesicles containing a limpid or yellowish serum, are diffused over the

swelling; sensations of stiffness, weight, and deep-seated burning pains are experienced; followed, if the disease advances, by nausea, vomiting, obtusion of the senses, rapid and feeble, or slow and full pulse; constant inclination to sleep, and finally profound coma; stertorous respiration; contracted or dilated pupils, either partially or wholly insensible to light; protrusion of the lips at each expiration; frothing at the mouth; diminished temperature of the skin; livid and inactive appearance of the diseased part, and general and rapid abasement of the energies of the system. This form of the disease has been recognized under the term *erysipelas œdematodes*, from the resemblance of the affected parts to dropsical swellings.

Erysipelas gangrenosum.—In this form of the disease there is evinced a strong disposition, from the commencement, to terminate in gangrenous degeneration. The inflammation is confined principally to the sub-cutaneous cellular tissue; the swelling is hard and inelastic; the color of the skin is dark red or purple; large vesicles filled with an acrid fluid form on the surface, presenting a sluggish and gangrenous tendency; the accompanying fever is of a low typhoid character; the muscular and nervous energies are below the natural standard: delirium or coma are for the most part present, and suppuration, gangrene and sloughing soon supervene.

Erysipelas neanatorum.—Erysipelas of this form attacks new-born children. The inflammation is generally confined to the lower part of the body in the first instance, but sometimes extends over the whole surface. The character of the attack depends much upon the constitution and predisposition of the child; although, commonly, the inflammation is of a high grade, the swollen parts very painful and tender, and disposed to suppurate and slough. The course of the complaint varies from two to four weeks.

Another, and very common kind of erysipelas is observed in old people and in cachectic and intemperate persons. It is unattended with febrile disturbance, or much pain; but it is apt to make its appearance from very slight exciting causes, it becomes a constant annoyance. When the inflammation is upon the surface, the subject feels well; but on its disappearance there often occur internal pains, congestions, and numerous unpleasant symptoms, which lead to the inference that the disorder is dependent on some internal miasm. Frank terms this form *habitual erysipelas.*

A number of other varieties have been described, founded upon the disease as it has prevailed in different localities and climates, and as modified by various forms of disease which may have accompanied it. We only aim to give a general outline of the complaint with its characteristic phenomena.

Epidemic Erysipelas.—This formidable disease invaded various

parts of the United States and Canada about 1841. In 1842, 43, 44, 45, it prevailed, at one time or another, in almost every Western state. It afterwards gradually diminished in virulence, losing its most striking characteristics. A single case will furnish a sufficient history of the epidemic as we often saw it during those years.

Mrs. M., aged 25, was in good health on the evening of the 19th of March, 1844, felt some pain and soreness in one nostril and through the head. During the night the pain increased, the nose swelled and the eyes could not be opened. In the morning erysipelatous inflammation was extending along the angle of the right jaw. At 9 P. M. the pulse was 100 in frequency; arterial action not strong; skin moist; but the inflamed surface fiery red; pain burning and confined to the skin; heat of the surface generally not great. The swelling and redness, however, continued to extend, assuming a deep dark-red color. At 4 A. M. on the 21st the pulse was 120; pain in the head; much worse among the parotids and salivary glands. During the morning the pulse 130, in the afternoon 140. The face largely swollen over the right side and red on the left. Pain in the head continued. The tongue, from the beginning coated, now dry and red. Appearances continue the same through the evening. Pulse constantly 135 to 140. Swelling extending upwards through the hair. The swelling closes the right eye.

March 22d, 8 A.M. The pain is now scarcely felt, though the swelling of the face is such as would be made by adding two inches in thickness at the middle of the cheek and extending it down the neck and up to the top of the head. Color dark mahogany color; pulse 136. The throat collects full of thick mucus which seems coming off. The patient thinks she is better. The pain in the back and legs is gone; intellect little disturbed, mammary secretion increasing, though the pulse is still too frequent to assure her safety.

At 6 P.M. the swelling was slightly diminished on the points first invaded, but is increasing on the top of the head and on the other side of the face; some discharge from the nostrils; pulse improving (120); superficial inflammation still slowly spreading, but with less swelling. From this time the disease declined. 23d, pulse 120 in the evening; face and head still very large; skin dark; nose running bloody serum; slight pain in the head. Skin thickened and red quite down to the neck, front and back. Itching of the skin and subsidence of the swelling and pain give assurance of resolution in the parts first invaded. 24th free from pain; pulse at 6 A.M. 110. Swelling slowly subsiding, though the eruption spreads down the neck; both eyes still out of sight from the swelling of the lids.

25th. Slowly improving; pulse 104. The eruption has ceased to

extend; appetite good; little perspiration; tongue moist and of natural appearance. Full recovery about the seventh day.

Causes.—There is much difference of opinion respecting the causes of erysipelas. Some attribute it to a local cutaneous vice; some to a degeneration of the blood in consequence of improper food, abuse of stimulants, &c.; some to a derangement of the biliary organs; some to atmospheric influences; while others entertain the opinion that it is dependent upon a peculiar dyscrasia which is constantly present as a predisposing cause. This opinion appears to us reasonable; but whether this dyscrasia is in all instances hereditary, or whether it may be acquired by intemperance, unwholesome food, or from contaminated air, we are not as yet always able to determine.

The more common *exciting* causes of erysipelas are, debility and loss of resisting power from disease, abuse of stimulants, violent emotions of the mind, undue exposure to cold, certain states of the atmosphere, accouchment, disordered stomach and bowels, confinement in close and crowded apartments, and wounds.

Eberle says, "the inflammation which is produced by the recent leaves of the *Rhus-toxicodendron*, is strictly of an erysipelatous character." This, however, is an error, for although a close similarity exists between the two inflammations, the careful observer will be able to distinguish decided marks of difference.

Treatment.—The important medicines in the treatment of erysipelas are, *Rhus-tox.*, *Belladonna*, *Aconite*, *Sulphur*, *Opium*, *Graphites*, *Arsenicum*, *Carbo-veg.*, *Merc.*, *Phosphorus*, *Pulsatilla*, *Acid-phos.*, *Acid-nitric.*, *Silicea*, *China*, *Hepar-sulph.*, *Lachesis*, *Bryonia*, *Chamomilla*, *Clematis*, *Euphorbia* and *Apis*.

Rhus-toxicodendron.—External indications.—Inflammation confined to the skin, numerous vesicular blotches, attended with itching and burning sensation; swelling and redness of the face, worse in the eyelids, around the eyes, and in the lobules of the ears, attended with burning and itching; swelling in the scalp; erysipelatous inflammation of the scrotum in new-born children; distinct or confluent vesicles, containing an acrid, limpid, or yellowish fluid, with redness of the skin over the whole surface of the body; partial or entire closure of the eyelids; swelling and hardness of the *alæ-nasi;* gangrenous ulcers; hot and dry skin; rapid and full pulse; urine small in quantity, dark and turbid.

Physical Sensations.—Burning, itching, and stinging of the affected parts, aggravated by scratching; irritation and sometimes excoriation of the skin from contact of the vesicular discharge; the itching and burning sensations worse in the evening; stiffness and sense of immobility in the swollen parts; bruised feeling in the limbs and back; general sensation of heat, both externally and internally, occasionally

interrupted by slight rigors; mouth filled with saliva, or dry, with or without thirst; dryness and obstruction of the nose, relieved by draughts of cold air, or by being fanned; painful pulsations in the internal ears, when resting on the affected side; scalp swollen and painful to the touch; eyes painful on motion; dull, heavy pain in the head, aggravated by motion or stooping.

MENTAL AND MORAL SYMPTOMS.—Obtuseness of intellect, stupefaction, and weakness of memory; sadness, anxiety, and despondency towards evening, and during the night; nightly delirium.

ADMINISTRATION.—A drop of the second or third dilution in water, once in two to four hours.

REMARKS.—Ruoff and Schroen consider *Rhus* particularly applicable in vesicular erysipelas, which is confined to the skin; but if symptoms indicative of serious cerebral disorder are present, they prefer *Belladonna*. It has been used with success in infantile erysipelas.

SYMPTOMS produced by *Rhus-toxicodendron*.—Blistering of the skin. The head swells to a very large size. Fontana thus poisoned himself three times when experimenting.

Inhalation of the atmosphere of Rhus-toxicodendron produces in a few days or even hours: itching; swelling, redness; pain, pustules, which are more or less vesicular; there is fever, malaise, oppression, lasting several days; death has resulted.

In 1825 Lavini experimenting with Rhus juice inoculated the first phalanx of the index-finger with two drops of the juice, leaving it only in contact for two minutes. In twenty-five days the following symptoms arose suddenly: great heat in the mouth and throat; rapid and large swelling of the cheek, upper lips and eyelids; in the night following, swelling of the fore-arms to double the natural size; dry, tense and burning skin; intolerable itching.

Rhus affects the integuments and membranes rather than the cellular tissue and the muscles, which are more under the influence of Arnica. It differs from Ledum-palustre by its tendency to spread instead of confining itself to a narrow space.

Pathological Conditions curable by Rhus-tox.—Sense of fullness about the head; worse when stooping; sensation in the brain as if bruised, or fluctuating; stupefying headache, such as exists in acute fevers, or that caused by intoxication with Brandy.

Redness or paleness of the face; margins around the eyes; pointed nose; comatous drowsiness, occasionally delirium; coldness of the surface; numbness of the limbs; general sinking of strength; frequent but oppressed pulse. It is employed successfully in many diseases, among which are the following. Acute hydrocephalus; serous and sanguinous apoplexy, erysipelas; paralysis; epistaxis. (*Teste.*)

SYMPTOMS.—Tingling in the hairy scalp, forehead, nose, or the

whole face; cracking and ulceration of the red border of the lips; hot swelling of the upper lip; burning pustules around the mouth, followed by dry, brownish crusts; heat and smarting over the face; parotitis. Enormous swelling of the whole head (erysipelas); itching of trunk and extremities, burning, itching made worse by scratching burns, chilblains; consequences of sun-stroke; it has even cured meningitis from this cause. It has cured erysipelas, pemphigus, zona, eczema, hot and painful engorgements of the sub-cutaneous glands; rheumatic pains which are very violent and always spread over a large surface, as at the nape of the neck, loins and extremities; gout, especially when characterized by cutaneous symptoms; hydarthrus; warts on the hands; red or colorless infiltrations of the extremities with burning pains; erythematous gastritis and gastro-enteritis, with the mouth hot as if burnt; strong desire for cold drinks; red and dry tongue, covered with a sort of false membrane, vesicles being visible beneath; burning at the stomach.

Œdematous Erysipelas of the Face.—Dr. E. A. Guilbert, Dubuque, Iowa, advises the topical application of remedies. He gives cases illustrating the treatment, in one of which he applied Arsenic for twelve hours, followed by Rhus. Improvement within the first twelve hours, and in thirty-six hours the case was out of danger.

In a second case Acon., Rhus-tox., Rhus-rad., Iodine, and Belladonna were used.

Third case. Arsenic and Rhus-rad. internally and the same remedies externally; impression made on the disease in twenty-four hours. Attenuations, first to sixth, tincture, twenty drops to a pint of water.

A vigorous and plethoric man, blind from cataract of both eyes, had erysipelas, involving the face, scalp, neck, and upper third of the chest "erratically leaping thence to the dorsal surface of the hands, and the plantar surface of the head," features hideously disfigured; eyes closed, lower maxilla almost immoveable, owing to the extraordinary tumefaction of the tissues involved; color of the affected parts bluish-red, and the heat thereof most pungent; dangerous cerebral symptoms from the second day to the subsidence of the disease. In this case, no topical application was used but strong tincture of Iodine, to create a barrier, by which the march of the inflammation might be arrested; and when that barrier was reached, the disease was suddenly translated to the hands and feet. He recovered slowly under Acon., Bell., Arsen., Rhus-tox.

In another case remedies were used topically. A boy of nine years was treated internally for several days by Arsen. and Bell. The same remedies were used topically; beginning at nine o'clock on one evening, they produced evident amendment by next morning. In another case a boy, aged nineteen, had been under treatment several

days; "the disease was still extending its ravages, and the cerebral symptoms were particularly ominous." Arsen. and *Rhus-rad.* were used internally, and the same (twenty drops of the tincture to a pint of water,) locally applied; "an impression was made on the disease within twenty-four hours, and the patient rapidly convalesced."

Belladonna.—External Indications.—Skin swollen, red, hot, and painful; cheeks, eyelids, nose, lips, and forehead, swollen, tense, shining and painful to the touch; eyes red, prominent, and glistening, or dull and cloudy; pupils dilated or contracted; whole head swollen and painful; obstruction of the nostrils; inflammation and enlargement of the parotid glands; hardness of hearing; redness and swelling of the tonsils and throat; urine scanty, dark, yellow, or reddish, clear or turbid; vesicular inflammation, with intense febrile excitement; tongue and lips dry; sordes upon the teeth; occasionally spasms, tremblings and rigidity of the limbs; pulse generally full and quick.

Physical Sensations.—Tension and pressure, or sharp, throbbing pains in the head; scalp very painful, especially on pressure; violent heat and burning of the inflamed parts; dryness, smarting, or burning of the eyes; disordered vision; stitching and throbbing pains in the ears, both externally and internally; roaring and humming in the ears, mouth, and throat, dry, hot, and painful; sticking and burning sensation in the throat when swallowing; aversion to food and drinks, or violent thirst for cold drinks; bad taste in the mouth, bitter eructations, and other signs showing biliary and gastric derangement; short, anxious, and difficult inspirations; great weariness and uneasiness; pains worse in the afternoon and at night, and aggravated by contact or movement.

Mental and Moral Symptoms.—Vertigo, confusion of ideas, or loss of consciousness, or delirium, violent at night, but moderate during the day; or melancholy, despondent, and apathetic.

Administration.—A drop of the third dilution in water every two or three hours, according to the severity of the symptoms.

Remarks.—It was chiefly from the employment of *Belladonna* and *Aconite* that Liston produced the successful results in the North London Hospital, and in private practice, to which we have already alluded. It is applicable when we believe it to have been excited by intemperance and violent emotions of the mind. Also in nearly all cases of erysipelas where there exists prominent cerebral disorder. In these cases, should it not cover all the important symptoms, we may give some other appropriate medicine in alternation.

Whenever febrile symptoms are strongly pronounced, and there exists a decidedly augmented action of the circulatory vessels, *Aconite* will be required, either alone or in alternation with some other remedy.

It should be used in the first, second, or third dilutions—a drop in water as often as the exigencies of the case may demand.

Opium is indicated in those cases which supervene during *pneumonia*, typhoid, and other fevers, and present the following signs: profound coma; stertorous respiration; eyes dull and watery; pupils dilated and immovable; general appearance stupid and besotted; spasmodic motions in different parts of the body; pulse slow and feeble, or slow, intermittent and full; inability to rouse the patient. The second or third dilution may be employed—a drop every half hour until an impression is produced.

When ulcers have formed, and there is a disposition to gangrenous degeneration, we must refer to *Arsen.*, *Carb.-veg.*, *Sulph.*, *Lachesis*, *Euphorb.*, *Sil.*, *Clematis*, *Acid-nitr.*, and *Acid-phos.*

In *erysipelas phlegmonodes*, when the inflammation is extending into the cellular tissue, our best remedies are *Bell.*, *Graph.*, *Hepar-sul.*, *Merc.*, *Phos.*, *Sil.* and *Sulph.*

If the inflammation exhibits a tendency to shift from place to place, and is attended with gastric or intestinal derangement, and constantly shifting pains, *Pulsatilla* will prove specific.

Bryonia has been strongly recommended when the inflammation takes place about the joints, and is accompanied by rheumatic pains.

China will often prove serviceable during convalescence from severe and protracted attacks, when the energies of the system have been exhausted, and there is great irritability of the nervous system. Some of the signs which point to this medicine, are emaciation, œdema of the limbs, deficiency of the animal heat, pale countenance, great debility, ringing in the ears, disturbed sleep.

Tartar-emetic.—In bilious erysipelas, or in the form that originates in strongly marked gastric disorder, *Tartar-emetic* often diminishes the inflammation, increases the perspiration and urine. Dr. Welsh thinks it acts specifically on erysipelas of every form, whether of high inflammation, low fever, vomiting or purging. It does not appear, however, to be so generally useful as Rhus and Bell. It succeeds best in cases accompanied with constant nausea, bilious vomiting, watery or brownish diarrhœa, cold sweats and great prostration of the vital forces.

External applications to the affected surfaces, in the form of blisters, and of nitrate of silver, have sometimes been supplied with success; though they are in accordance with our principle of cure, it becomes us to give them attention only as subordinate to internal remedies.

M. Velpeau, of Paris, says, he treated one thousand cases of erysipelas and recorded the history of four hundred of them. He relied only on external remedies, some of these were: blisters, nitrate of silver, Mercurial-ointment, hog's lard, white precipitate ointment, Sul-

phuric-acid, Hydrochloric, Citric, Tartaric, and dilute Acetous-acid; common salt and water, liquid Nitrate of Mercury, bird-peck punctures, and Camphor; and found no benefit from any of them. He then renounced them all in despair, till he came to think the disease might consist in a blood poison, to be corrected by iron. He tried nine drops of the Sulph.-ferri in forty ounces of water. He found that this, when locally applied cured the disease where it existed, but would not prevent its spreading.

Carbonate of Lead.—This is far superior to the common lead lotions, hot fomentations, Nitrate of Silver, Collodion. After painting the skin with white lead paint, the tight shining skin soon becomes wrinkled and shrunken; the inflammation rarely extends after the second or third painting. Apply it by means of a feather over the affected part, and a little beyond the margin. But no local treatment must be depended on in any form of erysipelas. Rhus and Belladonna are the true specifics. Let them be given alternately, followed by Rhus in vesicular cases.

Respecting the ADMINISTRATION of the remedies above enumerated, we suggest, as a general rule, the employment of first, second, and third attenuations; but in cases of infants and young children, we may go up to the tenth, or twelfth dilution. In acute cases, the dose should be repeated once in two to four hours; but in the chronic varieties, two or three times daily will suffice.

Acetum.—Cleghorn, a brewer of Edinburgh, recommended the application of vinegar to burnt surfaces, continuing it till the pain abated. The eschars to be covered with poultices, and afterwards sprinkled with finely pulverized chalk.

DISEASES OF THE BRAIN AND NERVOUS SYSTEM.

GENERAL OBSERVATIONS.—If the soul of man manifests itself through the healthy organism in a certain definite manner, and if these manifestations are modified precisely in accordance with the abnormal conditions which the organs and tissues may acquire, the importance of a correct understanding of the exact healthy functions of all the structures, and of their alterations during disease, will be truly appreciated. Unfortunately for science, the profusion of hypotheses, the arbitrary assumption of ancient ideas for facts, as well as the inherent difficulties attending the pathology of diseases of the cerebro-spinal system, have until recently retarded the onward progress relative to their nature and treatment, until Sir Charles Bell demonstrated that the nerves which arise from the *posterior* column of the spinal marrow were devoted to *sensation;* those of the anterior column to *muscular contraction;* while the middle column gives origin to the *respiratory*

nerves, the most erroneous and contradictory notions were entertained respecting the functions of the nervous system.

Magendie, Flourens, Abercrombie, Hall, Solly, Serres, Bennett, and Andral have also thrown much light upon the functions of particular portions of the brain, but much remains to be done in this important field of discovery. And it is only by banishing from our medical vocabulary all vague and obscure expressions, and contemplating the body as a complicated machine, actuated and kept in operation by an intelligence that pervades every part, and in conjunction with its material stimuli, giving rise to sight in the organ of sight,—hearing, taste, smell, digestion, assimilation, calorification, motion, &c., in their several organs,—and perceptions, memory, comparisons and ratiocination, by their operation upon a combination of organs, that we can arrive at accurate conclusions.

The cerebral organs may be affected throughout their whole extent, or in isolated parts alone; but whatever condition obtains, diseases of certain sections of the brain usually give rise to peculiar and well defined symptoms. Thus, *compression* of the brain, whether from effused blood, serum or pus, depression of a portion of the cranium, or a congested and relaxed condition of the cerebral vessels, give rise to *coma*, with slow pulse and stertorous respiration; *organic lesions* of the brain, to *paralysis* of one or more parts of the body, depending upon the extent of the lesion and the part affected; *irritation* of the brain to *convulsions*; disease of the *cortical substance* or *hemispherical ganglia*, to delirium and *mania;* of the *medullary* or tubular *structure*, to *convulsions;* effusion within the ventricles, to *dementia;* effusion upon the *surface* of the brain, to *lethargy;* inflammation of either *lateral lobe* of the *cerebellum*, to *paralysis* of the lower extremity of the *opposite side;* inflammation of the *middle lobe* to satyriasis (Hall,) of the *arachnoid* and *pia mater*, to *delirium;* ramollissement, to torpor of the *intellectual faculties* and loss of *muscular power*.

So strongly marked are these signs, that pathologists have made somewhat minute classifications of the diseases of the brain, as of the *arachnoid*, of the *pia-mater*, of the *cortical*, or the *medullary* part, the *base*, the *tuber-annulare*, the *hemispheres*, and the *cerebellum*.—But it is to be observed in most cerebral affections, that inflammations of particular structures rarely exist uncomplicated with more or less disease of the surrounding parts, and on this account we meet with a great diversity of symptoms during their progress. For this reason, if no other, it is more consistent to prescribe for the *totality of the symptoms* than for the mere *name* of the disease. By the former course we pursue a definite object and apply our remedies with an assurance of success, even if we are in error respecting the pathology

of the case; while by the latter method, we are liable to mistake the location and nature of the malady, and thus adopt a pernicious mode of practice. For example, by mistaking the cerebral symptoms of a typhus fever for encephalitis, or the *anæmic* condition of the brain which obtains in true delirium tremens, in some cases of apoplexy, in epilepsy, and in ramollissement, for *acute inflammation*, and resorting to the old remedies for the cure of the latter, viz: copious venesections, the most disastrous results might be apprehended. It is now a well-ascertained fact, that delirium, coma, hydrocephalus, and even ramollissement, may result from an *anæmic*, as well as an *inflammatory* condition of the brain. Drs. Abercrombie and Marshall Hall recognize still another comatose condition independent of disease of the brain, and arising from exhaustion of the general system, occurring during the last stages of certain diseases; but from the fact that this coma generally occurs after prostrated bowel complaints where Opium has been used as the principal remedy, we are of opinion that a real cerebral disease has been superinduced by the remedy.

For the cure of the symptoms above named, arising from an *anæmic* condition of the brain, tonics, stimulants, and a nutritious regimen are deemed essential by the practitioners of the old school. Blood-letting and antiphlogistics in these cases are fatal. But when the same symptoms arise from an *inflammatory* condition of the encephalon, a treatment directly the reverse is supposed to be necessary to save life, like venesection, leeching, purging, blisters, &c. Now, when we contemplate the great uncertainty attending the diagnosis in these two forms of disease, and the danger which must attend mistakes in treatment originating from errors, respecting the peculiar condition of the brain, is it strange that people have no more confidence in allopathy?

We have before remarked, that morbific substances, in order to develop diseased action in the organism, must be taken into the blood and conveyed to those tissues upon which they exert a specific morbific influence, there producing those alterations, (probably upon the sentient extremities of the nerves,) which constitute disease. It is only necessary to refer to the examples to which we have alluded in another part of this work to render this supposition entirely probable.

It is also equally evident, from the multitude of experiments by Müller, Magendie, Orfila, Pereira, Hahnemann, Trinks, Philips, Flourens, and Bichat, that poisonous drugs and all medicinal substances operate in the same manner in producing their specific poisonous or medicinal effects.

There are other causes constantly operating upon the system, of a character entirely different from those to which allusion has just been made, and which may with propriety be termed *spiritual* or *dynamic*.

Thus violent mental disturbance may cause epilepsy or apoplexy—chagrin and grief, biliary derangements, jaundice, and dyspepsia,—sudden news, whether good or bad, diarrhœa,—anger, fear, disappointment, and ill news, sometimes instantly destroy the appetite; fear and apprehension predispose to contagious disorders; the sight of blood induces syncope; and of human suffering, pain and disorder in the stomach. In these cases, the unusual mental excitement determines an unnatural amount of blood to certain parts, the blood-vessels and nerves of such parts are oppressed, and disease results.

But it is of vast importance that these *spiritual* or *dynamic* causes be not confounded with those that are merely *material*, or those manifestations of the physical usually designated as *imponderable*.

Although cerebral affections may arise under favoring circumstances, from the absorption of morbific and medicinal substances, and from spiritual or dynamic influences, yet the latter rank first in importance, especially in what are termed *chronic cerebral maladies*. In the treatment of brain diseases, therefore, too much importance cannot be attached to an accurate knowledge of these causes; for it is only by their prompt removal, together with a judicious application of remedial agents, that we can expect complete success.

The curious reader will find much to amuse, if not instruct, by tracing the medical history of cerebral maladies from Hippocrates to the present time. Throughout all of this period, notwithstanding the numerous changes of opinion respecting their nature, causes, &c., one striking fact will always be observed, viz.: that the *treatment* for all of these complaints has remained almost the same as that first instituted by the very respectable heathen philosopher, Hippocrates, until the time of Hahnemann.

Up to the time of Sydenham no advance in the knowledge of cerebral affections had been made. This celebrated author supposed the cause of many brain diseases, as lethargy, coma, paralysis, &c., to consist in a "*viscid condition of the blood and lymph, which obstructed the pores of the brain, and dulled the animal spirits. While the viscid blood forces its way into the brain, through the two carotids, it leaves in its passage a slimy matter, through which the animal spirits passing, stick by the way, and so the pores of the brain are obstructed.*" (*Sydenham* and *Salmon*, *Pract. Phys.*, p. 203.)

Their indications of cure were: First, "*to evacuate the redundancy of phlegm and choler, or to carry off that vicious acid which has created the viscosity of the blood.* Second, *to alter the present dyscrasia of the blood.* Third, *to open the pores of the brain now obstructed, and give a free passage to the spirits.* Fourth, *to strengthen the weakened parts, quicken the dull spirits, and increase their store or stock.*" (*ibid.*)

To fulfill these indications of cure the fathers of allopathy adopted almost precisely the same treatment as that which prevails with their brethren of the present day, viz.: blood-letting, emetics, cathartics, "*to purge off the phlegm and choler.*" Antimonials and alteratives "*to cut up the gross phlegm, dissolve the coagulums of the blood and humors, and excite the animal spirits to a brisker and more lively air.*" Paracelsus and Van Helmont particularly commended *opiates* and *narcotics* in chronic affections of the brain. If we refer to the most recent writers on insanity and other cerebral affections, we shall find not only the same remedies retained, but the same diversity of opinions respecting the application of these remedies; some trusting to venesection and purges, some to tonics, while others depend upon *opiates* and *narcotics.*

In a book which is now before us, published in 1587 by "Andrew Boord, Doctor of Physic—an Englishman," the opinion is given that maniacs are possessed of devils, and he advises for their cure, in addition to blood-letting, cathartics, &c., that they should be sent to Rome to be made whole. He says that "within the precincts of St. Peter's church, without St. Peter's chapel, standeth a pillar of white marble, grated round about with iron;" that this pillar is one to which our Lord "did lie in himself at his delivery unto Pontius Pilate; and that the Romans say that all persons possessed of the devil from divers countries" who were brought thither "were made whole."

The same writer supposes the cause of phrenitis to consist of "water or wind enclosed in the head;" and the remedies were "to purge the head with sternutatories and the bowels with physic."

Modern pathologists do not attribute mania to demoniacal possession, or phrenitis to "wind being enclosed in the head;"—coma, lethargy and paralysis are not supposed to be caused by "viscid blood rushing into the brain through the two carotids, and leaving in its passage a slimy matter, through which the animal spirits passing, stick by the way," but they have demonstrated that inflammation, irritation, organic lesion, and compression give rise to the phenomena which characterize the different diseases of the brain. But, notwithstanding this change of opinion in a pathological point of view, the therapeutical doctrines remain the same as formerly, with the single exception of advising maniacs to be sent to the marble pillar at Rome.

Blood-letting, probably to let out the "slimy" part of the blood; emetics and purgatives to "purge off the phlegm and choler;" irritating and inflaming the intestinal canal in order to cure a disease located in the brain, and now and then an opiate to cover up symptoms when too troublesome, are still resorted to by gentlemen of the old school.

It is to be hoped that the time is not far distant when all such indirect and unreasonable practices for the cure of diseases, will be entirely

superseded by the more *direct* and *philosophical* method of treatment which has been instituted by the father of homœopathy and his disciples.

Probably in no class of maladies has allopathy been so much at fault as in her classification of cerebral affections. Each author who has written upon the subject, has taken upon himself to promulgate pathological views different from those of his predecessors, and from these views to form new classifications and new modes of treatment. While some nosologists recognize inflammation of the arachnoid, of the pia mater, of the cineritious or cortical substance, of the medullary, or tubular structure, of the different lobes of the cerebellum, of the tuber annulare, &c., as distinct diseases requiring different modes of treatment; others, as Frank, describe inflammation of the hemispheres of the brain, the cerebellum, and their common envelops, as a single disease under the general term, *encephalitis*, and demanding for its cure a definite course of treatment. Thus: "*L'inflammation du cerveau, du cervelet, de leur enveloppes communes ne presente pas, selon la difference de son siège, des symptomes distinctifs surs et constants.*" So also Solly in his work on the human brain at page 322 remarks, "I have long felt convinced that there is no such thing as inflammation of the pia mater, independent of the brain, and that much mischief has accrued from our systematic writers treating of inflammation of the membranes of the brain as distinct from inflammation of the brain itself." The same writer lays down the following broad principles, viz.: "That inflammation of the brain is a depressing disease, and that, as a general rule, general blood-letting is not often admissible. That, although, blood-letting may sometimes be attended with relief, at the same time, the good derived from it is seldom permanent." Again, "*Il n'existe pas* de signes certains qui annoncent le siège de l'encephalite, qui caracterisent la phlogose superficielle et l'inflammation phlegmoneuse avec tendance a la suppuration. Ces varietes n'offrent pas des caracteres differentiels assez constants pour distinguer la frenesie de la cephalite. L'invasion soubite de la douleur, la violence de la fievre la stupeur des organes des sens et de l'entendement, bientot suive de l'extinction de leurs facutes, ne prouvent pas l'inflammation de la pulpe cerebrale." (Frank.)

In view of these radical differences of opinion, and from the generally acknowledged fact, that no single structure within the cranium can become inflamed without involving to a greater or less extent other portions of the cerebral region, we shall adopt the following classification:

A. Injuries and transient diseases of the brain.

B. Encephalitis, embracing acute inflammation of the hemispheres, the cerebellum and their membranes; under which head we shall point

out, as clearly as possible, the peculiar symptoms which are supposed to characterize affections of the different parts.

C. The diseases which occasionally result from encephalitis, as ramollissement and hydrocephalus.

Genus III.—INJURIES AND TRANSIENT AFFECTIONS OF THE BRAIN.

1. CONCUSSION OF THE BRAIN.

Pathology.—In concussion of the brain, as soon as the blow which strikes the skull has caused the symptoms of concussion, the physical disturbance of the brain, whatever it may be, has been produced, and the continuance of the symptoms must depend on the continuance of the structural or molecular disturbance. But the actual condition of the brain is not known, and has received no explanation.

Symptoms.—The patient who in a state of perfect health receives a violent blow on the head in an instant loses his consciousness, and lies dead to the world around him. In some cases this insensibility lasts only a few minutes, in others for days: the patient remaining in a kind of sleep insensible to *ordinary stimuli.* He may perceive an extraordinary bright light, or may take some notice of his name loudly called near him; but ordinary noises he does not notice. As he recovers, he begins to answer questions, but incoherently. These symptoms disappear by degrees, after lasting from some days to as many weeks.

The pathological condition of the brain in a state of concussion has been little understood. It can hardly be that a long continuance of the usual symptoms of concussion can be caused by any temporary disturbance of the vascular system of the brain. It is more probable that they "depend upon something more intimately associated with the structure of the brain itself. The most appropriate physiological term for concussion of the brain is, perhaps, 'collapse' or 'shock;'" and "that the function of the part is rendered very imperfect, is evident by the insensibility of the bruised skin, and its coldness or diminished temperature." (*Hilton.*)

If inflammation supervene, another group of symptoms follows. This inflammation is rather of the substance and lining membrane of the ventricles than of the cortical substance, and all the symptoms are decided and clear from the first; but often the effect of the concussion passes over quickly and the patient is considered out of danger; but after a few days, meningitis supervenes in such a form as to be overlooked by the friends.

A boy, aged fourteen, fell from a scaffold seventy feet, first striking the lower part of the abdomen and afterwards the head; was seen in a

few minutes afterwards. He was pale, cold, insensible, and almost pulseless. Received at the hospital he was partially sensible only; he became wildly delirious. The pulse rising to 100, then to 144, afterwards falling to 100. It must ever be kept in mind that when once the delicate texture of the ganglion is in a state of acute inflammation, it soon becomes disorganized, and all medical treatment is unavailing.

Treatment.—As in external bruises and shocks to parts of the surface, we rely chiefly on *rest*, giving the best opportunity for the favorable employment of nature's own efforts, the same means are our best reliance in concussions of the brain. "Give the brain absolute rest; rely on nature's reaction," only aiding it by such homœopathic remedies as have been proved to have power to aid the reactive powers of nature. One system long ago tried consisted in depletion, which has been now fully abandoned; another equally bad, more recently in fashion consists in "hurrying on reaction by excessive stimulation with brandy or ammonia." The brain which has been violently shocked by concussion is "defective, if not in structure, certainly in its vital endowments, and is therefore unequal to its ordinary duties. It recovers itself slowly; it then soon becomes fatigued from use," over-stimulations lead to inflammation.

The brain requires absolute *rest*, absence of occupation, for its complete recovery; as external parts that have suffered from severe contusion and have apparently recovered from the immediate effect, if too early or too much used, will become painful and assume a chronic inflammatory condition resulting in local thickening or ulceration, so the brain, though it may not manifest its disturbance by pain, is still more liable to go into some more serious condition of disease from excitement, stimulation or want of due rest.

Many of the chronic affections of the brain we meet with in practice are the result of concussion, perhaps trifling, as, a transient *shake* of the brain, slight or severe blows, or a fall upon the head. The *immediate* effects of the shock having passed off quickly, may have almost been forgotten. A sudden bound or recoil of the brain may instantly follow a railway collision, and may produce only a temporary confusion of thought to be remembered for a short time only. But we often hear of sudden deaths following at a long interval after a concussion of the brain. We may then consider that the brain that has been subjected to concussion or bruising, is not necessarily injured to the extent of laceration or extravasation of blood, but as having suffered molecular disturbance in its exquisitely delicate structure, this structure having a function belonging to it which requires molecular perfection to enable its fine endowments to be made manifest. Now, since we know that other parts of coarser texture require weeks or even

months of rest after injuries before their functions can be fully performed, we must not deny to the delicate texture of the brain a period of *rest* as long or longer before we again impose upon it the performance of its ordinary functions. Rest is the chief nurse employed by nature in restoring to health the body after injuries.

CAUSES.—A blow on the head, a fall, or a violent shaking of the body, when the violence is not very severe there will be some mental disorder, vertigo, dimness of vision, trembling of the limbs, sickness of stomach.

SYMPTOMS OF MORE SEVERE CASES.—The accident is immediately followed by insensibility, relaxation of the extremities, coldness of the skin, feebleness and irregularity of pulse, difficulty of breathing, dilatation of the pupil, sometimes nausea and vomiting; breathing, though weak and laborious, usually free from stertor or snoring. These symptoms are followed by gradual return of warmth of the body, the breathing more natural, the pulse rises, sensibility is partially restored, the patient is capable of being roused out of sleep or lethargy in which he was found, and can answer questions concerning his injury.

When the stupor and other primary symptoms have passed away, inflammation of the brain of an active character begins to be developed; and, if not arrested, it proceeds to a termination in effusion.

Concussion of other parts of the body may injure the brain· sometimes internal parts are distended or torn; pains arise which increase the following day; violent headache, giddiness, pains in the chest, asthma, hacking cough, spitting of blood, pain in the back, pains in the abdomen are common symptoms.

TREATMENT.—As soon as reaction has taken place after the injury, the circulation will become accelerated, and symptoms of approaching inflammation will obtain. The more common phenomena of this reactive stage are, headache, more or less mental perversion, flushed face, hot head, and moderate febrile symptoms. For this condition, Belladonna, first dilution in water, is the appropriate remedy.

Should the fever become quite active, a few doses of Aconite may be administered.

For other effects of concussions of the brain we suggest the following medicines as likely to be required: Calendula, Stramonium, Cannabis-ind., Rhus-tox., Opium, Hyosciamus.

Arnica is the chief remedy. The patient should keep quiet, drink plenty of water; wash the parts bruised with cold water containing a few drops of Arnica. Allow the simplest food, no stimulants, spices, salt or acids.

2. *Inflammation from Injury of the Brain.*—After injuries of the head the membranes are liable to become inflamed. The symptoms are nearly the same as those of inflammation of the brain itself: great

pain; the scalp becomes œdematous; the edges of the wound become glossy, or shining; there is discharge of serum and blood; sometimes the parts have a sloughy appearance; the countenance is much flushed; the carotid arteries beat with great force; frequent rigors, sometimes followed by hemiplegia; and the patient quickly becomes comatose. The inflammation of the brain or its membranes does not generally begin immediately after the injury. Sometimes a week or two elapse before it attracts attention. When the dura mater alone is wounded, there is generally a high degree of inflammation; when it and the pia mater are injured, there is generally fungus cerebri, and the consequent inflammation is less severe.

Treatment.—The first question that arises in the mind of the surgeon is the necessity of an operation to remove or elevate depressed or broken fragments of bone. The circumstances which render *trephining* necessary are: 1. When there is extravasation of blood between the dura mater and the cranium; 2. In compound fracture, when a portion of the skull is depressed, with symptoms of compression of the brain; 3. In simple fracture, with depression of bone, when symptoms of compression continue after depletion and early efforts to remove it have failed; 4. In some cases when there is purulent matter collected between the dura mater and cranium.

In the early part of this century it was the practice to trepan and raise the bone wherever there was suspicion that it was depressed; more recently these cases have been treated very differently. Abernethy published some cases that recovered without trephining, that would have needed it, according to the old rule. Lawrence, in a lecture, (*Medical Gazette*, Vol. 21, p. 345,) gave a case of a boy who recovered without an operation, in whom the skull was fractured and depressed, the brain wounded, and portions of it extravasated through the laceration of the scalp.

The medical treatment is the same as that of inflammation of the brain.

Fungus Cerebri.—After injury of the brain, accompanied by removal of a small portion of the cranium, there often arises a fungous excrescent growth from the substance of the brain, which grows luxuriantly and presses outward through the aperture of the skull.

Treatment.—Its growth must be prevented or repressed as soon as it is discovered, and the growth restrained until the dura mater covers it. Wet a piece of lint with Aqua-calcis and apply it to the fungus with adhesive plaster placed over it. Next day the fungus will be lessened. Take now a large piece of lint, and strap it as before with adhesive plaster, to compress slightly the protruding growth. Continue this process till the fungus is restrained within the dura mater, where it must be steadily maintained until the membrane heals over it.

Apparent Death from a Fall.—Place the patient carefully on a bed, with the head elevated, and put a few globules of Arnica dissolved in water upon his tongue. The old practice of bleeding is highly injurious, though the drawing of a minute quantity of blood may accelerate restoration. The Arnica may be repeated at short intervals till there are signs of life. If he partially recovers after any quantity of blood has been drawn, or if he have lost blood from the injury, give China, a few drops of wine at a time, and afterwards Arnica.

3. *Fullness of Blood to the Head.*—Symptoms.—Great heat of head; flushes of heat; sensation of fullness in the head; confusion in the head; loss of memory; vertigo; noise in the ears; deafness; spots before the eyes; oppression at the chest; faintness; constipation generally present; numbness of the extremities also.

Pathology.—There could be little seen by inspection of the brain in this state. "A little extra pressure on the brain from increased heart's action, or the reverse; a delay of blood in the vessels; a sort of atonic congestion; an over-distention or an exsanguinated state, so well represented in Dr. Burrow's plate, representing the brain of an animal dead from hæmorrhage; an impoverished state of the blood" may any of them produce similar conditions.

Exciting Causes.—1. *Disease of the Heart.*—This organ may be feeble, hypertrophied, be in a state of "fatty degeneration,"* or otherwise structurally diseased. This is one of the most common causes of apoplexy.

2. *Debility,* from naturally feeble physical development, or from recent illness, hæmorrhages following labor, profuse menstruation, hæmorrhoids.

3. *Indigestion* gives rise to faintness, vertigo and congestive headaches.

4. *Mental labor* causes many forms of headache, amongst others congestive spots before the eyes, vertigo, confusion of sight, inability to think, and in some cases to paralysis, which when not gone too far may be averted by relaxing mental efforts.

5. A diseased state of the brain or vessels.

6. Irregularity in eating and drinking; swallowing the food without properly masticating it, or not allowing sufficient time for meals; fasting too long, as men in offices too often do. The habit of taking stimulants.

7. Suppression of natural discharges, drying up of old sores, the sudden recession of eruptive disease of the skin, particularly after external lotions or unguents have been applied.

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* Drury, British Homœop. Soc. Annals, No. 2.

TREATMENT.—*Aconite.*—The arteries of the head are felt to throb as the pulse beats; the veins of the head and neck swell; the head feels full; the patient feels dizzy, especially when stooping or walking in the sun; feels as if the head over the eyes would burst; worse when stooping or coughing. There is sparkling, flickering before the eyes; seeing double, buzzing in the ears, frequent fainting, stunning, heavy sleep. Cold applications are also beneficial. Abstain from coffee, wine, and ardent spirits; drink freely of cold water, and wash the head and neck frequently with it.

Nux-vomica.—Aconite has been tried, with little benefit; the patient is very irritable and passionate; has been much constipated; is of sedentary habits, and uses ardent spirits.

4. COUP DE SOLEIL, SUN-STROKE.—*Aconite* is generally sufficient to correct the effect of direct exposure to the sun. A dose every fifteen minutes till better; or, in alternation with Bell.

Belladonna.—Severe jerking, burning, shooting pains on one side of the head, or violent pressure in the forehead, increased by motion, stooping, noise, or a glare of light. It follows Aconite well in children teething, amenorrhœa in young females, and generally where there is febrile excitement, with determination of blood to the brain. The head feels full, and aches as if it would split; worse when stooping or walking, or from slight agitation of mind; hot fever, thirst, restlessness, anxiety, rage or great irritation, fear of surrounding objects, lamentation, weeping.

Bryonia.—The patient is very peevish in the morning, cannot bear his clothes, is more passionate and cross than plaintive and despondding, is apprehensive of future evil; heat from great exertion, heat of the sun or a hot fire; head too full, loss of appetite, especially in the morning; thirst, fever, trembling, nausea, vomiting, or diarrhœa.

Carbo-veg.—Headache and heaviness from overheating; heaviness, throbbing, and pressure over the eyes, pains in the eyes, aggravated by looking fixedly at any object.

Glonoine.—Dr. Wm. Payne, of Maine,* refers to three cases reported by Dr. John Fox in the *Phila. Jour. of Homœop.*, Vol. III., p. 356, in which is shown the prompt action of this remedy over this fearful and hitherto unmanageable disease. It is believed that Glonoine, or Nitro-glycerine, is homœopathic to such diseases only as have their origin in the brain, and which exhibit primary and consecutive symptoms similar to those produced by the drug in the healthy organism."

"The primary impression of the Glonoine is upon the *cerebro-spinal* organs. The pain, dizziness, whirling, pressure, throbbing, fullness,

* Proceedings of the 17th Annual Meeting of the Amer. Inst. of Homœop.

confusion of ideas, shocks, undulation, sensation of balancing, impaired sight and hearing, &c., all point to the encephalic mass as the seat of the primary impression; whilst the rapid varying of the pulse, throbbing of the carotids, diminished appetite, deathlike sinking at the epigastrium, nausea and vomiting, muscular trembling, spasms, weakness, &c., as strongly indicate the consecutive effects of the drug upon other organs through the great sympathetic.

"All the provings of this drug, that have come under my own observation, point directly to the nerve-mass as the seat of attack." In all but two of the twenty-six observations published in the *British Journal of Homœopathy*, by Dr. Dudgeon, on the pathogenesy of Glonoine, we find the first development of symptoms in the encephalic mass. "The throbbing headache has been first exhibited in nearly every prover." "The character of the headache shows that its origin is in the encephalic mass, and not in a remote organ or tissue. A Glonoine headache is throbbing, with fullness and upward pressure, and a sensation as if a ligature were drawn tightly around the neck; and there is often connected with the above symptoms disturbance of the circulation, throbbing of the carotids, rapidity of pulse, palpitation of the heart, nausea, perhaps vomiting; but these latter symptoms seem to be consecutive effects, indicating a more general implication of the organism. They occur *after* the throbbing headache, or the lightness and dizziness of the head which precede the throbbing headache." In cases in which we find the symptoms developed in the order above given we may administer Glonoine with implicit confidence. In no other form of palpitation of the heart, in no idiopathic affection of the stomach, indicated by deathlike sinking, or nausea and vomiting; in no case of disturbed circulation, dependent on a primary affection of the circulatory system, or any tissue other than the nerve-mass, do we regard it as homœopathic.

Dr. Colby, of Concord, New-Hampshire, took (June 17, 1856, at ten A. M.,) two drops of the first decimal dilution. First and immediate effect, confusion of ideas and loss of strength. Sight and hearing both affected, indistinct. Fullness and pressure in forepart and top of head, with throbbing, pulsation, and confusion of all the senses. Sensation of balancing, requiring a constant effort to keep the head erect, which inclined to drop as on going to sleep; undulating sensation, increased by every turn of the head. Sick, faint, deathlike sinking at the epigastrium, with nausea, such as results from excessive dizziness, induced by rapid whirling of the body. Great weakness in middle portions of the thighs and arms. All the symptoms continued two hours without abatement, when the inhalation of Camphor seemed to mitigate some of the symptoms, but the more prominent ones remained uninfluenced. At the expiration of four hours fullness and throbbing of head con-

tinued unabated, together with dull headache, which appeared rather to increase till retiring for the night. Awoke on the following morning with the same fullness and throbbing, which occupied the whole forepart of the head, and appeared to be deep-seated."

SPHERE OF ACTION.—Meyer says,* Glonoine attacks first the organ of circulation—the heart. The symptoms are: painful feeling of fullness and constriction in the cardiac region, which sometimes extends to the throat, and simultaneously with which the pulse decreases in frequency. Soon after this comes a feeling of heat in the heart, as the spasmodic constriction subsides; its activity is increased, the impulse of the heart is perceived by means of the stethoscope to be loud, stronger, and irregular. This increased force of circulation is observed in all the larger arteries; and the jugular veins are sensibly distended; pulse increases rapidly in frequency and fullness (sometimes from sixty beats to one hundred and twenty per minute), sometimes irregular or intermittent; feeling of anxiety and restlessness.

Painful sensations in the heart; sharp pains extending through to the supra-scapular muscle.

Congestion of the brain follows soon on the vascular excitement; fullness and heaviness of the head as if from weight, extending as far as the eyes and ears; then comes a feeling as if all the blood of the body had ascended to the head; constriction as if from a band, or as if the brain were distended in all directions; as if the cranium were too small; as if the brain would burst; as if the brain moved when the head was shaken; constant heat of the face, with throbbing; head confused, as if from drunkenness; squeezing pain and pressure, especially feeling as *from below upwards*, and from within outwards; sticking, cutting, jerking, soreness, bruised sensation in the head with soreness, very severe, causing a feeling of desperation, and the pressive pain in the occiput to cause failure of the senses; sometimes the pain causes syncope and loss of consciousness, with sweat. Aggravated by *gentle* shaking, *not by violent shaking; pain worse on expiration.*

The pain is generally in the temples, vertex, and occiput, beginning in the occiput, and with wavelike motion ascending from the heart.

Vertigo, arising on stooping, shaking the head, or inclining it backwards; sensation like that of stepping ashore after a long voyage on a boat; the headache accompanied by heat of the face, hard pulse; nausea and vomiting; usual severe cephalalgia wanting in these cases. Headache relieved by rest, or sleep, in the open air, or compression of the head.

EYES.—Feeling of heat and confusion; balls injected and protrude, pupils dilated; the lower lids are reddened, puffed, and have some-

* Allgemeine Hom. Zeitung, 64, 49.

times a darkened appearance, or a blue ring under them; eye unsteady and trembling; occasionally it is staring. Sparks and flashes of light; a cloud appears before the eyes and affects the sight. Heaviness, pressure, sticking, and soreness in the eyes and the orbits.

Genus III.—CEREBRAL INFLAMMATIONS.

1. ENCEPHALITIS.

Diagnosis.—There are certain symptoms which are common to the first stages of all acute inflammations of the cerebral organs; and which, taken by themselves, afford no indication of the actual seat of the disorder. These symptoms are: a vague sensation of coldness in the first instance, perhaps succeeded by occasional flushes of heat, lassitude, anxiety, sadness, irritability, often alternating with great exaltation of the intellectual faculties; hilarity, sudden bursts of laughter, petulance, unwonted impudence and vulgarity; redness of the skin, heat; pain, pressure, or tension in the head; strong pulsations of the carotids and temporal arteries; singing noises in the head, vertigo, weakness of memory, frightful dreams, fantastic visions when awake; trembling of the limbs, nausea, vomiting; eyes bloodshot, great sensibility to light; constant wakefulness; acuteness or dullness of hearing; mouth and tongue dry; urine copious, yellow, and thin as water.

The symptoms which usually obtain in the second stages of these affections are: stupidity, coma, paralysis, eyes suffused and dull, besotted expression of countenance, strabismus, position upon the back, pupils dilated; suppression of urine, and general loss of muscular power.

The signs which are supposed to be peculiar to the first stage of inflammation of the *cortical* substance, or hemispherical ganglion, and the membranes of the brain, are: early derangement of the intellectual faculties; fixed pain in the upper part of the head; hot and dry skin; conjunctiva injected and red; eyes brilliant, ferocious, fixed, and intolerant of light; tone rough, violent, and defiant; face red and swollen; inclination to do himself and others injury; great exaltation of muscular strength; strong pulsations of the carotid and temporal arteries; constant watchfulness; continued and rapid motions of the head; impatience, irritability, and constant agitation.

Inflammation of the Medullary Substance.—The *first stage* is recognized by the following symptoms: vague chills, deep-seated headache or vertigo; vomiting, lassitude, trembling of the limbs; *convulsions* before any signs of mental disorder, anxiety, sadness, great agitation, arms continually raised towards the head, position mostly on the back, noises in the head. This disease is so insidious in its approach that convulsions may occur as the very first symptom. In instances like this it is probable that inflammation exists in the me-

dullary substance alone, without involving in the slightest degree the gray matter of the convolutions surrounding this part, or the envelops of the brain. We are forced to this conclusion if we adopt the opinions of Bouillaud, Golly, Duchatelet, Hall, and Bennett, who suppose the cineritious, or cortical substance of the brain to be "immediately connected with the intellectual powers," while the medullary portion presides over the muscular powers of the organism. Therefore, after an injury to the head, if the intellect is only impaired, we may be certain that the hemispherical ganglion is the seat of the injury; while if, in addition, there are involuntary convulsive motions soon after the accident, we may be equally sure that the medullary substance has also received detriment.

Inflammation of the medullary structure is more prone than either of the other cerebral inflammations to terminate rapidly in softening, and for this reason it is incumbent upon physicians to exercise the greatest care in their investigations of this class of maladies, and to apply their remedial measures with due promptness.

The most prominent secondary symptoms of disease of this portion of the brain are muscular paralysis, and loss of sensation in the parts affected.

According to Marshall Hall, "disease of a lateral lobe of the cerebellum induces paralysis of the opposite side, and chiefly of the lower extremity. Disease of the middle lobe of the cerebellum is denoted by erection of the penis. Disease of the medulla oblongata induces paralysis of the respiratory muscles, and consequently, when complete, instant death."

We have now enumerated those symptoms which are supposed to characterize the inflammations of the different cerebral structures, and in this connection, we call the attention of homœopathic practitioners especially to this subject, with reference to the therapeutic application of medicines. Flourens has demonstrated, by experiments upon birds, that *Belladonna*, *Opium*, and *Alcohol* uniformly exercise a specific action upon certain portions of the brain. Hahnemann and his disciples have also proved that large doses of these articles taken in health, uniformly give rise to those physical and mental manifestations which pathologists have shown to proceed from disease of these same parts. When therefore, in our provings of drugs, it is observed that the prominent symptoms are derangement of the intellectual faculties, exaltation of the mental and muscular powers, eyes bloodshot, and expression furious and defiant, manner violent and overbearing, voice loud and rough, throbbing pain in the head, face red and swollen, we may be certain that a specific effect has been produced upon the *cortical* substance of the brain. If, instead of these symptoms, we are presented with convulsions, paralysis, and general depression of the

powers of the system, we may infer that the drug has acted specifically upon the *medullary* portion of the brain. The same law obtains in relation to those symptoms, which characterize diseases of the different lobes of the cerebellum, of the medulla oblongata, of the different portions of the spinal marrow, of the nerves, and indeed of all other parts of the organism.

Causes.—"There is no single cause," says Solly, "which so frequently produces inflammation of the hemispherical ganglion, or meningitis as sudden emotion, whether of joy or fear. The latter is, however, much more common." Other causes are, fractures and contusions of the cranium; insufficient sleep; intense protracted thought upon a particular subject, disappointed love or ambition, repelled eruptions, whether by natural causes or by the abuse of ointments; exposure to cold, or to a burning sun; abuse of Opium and spirituous liquors; metastasis of rheumatism, gout, or erysipelas, suppression of the lochial and other habitual discharges. It often arises during the progress of pneumonia, scarlatina, erysipelas, otitis, and intestinal affections.

The most common predisposing causes are, plethora, a passionate and excitable disposition, want of exercise, high living and abuse of stimulants.

Pathology.—*Inflammation of the Hemispherical Ganglion.*—One of the most important laws of vital action which pathology has yet unfolded is, "that the first effect of the first stage of inflammation of neurine is to excite and to exalt to an unnatural degree exactly the same kind of power, which we have reason to believe resides in it in the normal state. The first effect of inflammation of the surface of the brain is to excite the faculties to produce great irritability of temper, and constant restlessness and desire for action. If the inflammation be arrested at this point, the patient recovers his reason; but if it pursues its ravages undisturbed, limiting its destructive effect to the spot where it commenced, without extending to that portion of the brain which is beneath, it annihilates the intellect, but does not affect the muscular system. If the inflammation travels farther, reaching the instruments by which the will travels to the muscles, it first produces *convulsive* action in those muscles which afterwards become perfectly paralytic. In this case the integrity of the neurine, through which volition travels to call these muscles into action is compromised, and its power therefore as an instrument for the production of voluntary motion is destroyed.

The first symptom of inflammation of the tract of *sensation* is the exaltation of *sensibility* of the part, both where the nerves of sensation originate, and also in the brain itself where they terminate.

The first effect of increased arterial action of the hemispherical

ganglion is to exalt the intellect; it may not last long and may be unnoticed; but to a certain point, the person who takes Alcohol, feels more lively; his ideas come more rapidly and clearly; he expresses them in better language, with greater facility and more rapidly. This passes off speedily. If the stimulus be continued, the brain becomes oppressed; the muscles of the tongue sluggish; the speech thick and indistinct; ideas confused; language incoherent; he loses consciousness and becomes insensible to the external world.

These views are based on the following positions:

1. The hemispherical ganglia are intimately connected with the intellectual powers; and it is in them peculiarly, and not in the whole cerebral mass that these powers reside.

2. The medullary substance beneath is in all probability merely the passive servant of the cineritious substance, as the conductor of its commands to the muscles, or of the various impressions made on the peripheral extremities of the nerves of the senses, which the central power receives, and with which it works. (See *Works of M. Foville*, *Pinel*, *Grandchamp*, and *Bouillaud*.)

The gray substance of the brain presides over intellectual phenomena, and the white over movements.

M. Bouillaud says: "Those physicians, who have recently employed themselves in the study of mental alienation, have remarked, that it was always accompanied with a disorganization, more or less deep, of the cortical substance of the superior convolutions of the brain; and it has been truly observed by MM. Parent and Martinet, that delirium is connected with inflammation of that portion of the arachnoid that covers the convexity of the brain." The seat of the intelligence therefore "is in the cortical substance of the superior part of the brain."

It seems not possible to separate, in diagnosis or treatment, the inflammation of the arachnoid and pia mater, and it is also impossible to separate between these membranes and inflammation of the hemispherical ganglion, or cortical substance of the brain.

Aberration of Mind without Complaint of Pain. "There is a remarkable restlessness, quick and impatient manner; obstinate watchfulness; incessant, rapid talking; rambling from one subject to another with little connection, and without actual hallucination. He knows those about him; answers questions distinctly; the pulse rapid, but without other symptoms of fever; case often mistaken for mania and hence lightly treated; but it is an affection of very great danger, and often rapidly fatal."

Pathology.—Its nature is obscure; on dissection little is observed but a highly vascular state of the pia mater, without any actual result of inflammation.

Effects of Inflammation of the Substance of the Hemispheres

—*The Tubular Neurine.*—Its sensibility may be exalted first and impaired afterward, and muscular contraction may be excited first and destroyed afterwards, without the intellectual powers being affected, when the inflammation is confined to that portion of the cerebral substance which is within the gray matter of the convolutions, that matter remaining itself unaffected. Important conclusions may be drawn from these facts.

Inflammation of the substance of the hemispheres, or rather the tubular portion is characterized by the appearance of convulsions previous to any sign of mental excitement. It frequently terminates rapidly in ramolissement, after having commenced very insidiously.

Sometimes a peculiar headache described as "most uncomfortable," is followed by vomiting, a symptom that should never be neglected. The convulsions are sometimes followed by coma, which may be regarded as a sign of danger, though some recover after a few hours; and the patient feels better after some days. But convulsions return without any warning and in fatal coma.

These cerebral diseases are often intermittent, but Quinine and all stimulants have been found deleterious. The pupil of one eye, at least, is at first contracted and then dilated.

When any injury of the head is immediately followed by convulsions, it is generally a sign of very serious injury to the substance of the brain, usually a laceration.

When convulsions after a few days follow a blow on the head they must be promptly treated, as they denote inflammatory mischief in the tubular structure or under surface of the ganglion.

Meningitis.—This term was employed by Abercrombie to express the disease of these two membranes, to distinguish from that of the dura mater.

Andral says, most of the lesions described under arachnitis, have been in the pia mater rather than in the arachnoid. Abercrombie and others describe this under the name phrenitis.

Symptoms.—Watchfulness, acute headache, impatience of light, suffusion of the eyes and maniacal delirium. This affection is, however, seldom met with as an idiopathic disease, except in few cases in which it is brought on by abuse of strong liquors, and in warm climates by exposure to the intense heat of the sun.

As a symptomatic affection is often seen as a phenomenon belonging to fever, and in mania; a condition resembling it occurs after injuries.

It is probable, that in this form of the disease the inflammation is primarily seated in the membranes of the brain. When fatal, it is generally by a rapid sinking of the vital powers supervening upon the high excitement without producing much disorganization of the parts

which appear to have been the seat of the disease; for the cases which are referrible to this class, when they terminate fatally, are generally rapid in their progress."

Inflammation of the Dura Mater.—The dura mater may be inflamed without affecting the pia mater; and the arachnoid is said to be inflamed without involving the subjacent pia mater. But, says Watson, "it seems scarcely possible, that inflammation of the pia mater should take place without implicating also the surface of the convolutions."

Case by Watson.—A man with a small incised wound of the scalp had it dressed, and it was considered trivial. In a few days he came to the hospital, perfectly paralytic of one side of the body. The skull was trepanned; he was perfectly calm. The dura mater at the point under the wound was inflamed, and there was pus effused over the arachnoid covering the cerebral convolutions on the same side. He sank quietly into a state of coma without the slightest incoherency or delirium; no convulsions; and no other morbid appearances were found within the cranium.

Otitis.—Inflammation of the dura mater sometimes occurs continuously from the petrous portion of the temporal bone and the lining membrane of the internal ear. Sometimes without any disease of the bone it extends along the path of the auditory nerve. This is common among the poor of scrofulous diathesis, more frequent in childhood than in adult age.

This inflammation of the dura mater from otitis or inflammation of the internal ear should make us guarded in our diagnosis of it.

Treatment.—Mild, unstimulating lotions may be carefully used in the ear, but not farther than is necessary for cleanliness; but the chief reliance must be upon internal remedies. See *Otitis* and *Scrofula.*

Case by Mr. Solly.—A case is given of inflammation of the lining membrane of the ear, extending along the neurilemma of the nerve to the cerebrum. A child, five years old, had otitis and discharge from the ear from birth. Complained of ear-ache seven days ago, when the discharge stopped; face pale; skin not discolored; head violently drawn back; found deep-seated abscess, pus very offensive. She was in great pain till twenty hours before death, she became comatose. Post mortem revealed abscess in the cerebellum; thickening of the neurilemma of the auditory nerve, the whole sheath filled with pus; surface of the bone denuded, not carious.

Osseous Deposits.—The dura mater is a nutritive membrane of bone, sometimes its vessels over-do their work and deposit bone in small patches, sometimes in the dura mater lining the skull, sometimes on the falx and tentorium. It always acts as an irritant body.

Case.—An extremely irritable, violent-tempered man cut his throat

in a watch-house. Mr. Solly found, on post-mortem examination, some "rough bony deposits on the falx-major. The same is frequently remarked in cases of mental irritability amounting to insanity.

One man was peculiarly irritable all his life; and latterly he became so passionate, that his outbursts of passion were beyond his control, and were excited by the merest trifle. He died rather from intestinal than from cerebral disease. The bones of the head were found thinner than natural, especially in the frontal and temporal regions. The external surface of the dura mater was healthy, on its internal surface were bony deposits, three in number. Some softening of the brain in the neighborhood of the diseased deposits. The bony deposits had irregular pointed edges, very rough.

"The extreme thickness of skull, which are frequently found in insane patients, must be regarded as the result of long-continued and general hyperæmia of the dura mater. We have seen a case in which entire dementia was conspicuously marked in a middle-aged man, who wandered about the shore of Lake Michigan. His skull was not originally well-developed; it was extraordinarily *thick*, and, at various points on its inner surface, there were *stiff*, *black hairs*, projecting from the bone against the membrane.

Spicula of bone, shooting from the surface of the skull, internally are generally abnormal projections of normal growths. In some cases, after a severe blow on the head, they lacerate the brain, which has been moved and shaken. Enlarged projections of the clinoid processes sometimes attend epilepsy. A woman, aged thirty-two, had epilepsy at the age of twelve years, following a fall and blow on the back of the head; latterly the fits occur sometimes four or five times in a night, then missing four or five days. Temper exceedingly irritable; the mind became imbecile.

In the right temporal sphenoidal fissure was found a projection of bone one-sixth of an inch long, sharp and at its point, wide and broad at the base, projecting like a spine from the squamous portion of the temporal bone; and in the middle lobe of the brain corresponding was a distinct softening of the cortical substance.

ATROPHY OF THE BRAIN.—The brain in whole or in part may be atrophied; partial atrophy is most common. It may arise from arrest of development in the fœtal state. The acephalous fœtus is the most complete illustration of this. Sometimes the arrest of development is confined to the hemispherical ganglion and then the brain retains the same condition permanently, which in a normal state would be merely one of its stages of growth. Cruveilhier describes another form of atrophy, as resulting from the pressure of serous effusion into the ventricles in childhood; this, however, is simply a case of chronic hydrocephalus in childhood, which causing dilatation of the left ventricle at

the expense of the tubular portion of the hemispheres, has been partially absorbed, and hence the paralysis.

The hemispherical ganglion or cortical substance was neither atrophied nor absorbed, but in normal quantity, as demonstrated by the section; and the rugæ on the surface were much more numerous on that side, and hence the preservation of the intellect.

Third Form.—This follows chronic inflammation of the hemispherical ganglion; we often see it in the brain of old-standing cases of insanity, where the patient has sunk into complete fatuity. The convolutions are then narrow and pinched, almost sharp, instead of being flat and rounded, full and plump. In some cases the ganglion is actually thinner, as may be seen on section.

4. Senile Atrophy of the Brain.—In very old age, the brain, like other organs, is less perfectly nourished, and, like other organs, it shrinks in bulk. The wide fissures between the convolutions are filled with that beautiful protector, the cerebro-spinal fluid; this is now in excess, but it is not to be considered as morbid; it is a cushion which nature has provided to supply the deficiency of the brain.

Nevertheless the brain of old persons is more easily injured than that of the adult, from its being "more easily shaken in its case." We meet cases, where the brain is lacerated by a blow on the skull, without fracture,—an accident seldom seen in the younger subject.

Case.—A woman, aged sixty-nine, on going down-stairs, fell and received a contused wound, which exposed the bone over the right eye, but without any fracture or further injury visible; she was in a state of insensibility till death; she was actively treated, but died on the evening of the next day. On dissection, the brain did not fill the skull completely, and there was extensive effusion of blood into the left ventricle, some on the right from laceration of the left corpus striatum and thalamus.

Thus it is not strange that mental imbecility should become a characteristic feature of extreme age. It has been thus described:

> "On his staff
> Bending he leaned; and from his weary eye,
> Distressing sight! a single tear-drop wept.
> None followed, for the fount of tears was dry.
> Alone and last, it fell from wrinkle down
> To wrinkle, till it lost itself, drunk by
> The withered cheek, on which again no smile
> Should come, or drop of tenderness be seen."

Induration of the Brain.—This structural change is believed to be the result of hyperæmia of the part, perhaps that state which precedes softening of the brain. It is often found in insane persons. Pinel saw it in one woman who died in a state of insanity.

M. Payen saw it in a girl, six years old, of melancholy temperament, though intelligent; she had from her birth contraction of the right wrist and foot, together with slight atrophy, and incomplete hemiplegia of the same side. Andral thought the induration the result of a slow inflammation. (*Pathol. Anat.* p. 75.)

General induration of the brain, says Copland, generally occasions loss of memory, confusion of thought, derangement of mental manifestations, causing insanity without lucid intervals. Towards the last of life insanity is complete.

The signs of the partial induration of the brain are: progressive defect of memory; inattention or inability to pursue a long train of ideas; indifference to momentary impressions and to present or future occurrences; difficulty of articulation; derangement of the ideas, with partial loss of the affections, appetites and desires; ultimately increased defect of speech, palsy, convulsions, or want of power of the muscles; fatuity, general or partial wasting, and death. (*Copland*, Vol. I, 221.)

General Principles of Treatment of Inflammation of the Brain. —1. The disease is always serious and should be judiciously treated from the commencement.

2. It does not in any case call for blood-letting, and, when depletion appears to do good at the time, it is only fallacious and temporary.

3. The best resources against the delirium are Opium, Hyoscyamus, Stramonium, Cannabis-ind., Belladonna, or other remedies homœopathic to that state. Cooling applications to the head are only adjuvants, not primary remedial agents.

4. Aconite is the great specific for cases purely inflammatory.

5. Mercury long continued and in minute doses has cured bad cases even in allopathic hands. It is partially homœopathic to cerebral and meningeal inflammation and may be employed with safety as low as the third attenuation, in which form its best effects may be attained.

6. Moral influence is indispensible in the homœopathic management of all diseases, in proportion as they effect the intellect.

7. Never lose patience in a chronic case, nor try to hasten the cure by increasing doses.

The time has been, when nobody thought of treating any inflammation without bleeding from the arm; and of all diseases inflammation of the brain would be the last in which this powerful resource would be neglected. It is useless to deny the dangerous power of the lancet.

When cerebral disease has supervened upon the suppression of hæmorrhoids, it is highly necessary to restore the hæmorrhoidal flow.

Cold Applications to the Head.—We prefer *cool water* to the ice that is commonly directed, let the water be so applied as to cool the head gently and permanently; evaporating lotions are beneficial when

kept up in a regular and judicious manner. The *cold dash* is the most powerful refrigerator, but it must be used with caution. Abercrombie says, he has seen a strong man thrown into a state approaching asphyxia, who, but a few minutes before was in such a state of maniacal excitement that four men could not hold him.

Though the good effects of the cold dash appear real when they are applied with care, they are only temporary; and then the following reaction is only an exasperation of the original disease. Its best effects need to be watched. *Cold* is homœopathic to these conditions, but it must not be applied on allopathic or antipathic principles. The feelings of the patient may be employed as a safe-guide, but can not always be ascertained.

In our selection of remedies, therefore, we should always endeavor to choose those of which the action has been shown by *pathological* facts, as well as by provings, to be positively specific upon the structure affected. It is of especial importance that due regard be paid to the causes which may have conduced to the attack. An encephalitis which has followed immediately upon the suppression of a lochial discharge, a habitual nasal hæmorrhage, or the retrocession of an eruption by improper external applications, not only requires a remedy which shall cover all the *manifest* symptoms, but one which at the same time shall operate in such a manner as to bring back the original discharge, or eruption. If disappointment, pecuniary embarrassments, fright, or political or religious excitement has been the exciting cause, the mind of the patient should be soothed and attracted into new and agreeable trains of thought. By these means we shall prepare the organism to receive our remedies in the most favorable manner.

The principal remedies employed in encephalitis, are: for inflammation of the medullary substance alone: *Belladonna*, *Aconite*, *Opium*, *Hyoscyamus*, *Stramonium*, *Cannabis-indica*, *Moschus*, *Chamomilla*, *Laurocerasus*, and *Ignatia*.

For paralysis: *Moschus*, *Plumbum*, *Acid-oxalic*, *Nux-vomica*, *Opium*, *Oleander*, *Cannabis-indica*.

For metastasis, or extension of rheumatism to the brain: *Rhus-rad.*, *Rhus-tox.*, *Bryonia*, and *Belladonna*.

When the disease has arisen in consequence of repelled eruptions: *Spigelia*, *Cuprum-acetat.*, *Tartar-emetic*, *Bryonia*, *Sulphur*, *Tabac.*, and *Belladonna*.

Belladonna.—The disease presents itself with febrile symptoms, accompanied with dryness of the mouth, tongue, and throat; difficult deglutition, nausea, vomiting; confusion of the head; giddiness; dilatation of the pupils; injection of the conjunctiva; eyes suffused, brilliant, furious, and protruded, imperfect vision; gay delirium; increased secretion of urine, and frequent desire to evacuate the bladder;

heaviness, pressure, or throbbing pain in the head; roaring in the ears; vertigo, with nausea.

Dr. Bigel gives the following indications for *Belladonna*, when children are the subjects of this disease. The children constantly press their heads into their pillows, they are startled by the least noise or light, there are: snoring sleep, great heat of the head, face red and puffed, with visible beating of the arteries of the head and neck, swollen veins, and occasionally hydrophobic phenomena.

During the period of dentition, and directly after being weaned, children are particularly prone to attacks of inflammation of the brain. At this age the child is exceedingly sensitive, and there is an unusual tendency of blood towards the brain; but if the signs of cerebral disturbance be closely watched, we shall find no difficulty in combating them successfully at the onset with *Belladonna*.

Symptoms: Face hot, red, and swollen; eyes red, sparkling, and fixed, or half open and distorted; pupils contracted; visible throbbing of the carotid and temporal arteries; veins of the head distended; constant boring with the head into the pillow; paralysis of one or more parts; convulsive movements; rapid, small, or intermittent pulse; subsultus tendinum; distortion of the features; grinding of the teeth; tongue bright red, and cracked; urine scanty and suppressed.

Sharp, throbbing, or confused pain in the head; great restlessness and agitation; intolerance to sound and light; thirst; head and face very hot; limbs cold with internal burning heat; roaring or humming in the ears; deafness; inability to speak or to swallow; nausea and vomiting during the course of the disease; sparks, flashes, or visions before the eyes.

Great sensitiveness of the nervous system; violent delirium at night; profound sleep; mania; hydrophobic symptoms.

Belladonna is likewise especially necessary in inflammations of the brain proceeding from metastases of scarlatina, measles, erysipelas, and small-pox.

Its specific action is upon the cortical substance, the tubercula quadrigemina, and the membranes of the brain. When febrile symptoms are strongly pronounced, it should be preceded by *Aconite*, or given in alternation with it.

Boenninghausen says, a girl, eight years of age, with violent cerebral inflammation of a high grade, was cured by a single dose of Belladonna, 2000 (Jenichen), the child having been given up as incurable by a previous attendant, and neither the 30th nor the 200th of Belladonna had succeeded.

Administration.—We advise from the first to the third attenuation for adults, and from the third to the sixth or thirtieth for children. As

a general rule, the dose may be repeated every two hours until the required impression is produced upon the inflamed structure.

Aconite.—There is no proof that Aconite affects specifically either the brain or its investing membranes. In autopsical examinations of those who have died from the effects of poisonous doses, no traces of inflammation have been found in the cortical substance, or the membranes of the brain, and but slight marks of action in the medullary structure. The prominent symptoms to which large doses give rise, are: numbness and tingling of the parts about the mouth and throat, and of the extremities, vomiting, contracted pupil, and failure of the circulation. The intellectual powers remain unaffected, and neither convulsions nor stupor usually occur.

Dr. Lombard, of Geneva, in his clinical practice, and in his experiments on animals, found that the internal exhibition of *Aconite* generally had the effect of "rendering the pulsations less frequent, without irregularity, and consequently, that it exerted a decidedly sedative effect upon the heart; whence he infers that it is a proper remedy in inflammatory affections in general." See opinions on the powers of Aconite given at page 650, 651.

Others have observed that its *primary* effect was to stimulate the action of the heart and arteries, and cause a universal glow over the surface; while the *secondary* effect was decidedly sedative upon the circulatory vessels.

Its effects are so manifest upon the action of the heart and arteries, that its use will be of eminent service in all those cases of encephalitis, or congestion, dependent upon a plethoric state of the system, or organic disease of the heart. It should also be given during the existence of active febrile symptoms, in all cerebral affections, and generally in alternation with some positive specific, in order that the malady may be met at all points. *Attenuation* and repetition of doses the same as *Belladonna.*

Opium.—It is conceded by both schools that *Opium*, when exhibited in moderate doses, exercises upon the human constitution two different effects—a *primary* and a *secondary*—which are of directly opposite characters. The first of these effects is invariably stimulant, as is evinced by such phenomena as increased force and frequency of the pulse, dryness of the mouth and throat, a pleasant glow upon the skin, exaltation of the mental faculties and of the muscular system, a sense of intoxication, and temporary retention of the stools.

The *secondary* manifestations are, general diminution of sensibility throughout the body, a feeling of relaxation and calmness, tremulousness in the limbs, disinclination to exercise, pulse full and slow, drowsiness, dryness of the mouth and throat, thirst, nausea, and finally, if a large dose has been taken, slow and laborious respiration, spasmodic

contractions of the muscles, eyes half closed, pupils dilated or contracted, and insensible to the light; bloated, suffused and besotted expression of countenance, cold and clammy extremities; respiration, gasping, rattling, stertorous, face pale, sunken, and death-like, rigidity of the jaws, entire insensibility to external impressions, pulse thready, and almost entirely imperceptible.

It is supposed "that the active principle of *Opium* is conveyed into the circulation, and operates upon the brain, and probably upon the nervous system at large by *immediate contact with their interior structure.*" (*U. S. Dispens.* p. 476.)

Opium is generally supposed to cause death by suspending the "cerebral influence necessary to sustain the respiratory function; and it is supposed also, that the heart ceases to act in consequence of the cessation of the respiration." (*Brodie.*)

From these facts we infer that the specific action of *Opium* is principally upon the *medulla oblongata*, although the other symptoms indicate that there has been some action upon other parts of the brain, and also upon the skin and lungs.

In autopsical examinations of those who have died from the effects of this substance, extravasated blood has been found in the brain, distention of the sinuses, and of all the cerebral vessels; but it is probable that many of these appearances are results of the impeded respiration, the imperfect decarbonization of the blood, and the impaired circulation which have arisen from a paralysis of that portion of the cerebral mass which presides over the respiratory functions, rather than from any specific operation of the Opium upon these different structures.

Opium in small doses has always been observed to excite the venereal propensities, and has been used for this purpose for a long period by the Turks, Chinese, and Egyptians. This fact viewed phrenologically, affords another proof of its specific action upon the cerebellum.

In proof that the active principle of *Opium* is *absorbed*, and operates by *actual contact* in producing its specific effects, we quote the following from Pereira and Barbier: "The odor of *Opium* is frequently recognizable in the secretions, exhalations and breaths of persons poisoned by it, and the secretions, in some cases, appear to possess narcotic properties."

Our own opinion derived from post-mortem examinations of those who have been poisoned by Opium, and from the effects, to which it usually gives rise, is, that it exercises, first, a specific action upon the cerebellum and medulla oblongata. If the drug be taken in moderate doses, this action is in the first instance *excitant*, producing venereal desires, erections, accelerated respirations; circulation, and augmented muscular force; and secondarily, *sedative*, as is shown by the languid,

relaxed and calm state of the whole system, the diminution in the number of respirations, and in the action of the circulatory vessels. If taken in very large doses, the parts appear to be paralyzed at once, and all those organs the functions of which are dependent upon the integrity of this part of the brain, cease to act.

Another specific effect of Opium is upon the skin, as is evinced by the perspiration and its odor, and the eruption to which it occasionally gives rise. Nor is it at all improbable that it may operate somewhat upon the par-vagum, or the lungs themselves.

The most prominent indications, therefore, for the use of Opium, are: exaltation of the physical and mental powers, succeeded by depression and calmness, dry throat and mouth; agreeable reveries; dreams; pulse at first rapid and full, afterwards slow and feeble; drowsiness; disinclination to muscular exertion, slow, irregular, and stertorous respiration, profound coma; pallid, sunken and ghastly face; immovable, contracted or dilated pupils; rigidity of the jaws, cold and clammy extremities; complete insensibility to external impressions, and sometimes convulsive twitchings, extinction of the pulse; interrupted and gasping respiration; and finally death. It may be administered in the same manner as *Belladonna.*

Alcohol.—Spirituous Wines in small doses have cured, homœopathically, *fevers* that were purely *inflammatory.* Of this several authors have published cases. Asclepiades cured *inflammation of the brain* by administering a *small quantity of Wine.* A case of feverish delirium, attended with stertorous breathing, similar to that state of deep intoxication which Wine produces, was cured by Rademacher in a single night. (*Hufeland's Journal*, XVI. p. 92.) "Can any one deny the power of a medicinal irritation analogous to the disease itself in either of these cases?"

Hellebore.—In the last stage, when serous exudation has already occurred; especially in cases where there are stupor, paleness of the face; suspension of the dominion of the mind over the body. Dr. Roth says, he treated one child with inflammation of the brain with Helleborus, 300, where Bell. had failed.

Tartar-emetic.—Disease of the Nervous Centres.—Dr. Christison ("*On Poisons*," p. 479), gives the following fatal case: The patient had been ill two days before seen by a medical man, and was suffering "from vomiting, excessive purging and convulsions. On the third day he had great pain and tension in the region of the stomach, and appeared like a man in a state of intoxication. In the course of the day the whole belly became swelled, and at night delirium supervened. Next day all the symptoms were aggravated; towards evening the delirium became furious, convulsions followed, and he died during the night." (*Christison*, p. 480.)

On dissection, Mr. Hartley's cases presented the following appearances: "On opening the cranium of the boy, the dura mater was found very vascular, the longitudinal sinus contained a coagulum of lymph, and but very little blood. The vessels of the surface of the brain were very much injected with dark blood, the whole surface having a deep purple color. Every portion of the brain, when cut, presented many bloody points, the medulla oblongata and cerebellum were also extremely vascular. In the body of the girl, the arachnoid membrane was more opaque than usual."

In the symptoms observed during life, we have an appearance of intoxication, delirium eventually becoming furious, and convulsions. The morbid appearances present us with a complete picture of inflammation of the brain and its membranes. The congestion of the *medulla oblongata* and *cerebellum*, with the convulsions observed during life, point to epilepsy, which Van der Kolk believes to depend, in many cases on this cause. Dr. Wood recommends Tartar-emetic in doses of from one-fourth to one-eighth of a grain, every two hours in the treatment of *inflammation of the brain*. (*Principles and Practice of Medicine*. Vol. II.) Dr. Graves witnessed beneficial results from Tartar-emetic in the advanced stages of *typhus fever* accompanied with intense cerebral excitement, manifested by loss of sleep, delirium, &c. (*Med. Gazette*, XX. p. 538.) Dr. Greenwood says, he cured a case of *delirium tremens* with Tartar-emetic, commencing with small doses, which he increased till he wound up the treatment with four doses of injuriously large size. (*Lancet*, 1835 and 1836. Vol. III. p. 142.) In epilepsy Van der Kolk has "found the greatest benefit from Tartar-emetic alone, in powders or pills, in which form, on account of its slower absorption, it is less likely to produce nausea and vomiting (in these cases to be avoided) than in solution." (*Spinal Cord, &c., Van der Kolk*, "*New Sydenham Society*," p. 277.)

Treatment of Inflammation of the Dura Mater.—In a case which arose from secondary syphilis, there was necrosis from nodes of portions of the frontal and parietal bones, but without symptoms of cerebral irritation. Two days after admission into the hospital the patient became drowsy and semi-comatose. He was actively treated, but got rapidly worse; and in twenty-four hours he came under the specific influence of Mercury; "and it was most delightful to see the rapidity with which the cloud was removed from his intellect." In forty-eight hours he could answer questions; the syphilitic symptoms improved apidly; the nodes became healthy; some large rupial sores on his thighs and legs improved, and he rapidly recovered. (*Solly.*)

Case.—A man, aged twenty-five, had iritis and secondary eruption; became wild in his manner, left the hospital without hat or coat in cold weather, and remained out all day. Next day had inflammatory rheu-

matism; this grew better, but he had headache, expression of countenance vacant, wild and suspicious; there was inflammation of the dura mater from metastasis of the rheumatic inflammation. He was not intemperate and there was no hereditary insanity. Under the influence of Mercury and Colchicum, &c., he recovered.

Inflammation of the dura mater often causes insanity, and the skul is found thickened and vascular, and the arachnoid also. Solly found in one case thickness of the os-frontis producing melancholia, especially over the organs of mirthfulness, ideality, and hope; symptoms: constant crying and moaning. In these cases "disease commenced with chronic inflammation of the dura mater of the anterior part of the brain, producing an ordinary periostosis, thickening of the bone. The thickened bone pressed on the above organs, and partially on the reflective organs; there being no inflammation of the arachnoid and pia mater, there was no maniacal excitement.

Inflammation of the Brain from Scarlatina.—The child is sometimes attacked with inflammation of the brain before the eruption appears and is misunderstood. Many children die in this way, and the real cause of death is not known till other children exhibit the scarlatinal eruption on the skin. For the treatment proper in these cases see *Scarlatina.*

Again, sometimes the subject of scarlatina when recovering from what was called a mild attack, is suddenly seized with headache and blindness with or without convulsions. This new attack is sometimes preceded by anasarca which follows scarlatina. The symptoms are indeed those of effusion on the brain, but they are truly inflammatory though never curable by antiphlogistic treatment. See *Scarlatina, Dropsy after.* p. 601.

Meningitis caused by Sun-Stroke.—*Belladonna.*—Boring with the head into the pillow; sensitiveness to *light* and *noise*; violent burning and stitching pains in the head; red, sparkling eyes, with furious look; red and bloated face; stupor with distorted, half-opened eyes; *heat in the head*, with violent throbbing of the carotids; swelling of the veins of the head; loss of consciousness and speech, or muttering, violent delirium; convulsive movements of the limbs; spasmodic constriction of the throat with difficult deglutition and other hydrophobic symptoms; vomiting; involuntary discharge of urine and fæces.

Aconite.—Inflammatory fever, delirium, violent burning pains through the whole brain, especially in the forehead; red and bloated face, red eyes, &c.

Opium.—Lethargy, loss of consciousness; stertorous breathing with the eyes half-closed; and stupefaction after waking; frequent vo-

miting; complete listlessness and dullness of sense, the patient not desiring nor complaining of any thing.

Case.—A lady of 48 years, married but without children, had drooping of the right eyelid and violent pain in the head. The lid droops over the eyeball and she can only raise it half way. She can command the left one; quivering motion in both eyelids and eyeballs vision of the right eye imperfect and hazy; shooting and pricking pair in the ball of the right eye; feeling of pressure and pain on the left side of the head and face. Feels as if going delirious; countenance wild and anxious; eyes staring and unnatural. Nervous feeling over the whole body; feels pricking like pins and needles; the eyeball flutters; right arm and leg numb; the left never feels so; passes a pint of blood a week from hæmorrhoids; has had much mental agitation and distress after the discharge. Six months ago the uterus was displaced, hard and shrunken; menstruation but once (two months ago) in that time; was then relieved by it. Pulse quick, irritable; tongue rather pale, not furred; appetite and sleep good; feels week. She took Hydrargyri cum creta two grains night and morning for two and half months. The paralysis of the eyelid was restored, and she felt nearly well. She disappeared for two months. Returned, eyelid and general appearance worse; pain in the back of the head and top of the neck; at times something seems to pass over the eyes and make her blind. Sometimes sensations so horrible that she feels as if she were going mad. Some loss of power of the right side across the right leg—it feels numb and heavy. Began to feel worse as mercurial action declined, though moral causes produced the relapse. Mercury again continued for four months; improvement considerable; sight restored; head easy; spirits, appetite and strength good; mind composed; feels comfortable.

Certain Derangements of the Brain and nervous System accompanied by Paralysis of the voluntary Muscles.—Mr. Colles of Dublin gives eight cases. (*Mercury in Affections of the Nervous System*, p. 328.)

Case.—A woman, aged fifty years, has for two years suffered severe family afflictions, loss of property, and has become subject to "great confusion in the back of the head;" it has extended to the right side of the head also. Latterly she has avoided all society; there is failure of memory, increasing for the last six months, defective memory of words or of place where she laid things; confusion in the head when she tries to read, do needle-work, or recollect things; temper becoming extremely peevish and irritable; constant sickness of the stomach like sea-sickness; dizziness of the head and staggering in walking; good appetite; constipation; sleeps heavily; no emaciation; pulse 96. She took Mercury in purgative doses and in four days had mercurial dysentery and soreness of the mouth; though she was injured in many

respects by the extent to which it was carried. The Mercury should have been attenuated and then given in small doses, producing the specific homœopathic effect without the mercurial drug disease.

Sleeplessness.—This is generally the result of the manner of living, when not associated with other diseases. Some persons cannot sleep if they eat anything in the evening before going to bed. Others only sleep soundly by eating before going to bed. Exercise in the open air in the evening, when not carried too far, favors natural sleep. The use of coffee and tea are the most common causes of nervous sleeplessness.

Coffea.—Sleeplessness caused by exciting agreeable news. Beneficial to children.

Aconite.—When caused by agitating events.

Ignatia.—Sleeplessness caused by dejection, grief, &c.

Pulsatilla.—When caused by surfeit.

Chamomilla.—Caused by abdominal symptoms, flatulence, &c.

Opium.—When various figures and visions appear before the eyes and prevent sleep. In general Opium is suitable for old persons. The general state of the health must be corrected; the cause of the sleeplessness must be studied.

Hyoscyamus.—M. Fouquier, of La Charité, gave (*Archives générales de Med.*, 1823,) the results of his experiments with this remedy on 200 patients. His conclusion embraces the symptoms it produced in massive doses. "Until it be absolutely necessary to procure rending headache, with vertigo, fantastic reveries, burning thirst, loss of sight, perversion of taste with insupportable disgust for every sort of food without a single wink of sleep, this remedy must continue utterly useless, and in the mean time should be banished from every Pharmacopœia." He denies that it ever acts as a hypnotic.

Hyoscyamus, *Stramonium* and *Musk*, are applicable in cases attended with complete loss of sense; convulsive or spasmodic movements; closed eyes; low muttering delirium; constant movements with the hands; dilatation of the pupils; rapid and anxious respiration; frequent sighing.

If inflammation of the brain has arisen in consequence of a suppressed otorrhœa, Sulphur should be employed. In those cases which occur in children from teething, *Chamomilla*, *Belladonna* and *Aconite* are our most reliable remedies.

In cases of metastasis or extensions of rheumatic inflammations to the brain, *Rhus-radicans* and *Rhus-tox.* are our best remedies.

Cuprum-acetat. should be given in cases which have arisen from repelled eruptions.

When encephalitis threatens to run into dropsy of the brain, *Mercurius-sol.* is the best remedy to counteract the tendency of effusion.

If the disease has arisen from exposure to the sun, repeated doses of *Camphor* are highly recommended.

ADMINISTRATION.—Our attenuations may range from the first to the sixth, and the doses repeated every two, three, or four hours, according to the severity of the symptoms.

A morbid condition of the brain of *anæmic* character occurs from long-continued dyspepsia, confinement in impure atmosphere, and other prostrating causes. This is called "London cachexy." It is characterized by loss of appetite, confusion, giddiness, violent sickness of the stomach, sleepless nights, horrid dreams, waking suddenly in a fright, noises in the ears like the singing of a tea-kettle, or like something struck close to the ear, or water thrown on hot iron, or a muffled drum at a distance; falling to sleep and suddenly awakened by a feeling as if a sky-rocket had suddenly rushed through the brain; transient deafness; headaches; black and bright spots dance before the eyes; languid, weak, irritable pulse; cold skin; pale flabby tongue. Sometimes there is a partial loss of memory, sudden startings up at night, frequent dizziness and depressed spirits. (*Solly, On the Brain*, p. 288.)

The only treatment required in these cases, consists in a better diet, restricted to proper articles in reasonable quantity; change of air; exercise to the extent of slight fatigue; proper attention to the state of the stomach, liver, bowels, &c.

2. WHITE SOFTENING OF THE BRAIN.

Ramollissement.—Cerebral anæmia long continued produces *white softening of the brain.* It may be connected with hydrocephalus, or be independent of it. It often occurs in infants, being caused by hydrocephalus, and in old men it arises from disease of the arteries. Mr. Abercombie says: "This peculiar softening of the cerebral matter is analogous to gangrene in other parts of the body; and, like gangrene, it may arise from two different causes—inflammation, and failure of the circulation from disease of the arteries." Both of these forms of gangrene are familiar to all observers, though their origin is very different. Ossification of the arteries of the brain is common in elderly people, and is a frequent source of apoplexy with extravasation of blood at advanced periods of life.

It is not yet decided whether *ramollissement*, or *softening of the brain*, proceeds from inflammation, or is a disease *sui generis.* Many of the French pathologists suppose it to be the result of inflammation; while others, as Rostan, believe it to be a disease *sui generis.* Abercrombie believes it may arise from either inflammation or from a condition of the cerebral structure analogous to those parts which have become gangrenous in other parts of the body, while Solly supposes

that it may arise from inflammation, from a total failure of the circulation, and from local and general anæmia." Dr. Burnet recognizes two kinds of cerebral and spinal softening, an *inflammatory* and a *non-inflammatory*, and "which may always be distinguished from each other by the microscope."

Inflammation of the tubular structure is more prone to terminate in softening than any other portion of the brain, and it is usually very insidious in its approach.

Diagnosis.—Softening of the brain may supervene suddenly upon an attack of acute inflammation, like hydrocephalus, or it may make its appearance in a gradual and imperceptible manner. Some of the characteristic symptoms of ramollissement are: Insensibility, dilated pupils, slight muttering delirium, paralysis, contraction of the flexor muscles, constipation, and a urinous smell.

Those cases which have arisen from an anæmic condition of the brain, or from an obliteration of the arteries which supply this organ, are usually slow in their progress, and manifest themselves by a gradual failure of the memory, drowsiness and œdematous state of the body, occasional wandering of the mind, especially during the night, general languor, slow, dragging and imperfect articulation, constipation, loss of energy and ambition, and an almost entire absence of pain or febrile symptoms.

Dr. Todd of King's College directs us to examine in all cases of hemiplegia the condition of the muscles of the paralysed limbs; to "flex the fore-arm upon the arm and the leg upon the thigh; and carefully ascertain which, if any, of the muscles offer resistance to our efforts, and the degree of resistance. Sometimes the biceps alone resists, and sometimes the triceps; flaccidity, slight resistance and absolute rigidity denote different states of the brain. Thus the perfectly flaccid condition of the muscles of the palsied limbs indicates cerebral lesion distinctly *atrophic* in its nature, the opposite of inflammatory. The vital powers are *below par*; the action is of a low kind, and there is a tendency to wasting. A resisting state of the paralysed muscles shows that the cerebral lesion is of an irritative kind; perhaps there is "a small apoplectic clot with laceration by the effused blood of some of the healthy brain-substance immediately adjoining it. When the palsied muscles are hard and rigid, and almost in a tetanic condition, the brain lesion is of a more distinctly and decidedly irritative kind," it may be even of an inflammatory nature. These are the cases which, when the resistance is slighter, or the muscles perfectly flaccid, may be remedied by Aconite, Belladonna, or Mercury. But these remedies are not alone sufficient. When the intellectual powers remain perfect or nearly so, the seat of the lesion is in the part of the brain concerned in voluntary actions—the corpus striatum and optic

thalamus, and parts adjacent. Softening of the brain is not attended with the *prolonged* coma, which almost always follows the *apoplectic* effusion of blood on the brain. Consciousness is retained, though the articulation is imperfect.

Causes.—Long-continued anxiety; over-exertion in business; venereal exhaustion; use of stimulants and low diet; depression. White softening of the brain generally depends on some cause which cuts off the normal supply of blood from the brain, or some part of it. Ligatures placed on the common carotid artery, have speedily caused hemiplegia of the opposite side. Dr. Todd says the application of the ligature was in one case followed in two days by hemiplegia of the opposite side, without any loss of consciousness; dissection showed white softening of the cerebral hemisphere of the same side as that of the carotid tied. In another case a dissecting aneurism, formed by a stream of blood from a slit in the aorta, extended for an inch and a half up the *right* common carotid. It there coagulated and formed a plug, which completely obliterated the carotid artery. Two days after the accident the patient became suddenly hemiplegic on the *left* side. Consciousness was retained, the muscles were perfectly flaccid and reflexed, and life continued eleven days. Dissection revealed white softening of all the parts of the right hemisphere of the brain which are supplied with blood by this artery.

This disease occurs most frequently in persons above fifty years of age; and in many of them it is preceded by a change in the coats of the arteries, especially in those of the brain. This change consists in the deposition of earthy and fatty matter in the walls of the vessels, and is known by the term *atheroma*. These deposits impede the blood in the capillary vessels of the brain, which, being less perfectly nourished, passes into a softened state. The disease is thus seen to be one of a purely *atrophic* nature. It is in such cases that true apoplexy generally occurs. This is usually preceded by unsteadiness of gait, loss of mental and physical power, eccentricities of conduct, despondency. (*Todd, Med. Times*, Febr., 1858.)

Dr. Bennett (*Edinb. Med. and Surg. Jour.*, Vol. 58, 59 and 60,) has explained the process of ramollissement of the brain, and thus sums up his conclusions (Vol. 60, p. 398.):

1. That two kinds of cerebral and spinal softening exist,—an inflammatory and a non-inflammatory affection, and they may be distinguished from each other by the microscope.

2. That inflammatory softening is characterized by the presence of exudation, corpuscles and granules; whilst in the non-inflammatory these bodies are never found.

3 That the nature of inflammatory softening consists in the formation and development of nucleated cells in the exuded blood plasma

whilst the nature of the non-inflammatory softening consists in the mechanical destruction or maceration of the nervous tissues in serum, or is the result of putrefaction.

4. That non-inflammatory softening, unaccompanied by hæmorrhage, is usually *post mortem*, and causes no symptoms; whilst uncomplicated inflammatory softening always causes marked symptoms which, however, vary according to the seat of the lesion.

5. That the inflammatory and non-inflammatory softening have frequently been confounded together by morbid anatomists, it being impossible to distinguish the one from the other with any certainty by the naked eye.

6. That inflammation in the nervous centres has in several instances been demonstrated by means of the microscope after it has escaped the search of good morbid anatomists and been indicated by most equivocal symptoms.

7. That very different colored softening has, at various times, been found to be connected with inflammation; but that yellow and white softening are most frequently inflammatory, whilst fawn-colored softening is non-inflammatory.

8. That red softening usually depends on congestion or the direct extravasation of blood; yellow softening on the imbibition of the coloring matter of the blood; fawn and gray-colored softenings on the presence of gray exudation corpuscles; and white softenings, in the great majority of cases, are *post mortem*, and the result of maceration in serum.

9. In no instance has softening of nervous centres been traced to the presence or infiltration of pus.

10. That inflammation of the central parts of the brain generally produce well-marked lesions of sensation and motion; whilst in inflammation of the peripheral portion, lesions of intelligence are commonly well pronounced.

11. That in idiopathic inflammatory softening of the brain, the contraction in one or more limbs is a common symptom.

12. That the fawn-colored spots described by Dr. Sims are no evidence of the cure of inflammatory softening.

13. That inflammation accompanying hæmorrhages is consecutive.

14. The softening surrounding apoplectic clots or sangineous infiltration is no proof of inflammatory action.

Prognosis.—Ramolissement of the brain was formerly considered as almost inevitably fatal. Regarded as always inflammatory and treated by depleting measures, the vital powers became rapidly more depressed. In those cases of fatty and earthy degeneration of the coats of the blood-vessels it may still be considered hopeless. But in cases which originate from the obliteration of the arteries it may still be pos-

sible to support the cerebral powers until a collateral circulation may be established through *other* vessels which may restore and maintain the normal nutrition; this is often seen where the main artery of a limb has been tied. By this process it seems that simple white softening *may* be repaired; but in very many cases it never takes place. In these the palsied limbs are never restored; their temperature falls below that of health; the paralysed parts become œdematous; strength gradually declines and death follows; though existence may be prolonged through months and even years.

TREATMENT.—Begin by endeavoring to improve the state of the blood, and uphold the patient's strength in every way consistent with the degree of digestive power remaining. At first Ammonia and Chloric-ether may be given every four hours or less, after the hemiplegic attack; to these we may add wine, coffee, Quinine and other tonics and stimulants may be added. When the patient appears rapidly sinking, he may be revived by stimulants, and of these strong coffee in large quantities is one of the best. All the attendant symptoms, as the slow pulse, fainting fits, convulsions, &c., denote extreme anæmic debility, rather than congestion. Many of these cases occur in persons who have lived freely and are accustomed to stimulating food; and a frequent cause of their worst symptoms is found in dietetic restrictions. Let the generous diet to which he was formerly confined be restored, especially the wine, the animal food, and add to it iron and other tonics. Mr. Skey, of St. Bartholomew's Hospital, says, he has treated nine or ten cases of ramolissement on the stimulating plan. These patients all had a slow pulse, some had alarming syncope, both of which symptoms depend on the state of the heart, and are always improved by tonics In one case he gave a pint of claret a day, in place of water gruel, and quinine and iron in place of leeches, antimony, graypowder and mindererus.

Ramolissement, from whatever cause it may proceed, is seldom cured. As remedies, however, we suggest *Opium*, *Hyoscyamus*, *China*, *Secale-cornutum*, *Carbo-vegetabilis*, *Belladonna*, *Nux-vom.*, and *Phos.*

Nux-vomica.—D. E. M. Hale gives a case (*N. A. Jour. Hom. Vol. XI.*) of a physician aged 60, a man of large frame, and originally possessing much strength and considerable power of endurance. For some years he had occasional paroxysms of "sick headache, excruciating pain and vomiting, was affected by a certain absent-mindedness, loss of memory, and an eccentricity of manner. His mind became clouded at times, his speech hesitating and slow.

Two years after he had an attack similar to an apoplectic seizure. This left him, with partial loss of motion in the lower extremities. He recovered from this attack, so much as to be able to ride and even walk

over his farm, and attend to his domestic affairs, but he had the headaches, mental obtuseness, &c., worse than before. One year from this attack, he had another, much more serious. It came upon him while in the barn-yard and he was found several hours after lying upon the ground completely insensible, comatose, with stertorous breathing. After three weeks of allopathic treatment, he was in a condition approaching to general paralysis of the voluntary muscles. His lower extremities completely paralysed, they still retained sensation, but not in a normal degree; the tendons were somewhat contracted, upper extremities partially paralysed, the face was partially distorted, power of speech lost. Gelseminum improved the febrile condition and the passive cerebral congestion; he appeared much better. The case was considered to be one of ataxic or chronic softening of the brain, of the variety denominated "red-softening"—from chronic venous congestion and capillary hæmorrhage.

Nux-vomica, 3. produced in a week decided amendment. The tongue became moist and clear, breath less offensive, greater power of articulation, less distortion of the features, and the return of some power of motion in the legs. He can turn in bed with a little assistance. There was slow but steady improvement in all except the mental condition, which remained cloudy and idiotic as ever. Phosphorus was then alternated with Nux, with decided benefit. Further improvement, followed from Citrate of Iron and Strychnine.

A distressing headache and vomiting was prevented from returning in regular paroxysms by Cuprum-aceticum, 2°, given every three hours, for the twelve hours, preceding the expected paroxysm, and until its subsidence. *Phosphate of Zinc*, first dec. trit., one grain one hour before meals, cured it entirely.

3. HYDROCEPHALUS.

WATER-BRAIN-FEVER. DROPSY OF THE BRAIN. TUBERCULAR MENINGITIS.

General Remarks.—No satisfactory account of this disease appears in any of the ancient authors. The first clear and full description of it was given by Whytt, in a Dissertation published in 1768, which is even now regarded as one of the best that has ever been written on this subject. It may be divided into three stages: 1st, that of excitement; 2d, that of effusion; 3d, of convulsions.

ACUTE HYDROCEPHALUS.

Diagnosis.—This is a malady almost peculiar to infancy and childhood. The symptoms which indicate its approach, are neither very uniform nor regular. Indeed, so various and uncertain are these symptoms, that some writers suppose the effusion to be dependent upon a

debilitated condition of the membranes, analogous to dropsy, while others attribute it to inflammation in all cases.

It may appear suddenly with most of the phenomena we have designated as encephalitis, viz.: febrile symptoms, quick pulse, fits of screaming, expression bold and furious, eyes bloodshot and brilliant; great heat of the head, nausea, vomiting, noise and light painful; convulsions, ending in coma and death in a few days. In cases of this description there exists unquestionably acute inflammation of the meninges of the brain; and the effusion commences almost simultaneously with the inflammation.

In other instances, the disease approaches insidiously, presenting no marked symptoms for some days. The child will perhaps be observed to be petulent, to complain of some pain in the head, to become easily fatigued, to have occasional flushes of heat, to be restless at night, occasionally to grind the teeth, to have lost the appetite, and to prefer the recumbent position. After these symptoms have continued for an indefinite period, the more serious signs of effusion present themselves, as: general diminution of sensibility, less frequent and more irregular pulse, greater debility, constant inclination to keep the bed, or to be held in the arms, dilatation or contraction of the pupils, frequent sighs, strabismus, or an unnatural expression of the eyes, turning inwards of the feet and hands, slight convulsive twitchings of the face, upper-lip and arms, automatic movements of the hands towards the head, rolling the head from side to side, constant motion of the lips, convulsions, paralysis.

The pulse at the beginning of this disease is always *slow*, in very few cases exceeding one hundred, in some eighty, and in a few as low as fifty-four per minute; but this lasts only a very short time after the headache, and vomiting begin. There is then a reaction and the pulse rises to one hundred and thirty, and in some to one hundred and sixty. It is full, but more easily compressible than in inflammation of the brain, called encephalitis; it has a perceptible variation in the rythm of the artery and in the regularity of the strokes, varying in frequency even during the same minute. There is a distinct intermission every seven, seventeen or twenty pulsations, and some of the pulsations may be felt soft, weak, and fluttering. In the second stage, the pulse sinks and becomes slow, labored, intermittent and irregular, and is easily quickened by motion or mental disturbance to double the number of pulsations per minute. (*Whytt, Hennis, Green, Smith on Hydrocephalus, p.* 31. *Rilliet and Barthez.*)

Abdominal Organs.—The appetite is not entirely lost: but vomiting almost always occurs on the first day, rarely later, though sometimes continuing longer than the second or third. M. Piel says of this sign: "If in a child that has been vaccinated or had the small pox, who

digests well, and is suffering neither from bronchitis nor pertussis, vomiting, whether simple or bilious, accompanied or preceded by a more or less continued headache, there is every reason to fear an approaching meningitis, especially if the child is tuberculous." The vomiting is spontaneous and unattended with nausea, and after its occurrence food is often taken with avidity. Constipation is generally conjoined with vomiting, and is generally followed by diarrhœa before the disease terminates.

Retraction of the walls of the Abdomen generally occurs about the sixth day. Rilliet and Barthez say: The belly becomes depressed at its centre and takes the form of a boat; the contraction being sometimes carried so far as to allow the beating of the aorta to be felt. It is almost a constant symptom, and does not depend on the constipation or the subsequent diarrhœa. It is almost exclusively in cerebral affections that we have observed this symptom."

The urine is of a deep amber hue, of high specific gravity, sometimes milky, and deposits a whitish slimy sediment, smells offensively shortly after being passed, and occasioning strangury. It differs in color from the dark-brown or porter-colored urine, seen in inflammation of the brain, which contains more urea and less of lithates than that of hydrocephalus. (*Hydroceph., p.* 9.)

Cerebral Symptoms. Vertigo, stupor and coma follow the characteristic headache: dilatation of the pupil, spasmodic contraction of the eyelids, &c.

Diagnosis.—Distinction from Phrenitis.—The headache of hydrocephalus is of a lancinating, paroxysmal character, and accompanied by voluntary ejaculations. If the child be directed to shake the head he tries, but suddenly he stops, utters a piercing cry, holding the head fast between the hands. The head feels heavy and full anteriorly, and there is a disposition to rest its frontal surface against the pillow. Vertigo approaches more gradually and lasts longer than in phrenitis, and is especially felt on assuming the erect posture. "The stupor is more intense and longer continued than in other cerebral affections. Rheumatic and colicky pains are found oftener in the abdomen, with tenderness along the cervical and dorsal vertebræ which increase as the disease advances. The respiration and pulse do not observe their usual consentaneous action. The pulse may beat 140 or 160 per minute, while the respirations are only 40 or 50." But "the respiratory effort is usually performed in a hurried convulsive manner, and there is a marked increase in the duration of the expiratory act and the period of repose; deep and prolonged sighing intervenes, and considerably diminishes the amount of the respiratory movements." The fæcal evacuations in this disease are more "tenaceous, gluey, and glossy in their properties, with a more cadaverous smell, than in phrenitis or

other febrile affections. The pupil is always dilated in idiopathic hydrocephalus, and it is only when the disease is complicated with inflammation of the brain or its membranes that it is permanently contracted. The spasmodic contraction of the eyelids peculiar to this affection is attributed to irritation of the filaments of the fifth pair supplying the orbicularis; and from the same cause there often exists itching of the alæ nasi, and lower lobe of the ear. The auditory nerve is acutely sensible to impressions, but the olfactory becomes obtuse.

Cerebral Auscultation has been proposed as a means of distinguishing hydrocephalus, but thus far without important results.

Causes.—The predisposition to hydrocephalus is often inherited from scrofulous or unhealthy parents. The latent cause most common is a strumous or lymphatic constitution, which has most frequently originated in the highly excitable condition of a nervous and irritable mother. A woman, whose brain and nerves are liable at all times to be extraordinarily excited, whether by causes of great or small importance, always transmits to her child a feeble, ill-nourished, scrofulous or otherwise unhealthy body, and an irritable weak or ill-balanced mind. This disease may also result from the want of suitable food, clothing, exercise in the open air. The health of children depends in a great degree on that of the parents, their habits of life, and general management. Let dwellings be improved; let food be selected with greater regard to its healthful qualities; and let children be properly fed, clothed, and habituated to the appropriate degree of exercise in the fresh air, and they will be less burdensome to themselves, their parents, and the community. Hydrocephalus is often one of the tubercular forms of disease inherited from phthisical, scrofulous or dyspeptic parents.

Pathology.—This disease is an idiopathic nervous fever with a deposition of tubercular matter in the meninges of the brain, in its most common and well-marked form. In some cases there is a limpid effusion of serum, softening or slight opacity of the membranes, either on their surface or at the base of the brain. In other cases there are signs of tubercular deposit in various organs of the thorax and abdomen. Hydrocephalus, says Dr. Smith, "is not in essence an inflammation, much less a dropsy; but it may or may not be accompanied with inflammation in its origin,"—it may or may not lead to effusion in its progress. (*On Hydrocephalus*, p. 68.)

Prognosis.—This disease once developed in that kind of constitution which, of all others is most likely to be effected by it, has not often been cured. In constitutions not hopelessly tubercular it can be generally treated with success.

Treatment.—Prophylactic Measures.—In children suffering but trifling indisposition, to outward appearance, but in whose families the disease has already manifested itself by attacking other children, hy-

drocephalus may be feared, and all useful means for maintaining the general health should be employed. Due attention should be paid to all the secretions, the state of the skin, the physical strength and all the indications of morbid activity of the brain, precocity of intellect, &c. All invigorating measures should be immediately employed and all mental excitement avoided. It is easier to criticise one mode of treatment than to propose another that will be certainly successful. Hitherto the most successful treatment has been directed to the producing of a favorable crisis by the steady and uniform action of all the abdominal and cutaneous exhalents by means of homœopathic remedies.

A warm bath may often be found useful, though it must be employed with great caution. And it may be useful in some bad cases if the warm water be allowed to come up high enough to cover the chest at the same time that cold, graduated to the strength of the patient, may be applied carefully to the head. A *sponge cap*,—formed of pieces of thin sponge sewed together and to a leather border to secure it, may be made to absorb any cooling mixture desired, and then, by its evaporation the head may be *carefully* cooled; and, in this way, the excess of blood may be driven from the head, at the same time that it is drawn to the extremities and surface of the body. We have better resources.

The medicines which we would suggest in this affection are: *Belladonna*, *Digitalis*, *Cannabis-ind.*, *Hellebore*, *Apis-mel.*, *Nux-vomica*, *Phosphorus*, *Stramonium*, *Tartar-emetic*, *Veratrum*, *Aconite*, *Arnica*, *Arsenicum*, *Bry.*, *Cuprum-met.*, *Iod.-arsen.*, and *Canthar.*

During the first stage of the acute variety, our most reliable remedies are *Aconite* and *Belladonna*. These should be given as often as once in two hours, until a manifest effect has been produced, after which we may repeat as circumstances require.

Bryonia.—If the inflammation has not been promptly subdued by the use of *Aconite* and *Belladonna*, but signs of effusion manifest themselves in the form of "deep red, or almost brown face; eyes rolling in their orbits, sometimes closed, and at others wide open; lips dry; tongue covered with a brownish yellow fur; tension and swelling of the abdomen; constipation; generally retention of urine, or difficulty of passing it; respiration quick, anxious and sighing; deglutition difficult; skin of the whole body dry and burning, *Bryonia* acts surprisingly." (*Bigel.*)

Helleborus-niger has been successfully employed in many apparently hopeless cases, which were attended with coldness and insensibility of the surface; rapid and feeble pulse; convulsions and spasmodic rigidity; face pale and swollen; constant rolling of the head from side to side; moaning; general prostration.

After decided marks of effusion obtain, *Digitalis*, *Merc.-sol.*, *Belladonna*, *Veratrum* and *Arnica* deserve our consideration.

Nux-vomica and *Stramonium* will be required when great agitation, flushed face, convulsions, strabismus, haggard and staring look, involuntary twitchings of the muscles, dilated or contracted pupils, groaning and crying, and opisthotonos are present.

Phosphorus and *Tartar-emetic* will be found useful in hydrocephalus, depending upon metastasis of some disease to the brain, and in cases occurring in worn-out constitutions.

ADMINISTRATION.—The first, second and third attenuations may be used, and the doses repeated once in from four to six hours.

Apis-mel. is another remedy of importance. Several acute cases are reported in the *Brit. Jour. of Homœopathy* and elsewhere.

Kali-hydroicum, first decimal trituration, in grain doses, every three hours, has often cured apparently hopeless cases.

Tartar-emetic.—Laennec used it to reduce the inflammatory action, and restore the secretions of the abdominal organs. In chronic cases Recamier used a bath of one ounce of Tartar-emetic to the pail-full of water. He thought it reduced the size of the head and acted as a diuretic. We can only rely upon internal remedies.

Mercury.—The treatment of inflammatory diseases by Mercurials was commenced by Dr. Dobson in England in 1775. It was of course used on a large scale, and the quantity sometimes employed seems incredible in this age. The following case treated by Dr. Kuhn of the Pennsylvania University, in 1814, is reported by Prof. Chapman of the same school. A child, six years of age, passed through the different stages of hydrocephalus, taking repeated and large doses of Calomel. When the phenomena of effusion on the brain became evident, the doctor commenced rubbing the whole surface of the body twice a day with mercurial ointment of double strength. Long gloves made to reach to the arm-pits, stockings extending to the groins, a wide belt around the abdomen, and a cap on the head, were all thickly lined with mercurial ointment. On the 14th morning, a slight ulceration of the gums was perceptible, and some improvement was apparent; but the treatment was only discontinued after fourteen and a half pounds of the strong ointment had been consumed. "Recovery" followed without any perceptible inconvenience from the Mercury absorbed.

The reckless employment of Mercury has very often resulted in the sudden development of most disastrous effects even when the quantity given has been very small, and where a high degree of caution and common judgment have been exercised. Every physician who has precribed much Mercury in any form knows that its action is uncertain and capricious in a great proportion of all the cases in which it is tried in a crude form. It can only be used successfully and safely in the homœopathic form. Mercurius-corr., or Mercurius-hydriod. employed at the second triturations, have produced excellent effects in many cases.

CHRONIC HYDROCEPHALUS.

DIAGNOSIS.—*Chronic hydrocephalus* is usually the result of a very slight inflammatory action, which has progressed very slowly and insidiously. The characteristic indications which distinguish it from other affections are, gradual emaciation, feebleness, unnatural enlargement of the head, occasional giddiness, and now and then strabismus.

TREATMENT.—The medicines we would suggest in this disease are: *Belladonna*, *Digitalis*, *Nux-vomica*, *Phosphorus*, *Stramonium*, *Tartar-emetic*, *Veratrum*, *Aconite*, *Apis*, *Cann.-ind.*, *Merc.-cor.*, *Arnica*, *Arsenicum*, *Kali-hyd.*, *Calcarea*, *Sulphur*.

FIRST STAGE OF THE ACUTE VARIETY.—Our most reliable remedies here are first *Aconite*, followed by *Belladonna*. They should be given even singly or in alternation as often as one in two hours, until a manifest effect has been produced, after which we may extend the intervals as circumstances may require.

We usually commence the treatment of this malady with Sulphur, followed by Calcarea, both in the higher attenuations. These medicines have the effect to modify the scrofulous dyscrasia which is often present, and to prepare the system for the favorable reception of other remedies.

Next to these drugs in value we should rank Kali-hyd., Digitalis, Arsenicum-alb., and Hyd., Apis, Cannabis-ind., and Mercurius-corr. These medicines should be prescribed in palpable doses, and repeated often.

CASE BY DR. NORTON.—*Calcarea.*—A boy, aged one year, had been previously under allopathic treatment. His appearance was scarcely human; the head was immense, with open fontanelles, and squinting eyes; his only attempt at speech or vocal sound was a distressing grunt; the skin was hanging in loose folds; emaciation; very tumid abdomen; diarrhœa, alternating with hard scybalæ, passed from him as from a senseless animal; periodical convulsions, amounting to opisthotonos; he drank milk greedily, through a tube, and till satisfied he continued the grunting noise. After a dose of Calcarea 200°, he was much improved. Calcarea 200° and Sulphur 200° were given in weekly doses, one medicine one week, the other the next week, and so on alternately. In six months he was quite well." (*Brit. Jour. of Hom.*, Vol. VII.

Dr. Liedbeck has recorded some cases of hydrocephalus successfully treated with Ferrum-aceticum. (*Brit. Monthly Rev.*, Vol. V. p. 39.)

Genus IV.—INFLAMMATORY DISEASES OF THE EAR, MOUTH AND THROAT.

1. Diagnosis of Diseased Condition of the Meatus Externus.—Facility in conducting an examination of the meatus externus and forming a correct judgment of its true condition can only be acquired by considerable experience. To judge accurately of the nature and extent of the disease that may be present it is necessary to have a clear idea of the healthy appearance of the part. This knowledge can only be acquired by the careful inspection of the meatus in a large number of healthy individuals.

Mode of Conducting the Examination.—Placing the patient in a favorable condition to permit the rays of the sun to fall directly into the ear, and then gently pull the upper portion of the auricle upwards and backward; and if the whole cavity can not then be well examined, a speculum of some kind is required. "The instrument employed by Dr. Toynbee is a modification of the cone introduced by Gruber and Wilde. The portion which enters the meatus is of the same circumference throughout, but oval, like a flattened cylinder, corresponding to the oval shape of the outer meatus." "In order to hold the speculum more firmly, it is desirable that the expanded portion should be somewhat flattened; and this flattening should be at right angles with that of the small extremity." The "forceps speculum," formerly used with the design of dilating the meatus, is now rejected as unfitted for that purpose.

When the sun is not in a favorable position for the direct falling of its rays in the exact direction required, a mirror can be so adjusted outside of the physician's office window as to reflect the sun's rays into the ear of a patient, sitting in any part of the room. When the sun is obscured an artificial light may be substituted. This can best be done by throwing the light of a good lamp or gas-burner through the speculum into the ear by means of a concave reflector, having a small opening in the centre, through which the surgeon can look. Specula with magnifying lenses are sometimes advantageously employed.

In cases of otorrhœa, where there is a discharge from the meatus, the ear should be gently syringed, and carefully dried by means of a small tuft of cotton, before the inspection of the meatus is attempted.

2. Foreign Bodies in the Ears.—The symptoms commonly excited are, intense pain; alarming inflammation which is propagated to deep-seated parts; ulceration and granulations in the meatus, which may become closed; deafness is the common result.

Treatment.—The foreign body must be removed, but the effort to do it must be made with the greatest caution, as the offending substance may be thrust still further in, the membrana tympani ruptured, and

the body enter the cavity within. Forceps can scarcely be used, as they must be insinuated between the sides of the meatus and the body. Perhaps the best instrument is a steel-stylet, tapering from one extremity to the other, that the end in the hand may be stiff enough for a handle. The other end like a small probe, obtusely flattened laterally and bent at the point.—This point is to be insinuated beyond the foreign body, and the instrument used as a lever to bring it out.

If this mode does not answer, try forceps with very large slender blades, bent nearly at the right angles about an inch from their points, which should be thin, a little convex on the outside, and slightly curved inward. They are bent that the hand may not exclude the light.

After removing the object the ear should be deterged by warm milk and water. Many are mistaken about the existence of the substance in the ear; at all events it is necessary to be careful to avoid irritating the external meatus in efforts to remove what is not there.

When an insect has got into the ear, place the patient on the opposite side and pour sweet-oil in the ear. The insect will probably become visible and may be removed by a roll of paper or small forceps.

Extraneous bodies, as gravel, shot, beads, cherry-stones, pieces of wood, peas, beans, &c., when put by children into their ears, excite inflammation and swelling. They will generally be removed by slender forceps, or by a hair-pin bent into an obtuse angle. This forms a round smooth wire spatula so curved that it can enter far into the external ear without injury, and, passing beyond the offending substance, withdraw it. A horse-hair bent into a spatula-form and wrapped with a thread to form the handle, can be pushed farther into the ear than the wire spatula, and if used with skill, will almost always bring the extraneous matter with it.

If, before effort is made to extract the foreign body, inflammation and swelling of the membrane lining the ear has proceeded so far that nothing can be introduced within the ear, the fever is also high, and there is pain in the head, we begin by reducing the inflammation. Aconite and Belladonna may be given in alternation so long as they seem to exert an influence in allaying the inflammation. Warm fomentations exert a homœopathic influence by being applied directly over the ear. Soft cloths wet in warm water may be laid so thickly over the ear as to keep warm for considerable time. A few drops of Glycerine may be dropped in the ear before the wet cloths are applied. A drop of Lactucarium in the Glycerine soothes the pain without doing any injury. In one case a child had pushed the part of a fine comb into the ear, and when examined the meatus was so swollen that the comb could not be seen, and there was no room to insert any instrument. By fomenting the ear the swelling was reduced till the comb was visible, and then extracted with curved forceps.

3. Diseases of the Membrana Tympani.—1. *Fungous Membrane covering the membrana tympani.*—This membrane in new-born infants is over-spread in the external side by thick fungous membrane, which soon disappears by suppuration. When this continues to adhere to the drum, instead of separating, it produces deafness. This is probably the condition of most of the congenital *deaf mutes.* A deaf mute of Chartres, in 1803, began to hear at twenty-four years of age; another, (says Riolan,) began to hear after the membrane was perforated with a tooth-pick. At Nantes, a man deaf and dumb from his birth, at the age of twenty-eight began to hear and speak.

The existence of this deciduous membrane has indeed hardly been demonstrated. It is said that the suppuration is often imperceptible, and that when the suppuration is going on the pus blends with the cerumen of the ear, it is with difficulty distinguished, and must be often and carefully examined. The wax during the suppuration is changed in smell and color, the question of ability to hear is hardly settled till the child is old enough to answer some questions. This fungous membrane corresponds with the membrana pupillaris.

Diagnosis.—To ascertain whether this be the cause of deafness; expose the ear to a strong light, directing the rays of the sun into the external meatus. If the bottom be seen to be pearly white, smooth, sensible to the probe, we may be certain, that there is no false membrane; but if the bottom be seen of red fungus, little or not at all sensible to the probe, we may be assured the false membrane exists.

Treatment.—It has been proposed to destroy it by irritating it by acrid medicines, or to cause it to desquamate by dry, mild corrosives. But these measures cause unnecessary inflammation and sometimes the inflammation thus excited only thickens the membrane; as often happens in efforts to destroy false membrane on the eye. Hildanus says, a child, eight years old, had discharge from the ears. An empiric injected into it an acrid fluid, which produced intolerable pain and inflammation; it was afterwards insensible to the loudest sound.

A child, aged six years, had inflammation of the ear excited by a glass-bead as large as a pea; there was continual pain, afterwards increased by cold and moisture. Then there began to be felt numbness, first in the left arm, then the hand, next the leg, finally the whole side. A dry cough and attacks of epilepsy followed; the arm atrophied; but all of these symptoms ceased on the extraction of the bead. These cases show that any substance introduced into the ear may be followed by dangerous consequences.

Sassy prefers puncturing the membrana tympani, as "it restores hearing more promptly than any other method; and to prevent closure of the pupil a small portion of a gum-elastic tube or sound may be in-

serted in the opening, which should for a time be repeated every day." (*Diseases of the Ear.*) This is now abandoned.

Valuable internal remedies for this form of deafness are: *Kali-hydriod.*, Mercurius-hydriod., Sulphur. We prefer the low attenuations, given every night for a considerable period.

4. Inflammation of the Membrana Tympani.—This inflammation generally extends to the adjoining parts. It may terminate by resolution, suppuration, seldom by catarrhal effusion, though this last is the ordinary termination of chronic inflammation.

Causes.—The most common cause is picking the ears; any other irritation may produce it. Foreign bodies in the ear, retrocession of external eruptions, as itch from the skin, or tinea capitis, are common causes.

Symptoms.—Acute pain and fever, increased by the slightest noise or opening the mouth, show acute inflammation. Chronic inflammation; less painful; mucous or serous excretion; itching within the ear; at later stages the hearing is difficult from the thickness of the membrane.

Acute inflammation is generally soon cured. Chronic generally leaves some hardness of hearing after it.

Treatment.—1. The measures that reduce inflammation in general.

2. If the disease has been caused by the repulsion of eruptions, the case must be treated by antipsoric remedies capable of reproducing or curing the original eruption.

3. Some advise the softening of the secretion by emollient vapors, washing the ears out with warm soothing liquids; lay over the ears cotton-batting wet with warm oil of almonds.

Local washes injected into the ear. Cleansing the ear with mild warm suds of Castile-soap.

External irritation to the back of the ear has been much practiced.

Blisters have produced bad effects, as in the following case: A soldier, who had passed many nights on guard during the siege of Lyons, had rheumatic pain in the ear. This afterwards ceased, but there remained a buzzing noise in the ear and difficulty of hearing. A blister was applied over the mastoid region which increased the buzzing sound. Another surgeon healed the blister, and applied another on the arm, which cured both the buzzing and the deafness.

Madame G——, in Paris, had inflammation of the external meatus of both ears, involving the membrana tympani. After a great many remedies, the inflammation was apparently subdued by caustic over the mastoid region on each side. To the inflammation now succeeded a degree of deafness, which every day grew worse; it having commenced the same day that the caustic was applied. These and many similar cases show that blisters, caustics and especially issues produce con-

gestion in the mastoid cells instead of relieving them and hence these drains become causes of deafness. (*Sassy, on Diseases of the Ear.* Paris. p. 45.)

In the first period of the inflammation, give Aconite and Belladonna, every four hours until the acute symptoms have subsided. After this Hepar, Mercurius-corrosivus, Graphites, and China will probably be indicated.

In the use of local applications extreme caution should be used, in order that no undue irritation shall be excited or kept up, by their employment. Much injury is often produced by too frequent and too active local appliances. In these cases, as in many others, unassisted nature not unfrequently restores affected parts, which the efforts of art would only have injured.

5. Ulcerations of the Meatus Externus.—No membranes of the body seem so often the seat of local diseases as the part of the tegumentary system which lines the orifices of canals leading to internal cavities. Here the skin and mucous membrane are blended into and insensibly assuming the character of each other. Thus the muco-cuticular membrane of the lips, that of the meatus, the prepuce and the nose are characterized by the combined qualities of the skin and mucous membrane, perform the offices of each other and participate also in each other's diseases. Thus also these different membranes influence each other by sympathy called continuous. A morbid state of the mucous lining of the stomach diffuses itself along the membrane till it comes to the skin, and this is also true in regard to disease located in the skin. Thus we have cases of disease within and without. This accounts for the frequency and obstinacy of ulcers of the meatus, eyelids, lips, prepuce, &c.

In some of these regions morbific humors seek for an outlet, forming ulcers, frequently of scrofulous or psoric character.

6. Abscess of the Meatus.—This is known by the purulent discharge as more sanious than pus commonly is. It requires local cleansing with fine soap and water, and protection from the cold air. And then it needs constitutional treatment for the general psoric or scrofulous diathesis, which is always present in patients in whom the abscess tends to become chronic. The hearing is soon injured, the morbid granulations grow up and overspread the membrane, excluding the undulations of the air; or the ulcer spreading more slowly destroys the membrane, the delicate small bones and extends to the accoustic nerve.

Treatment.—If the disease is of recent origin, we may at once cure it by cleansing the meatus with washes of water with Castile-soap, and treat the general condition, as it may be febrile, scrofulous or otherwise. Other more remote irritations must be removed. Difficult dentition is often accompanied by abscesses within or behind the ears.

Irritation from the stomach from noxious indigestible food, worms, &c., increase general fever and determinations to the head. These sources of irritation must be sought for and removed. The constitutional treatment and proper cleansing of the ear ought to be successful without the local mineral injections recommended by authors. In those cases in which the abscess becomes chronic and lasts for years, we must always succeed by internal treatment of the general dyscrasia as has been done in many cases of which we give a few examples, p. 732.

Hepar-sulph., Calcarea-carb., Sepia, Mercurius-hydroid., Aurum-met., and Silicea are the medicines most likely to be required in this affection. If the disease is recent the lower attenuations should be employed; but if of long standing, the higher preparations should be prescribed at long intervals.

7. Rupture of the Membrana Tympani.—Causes.—Violent use of ear-picks, sneezing, erosion of the membrane by acrid pus. This cause is the most common.

The accident is usually known by air proceeding from the ear with a buzzing sound, so that a hair or the flame of a wax-candle shows the current. If injections are thrown into the ear, the fluid comes out through the mouth or nose; also by injecting a fluid into the eustachian tube it passes out through the ear.

Treatment.—Art has done nothing to restore the perforated membrane. Nature can do with it as she does the puncture of the membrane made by art. If the membrane is much injured, the hearing is injured or lost, as the small bones of the inner ear are connected with this membrane and it is essential to hearing. Some recommend a false membrane to keep out the external air, but a little wad of cotton is sufficient. The disease is incurable by art; but a constitutional treatment with proper antipsoric remedies will greatly improve the patient's general condition, and avert further progress of local disease.

Many cases of rupture of the membrana tympani originate in the severe concussion of the air from the firing of cannon; gunners, particularly in the naval service, aware of the great danger to which the ear is exposed, plug their ears well with wool. The wool gives only partial protection. The effect of position with reference to the gun is peculiar; those men who stand nearest the muzzle feel the report most, and those who are to leeward suffer more than those to windward. Some protection to the ear is said to be afforded by keeping the mouth open when listening to heavy firing. During the French revolution a dog, which stood near a cannon, was seen to run away and complain loudly when it was fired. Blood ran from his ears; he ran into a house and died. The membrana tympani was found ruptured.

Dr. Von Mosckzisker says, the injury of the ear by loud explosions may be obviated by "saturating a piece of cotton in a solution of Gly-

cerine and Belladonna, and placing it as far within the ear as possible. This solution forms a coating for the surface of the membrane, and with the addition of the cotton protects the drum of the ear to the fullest extent. It can be afterwards washed out with warm water."

8. Polypus of the External Surface of the Membrana Tympani. —This may originate in any cause which produces irritation of the part. Adynamic or ataxic fever frequently end in deafness, accompanied by long-continued suppuration and polypus of the ear.

Sassy says: "A young man, aged twenty-two, had adynamic fever ten years before; it left him deaf, with suppuration and buzzing sound in the ear. Injections of the Eau de Balarac thrown into the auditory passage caused the polypus which made these symptoms to drop off. The polypus was like a strawberry, attached by a slender pedicle to the membrane. Separation of this caused a slight bleeding only. The suppuration and sound ceased and the hearing was immediately and permanently restored." When polypus exists, examination quickly shows its presence, but not the point of attachment. It can always be removed by twisting it off, or by a cutting instrument, by ligature, or by local applications, always duly associated with internal remedies. In one case of polypus of the external ear, which completely filled the cavity, a cure was effected by Scultetus in part by tearing away and in part by the application of the actual cautery. A young girl had an excrescence growing from the external ear implanted deeply in the cavity, and issuing more than half an inch; it was regarded as a true polypus fungus and emitted a fœtid purulent discharge from its surface. It was removed by lacerations. See p. 426.

9. Relaxation of the Membrana Tympani.—The membrane protrudes in the form of a pouch. It may be caused by violent coughing; violent inspiration; sneezing; an accumulation of mucus, pus, or rarified air in the tympanum.

In the latter case it is sufficient to depress the membrane which may easily be seen protruding. It may be effected by the end of the probe, and the cavity stuffed gently with cotton or lint for forty-eight hours. Removing this, a few injections of a mild astringent water occasionally repeated for a few days. A weak solution of Sulphate of Zinc will be sufficient.

10. Morbid Tension of the Membrana Tympani.—This may be caused by such diseases of the brain and its appendages as produce morbid acuteness of the sensations. Inflammation of the eustachian tube sometimes causes morbid acuteness of hearing. The slightest noise disturbs. In some persons the North or North-east wind makes some persons peculiarly uncomfortable, with neuralgic pain and sensitiveness of the face, teeth and ears. The South wind relieves them.

Treatment.—Cure the fever and neuralgia with Aconite, Bell., &c

Baths and vapors, emollient soothing applications to the internal ear; fresh glycerine dropped into the ear over which cotton may be applied; protection from cold, removal of decayed sensitive teeth, &c.

Otorrhœa.—Chronic.—The question of the propriety of suppressing chronic discharges from the ears has perplexed all allopathic authors. They have concluded that if we make the effort, we must blister, purge and give mercurial alternatives at the same; and even then the discharge must only be suppressed with slowness and extreme caution. They sometimes venture to arrest it in young persons, and also where the disease is the result of suppressed evacuations.

Frederick Hoffmann cured cases of chronic otorrhœa by scarifying hæmorrhoids and applying leeches to them. A young girl had suppression of urine and was immediately affected with discharge from the ears. On restoration of the former excretion the latter immediately ceased. (*M. Alard, De l'oreille.*) A woman had otorrhœa for six months, following on suppression of the menses. When the latter re-appeared, the purulent flow from the ears ceased spontaneously.

But in all ordinary cases suppression of otorrhœa has been pronounced dangerous by ancient and modern authors. The effects witnessed of suppression have been convulsions, epilepsy, and death. A Venetian who had an old discharge from his ear arrested, says Sadabert, speedily died. A robust and sanguine man, aged sixty, had a considerable otorrhœa of twenty-five years standing, though in other respects he was well. The matter discharged was fœtid and very thick. This discharge, says Duverney, "being suddenly stopped the man died in twenty-four hours of apoplexy." Alard says, "an attorney of Paris had an ear discharging copiously of matter for a long time; the humor being repelled by cold, the ear became the seat of a violent inflammation, which induced violent symptoms, followed by death." Similar events, says the author, should instruct us to be careful to cure these discharges from the ear while they are recent and not permit them to become chronic. (*Duverney, Traité de l'organe de l'ouie.* p. 121.)

Dr. Richards, of N.-J., gives a case of a scrofulous girl, aged nine years, who had been troubled for six years with constant purulent discharge from the left ear. She was treated with Sulphur 30, Hepar-sulph. 30, Calc.-carb. 30, and Lycopodium 30, for several weeks. Of these remedies Hepar and Calc.-carb. seemed to have some effect, the others had none. Feb. 13, 1860, gave them Aurum sixth, six pellets three times a day. March 5th, improving. March 28th, cured. Feb. of next year there had been no return. (*U. S. Jour. Homœop.* Vol. II. p. 491.)

Apis-mel.—Dr. Munger cured a case with the following symptoms with this remedy: Hard, red, somewhat conical swellings, usually

on the lower extremities below the knees, but sometimes in the arms, and occasionally on other parts. Some no larger than a dime, others an inch or two in diameter; heat, redness, extreme soreness, a burning, smarting, stinging pain. In from two to six days the spots became livid; the swelling, heat and pain subside; but new spots continue to appear; slight general swelling of the limbs; little febrile excitement. (*New Materia Medica.*)

11. *Induration of the Membrana Tympani.*—This membrane sometimes becomes hard, as if cartilaginous or bony. This state may arise, 1. from inflammation, tumefaction of the glands of the septum, an affection which Bartholin declares very common in persons affected with abdominal dropsy; 2. from venereal disease; 3. from intemperance in drinking; 4. from age.

Symptoms.—Deafness, diminished sensibility of the membrane if it be only hardened; but if it be ossified it becomes insensible to the probe; then there is want of elasticity, and when firmly ossified the membrane emits a sound when struck with the instrument. If the induration proceed from the venereal virus the expansion of the ear is covered with scales easily detached, leaving the organ red; though these scales may arise from predisposition to the tetter. A case was seen in the Hotel Dieu in Lyon who was completely covered with the scales. The nails, hands and feet were hard, thick and of dirty white color; ears red and scabby, and hearing difficult.

Treatment.—Some of these cases have been treated by surgeons with injections, others by puncturing the membrani tympani; others again by injections through the eustachian tube.

1. Perforation of the membrane has succeeded when this septum was cartilaginous or ossified, the rest of the organ remaining healthy. Also in stoppage of the eustachian tube when is is impossible to remove this obstacle by other means at hand. Also when owing to malformation, chronic swelling or polypus of the nostrils.

2. This operation is insufficient when the cavity of the drum is obstructed by matter which is so thick that it cannot pass through the artificial opening.

3. It will be useless when deafness depends on paralysis of the auditory nerve.

4. It will be equally so in cases of deafness which proceeds from catarrhal affections and nervous irritation.

5. When deafness is the consequence of adynamic and ataxic fevers, and the eustachian tube unobstructed, this operation will be ineffectual.

6. This operation, excepting in the first-named cases above, should be rejected from the means of treating deafness.

In these cases, a long-continued course of antipsoric, or anti-venereal remedies, will *always* produce good results.

Induration of the membrani tympani and consequent deafness, often occur in scrofulous subjects who have suffered from syphilitic affections. Such cases are always more or less benefitted by the high potencies of *Mercurius*, *Sulphur*, *Nitric-acid*, *Calcarea-carb.*, *Hepar-sulph.*, *Lycopodium*, and *Kali-hydriod.*

12. Ozœna.—Ulceration of the lining membrane of the nostrils, attended with fœtid discharge, and sometimes followed by destruction of the cartilages, and by caries of the bones of the nose. In some cases there is a large accumulation of thick mucus, or incrustations which sometimes block up entirely the passages of the nose. When not checked, it progresses among the cartilages and bones of the nose, and extends to the cheek, producing frightful deformity. See p. 423.

Causes.—It is generally excited by exposure of the face to cold, but the extreme cases are connected with either a scrofulous or syphilitic discrasia.

Treatment.—Remedies.—Teucrium, Sulphur, Pulsatilla, Bell., Lachesis, Lycopodium, Causticum.

Syphilitic ozœna.—Mercur.-sulphuret, Hepar, Aurum, Nitric-acid, Lycopodium, Lachesis, Conium.

Scrofulous ozœna.—Phosphorus, Silicea, Nitric-acid, Conium.

Arsenicum.—One of the best specifics. Symptoms: pains severe, burning and throbbing.

Lycopodium.—Discharge thick and yellowish.

Pseudo-ozœna from Foreign Bodies in the Nostrils.—Dr. Culbert of Newburgh, N. Y., gives some cases* presenting the following symptoms: "At first there is merely a feeling of stuffiness and obstruction of the nostril. The natural secretion of the nose not escaping freely, sooner or later putrefy, and give rise to an ill odor. This putrid mass, again, acting as a local irritant, causes increased redness and vascularity,—in a few weeks or months, congestion and ulceration of the schneiderian membrane, foul secretions, fœtid smell and the symptoms of constitutional ozœna."

In one case a boy, aged four years and a half, had offensive discharge from the left nostril through which he was unable to breathe. As the family was scrofulous, one member having died of phthisis, and a son suffering from hip-joint disease, this nose affection was considered of similar origin. The lining membrane of the nostril was congested, bleeding when touched, fœtid liquid oozing from it. By bringing a strong light upon the affected spot, a grayish white substance was found, resembling a mass of concreted pus, as large as half a small

* U. States Jour. of Hom., Vol. I. p. 73.

pea. A small string of mucus-coated substance was drawn down with forceps, and was found to be wool from a rose-blanket; following came a tea-spoonful of thick mucus mixed with blood. Washing with tepid soap-suds speedily cured the ozœna.

In another case, a boy of three years had been treated several months for ozœna with Hydriodide of Potash, Sarsaparilla, and local use of Nitrate of Silver. A roll of paper was extracted; castile soap-washings cured the ozœna in a few days.

A third child, aged four years, had been treated with Arsenicum 30°, 60° and 100° without effect. After a putrid pumpkin-seed had been blown from the nostril, the child got well without treatment.

A fourth case was supposed for several weeks to be one of worms; showed itching of the nose, pain at its root, headache; face swollen; eyes red, sensitive to light. Injecting the nostril with water excited sneezing; a grain of wheat was then extracted with a forceps. It had lain so long in the upper part of the nostril that it had germinated, "having a root and blade attached; it was one and a quarter inches long."

13. Swelling and Inflammation of the External Nose.—*Treatment.*—When caused by a blow, contusion, or fall, *Arnica* is the best remedy. Calendula is also useful. If caused by abuse of Mercury, give *Azarum*, *Aur.*, *Bell.*, *Hepar*, or *Sulph.* Redness of the nose, caused by intemperate drinking: *Arsen.*, *Calc.*, *Puls.*, *Sulph.* Redness in scrofulous patients: *Iodide*, *Merc.*, *Sulph.*, *Phos.*, *Calc.* Copper-redness: *Arsen.*, *Cupr.*

II. INFLAMMATION OF ORGANS AND TISSUES CONNECTED WITH THE DIGESTIVE SYSTEM.

1. GLOSSITIS.—INFLAMMATION OF THE TONGUE.

Glossitis.—Inflammation of the Tongue.—Inflammation of the tongue is by no means a common affection, but cases now and then occur in which this organ is so enormously inflamed and swollen, as to place the sufferer in imminent danger of suffocation. It may arise spontaneously, with but few and slight premonitory symptoms of its approach, or it may proceed from derangements of the stomach, sudden changes of temperature, and the application of irritating or poisonous substances. Generally it runs its course rapidly, and if not met by prompt and efficient measures, will so fill the mouth and throat as to suspend respiration.

Diagnosis.—Previous to the pain and swelling of the tongue, the patient is affected with slight chills, loss of appetite, lassitude, indications of disordered stomach, dull pains in the head and back, succeeded by throbbing and aching pains in the tongue, heat of the skin, and rapid pulse. The tongue now commences swelling, and often pro-

gresses, if the inflammation is not arrested, to an alarming extent. It is usually red and dry, but in some instances continues moist through all the disease.

Causes.—Derangements of the stomach, exposure to strong currents of air, mercurial salivation, small-pox, the application of irritating substances, stings of insects, certain poisons.

Treatment.—The physician is sometimes summoned to cases of this description, where the danger of suffocation is so threatening, as hardly to render it prudent to await the operation of remedies. In these instances free and deep incisions should be made into tho substance of the tongue in a parallel direction, which will afford prompt temporary relief, and thus allow us time for the action of our specific remedies.

The remedies which will apply specifically in these cases are, *Mercurius*, *Belladonna*, *Plumbum*, *Aurum*, *Hepar*, *Calendula*, *Arnica*, *Nitric-acid*, *Kali-hyd.*

Mercurius-sol.—Expression of countenance anxious and terrified; tongue inflamed, swollen, red, dry or moist; respiration exceedingly difficult; pulse rapid and full; constant inclination to keep an upright position; skin hot and dry.

Febrile Symptoms.—Heat; thirst; pains in the head, back and limbs; throbbing, stinging, or aching pains in the tongue; mouth and throat filled with the swollen organ, giving rise to a dreadful sense of suffocation; symptoms somewhat aggravated during the night; rapid sinking of strength; respiration rather better in the air, and on gentle motion; deglutition partially or entirely suspended.

Excessive anguish, apprehension, and constant and insurmountable dread of immediate suffocation.

Administration.—Divide two grains of the third trituration into six equal parts,—one powder, dry upon the tongue every half hour in urgent cases until there is relief, or a medicinal aggravation. In less severe cases the medicine may be given once in two, four or six hours, according to the symptoms.

Marcus gives (Magazin ii.) a case of inflammatory swelling of the tongue and of the pharynx, which he cured with Mercury. The daily experience of all old school physicians, at least, proves that Mercury has a specific tendency to produce *inflammation and tumefaction of the internal parts of the mouth*; even when applied on the skin it produces these same effects.

Belladonna.—Face red; eyes bloodshot, or suffused; tongue inflamed, red, dry and swollen; violent pulsations of the carotid and temporal arteries; pulse rapid and bounding.

Congestion of the blood to the head; throbbing pain in the head; eyes sensitive to the light; skin hot and dry; thirst; throbbing, darting or drawing pains in the tongue; difficult and anxious respiration;

deglutition extremely difficult or entirely suspended; sense of suffocation.

Great agitation; fear of death; anxious and depressed.

ADMINISTRATION.—A drop of the third dilution on two grains of *sugar of milk*; divide into four equal parts, and exhibit one dry upon the tongue once in one, two or three hours, as the urgency of the case may demand.

Plumbum.—Plumbum is appropriate in cases of chronic swelling of the tongue, with numbness and *partial paralysis.* Convulsive tremors and general muscular debility are other indications for the employment of this remedy.

In cases of glossitis proceeding from the abuse of Mercury, recourse may be had to *Aurum-muriaticum*, *Kali-hyd.*, *Nitric-acid*, and *Hepar-sulph.* If the inflammation be owing to a wound or injury, Arnica is the proper remedy.

HERPETIC GLOSSITIS.—*Diagnosis.* Redness of the mucous membrane and development of the papillæ, or exfoliation of the epidermis thelium; at a later period, partial induration, fissures, ulcerations and transformations of the epidermic tissue, smarting, shooting pains caused by contact of food and drink, while the sensation of dryness is permanent. There is generally also *a dyspeptic state, either with or without hæmorrhoids; and the glossitis follows in a remarkable manner the modifications which this general herpetic state undergoes.* When the disease becomes well established, the fissures show indurated edges, become deep and are often taken for a syphilitic affection, even for cancer. It is often treated by cauterizations which may cicatrize the fissure; but it soon breaks again, and every cauterization increases the inflammation or induration. Dr. Escallier (*L'Art Medical.* 1861.) gives the case of a native of Yucatan, in whom the disease commenced in 1846. He had sought a cure in Mexico, and by a voyage to Europe; had been five times cauterized and found himself worse after each trial; he had been treated with Mercury, and longer by Iodide of Potassium. He was at last subjected to homœopathic treatment. He took Sulphur 10° in water, Nov. 2. There was gradual improvement. Nov. 4, Staphysagria 6°, was directed; on the 22d the digestion and action of the bowels had been good; the tongue moved easily and was nearly healed. He continued under treatment till the summer of next year; and during this time took Staphysagria 12°, Sulphur 30°. Borax for Aphthæ, Orpiment and Sulphur 12°, &c. Finally returned to Yucatan quite well.

APHTHA.—THRUSH.—MUGUET.—STOMACACE.

Aphtha in adults occurs most frequently in the course of other diseases, and then it indicates *debility*, imperfect digestion and mal-

nutrition. The worst cases are those called *stomatitis materna* in nursing females and those of infantile aphtha in children at the period of lactation. We shall treat of them separately.

1. Aphtha Infantilis.—This disease appears in small white ulcers upon the tongue, gums, and around the mouth and palate, resembling small particles of curdled milk. When the disease is mild, it is confined to these parts; but when it is violent and of long standing, it generally extends through the whole course of the alimentary canal, at least in the œsophagus, so far as is supplied by reflected epidermis. We have here in the mouth and upon the tongue the white, creamy, circular spots, which are scattered but tend to coalesce at their margins. These spots form little islands of a matter which at first is very white, and not easily destroyed or removed. The islands consist of a species of small grains which are distinct and opaque, having nothing resembling vesicles filled with liquid. On the inner surface of the cheeks these productions bear a close resemblance to milk-curds arranged in clots. Among patients having a continuous coating of thrush,—the exudation having become yellowish or brownish in consequence of matters vomited, of blood effused, or of medicines taken, the pellicles are less resisting, easily broken and their adherence to the mucous membrane is delicate. The deposit is smooth, and in consequence of its not involving the deeper layer of epithelium, is not accompanied by ulceration.

The salivation is not extremely abundant. It is known, that in some cases of children the milk is quickly acidulated in the mouth. In mild cases of muguet, the saliva becomes diminished by the acidity of the buccal mucus, as is proved by the reddening of litmus paper when it is brought into contact with the mucous membrane.

The disease in severe cases is attended by drowsiness, sickness, feverishness, severe purgings, flatulencies and other disagreeable symptoms, the surface remains brown or bluish after the loosening and separation of the crusts; the local affection runs into a bad kind of gangrenous ulceration; the discharges from the bowels contain slime and shreds.

Aphtha sometimes appears as a chronic disease in warm, moist and malarious climates. It begins with evident derangement of the stomach, acidity and uneasy feeling or burning in the stomach, increasing gradually in violence. After some time, small pimples of the size of a pin's head appear on the tip and edges of the tongue; these soon spread over the whole inside of the mouth, causing tenderness and rawness, till the patient can not take any solid food; acid and stimulating drinks cause pungent burning pain. There is little febrile heat; but the skin is dry, the countenance pale, the pulse is small, the extremities cold.

In debilitated children improperly nourished the aphthous ulcerations become gangrenous; the edges shrink, become flabby and ragged; a brownish slough forms in the centre; and on coming off, a granulated

surface of vermillion color remains; the ulcers become covered with a brown, creamy fluid, which exhales a gangrenous odor; the parts around the ulcers become tumid, soft, and of a violet hue. The saliva becomes fœtid, ropy, flowing from the half open mouth. Countenance pale and puffy; the pulse feeble; surface of the body pallid, deficient in sensibility. The vomiting and diarrhœa become profuse, exhausting; abdomen tympanitic; hiccough and eructations precede complete exhaustion and death.

Pathology.—When a portion of the pseudo-membranous layer that spreads over the inside of the mouth, fauces and œsophagus is minutely examined, the following appearances are seen by aid of the microscope: The substance is composed entirely of a collection of cryptogamic plants. M. Gruby says, the roots are cylindrical in form, transparent, and about $\frac{1}{480}$th part of a millimetre in diameter, and implanted in the cellules of the epithelium. During their development, projections from these roots penetrate the entire series of cellules of which the epithelium is composed, to arrive at the free surface of the mucous membrane.

These parasitic plants have some resemblance to the cryptogamic plant called the sporotrichium. They are fragile, easily detached by the movements of the tongue and lips; and, by mixing with the food, they are carried downward; and thus they become transplanted to other portions of the lining membrane of the œsophagus, and in some instances to the lower intestines. Children in whom this extension of the disease takes place to any great extent, fall into a state of marasmus, and soon die. (See *Drs. Gruby, Berg, Oesterlein and Condie.*)

2. Mercurial Stomatitis.—In this form of aphtha, which is only a result of mercurial poisoning, the salivation appears in advance of the membranous formations. This salivation differs entirely from that which accompanies other pseudo-membranous affections.

The appearance of the false membranes of *mercurial stomatitis* is that of grayish concretions which are not very adherent, and which are frequently covered by ulcerations. They have been observed upon the tongue and upon the cheeks, with elevations which correspond to the intervals between the teeth, and which are frequently more reddened than the remaining mucous membrane, of which the tint is grayish or ash-colored.

3. Ulcero-membranous Stomatitis.—The appearance here is altogether different from the last. In such cases there is always some ulceration beneath a soft and yellowish cast. This cast is sometimes strongly adherent in its middle portion. The ulceration is frequently covered by a simple whitish exudation, or by sanious pus. The edges are swollen, the base ecchymosed, and sometimes of a brownish color. The submaxillary glands are engorged. When the ulceration is located upon the dental borders we find the alveoli occupied by a chalky pulp;

the gums are raised, fungous, of a reddish or violet red hue. (*Laboulbene* on Pseudo-membranes.)

4. Chronic Exanthematous Eruptions of the Intestinal Canal. *Symptoms.*—General indefinable debility and emaciation; a condition often of broken and impaired health without any very appreciable cause; the muscular system easily fatigued and exhausted; sometimes so much palpitation as to lead to the idea of heart-disease; the circulation weak, as shown by the coldness of the extremities, diminution of nervous power, irritability, &c. Direct evidence of the presence of and tendency to mucous eruptions in such subjects, can generally be obtained by carefully examining the state of the mucous membrane within sight. Spots of eruption and sometimes ulcerations left by them, will frequently be detected on the inside of the lips and cheeks and on the gums and tongue. The tongue, with the mucous membrane lining the cheeks, is not unfrequently so swollen as to be marked and indented by the impression of the teeth. Sometimes when thus enlarged, the tongue is whiter than usual; but in other cases we see it red and irritable, and one or more distinct and broad patches of eruption are seen upon its surface. (*Dr. Simpson of Edinburgh.*)

Acute exanthematous inflammations generally form a "complementary addition to eruptions on the general integument;"* sometimes they are "vicarious with the crisis of an exanthema upon the skin, which from various influences of which we are ignorant, is insufficiently developed;" sometimes they constitute a specific eruption, arising from a special relation between the general disease and a particular tract of mucous membrane. The two first of these varieties appear on the mucous membrane, where it joins the original seat of the disease, as in the mouth, pharynx, tracheal passages, conjunctiva, or urethra. The last kind is confined to particular parts of the mucous system, as the ileum in typhus, or the colon in dysentery."† Chronic exanthematous affections have as yet been little studied.

5. STOMATITIS MATERNA.—NURSING SORE THROAT.

General Symptoms.—*Anæmia* is seldom wanting in well-marked cases. The complexion is less waxy and clear than in chlorosis, with more of the sallow and cadaverous shade than is seen in other diseases. The tint is peculiar, and is recognized at first sight. It is dependent on the anæmia, and in common with the other symptoms is attributed to local irritation and suffering superadded to a cachexia which is in some cases related to scrofula, in others to scorbutus.

The Diagnosis generally turns on the general condition of the pa-

* Dr. Helmuth. U. States Jour. Hom. Vol. I., p. 407.

† Rokitansky, Path. Anat. Vol. III. p. 55.

tient. The disease presents the peculiar characteristic local symptoms and is found in subjects who are either *enciente*, or in some one of the stages of recovery from the puerpural state. The aphthæ of advanced phthisis, with which it is often confounded, is a different and much more fatal disease.

TREATMENT OF STOMATITIS.—*Arsenicum-album.*—Stomatitis occurring in malarious districts, most of whom have been injured by Quinine; or where the water is more or less stagnant, and impregnated with the common causes of malarious fever. There is a depraved condition of the system analogous to typhus; the local eruption is *vesicular* in character; there is dryness and inflammation of the buccal mucous surfaces. The edges of the tongue are ulcerated; aphthæ, violent burning pains; swollen and readily bleeding gums, looseness of the teeth; debility; sinking.

Calcarea-carbonica.—Dr. Ludlam gives the following indications: In cases where disorders of digestion, in pregnant or lying-in women are due to a stomatitis which may be either latent, or may have already so far localized itself that its real nature may be known; the constitution of the patient is scrofulous or consumptive; there is inveterate diarrhœa, not relieved by other remedies. There is "great dryness of the mouth and tongue, with a sense of roughness and stinging; a dry, bitter, sour, or metallic taste in the mouth; great aversion to boiled food, and to meats in particular; inclination to salt diet, or to eat such forbidden articles, as pickles, dirt, chalk, slate-pencils, &c., strong and unconquerable desire to sleep after dinner or tea; nausea, with acid eructations; vomiting of the ingesta; profuse colliquative diarrhœa, the stools being sometimes quite undigested; faintness, with swooning, after stool or exercise; a sudden metastasis of the eruption from the mouth to the alimentary mucous membrane; acidity of the urine, with burning of the urethra, &c. The third decimal trituration, repeated thrice daily. (*Amer. Hom. Review.* 1860. p. 252.)

Mercurius.—Red, spongy, receding, ulcerated gums, with burning pains at night, soreness when touched; loose teeth, inflamed, sore, ulcerated tongue and mouth, covered with aphthæ; fœtid cadaverous smell of the mouth and ulcers; saliva profuse, fœtid, bloody; ulceration of the stenonian duct; tongue swollen, stiff, hard, or moist and covered with white mucous; face pale, chills; burning diarrhœic stools.

The eruption on the mucous membrane assumes the form of ulcers, more or less corroding and destructive of the tissues, and there is profuse secretion of saliva. When the corroding tendency is manifest and the breath has an offensive putrefactive odor it is recommended to alternate the Mercurius-vivus once in four hours.

Natrum-mur.—Swollen gums, readily bleeding; sensitiveness to cold or hot substances, ulcers and blisters in the mouth, on the tongue

and gums, with burning pain and impeded speech; ptyalism, rigidity of tongue.

Nitric-acid.—Bleeding; white swollen gums; loose teeth; sore mouth with stinging pains; fœtid smell of the mouth; ptyalism.

Muriat.-acid.—This is one of the best constitutional remedies; i is recommended where it is believed that the disease has a *parasitica* character.

Nux-vomica.—In incipient cases first manifested "through perverse disorders of the nutritive system; suspend it when the eruption appears in the mouth, especially after diarrhœic symptoms begin.

Sulphuric-acid.—Aphthæ in the mouth; swollen, ulcerated and readily bleeding gums; profuse ptyalism.

Sulphur.—Gums bleeding and receding from the teeth, with throbbing pains; blisters and aphthæ in the mouth and on the tongue, with burning and soreness when eating; fœtid and sour smell of the mouth; ptyalism, or bloody saliva; tongue thickly coated, whitish or brownish; slimy, greenish stools, with tenesmus; rash; restlessness at night.

Veronica-baccaburga.—Dr. Prentice of Freeport, Ill., says, he has used this plant in the first decimal trituration with great success for years; also applying it as a local wash.

Local Treatment. Dr. Curran, of Hannibal, Missouri, recommends the Oleum-juglandis (Butternut-oil). All local treatment will fail except when associated with appropriate constitutional remedies.

Frasera-carolinensis.—Dr. Murch directs a gargle of an infusion of this plant for the mouth, also for the nipple when very sore and surrounded with vesicles. *Hydrastis* is a still better remedy.

For further remedies see page 248. Also Scurvy.—*Index.*

Diet.—This must be that which is best calculated to promote the general health, allowing for all peculiarities of condition and idiosyncracies of the patient. It must be as *nutritious* as *can be digested and assimilated.*

It may include, beef-tea, oyster-soup, good, dry, mealy potatoes also.

Vegetable acids, as baked apples, oranges, or weak lemonade. Many of the cases which have baffled allopathic skill and are not promptly cured by homœopathists, are scorbutic in their character and can not be cured without these grateful acids.

4. PAROTITIS.—MUMPS.

This affection is classed by writers as an epidemic. It more commonly attacks children, than adults, and generally makes its appearance during cold and damp seasons. Its cause is a specific morbific contagion, which may be generated during certain peculiar conditions of the atmosphere, or it may be communicated from the bodies of those having the disorder.

Diagnosis.—Slight febrile disturbance, followed by swelling and pain in one or both parotid glands. Under favorable circumstances the local affection continues to progress until the end of the fourth day, at which time the inflammation and swelling have reached their height, then tumefaction and pain gradually subside, until at the end of about seven or eight days from the commencement, all traces of the complaint have departed. As soon as the inflammation has fairly declared itself in the glands, the patient experiences much difficulty and pain in moving his jaws, masticating, or even the sight of savory food, especially acids.

It is highly important during its progress, that there be no exposure on the part of the patient, either to cold or dampness, nor from any undue mental or physical excitement. In this manner we may guard against those troublesome metastases to the brain, mammæ and testes, which sometimes supervene from improper exposure, external applications, &c.

The pain of the swollen part is of a tensive character, combined with pressure, rendering both chewing and swallowing difficult. When the disease affects one side only, the face appears drawn to one side. Often the cellular tissue and the skin overlying the gland are inflamed, and then the patient seems to have erysipelas.

Sympathetic swellings often affect only one testicle, and then it has been noticed only on the side opposite to the seat of the mumps. The scrotum over the testicle is more or less swollen and red. Sometimes after the disappearance of the mumps a metastatic inflammation of the testicle is developed, when there is shooting or bruised pain in it.

In mumps there is generally fever, a full tense pulse and great heat; head hot, aching hot feeling of the head; shooting hard pain in the affected parotid; redness of the face, in some cases of the conjunctiva; photophobia and flow of acrid tears; thirst; constipation.

A severe epidemic of cynanche parotidea catarrhalis is described by Dr. Baertl. (*Brit. Jour. Homœop.* 1861.) The disease was preceded by feelings of general illness; ill-humor; prostration of strength, disturbed restless sleep, want of appetite, shivering, alternating with heat; headache, extending to the neck; coryza and uneasiness. A few days afterwards the region in front and beneath the ear became swollen and hard, generally also red and painful; sometimes nearly the whole neck swelled also, and the sub-maxillary glands and tonsils were affected.

The fever in some epidemics affects the chest, when there is cough with but little expectoration of mucus; heat and aching of the chest; there is also sleepiness; restless sleep at night, starting on falling asleep, and horrible dreams. In these severe cases the patients are prostrated and depressed at the commencement of the disease.

Duration of the disease: about one week, at most fourteen days.

Causes contributing to its Development.—Atmospheric influences. Suppression of the perspiration, a catarrhal predisposition.

Termination of the disease, usually in resolution on the third or fourth day by a general warm perspiration. The sleep becomes more tranquil, the fever declines, the swelling subsides, and other morbid symptoms disappear.

Treatment.—But little medicinal treatment is required in this malady, provided the precautions just alluded to are heeded; a few doses of the sixth dilution of *Mercurius-sol.* being all that is necessary to conduct the patient happily through the attack.

Sometimes, however, coma and other alarming symptoms of cerebral disorder, suddenly appear from metastasis of the disease to the brain, which require the prompt administration of *Belladonna*, *Opium*, or other cerebral specifics. More commonly, however, the metastasis occurs to the mammæ or testes, causing inflammation, swelling, induration, and occasionally suppuration in these glands. The remedies in these cases are *Mercur.-sol.*, *Bell.*, *Nux.*, *Puls.*, and *Acon.* See the particular indications for these medicines under "*Inflammation of the Mammæ and Testes.*"

In severe cases, keep the patient in bed, covering him with a moderate supply of clothing; regulate the food and drinks.

The external swelling may be covered with dry flannel; the swollen scrotum should be placed in an elevated position and covered with dry cloths and supported by a suspensory bandage.

Belladonna.—In the epidemic described by Dr. Baertl, it proved a specific, effecting rapid amendment and cure. It was generally given in the third dilution, a few drops in several ounces of distilled water, a table-spoonful every three hours. On the decline of the disease the intervals are lengthened.

Mercurius-solubilis.—Used with success when the inflammation is not highly marked. It should be given as high as the third trituration, and in the milder cases, when it will be effectual if given only once per day.

Calcarea-carbonica.—In cases in which the course of the disease is slow, and almost without fever.

Mercurial Parotitis.—This form of parotitis never exists as a primary affection, but follows other diseases in which Mercury has been used. When the original malady has arrived at that stage in which it seems entirely subdued, and the patient is lingering between disease and convalescence, he suddenly complains of a pain and swelling beneath and in front of the ear. The affected spot soon shows a throbbing tumor, which is extremely tender to pressure by the finger or the pillow; and it increases, becoming painful, lancinating on every motion of the jaw, spreading anteriorly with great rapidity. In a few hours,

the whole side of the head becomes involved; the eyelids, lower jaw, side of the neck, the cellular tissue of the neighboring parts, the periosteum, muscles and parenchyma of the glands, are all included in one mass of inflamed tissues rapidly advancing towards suppuration. The skin over the tumor is red, smooth, tense and glossy; when felt by the hand, it emits a peculiar burning heat, and the hand feels as if pricked by needles. The surface resembles an inflamed spleen, covered with serous membrane.

As the disease advances, the pain becomes more intense, burning, and lancinating. Swallowing is now exceedingly painful. The countenance is flushed and livid, and suffocation begins to be threatened. When the intumescence has reached its height, the pain subsides. The head has now a feeling of dull heaviness; the tumor becomes livid; there is deafness of the ear of the affected side, low muttering delirium, with other symptoms of cerebral oppression and deep nervous prostration. The tumor at this period begins to present evidences of suppuration; it becomes soft and fluctuating; the abscess soon bursts spontaneously, and discharges generally in small quantities a sero-purulent matter, from a surface which is beginning to assume a gangrenous appearance. But the discharge is not followed by the slightest improvement; the parotid gland continues hard and firm; the cellular tissue begins to slough off in flakes and masses resembling wet tow; the pulse, which in the beginning of the disease was hard, quick and contracted, becomes now small, weak, and about one hundred and fifty per minute; the cerebral excitement continues to increase till the patient sinks from exhaustion, or, if the abscess makes its spontaneous opening inwardly he suddenly dies from strangulation. The disease usually runs its course in four or five days; it never occurs during the progress of active ptyalism, but follows a sudden subsidence of the ordinary form of mercurial action, or supersedes it in peculiar constitutions. This is only one of the many disastrous results that have often followed the use of Mercury even in small doses. The physician whose prescription has caused one such result, as the disease above described, has suspended his patient's life and his own reputation against the mere dust of the apothecary's scales, and is astonished to find that he has lost them both.

Parotid Gland, Induration of.—*Case of Baron Kaczkowsky, of Vienna.**—The baron says he took cold in 1840, from exposure while performing a difficult surgical operation, which induced a rheumatic attack. He was treated with various drastic remedies, cataplasms of mustard, Russian steam-baths, &c. The swelling of the joints subsided, but the parts remained very sensitive to changes of temperature,

* Monthly Magazine of the Homœopathists of Austria.

with evident proneness to rheumatic pains and disposition to inflammation of the throat. This ultimated in hypertrophy of the tonsils, which were at length removed by excision. The throat disease terminated in "an inflammation and swelling of the glands beneath the right ear. In spite of the remedies employed it became indurated and enlarged to the size of a man's fist, extending to the clavicle and causing violent pain upon turning the neck." After the whole medical and surgical therapeutics had been exhausted, and the baron in the course of six years had undergone every variety of treatment without even the slightest relief, the swelling was larger than ever. In April, 1851, he was induced to try homœopathic remedies. He took every morning one drop of Belladonna of the sixth dynamization, alternated every second day by one grain of Hepar sulphur in the evening, of the same potency. In two days striking improvement was manifested in the indurated swelling of the gland, and the homogenous, hard mass began to disperse into separate smaller and painless knots; and in like proportions the motions of the neck became easier. Before the end of July the swelling as well as the pain and stiffness of the neck had entirely disappeared. Certain hæmorrhoidal complaints that had troubled him for a long time had also totally ceased.

TONSILITIS.—QUINSY.

Diagnosis.—Febrile symptoms, succeeded in a few hours by soreness of the throat, painful deglutition, swelling, and smooth, shining scarlet redness of the tonsils, uvula and soft palate. As the tonsils continue to enlarge, deglutition and respiration become more difficult, the voice is changed, the pains increase in severity, extending often through the eustachian tubes into the ears, the tongue becomes covered with a thick yellow fur; there is an abundance of viscid saliva on the tongue and tonsils; the breath acquires an exceedingly offensive odor, which, according to Mackintosh, proceeds from sebaceous matter escaping from the mucous follicles.

The disease may terminate in resolution, suppuration, or in permanent induration. When the appropriate remedies are administered at the commencement, the inflammation usually resolves itself without suppuration. If no medicines are given, or those only which are inappropriate, the disorder usually progresses until suppuration ensues, when an artificial opening is made, or the tonsil bursts spontaneously, and the swelling and inflammation gradually subside.

Not unfrequently the tonsils become affected with chronic enlargements and indurations, from frequent and partially subdued acute attacks, which prove exceedingly troublesome by their proneness to take an acute inflammation for the slightest exciting causes.

There is often reason to suppose that chronic enlargements of the tonsils often lead to cough and expectoration of purulent matter, which are confounded with and erroneously attributed to chronic bron chitis, &c.

CAUSES.—The predisposing causes are: Inherited scrofulous dis crasia, irritability, chronic enlargement of the tonsils from mercurial salivations, and derangements of the stomach and bowels. The common exciting causes are, cold, atmospheric viscissitudes, wet feet, and the common causes of fever or inflammation.

TREATMENT.—The best remedies for tonsilitis are: *Belladonna*, *Mercurius*, *Aconite*, *Baryta-carb.*, *Nux*, *Pulsatilla*, *Hepar-sulph.* and *Kali-bichrom.*

Belladonna.—Cheeks flushed; violent pulsations of the carotids; enlargement of tonsils perceptible on the outside of the throat; tonsils, uvula and soft palate, inflamed, dark, red and swollen; tongue dry, or covered with a thick, transparent and tenacious mucous; skin hot; pulse full, hard and frequent; voice hoarse, stifled or suppressed.

Headache; burning and shooting pains in the throat, when swallowing; constant inclination to swallow; choking sensation; tonsils painful to the touch; putrid or bitter taste; thirst; eyes sensitive to the light; stitches extending into the ears; deafness from obstruction of the orifice of the eustachian tube; burning fever.

Uneasiness and dejection; worse at night, and occasionally delirium

ADMINISTRATION.—Two drops of the third dilution to two grains of *sugar of milk.* Divide into six parts and exhibit one dry, once in two to four hours, as long as possible.

Mercurius.—Offensive, putrid odor from the mouth; tongue covered with a thick, yellow fur; mouth dry or filled with viscid saliva; uvula elongated and red; tonsils and soft palate dark red, inflamed and enlarged; roots of the tongue red and swollen; ulcers in the mouth and throat; enlargement of the parotid or sub-maxillary glands; pulse frequent and moderately full.

Heat, alternating with chills; frequent profuse sweats; stinging and shooting pain in the throat, particularly when swallowing; very great difficulty in swallowing; although frequent inclination; glands of the neck painful on motion of the jaws, at sight of savory food, or on swallowing; the pains and difficulty of deglutition worse at night; pains darting through the eustachian tube to the ears and parotid glands; loss of appetite and disgust for food; putrid or coppery taste; thirst for cold drinks; symptoms migitated during repose in bed.

Morose; dejected; uneasy; out of humor.

ADMINISTRATION.—Divide four grains of the third trituration into six powders,—give one dry, upon the tongue, once in four to six hours until an impression is apparent.

Aconite is a suitable remedy in cases of tonsilitis attended with a high grade of arterial reaction, painful deglutition, bright redness of the fauces, uvula and tonsils, with pricking or burning pains when swallowing.

ADMINISTRATION.—A drop of the third dilution to two grains of sugar of milk. Divide into four parts, and give one dry, once in two hours until the symptoms abate.

Baryta-carbonica may be given in cases of catarrhal tonsilitis, where there is suppuration of the tonsils, swollen and elongated uvula, raw, scraping or shooting pain on swallowing, obstruction, as if by a plug in the throat, bad taste, offensive breath, especially in the morning, and discharge of sebaceous matter from the follicles of the throat.

ADMINISTRATION.—The same as *Aconite*.

Nux-vomica.—When derangement of the stomach appears to be the prime predisposing cause of the complaint, and when the symptoms of the acute attack are, scraping pains during deglutition, or when inhaling cold air, obstruction from the enlarged tonsils, choking and spasmodic contractions of the throat when swallowing, Nux-vomica is the specific remedy indicated. It may be given at the third dilution, by means of sugar, like *Aconite*.

Pulsatilla will apply in cases arising from a chill by being wet, wet feet, &c. The signs for this remedy are, burning, scraping, smarting or shooting pains in the throat when swallowing; deglutition obstructed by viscid mucus which adheres to the tonsils and fauces; pains worse in the afternoon and evening; bitter or saltish taste in the mouth, loss of appetite; unnatural taste of food; tongue furred with a thick yellow coat, and breath offensive.

ADMINISTRATION.—A drop of the third dilution on sugar. Divide into four parts, and let one be given dry, once in four hours until the desired effect is produced.

Hepar-sulphur has been much employed in those habitual cases of inflammation and suppuration of the tonsils which appear to owe their origin to a scrofulous dyscrasia. This medicine occasionally arrests the disease and prevents suppuration, after *Belladonna*, *Mercurius* and *Aconite* have entirely failed to produce an impression. It may be given in grain doses, at the third trituration, once in two hours.

5. ANGINA MALIGNA.—PUTRID SORE THROAT.

See *Scarlatina Maligna*, p. 592.

6. PHARYNGITIS.—INFLAMMATION OF THE PHARYNX.

The pharynx, the muscular funnel-shaped bag at the back part of the mouth which terminates in the œsophagus, is liable to inflammation from cold as well as from other causes.

TREATMENT.—*Aconite.*—Simple and uncomplicated inflammation or "sore throat." Other remedies are: Bell., Canth., Lach., Merc.

Inflammation with spasmodic constriction of the fauces: Bell., Hyos., Lachesis, Stram., Veratr.-alb., Arsen., Coccul., Ignatia, Laur.-cer., Lycop., Nux-vom., Opium.

Sensation of a foreign body in the throat:—Arsen., Ign., Merc., Nux-vom., Puls., Bell., Lach., Sulph., Lobelia.

Inflammation of the Velum palati: Ac., Coff., Merc., Cinnabar, Nux.-vomica.

Inflammation of the uvula: Bell., Coff., Cinnabar, Nux-vom., Calc., Senega, Sulph., Sanguinaria.

Tartar-emetic.—Pharynx and œsophagus violently inflamed; sore throat; disagreeable sensation about the palate; pustules covering the mucous membrane of the pharynx and œsophagus; Dysphagia, with difficult breathing; palate bright red, swollen and covered with tenaceous mucus and vesicles; sudden swelling of the cervical glands and tonsils; burning in the same parts. Heat in the throat; difficulty of swallowing and of breathing, in consequence of the swelling of the isthmus of the fauces; great sensitiveness of the œsophagus.

Swelling and redness of the throat, with large secretion of mucous, often present in epidemic catarrhs and influenzas; pustular eruptions in the throat, whether caused by small-pox or other cause; *convulsions* from *tonsilitis;* erysipelatous sore throat; mercurial ulceration of the throat.

7. LARYNGITIS.

Laryngitis is an inflammation of the mucous membrane of the larynx, sometimes extending to the epiglottis. It is regarded as a dangerous disease not so much from the extent or severity of the inflammation which constitutes it as from the situation in which it is developed. Inflammation of the larynx even of small extent is always alarming; it is particularly so in young subjects in whom the formation of the so-called false membrane takes place. The reason for the deposition of this plastic exudation in children only is not well known. Dr. Williams says: "that the inflammation involves the sub-mucous areolar tissue, which is very abundant during youth; and that the natural product of the phlegmonous inflammation transudes readily through the thin delicate mucous membrane proper to that age." In the case of the adult, the infiltration consequent upon inflammation pushes or swells out the mucous membrane, too thick already to admit of serous transudation, and terminates in that frightfully fatal disorder, œdema glottitis. On the other hand the same inflammation produces precisely the same result with respect to the lymphatic vessels, so numerous in this region, namely the secretion of lymph in ab-

normal quantities; but the tenuity of the mucous membrane in the young allows the lymph to ooze through, and coming in contact with the atmospheric air, to coagulate, and with the fibrin of the blood to form the so-called false membrane. It will be seen that the pathological process is the same in both, only that in the one the mucous membrane is infiltrated—that is œdematous; and in the other, the mucous tissue permits the complete transudation of the lymph and the consequent formation of an adventitious membrane on its surface.

"The explanation, therefore, would seem to be anatomical rather than physiological. That atmospheric air is necessary to the formation of this false membrane will be readily admitted when the history and nature of plastic lymph is understood. The lymphatic glands and vessels are essentially skin organs, and no where exist so abundantly as beneath the mucous tissue of the respiratory organs. Very few are found in the brain, while the pleura is completely "gridironed" with them. The fibrin of the lymph possesses the peculiarity that, under ordinary circumstances, it does not coagulate within the lymphatic vessels either before or after death; while blood itself clots in many cases, during life, but always after death; so that "of all fluids of the body, the blood alone possesses inherently the quality of coagulation." Coagulated lymph is never found *in the lymphatic vessels* either before or after death, "but that coagulation commences as soon as the lymph is brought into contact with the open air." It has then been supposed that the lymph proper contains no finished fibrin, but that it becomes complete, either from contact with the atmospheric air, or under abnormal relations, through the importation of altered morbid matter.

DIAGNOSIS.

Croup, or *Tracheitis.*	*Laryngitis.*
Croup seldom occurs in adult life.	Is common in adults.
No pain in swallowing.	There is pain on swallowing.
The croupy symptoms set in suddenly, or after a slight cold; no pain on swallowing; no swelling of the epiglottis or throat.	The croupy symptoms have supervened upon an attack of scarlatina, measles, small-pox, tonsillitis or ordinary sore throat.

TREATMENT.—Our principal remedies for laryngitis are: *Aconite, Kali-bichrom., Caust., Spongia, Fluor-ac., Nitr.-ac., Hepar, Iod., Kali-hydriod., Sanguinaria, Calc., Arsen.*

8. CHRONIC LARYNGITIS.

SYMPTOMS.—Complete loss of voice, sibilant cough, and the larynx painful on pressure; expectoration of a thin but a viscid mucus, occasionally pus, painful deglutition, owing to an inflammation of the epiglottis, and emaciation; as the disease progresses it has all the symptoms of phthisis pulmonalis, with which it is frequently connected.

Causes.—Many causes have been assigned for the increasing prevalence of this disease. Clergymen who *read* their discourses are more subject to it than lawyers and political orators; for the reason that reading is a purely mechanical operation, whereas extempore speaking is both mental as well as mechanical. It is, therefore, this mental, this vital nervous influence, which protects the lawyer and stump-speaker, while the lack of it punishes the preacher. The extempore speaker "gives his mind" to his argument, and thus lends the muscles of speech extra and recuperative energy; while the reading clergymen from a colder and calmer sense of *duty*, allows his organs of speech to flag and fail. Chronic laryngitis is the result; for it is only when under a strong earnest desire to say something, from whatever exciting cause, that the vocal chords can be kept faithful to their functions. In mere mechanical reading, there is an absence of that vital energy which affords the power to resist the "wear and tear" of the enunciating organs. The vocal chords were made originally to give the means of expressing our thoughts. They were never intended for reading merely, consequently when we have something to say, the brain lends the requisite amount of nervous energy to protect the vocal chords from injury in discharge of their duties. The lawyer speaks generally from the spirit of the moment; the brain co-operates with the vocal chords in giving expression to his thoughts, and thus saves them from irritation and disease. (*Dr. Ward. U. S. Jour.*, Vol. II., p. 58.)

Pathology.—Œdema glottitis, inflammation of the mucous surfaces, ulceration, ossification, caries and necrosis of the cartilages.

Treatment.—The topical application of *Nitrate of Silver* has long been the principal dependence of physicians. Though this powerful agent has a direct influence in modifying the condition of the mucous membranes, we have better resources in the proper homœopathic remedies. The application of *Iodine* to indolent ulcerations of the larynx, has also been much relied upon.

Internal Remedies.—*Arsenicum*, *Calcarea*, *Sanguinaria*.

Nitric-acid 30°.—In that bad form of throat disease in which inflammation of the mucous membrane ends in laryngeal phthisis. When this fails, Apis 30°; then Fluoric-acid 10°; in the most serious cases the 2000°; in more acute cases 200° in dilution, once in five days.

Tracheotomy.—In the cases in which the inflammation originally in the trachea extends upwards, involving the larynx, the epiglottis and the pharynx successfully, or pass downwards into the ramifications of the bronchia, tracheotomy can not be successful in giving relief. But in those other cases in which the inflammation is confined to the larynx the patient may be saved by tracheotomy. When the trachea alone is affected it should not be tried. Still if there be doubt of the

seat of inflammation the patient should have the benefit of the doubt, as many lives have been saved by tracheotomy. M. Trousseau saved 39 out of 150 cases; others have met with better success. If there be a bare prospect that the patient would recover without an operation the operation does not lessen the chance: besides, as soon as the patient breathes through the tube in the throat, the atmospheric air which has been shown to be the chief agent in the formation of the fibro-plastic membrane, ceases to rush into the lungs through the throat; and thus the formation of the false membrane is arrested. When inflammation has extended to the bronchia and lungs, tracheotomy is worse than useless.

9 DIPHTHERIA.—Laryngitis Exudativa.

In 1818 Brettonneau wrote a description of an epidemic which prevailed at Tours, in France, which he considered as a new disease and designated by the term diphtherite. He believed that the disease came from Egypt and that it first manifests its presence in the nasal mucous membrane. It afterwards became common in other parts of Europe.

After having prevailed for some years in the neighborhood of Boulogne, in France, the disease crossed to England about 1856.

In September, 1858, diphtheria began to be regarded as an epidemic in Albany, N.-Y., between that time and February, 1859, about two hundred and fifty deaths occurred in the city and its immediate vicinity. Dr. Paine estimated that the whole number of persons who were in some degree affected by the epidemic would embrace about one-fourth of the entire population.

It was regarded as an epidemic that had crossed the Atlantic, but nobody pretends to tell on what day it appeared.

In the autumn of 1858 it commenced in Nova Scotia, and was strongly epidemic during the winter.

In the city of New-York the first case of diphtheria was that of an infant, eighteen days old, reported May 3, 1857. But one other case occurred that year; and both of these were probably something else.

In 1858 the number of deaths reported by the physicians of this city was five; in 1859, the number was fifty-three; in 1860, 422; in 1862, 594.

Definition.—Diphtheria or diphtherite, is a word used to signify a specific disease, which should be classed among the zymoses, and is characterized, locally, by the formation of a false membrane upon mucous or abraded cutaneous surfaces.

Varieties.—We recognize but two varieties, the simple and malignant; though diphtheria may become complicated with other diseases. These two grades of the disease are essentially the same in their nature

In this they resemble many other diseases; thus we have cholera morbus resembling in its general features the more dreaded cholera maligna. We have different forms and grades also of scarlatina and many other diseases.

Diphtheria, then, is not a new disease, but a modification of a disease long known; and the two types under which it now appears, differ "in proportion as they are modified by season, climate, epidemic constitution of the atmosphere, and other sources of propagation and development of a specific zymotic cause, as well as in the individual organic susceptibilities of persons who are seized."

"These contingencies make the types convertible," and cases of each may appear in the same house. Some practitioners find nearly all their cases curable and others find many malignant ones. "Or in a family of children, one may have the disease in the more severe, the others in the milder form. In this regard, as well as in the fact that children seized with the diphtheria at a later period of its prevalence do not have it so badly as at first, it resembles scarlatina and other epidemic disorders." (*Clinical Lectures on Diphtheria. Dr. R. Ludlam.* Chicago, 1863. p. 7.)

Nature of the Disease.—It is always *endemic*, sometimes approaching the *epidemic*, but never the contagious character, affecting in all places persons subject to glandular enlargements, or to catarrhal or croupal affections. Nearly all who die with it have such predispositions, and worst in syphilitic and scrofulous subjects. In 1858, says W. H. Eddie, Esq., it appeared at Barton-upon-Humber, and for a few weeks it was connected with scarlatina. After that period, "diphtheria began unequivocally to show itself as a distinct disease; appearing in some who had had scarlatina and were perfectly recovered, and in others who were grown up and remembered having had scarlatina in their childhood."

Diphtheria is a zymotic disease. Its characteristic symptoms are evidently the product of blood poisoning; and its first cause must be sought for in "a specific virus which vitiates and depraves" the blood, and, through it, the structure and function of certain solids.

Dr. Ludlam reaches the following conclusions respecting the nature of the disease:

"1. Diphtheria arises from a specific invisible cause, which in order to produce its legitimate pathological fruits, must first be introduced into the blood.

"2. The means for the introduction of this virus into the blood are two in number, viz. through the respiration and by inoculation.

"3. We can not conceive of an epidemic cause which fails to occasion more or less contamination of the atmosphere. Local circumstances may concentrate such a taint, and thus render susceptible per-

sons in a community more liable to contract the disease from breathing this atmosphere.

"4. In exceptional cases the diphtheria may spread in this manner by a thorough poisoning of the air which is breathed; but as a rule it is much more feebly contagious than either of the eruptive fevers. There is no evidence that it is ever conveyed by *fomites*.

"5. The only known method of successful inoculation is that a portion of the vitiated secretions from either the mucous membranes or the skin of a diphtheritic subject be applied to an absorbent surface.

"6. Both these methods of communicating the disease will fail unless the individual constitution and local habits and surroundings of the subject afford a congenial soil in which the specific cause may develop its specific effects."

"All of these symptoms and sequelæ point to the constitutional character of diphtheria. There is no question but it is a systemic, and not merely a local disorder which owes its essential characteristics to the presence of a species of parasitic growth, whether it be algous or fungous. It is *zymotic* in its origin, its characteristics, and its sequelæ. It is a disease *per se*, and not alone a dyscrasia. Like the typhoid fever, it has its general and its especial lesions, the one systemic and the other local."

Dr. Eade, of the Norwich Hospital (England), says, the specific cause of diphtheria is a depressing poison which acts primarily on the nervous system, as is often shown in the apparently causeless and sudden sinking and death of patients not considered to be in danger; and in other cases of longer duration, in some peculiar forms of paralysis, occurring at some weeks from the date of the first attack of the disease. This paralysis is not due to mere poverty of blood or to the *spanæmia* induced by the preceding disease, but rather to the presence in the system throughout all the stages of the disease of a specific poison whose special affinity is for the nervous tissue. Its action on this tissue is shown in the first instance by a general vital depression, and, subsequently, by a more or less complete suspension of the function of particular nerves or systems of nerves and loss of power of the limbs. (*Lancet*, Oct. 1859. p. 214.)

After reviewing the facts of the question as they are presented by observation and the published opinions of others we conclude:

That diphtheria is a specific disease dependent for its origin on

1. A peculiar *morbific epidemic influence*, which for an unknown period has been recognized in a large portion, at least, of Europe and America, and which so far affects all the inhabitants of large tracts of country at a time, that all common forms of disease are liable to be more or less modification by the prevailing epidemic.

2. A *predisposition to disease* consisting in a psoric, dyscrasic, or

strumous constitution, liability to glandular swellings, catarrhal, cynanchal, or erysipelatous disease.

3. The common exciting causes of disease conspiring with the above conditions in individuals; sudden changes of temperature, exposure to severe cold, or to damp or chilly air long continued; derangement of the digestive organs.

General Symptoms.—In the type, which is the most common in some localities, the patient is suddenly, (generally in the morning,) seized with violent vomiting of a thin yellowish-white matter of a very offensive character; then purging of a fluid of similar appearance and smell. These dejections last for an hour or more, and are followed by great prostration and stupor. The patient lies for many hours in a heavy sleep, is with difficulty aroused, and immediately sleeps again. The skin is hot, pulse 100, though in children perhaps 140 or 160, tongue bright red; great thirst; drink taken with avidity to be instantly returned by vomiting. In other localities the purging does not occur.

The odor of the breath is characteristic and peculiarly offensive, and often it gives the first conclusive evidence of the danger impending, when other symptoms have revealed nothing to alarm. The breath is infected by specific zymotic poison operating on the secretions of the affected parts as well as on the blood generally.

The throat is sore, though it does not feel so; the vigilant physician examines it and finds, in the early stage, the tonsils, soft palate and back of the pharynx, presenting a bright shining appearance; the small vessels are not seen individually injected as in many sore throats; but the part appears as if brightly painted and then varnished. Hanging from the velum to the tongue is seen in this stage a transparent film of a tenacious fluid which bursts before the expired breath and sends its particles over the mouth and the instrument used to depress the tongue. The next moment a similar curtain is formed.

After a period of a few hours (10 to 16) the condition of the patient is changed. The stupor has passed off and delirium takes its place; there is high fever, quick breathing, the voice thick or shrill; short dry cough; children show evidences of coming croup; neck puffy and flushed, tongue coated with white fur; the parts of the throat at first so brilliantly red are thickly coated with a whitish substance in spots, which in a very short period conglomerate and form one thick plastic deposit, which in time may cover the whole palate to the teeth, appearing as if the whole mouth were lined with plaster-of-Paris.

The violent delirium now subsides; the powers of life fail rapidly; horrible sensations of choking and suffocation come on; the sufferer tears at his neck with his nails and tries to tear open his mouth, though

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* Lancet, 1859. p. 306.

retaining full power of swallowing; and greedily takes down any fluid offered him; livid spots on the extremities show purpura; white offensive diarrhœic discharges from the bowels become incessant; there is muttering delirium; and, in a long tetanic convulsion, death closes the scene.

The cases of true diphtheria are not numerous in any locality yet invaded by this disease. It is characterized by the peculiar wash-leather exudation; fœtid discharge from the nostrils; phagedenic ulceration of tongue, gums and fauces, profound general adynamia, often from the very beginning of the disease. Dr. Dake describes it as presenting, in the severer cases, aphthous ulcers on the tongue, palate, tonsils, &c.; "small and rapid pulse, with moisture of the surface, and general debility." In a still higher grade, in which two deaths occurred in seventy-four cases, there were: "white elevated spots on the tonsils, uvula, arches of the palate, or posterior wall of the pharynx, appearing like the mucous membrane, raised, thickened, hardened, and whitened, in patches varying in size from the smallest fish-scale to that of a piece of white kid, sufficient to cover the entire throat and buccal cavity. These patches have a border of deep red, and, when removed, leave a raw, rough, and often bleeding surface. They sometimes form and spread very rapidly. Under successful treatment they loosen, break, and are thrown off in fragments, with a sanious and bloody discharge. The breath is very offensive; the pulse small, and generally rapid, with copious perspiration, and in the later stages, extreme debility."

In sixteen cases, of whom four died, there occurred in addition to the symptoms already given: "Constant cough, provoked by swallowing, and worse when lying; hoarseness and rasping respiration, such as characterize membranous croup." In some cases "the peculiar membrane is visible, covering the epiglottis." In three cases this membrane came away in fragments, leaving a rough and bleeding surface. In but one case it formed a second time on the same spot. "One patch of the membrane thrown off and preserved in Alcohol, is nearly an inch square, of the thickness of the heaviest kid, of spongy texture, and of yellowish white color. The under surface is rough with elevations and depressions corresponding with the granulations of the tonsil whence it came. Upon close examination it appears like the mucous membrane thickened by an intestinal deposit of a white cheesy substance; it must have left the surface of the tonsil, whence it came, completely minus a mucous membrane' (*N. A. Jour. Homœop.* Feb. 1862.)

Dr. Kinch, of New-Jersey, sent to the New-York Pathological Society (Jan. 1862) "a membranous cast of the trachea, bronchii, and larger divisions of the bronchial tubes which had been expectorated in

a fit of coughing by a girl, aged eleven years on the fifteenth day of the disease. The breathing was afterwards easier, but the patient refused to swallow anything, even water, and died after two days.

DIAGNOSIS.—Distinction between

DIPHTHERIA AND CROUP.

1. *Seat of the Disease.*

DIPHTHERIA.	CROUP.
Its primary and essential feature consists in the exudation of an albuminous or coagulable effusion on the mucous surface of the fauces and air passages. This effusion almost always commences on the tonsils and pharynx, extending thence along the nares, velum pendulum palati, and sometimes downward to the larynx, which it seldom passes beyond; but it *may* proceed to the trachea and even along the œsophagus into the stomach. When the false membrane extends into the trachea, the distressing dyspnœa and other symptoms of true croup may be produced. In unusual cases a plastic exudation resembling that of diphtheria has been seen on other parts. In one case it covered the conjunctiva of one eye; in another the surface of a burn upon the arm. Symptoms those of diphtheria.	Genuine croup is almost always seated in the trachea and lower portion of the larynx. It commences there and very rarely presents any appearance of the disease in the pharynx or any part of the fauces. It is always so completely restricted to the region of the glottis that the general febrile disease gives little concern. There is no epigastric uneasiness, vomiting or diarrhœa. Pseudo-membranous croup is a very rare affection, is confined to the larynx and trachea, and is neither malignant nor infectious.

DIPHTHERIA.	CROUP.
It usually selects feeble, lymphatic subjects, with defective vitality, who are surrounded by unfavorable conditions. The inflammation tends from an early stage to assume a gangrenous and putrid character. The accompanying fever is typhoid. The profound adynamia is different from that seen in the latter stages of croup. Under this adynamic fever the vital powers are exhausted. Diphtheria is essentially a zymotic disease. The specific poison is a depressing toxic agent which acts directly on the nervous system.	Croup is essentially a *sthenic* disease, it is highly inflammatory in its nature, generally traceable to exposure, to cold and damp air; it is seldom epidemic and never contagious. The symptomatic fever is inflammatory throughout its course. It has been caused by some known exposure, as sudden suppression of perspiration, wet feet, or a current of cold damp air.

Period of Life.

Common to all ages, but most fatal amongst children and young persons.	Confined to the period of infancy; it generally attacks the robust and well fed.

Character of the Effusion.

Diphtheria.

In very light cases there is no effusion, and when there is its features are not uniform or permanent. Sometimes the matter effused consists of a firm lymph-like *albuminous* deposition, and is the product of an active inflammation of the fauces, as in cynanche pharyngea and tonsillaris; in other cases it is "soft, shreddy, in patches on one or both tonsils, the palate or fauces, resembling sloughy mucous membrane; it is accompanied by all symptoms of typhus fever, as in cynanche maligna, and in some of the worst forms of scarlatina or measles. In such cases the false membrane is formed by a thin pultaceous exudation which is rather mucous than fibrinous. In other cases the deposit consists of a few small patches upon one or both tonsils, the palate or fauces only. In all cases of diphtheria the effusion seems incapable of organization.

Croup.

The false membrane in laryngeal croup is strong, dense, *fibrinous*, often organized; and it often exhibits a well-marked vascular derangement.

Principal Symptoms.

Diphtheria.

When the disease is confined to the upper part of the larynx, as it usually is, we never observe the sharp sibilation of croup; we do not see the spasms with fits of suffocation, but a kind of "ronchus mucosus," in the course of forty-eight hours, with marks of a slow and progressive asphyxia, during which discharge from the nose becomes fœtid.

In no locality have we yet found *all* cases presenting the peculiar diphtheritic exudation, though we may distinctly recognize all the other distinctive features of the epidemic. We find the same erysipelatous-looking patches of inflamed surface on the tonsils; the same swelling of the glands of the parotid and submaxillary region; the same disposition to a *low* state of the system; and we find these states in the same localities and in the same families in which the more strongly-marked cases of true diphtheria are seen. The imperfectly

Croup.

There is a sharp hoarse cough, which is afterwards stifled; spasms of the larynx are followed at last by asphyxia and suffocation. The agitation and extreme agony which distinguish the last stage of croup contrast strongly with the livid pallor of the surface, the delirium, profound depression, somnolent tranquility and adynamia which belong to the same stage of diphtheria.

The dyspnœa is paroxysmal, invariably worse at night; in the intervals the breathing is almost natural; the patient alternates between suffocation and repose. There is no eruption; no acrid coryza; no especial liability to hæmorrhages from the mucous membranes, no alimentary disorder; no albuminaria. The glands of the neck are not swollen; there is no after-tendency to paralytic prostration. Croup cannot be communicated by inoculation.

developed cases are certainly cases of the same disease, produced by the same morbific influence. Adults are particularly liable to the disease in this form. *Some* albuminuria is common.

Distinction between Diphtheria and Scarlatina.

Diphtheria has been supposed by many to be only a "suppressed or masked scarlatina." These two diseases have some features in common. Thus,—in both there are:

Enlargement and inflammation of the tonsils and glands of the neck; ulceration; a rash upon the skin which does not appear in all cases; similar premonitory symptoms; general depravation of blood, shown by a tendency to gangrene; albuminuria is also common to both.

This resemblance of diphtheria in some of its symptoms to scarlatina has led many authors to believe that the two diseases were essentially the same though slightly modified by some epidemic influence. But to this it is answered that diphtheria has prevailed as an epidemic in many localities where scarlatina was not only absent, but had not been heard of for years.

That there is much confusion in the minds of physicians in regard to the diagnosis between this disease and some others is evident by the fact that consulting physicians very often disagree about the name that should be applied to the case before them. "From the history of the progress of diphtheria for the last few years its existence would seem to be in some measure connected with scarlet fever." In 1858 the two diseases prevailed very extensively together in England. "In New-York City, during 1860, when diphtheria had become a common disease, we had more scarlatina than was ever before seen in this city." Physicians, however, frequently "confound the two diseases."

DIPHTHERIA.	SCARLATINA.
The invasion is generally insidious. The heat is slight, and subsides early.	The invasion is sudden and violent. The fever continues high; the skin hot.

Liability to a Second Attack.

Many persons have had a second attack several weeks after apparent recovery. Dr. Dake saw nine cases each of which had it a second time.	The patient recovering from this disease is not generally liable to a second attack. His having had diphtheria does not protect him from scarlatina.

The Eruption.

The *eruption*, or *rash*, when there is any, appears suddenly and disappears as suddenly, is more like that of measles than scarlatina, and is not followed by desquamation.	The *eruption* is a prominent feature in the disease. The rash does not come out suddenly; and, after remaining on the skin for some number of days, terminates its course by desquamation.

The Angina.

Diphtheria.	Scarlatina.
Commences by patches on the tonsils, &c.; it shows in spreading, a great tendency to invade the respiratory passages. In many cases there is no false membrane formed, since death occurs before there is time for it. In slight cases there is none that attracts attention.	The angina tends to localize itself in the whole cavity of the fauces and posterior nares, and rather to invade the œsophagus than the larynx.

Dropsical Affections.

Dropsy after diphtheria has not been noticed in this country.	Anasarca and other forms of dropsy are common after scarlet fever has appeared to be terminating in health.

Albuminuria.

The mucous membrane of the throat generally eliminates *most* of the albumen.	The albumen is chiefly eliminated by the kidneys.

Mode of Termination in Death.

Death takes place from the extreme prostration; and the symptoms by which it is preceded are those which result from the action of a malignant septic poison. This poison, in cases of slow recovery, still shows its power in general vital depression; particularly in the peculiar form of paralysis that often follows diphtheria.	The direct cause of death from scarlatina may be:—1. Suffocation; 2. Cerebral congestion or effusion; or 3. Dropsy or other sequelæ of true scarlatina. In all of these affections there is a high degree of toxæmia, but it does not show its effect in the general or partial paralysis that often follows diphtheria.

Diphtheria and Scarlatina Anginosa, known by the Synonyms "ulcerous sore throat" of Fothergill, "angina putrida maligna" of the older writers; the "pharyngite pultacée" of Valleix.

The coating on the tonsils, &c., consists of an erysipelatous redness, which is soon superseded by patches of a gray, tenacious firm transparent membrane.	The tonsils and contiguous tissue are covered with a thick heavy pultaceous exudation of dull whitish or dirty looking color.

Diphtheria and Syphilitic Ulcer on the Tonsils.

The diseased surface is not depressed; the membrane can be separated from the tonsil.	In this last affection the surface is depressed, except in secondary syphilis, and the false membrane is adherent.

Relations between Diphtheria and Erysipelas.—John Hunter, who has been generally regarded as the Newton of modern physiology, said he thought diphtheritic angina to have "something of the erysipelatous disposition." He believed that the erysipelatous inflammation produces results the very opposite of those to which common inflammation gives rise, namely, in the serous membranes suppuration, and in the mucous membranes effusions of lymph. In many respects we find points of resemblance between erysipelas and diphtheria. Stephenson and others

have considered cynanche maligna and scarlatina maligna as forms of erysipelas.

Points of coincidence between these diseases are:

They both depend on occult causes little understood, and are always found in subjects who are predisposed by previous bad health to be attacked by some disease, and naturally fall under the sway of the prevailing epidemic whatever that may be; they both attack more readily persons of a scrofulous diathesis; "both prevail most in damp districts and damp weather;" and "both yield to the same class of remedies."

Patients who have ever been affected by either of these diseases are afterwards good subjects for an attack by the other. Dr. Dake says he saw four cases in which erysipelas spread over the face after the peculiar false membrane of diphtheria had disappeared. In these cases as in all others erysipelas affects the skin as diphtheria does the mucous membrane.

The *distinction* between diphtheria and erysipelas may then be considered as so obvious to any observer that the features by which they may be distinguished need not here be detailed in contrast.

On the interpretation of the term *false membrane*. Laboulbène offers the following:

"*A false membrane is a morbid product which is most frequently deposited upon a tegumentary surface,—either of mucous or serous membrane, sometimes adventitiously and which is formed or exuded by that part of the body which it invests.*" (*On Pseudo-Membranes.* Paris, 1861.)

Now the diphtheritic poison, introduced into the human organism, is held to have two especial and peculiar affinities,—one for the nervous centres, and the other for the mucous structures which line the internal cavities. These remarkable predilections are everywhere recognized.

One conspicuous and characteristic feature, which is of great practical importance, is that diphtheria has an unfortunate tendency to invade the respiratory passages, the nasal fossæ, the larynx and the trachea. Muguet occupies a portion of the alimentary tract, the œsophagus and stomach, but does not extend to the respiratory mucous surfaces.

On the Pathology of Diphtheria.—Dr. Wilks* states, that in the cases that had passed under his own observation a parasitic fungus was always present on the affected part; and at first he was disposed to believe this peculiar growth constituted the essential characteristic of the disease. He then says, his attention being directed to this matter, "I took the opportunity to examine the films which occasionally form on the mouths of those sick with various diseases, and upon submitting

* Med. Times and Gazette. p. 354.

them to a microscopic test, felt some surprize in witnessing in all fungous growths which I have not been able to distinguish from that of diphtheria." He mentions the case of a woman who had died under his care with acute cerebro-spinal meningitis; on examining whose pharynx after death, a pellicle was found composed of the parasitic growth. Several other instances are recorded in which the same growth was detected, when there was no diphtheritic disease properly so called. Dr. Laycock found the fungus called oidium albicans in only a single case of diphtheria.

Diphtheritic deposits according to Laboulbene, are: "*plastic products which are morbid, and which are deposited upon a tegumentary surface, the skin or mucous membrane, by exudation upon those parts which they are to invest, and are not persistent.*"

Appearance of the Deposit.—In patients seized with *diphtheria* in the mouth and pharynx, says M. Laboulbene, "we remark the existence of plastic products of a grayish or yellowish hue, and which appear to be located upon the thickened mucous membrane. At different periods of their formation these pseudo-membranes are opaque, somewhat delicate, and thicker towards the centre; others are whitish, grayish, or yellowish. The first, or the more delicate, are easily detached; the adhesion and tenacity of the latter being well-marked, they adhere to the mucous membrane. They form more or less extended plates or layers, and not little islands which tend to coalesce. In some cases the plastic product envelops the whole tonsil, again the uvula, and sometimes it forms a lardaceous coating located at the base of the pharynx. The subjacent mucous membrane which is reddened, is bloody in little patches, but the surface is not ulcerated; the mucous membrane, which surrounds the cast is tumefied. The sub-maxillary glands are congested, painful and the neck is swollen.

"If the examination is repeated at a more advanced stage of the disorder, we discover the false membranes in a state of putrid solution. These detach themselves in shreds which are mingled with the saliva, or which are attached to the posterior part of the mouth by some points upon their surface. Below, and where the plastic product is not adherent, the diphtheritic false membrane has been reproduced. In appearance it resembles an ulcer which has exfoliated shreds of decayed mucous membrane.

Certain disorders of innervation belong as much to the natural history of diphtheria, as does the lesion of the superior alimentary and respiratory passages.

The exceeding and immediate prostration, which is disproportionate to the duration or the severity of the illness, the losses sustained, or to the balance of the symptoms; the excess of heat, and other disorders of calorification; the rapid pulse, the type of the fever; the

character of the delirium; the dilated pupil; the anæsthesia, which is partial or complete; the hyperæsthesia of the surface; a feeble uncertainty of gait, stiffness and lameness of the muscles of the neck; in continence of urine, with or without involuntary stools; all bespeak a more or less profound disturbance of function in the nerve centres of animal and organic life. There is no question but these centres are poisoned, and hence the above train of symptoms.

Prognosis.—Children below eight years of age are less likely to survive a severe attack of diphtheria than older persons. Those who are predisposed to croup are particularly difficult to cure, as in them if the disease go on beyond four or five days, there is danger of the propagation of the diphtherite process to the larynx. Dr. Willard, of Albany, reported to the N. Y. State Med. Soc., 1859, only three deaths of adults among 188 cases. When we hear the peculiar noise caused by the glottis when it becomes involved in the disease a bad prognosis of the case is necessarily formed; also, when the violent symptoms have subsided and yet debility remains. Dr. Cretin, of Paris, says "that in membranous angina as in severe fevers, the issue is rarely favorable, unless convalescence is *prompt*. In all of these cases where there is not a speedy renovation when the apparent causes of debility are removed there is one sufficient cause for failure, that is "*a poison infecting the general system; it is not the local disorder.*" The constitutional predisposition accounts for the great fatality of the disease in certain families. Dr. Paine says in the winter of 1858—59, at Albany, "in 15 families there were in each two deaths; in four families, in each 3 deaths, and in one household four children were swept away by the pestilence." Dr. Dake, who lost 7 cases only out of 193, says: "Those who died were all subject to glandular enlargements except three, aged by one year. A female, aged 38, had great enlargement of the tonsils, parotid and submaxillary glands, irritation of the nasal duct, fœtor of breath." The disease is more fatal in some localities than in others. Though it has often appeared in places usually healthy, it is certainly more fatal in cities and villages in which the people live closely crowded together in damp and ill-ventilated dwellings.

Treatment of Diphtheria.—A persistent use of the proper homœopathic remedies will cure nearly all cases of this malady. We have treated more than 200 cases, including many of the malignant type, and our losses have not been one per cent. We make this observation for the purpose of impressing upon the medical man the vast importance of *selecting* and of *continuing* the very few really specific medicines at our command for the cure.

The two great remedies are Kali-bichromicum, and Mercurius-hydriodicum. The first triturations of both drugs should be employed; the first, dissolved in water (so as to tinge the water yellow), and the other

to be taken dry on the tongue. These medicines, repeated every hour or two, in alternation, will suffice to cure nearly every case. We have used the Biniodide of Mercury, in place of the Hydriodate with the same good results.

These medicines are *sine qua nons* in this malady, and should be boldly and persistently given until the deposits have disappeared.

A dose or two of Aconite and Belladonna, may now and then be required, but they should be deemed and used as quite subordinate to the precited medicines.

From the commencement, meat-broths, wine whey, milk punch, brandy and water, and the like should be judiciously administered, in order to support the strength and counteract the typhoid tendency of the disease.

Occasional inhalations of the vapor of Ammonia water, will often aid in detaching the albuminous depositions, and thus often relieve the sense of threatened suffocation. Ammonia is an excellent solvent of albumen, and will often conduce materially to the comfort and safety of the patient.

It may sometimes be used internally with advantage, when typhoid symptoms are strongly marked, and there are indications of decomposition of the blood. But it also must be secondary to the medicines first named.

These few observations comprise our own experience, and as such we offer it to the profession. Below we have collected the views of many other physicians, both American and European.

The treatment of diphtheria is necessarily based upon correct principles of its pathology. It may be advantageous to group, the different remedies under the various indications they are calculated to fulfil.

The Constitutional Treatment—For the Febrile Symptoms :—Aconite Belladonna, Gelseminum, Rhus-toxicodendron, Baptisia, Bryonia.—For Cerebral Disorder :—Phosphorus, Bell., Opium, Conium-maculat.—For the Mouth and Throat Symptoms:—Mercurius, Iodine, Mercurius-iodatus, Cantharis, Bi-chromate of Potassa, Rhus-tox., Iodide of Arsenic, Baptisia, Nitric-acid, Apis-mellifica, Baryta-carb, Belladonna.—For the Coryza :—Do. the gastric and Alimentary Disorder;—Nux-vom., Bryonia, Opium, Veratrum-alb., Phosphoric-acid, Arsenicum-alb., Nitric-acid, Arsen.-iodatus, Merc.-iodatus, Cantharis.—For the Eruption:—Bell., Rhus-tox., Bryonia, Pulsatilla, Nitric-acid, Arsenic-alb., Cantharis.—For the Urinary Disorder:—Acon., Merc.-iodatus, Cantharis, Apis-mel., Ammon-acetat., Mer.-cor., Phos.-acid, Colchicum.—For the extreme Debility :—Cantharis,* Ferrum-aceticum, and China.

Aconite—Is one of the first remedies in the forming stage of the

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* Ludlam on Diphtheria.

disease. It has been common to give it in tincture (two to three drops in a glass of water,) in doses proportioned to the age or condition. The third dilution is better in ordinary cases.

Belladonna.—In the simplest form of diffusive inflammation in which no marked peculiarity was observed, a few doses in solution sufficed to affect a revolution in a short time. Or, if with some swelling of the tonsils there was a bright scarlet redness, uniformly extending over the mucous membrane, it was generally continued at intervals during the stage of excitement, or inflammation.

Rhus-tox.—When the inflammation of the fauces is of a dark red, or if there are dark crimson patches scattered over the inflamed surface, adynamic tendency.

Colchicum, has been found speedily efficacious for the engorged state of the tonsils with fever and headache.

Mercurius-iodatus.—Dr. Ludlam thus sums up the principal conditions for which this remedy is appropriate: 1. It is "most appropriate to those examples and epidemics of diphtheria in which the deposit is located upon the mouth, tonsils, uvula, velum palati, the pharynx or some portion of the alimentary tract.

2. To those cases in which the function of the mucous follicles is so deranged as to produce in considerable quantity, the tough and viscid secretion.

3. The deposit should be of limited extent, of feeble organization, transparent, pellicular, albuminous, and easily detached.

4. To those cases in which there is but a feeble effort at re-organization of the false membrane, when it has been removed, or has dropped off spontaneously.

5. To such examples of diphtheria as are characterized by marked disorder of one portion or another of the alimentary system." The Proto-iodide of Mercury is preferred to the Bin-iodide. (*Lectures on Diphtheria*, p. 104.)

As soon as the least appearance of membranous deposit or any swelling of the glands of the neck is observed, we may commence with this remedy, and continue it till the symptoms are completely obliterated. Dr. Paine says he gave it in the first trituration, and the effect "in arresting and detaching the false membrane was in many cases most gratifying."

Dr. Preston says, in 1852, he had some success with Bin-iodide of Mercury and Bromine. (*Philad. Hom. Jour.*, 1852.) He gives the following case in the *U. S. Jour. of Homœopathy*, Vol. I. p. 226.

A boy, aged nine years, residing near a family in which four children had recently died of diphtheria, attacked on the morning of Sept. 16th, 1859, with high fever, inclined to sleep all day; fever increasing till night when he had delirium; pulse 160 per minute; when aroused he

complains of difficulty of swallowing, headache, &c.; desires to be allowed to go to sleep; refuses all food.

Give Acon. 3° and Bell. 3°, every hour alternately.

Sept. 18. Found the whole tonsils and palate considerably swollen and covered with false membranes, which also lay in patches on the pharyngeal mucous membrane; he swallows with difficulty; breath fœtid; breathing hoarse; pulse 120; an eruption appearing over the surface resembling scarlatina miliaris, but the skin rather pale than red, as in scarlatina. Give Bell. 3°, Proto-iod.-Merc. 3°, alternately every hour. Meat-broths as food.

Was better next day, but three days later was much worse; hoarseness; difficulty of breathing; refused food and drink all day; took no wine for two days. Weaker than five days before; no ulceration; palate natural; fauces still very red; pulse 60; rough breathing in the larynx; breath more fœtid; bloody discharge from the nostrils; eruption entirely gone.

"Give Bell. and Merc.-Proto-iodide alternately every hour; insist on the taking of the wine three times a day with as much nourishment as possible.

"The next day the breathing was easier, the mucous membrane quite clear and very red; swallowing easier; more appetite. Three days later he was quite well."

Dr. Süss Hahnemann treated a severe case successfully with Merc.-iod. internally, and Tinct.-ferri-Mur. locally.

Bi-chromate of Potassa.—Diphtheritic effusion on the superior portion of the pharynx, nares, larynx, trachea and bronchial tubes, even down to their ultimate ramifications; the deposit of firm texture, pearly in appearance, elastic, fibrinous, securely attached to the subjacent integument. Cases in which a transfer of the local disorder to the larynx or trachea is threatened; there is soreness of the larynx when pressed from before backwards; aphonia, croupy inspiration or cough; desire of the patient to lie with the head thrown far backwards in order to throw open the glottis; tonsils enveloped by a thick and well organized deposit; incessant cough. Tendency to ulceration and deposit upon remote mucous surfaces, as the uterine and respiratory epithelial surfaces. When putrid symptoms begin to be manifested the Bi-chromate should be superseded by Iodide of Arsenic, Nitr.-acid, or Carbo-veg. The Bi-chromate is recommended in the second decimal trituration, to be repeated every one, three or four hours.

Dr. Lord, of Chicago, reporting a severe case to the Ill. State Association, says it produces aggravation even when given in moderate doses:

"When the Bi-chromate was given with intervals of an hour or more, the patient uniformly got worse. The cough was almost constant, ex-

cept in the night, when asleep. It ran up from a slight hacking to suffocation, which was only prevented by a means which I have purposely omitted to mention that I might direct your attention more particularly to it. After the 20th day, whenever the cough became dry, and respiration, whistling and suffocation seemed imminent, inhalations of the Bi-chromate were used with prompt relief; of course, it was only temporary, but it was a respite. But for it death must have ensued. It did not fail in a single instance of easing the breathing and loosening the cough, and ejection of membrane or large quantities of stringy mucus followed.

"The method was simple. Two or three grains of Bi-chr. 2, were put into a small tin-teapot, and half a tea-cup of hot water poured on. The vapor passing from the spout was inhaled. I do not think that any medicines given in this case, but the Acon. and Bi-chr., had any good effect.

"I was so well satisfied of this that in all subsequent cases I have trusted entirely to the Bi-chr. as the specific remedy, and have had no reason to repent it. Other remedies may be required, but that is *the remedy*."—(*Transactions*, &c., 1862.)

Hydriodate of Potash.—Dr. H. Robinson, Jr., of Auburn, N. Y., writes: "I would like to recommend to the notice of physicians the use of the Hydriodate of Potash in diphtheria. I find nowhere in any of our authors the mention of this drug in this disease; but in quite an extensive practice in this disease, I have used no remedy with such happy results as this. Doses the same as the Bi-chromate.

Tartar-emetic.—This remedy has been shown by Laboulbene to be capable of producing the false membrane in the cavity of the mouth, especially on the tongue. They are described as "having the form of irregularly rounded patches, whitish or grayish in color, somewhat thick, of a marked consistence and firmly adherent. In the œsophagus they are small, delicate, pale and easily detached from the subjacent tissue. Beneath the pseudo-membrane the surface of the tongue is excoriated, ecchymosed, wrinkled, and forms an elevated margin around the plastic deposit which is red and somewhat extended. The œsophageal mucous membrane is ulcerated; the borders of this ulceration are not elevated, but enclosed by a red circle, the base being softened and grayish, and, at some points, ecchymosed."

This remedy is advised by Dr. Ludlam for the following conditions: Sudden swelling of the cervical glands and tonsils in scrofulous children, who are predisposed to catarrhal or asthmatic affections; occlusion of the larynx or lower respiratory channels by excess of mucus, of a feebly-organized plasma, with cough, dysphagia, difficulty of breathing; gasping which compels the patient to sit upright, or to seek the open air; retching or obstinate vomiting of tenacious mucus, with-

out any considerable thirst; small circular patches, like small-pox pustules, in and upon the mouth and tongue; hepatization of the lungs impending or progressing by closure of the pulmonary air-vesicles, by solidification of effused serum. Cases in which a prevailing influenza attacks a patient predisposed to catarrhal disorders of the respiratory mucous membrane.

Arsenicum.—The breath fœtid; the lining of the nostrils discharging a viscid foul secretion; great and increasing prostration of strength. After the separation of the false membranes, it may remove the extreme tenderness which remains, as well as keep up the vital energies.

Iodide of Arsenic seems more efficient than any other form of Arsenic when there is putrid offensiveness of the breath, especially in the later stage of the disease.

Bryonia.—M. Curie, in a discussion in the Homœopathic Med. Soc. of Paris, (Febr. 20th, 1860,) says, Bryonia has the "pathogenetic property of *forming false membranes*, which the other remedies do not possess (though Bromine, Chlor.-potash, and Chloride of iron have some such power in lighter degree). The false membranes formed by Bryonia are not those developed by an irritant local action as a corrosive poison. Teste gives a case of false membranes in the mouth developed by Bryonia. Orfila in his *Toxicology* mentions another in which they appeared in the rectum, in consequence of an injection of Bryonia. M. Curie exhibited to the Society preparations of the tongue, the trachea and the lungs of a rabbit to which he "had administered Bryonia for eight months; at first giving two drops of tincture per day, a dose which was progressively augmented to 250 drops at last." There was formed "a pseudo-membranous firm tube, which lines the trachea, and on the one hand, penetrates the second and third ramifications of the bronchia; and on the other hand lines the whole of the larynx. Some false membrane existed also in the mouth, at the base of the tongue; but these not being so strongly organized have disappeared in the alcohol." This was not the effect of an irritant liquid into the bronchia. The false membrane grew little by little, and permitted the trachea to enlarge for the passage of air. Autopsy showed the trachea abnormally enlarged. The rabbit died in full vigor from an accident. The membranous tube having detached itself at the level of the larynx by an effort, perhaps the shock of a cough, brought on by the introduction of a drop of liquid."

This proving of Bryonia by M. Curie was declared by M. Cretin "the most brilliant experiment that has ever been made in homœopathy. He has demonstrated with specimens in his hand, the homœopathicity in laryngo-tracheal diphtherite, of a remedy too much neglected. Put Bell., Hepar, Iodine, Spongia, &c., to the same test, prove that each

of these produces peculiar functional disorders, and you will have made a grand step in science."

Capsicum-annuum.—Dr. Dake:* "Sensations of heat; burning and soreness in the mouth and throat; congested appearance of the mucous membrane; pain in swallowing; ptyalism; contracted feeling in the throat; heat and throbbing in the head; vertigo; epistaxis; increased rapidity of the pulse; fever; nausea; strangury." It has long been regarded as an efficient remedy in *cynanche maligna* and *scarlatina anginosa*. It promotes "the separation of the sloughs, and improves the constitutional symptoms." "Its extraordinary power to control the capillary circulation, to bring excess of blood, and thence to scatter more than it has brought, will enable it to remove congestions to reduce swellings, as promptly, if not as effectually as Belladonna."

Carb.-baryta.—A case by Dr. Preston (St. Johns, N. B.).† A girl, aged eleven years. Sept. 19th, 1859. Tonsils very much enlarged, externally and internally; neck very stiff and painful on motion; membranes of the tonsils, palate and fauces quite, red without much difficulty of swallowing; no exudation in the throat; no hoarseness; no fever, but great depression and weakness.

To take strong nutritious food, with wine, and a dose of Carb.-baryta every two hours.

Next day, this child and another much better. Medicine continued at longer intervals, diet the same. Recovered in a few days.

Nitric-acid.—Burning of the tongue, mouth and pharynx; inflammation of the mucous membrane of those parts; ptyalism; ulcerated spots; spreading ulcers in the mouth and throat; swelling of the submaxillary and parotid glands; obstructed nares; fluent coryza; epistaxis; putrid-smelling breath; frequent urging to urinate; red and whitish deposit in urine. Hoarseness; dry, barking cough; worse at night; ear-ache; hardness of hearing; pains in various parts like rheumatism; swelling and inflammation of the face, like erysipelas; loss of appetite; aversion to food; nausea; pain in the stomach; chilliness; paleness; excessive languor; profuse sweat; extreme debility.

Regarding diphtheria not as a local but general affection, Dr. Dake thinks "there is no remedy more capable of meeting the disease, without and within, locally and constitutionally. It not only touches the patchwork, but also follows on through every avenue, traversed by the destroyer, quickening the powers of gland, mucous membrane, and stomach, for its expulsion, the repair of tissue, and the support.

Bromine.—Recommended by Dr. W. E. Payne, 1847, for membranous

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* N. A. Jour. of Homœop., Vol. X. p. 431.

† U. S. Jour. of Homœop., Vol. I. p. 227.

croup (*Amer. Jour. Homœop.*, Vol. I.), by Dr. A. S. Ball, of N. Y (*North Am. Jour. Homœop.*, Vol. II.), Dr. H. C. Preston, also in 1853, (*Phil. Jour. Hom.*, Vol. I.), Dr. Kirsch of Wiesbaden; all of these physicians succeeded in curing cases of membranous croup with it.

Dr. J. P. Dake gives the following indications:

"Soreness and smarting in the throat; ptyalism; hoarseness; rough, dry cough; sensation of contraction in the wind-pipe; fluent coryza; also nasal obstruction; epistaxis; ear-ache; alternate chills and heats; violent inflammation of the mucous membrane of the fauces, œsophagus, also of the larynx and trachea; these parts are coated with coagulable lymph, which obstructs almost entirely the air passage. A dingy brownish, granular, firmly-adhering exudation over the mucous membrane of the œsophagus."

The physiological provings of Brom., and its effect on patients (syphilis and scrofulosis) produce a pathological picture, corresponding fully to the symptoms of diphtheria in its different stages and forms, but it shows also the local process of exudations so characteristic to this disease. Trinks gives us from different sources the following symptoms: Tough yellow, or watery mucus flowing from the nose. Salivation with increased secretion of mucus in mouth and fauces. Insensibility of the skin, especially of the fauces. Severe inflammation of the fauces, œsophagus and covering of it with plastic lymph. Severe inflammation of larynx and trachea with exudation of plastic lymph, nearly closing those organs.

Hulte, Rames and Pluhe found after a large application of Bromine coryza, the eyes full of tears, injection of the conjunctiva with increased sensibility to light. In larger doses (ʒi per day) it produced intoxication without any agitation, great malaise, vanishing of strength, decrease of the powers of vision and hearing, loss of sexual feeling, insensibility of the skin, even stitches were not felt; fauces and pharynx losing every reflex motion.

Dr. Hering, of Philadelphia, seems to have been more successful than practitioners generally.* He says he treated within three months about fifty or sixty cases with marked symptoms of diphtheria, and about the same number of light cases. They "all recovered within seven days, except a few of the so-called scrofulous diathesis, which required more time." The medicine at first relied on was Belladonna. In some cases Bryonia or Antimonium-crudum, which latter corresponded to the genus epidemicus particularly well. After the first medicine Lachesis was indicated by the great sensibility to the touch on the throat, with or without a swelling.

Every single dose of any of the medicines, even in the worst cases,

* Transactions of American Institute of Homœopathy, 17th Annual Meeting.

I allowed about twenty-four hours to act before I decided to make a change. The lowest potency given was the 200° of Jenichen; generally I used them higher, giving always on repetition a higher degree."

M. de la Pommerais, of Paris, said at a meeting of the Société Hom. de France,* February 20, 1860, he thought we had been too much preoccupied with the contagious or epidemic element of the disease and had neglected the *psoric*, *syphilitic* or *sycotic* element, which constitutes the hereditary predisposition. To this neglect he ascribes the greater part of his failures. According to Hahnemann's "*Treatise on Chronic Maladies*," one of these three poisons is likely, on various occasions, either to change the nature of the existing disease, or to aggravate its intensity. We ought, therefore, in some cases to employ the *anti-psoric* remedies. There are some cases where we shall be obliged to recognize the appropriateness of Hepar-sul., Merc., or Brom. where we suspect something besides the contagious or *diphtheritic* element. Besides the symptoms, proper to a given disease, we have to consider the constitution of the subject, his predispositions, in a word his "idiosyncracy," all that makes up his individuality, physiological, or pathological. In a case of diphtheria, if the parents have been tainted with one of those primitive maladies to which we ascribe the after-existence of all the various chronic affections, can we believe that such an angina would not be more severe than one which attacked a healthy organism. This view of the subject accounts for the failure of remedies which are homœopathic to the obvious symptoms. In these cases it is necessary to give a dose or two of an anti-psoric remedy in order to enable the proper specific to act with its full force upon the disease. We must individualize even in great epidemics, but the *totality* of the symptoms includes the *idiosyncracy*.

Cantharis.—M. Bretonneau has noticed the similarity between the debility produced by this agent and that produced by the diphtheria poison. In each there may be seen the following symptoms: Coldness which resists external heat; adynamia even to the complete extinction of muscular power, no movements remaining but those of the heart and of respiration; the pulse falls to fifty, thirty or twenty-five beats per minute; corresponding decrease in expiratory movements; at last extinction of life. Cantharis produces *apparent* death. Successive fits of lethargy being prolonged more than twenty minutes, without any symptoms of life; then there is a slow resuscitation until the poisoned animals become able to stand and walk; subsequently there was a more prolonged relapse ending in complete extinction of life.

Dr. Williamson, of Philadelphia, says:—"*The result of the adoption*

* Bulletin. &c., Vol. 1.

in my practice of Croton, Canth., and Rhus as the principal remedies in the treatment of the throat symptoms in diphtheria, has been to diminish the mortality one-half. A careful study of the pathogeneses of these drugs, and a full consideration of their well-known sphere of action in the treatment of other diseases, would lead one to anticipate important results in the treatment of diphtheria, and after repeated trials I have found the anticipation to be be fully justified."

"I generally administer the remedies in water, in the proportion of ten drops of the first decimal dilution, to a common-sized tumbler half full of water, and give by teaspoonful doses in the usual manner."

Nitrate of Silver.—The local treatment is still the chief reliance of the old school. Dr. McDonald says, (Lancet, Oct., 1859, p. 307,) by skillful application of strong solution of lunar caustic to the glazed red surface, the fungoid matter may not be developed; or if it be formed it may be separated from the surface and brought away. But if this be effected, the constitutional disease is not subdued. The poison is yet to be eliminated from the system and the vital powers remain yet to be supported. The solution directed is that of one-half drachm to the fluid ounce of water. Such was the allopathic reliance in the treatment of diphtheria at Albany, in 1859.

Dr. George P. May, of Edinburgh, describes the disease in three degrees of severity, and says he has seen several hundred cases. He says the lighter forms of it "yielded to a few applications of a strong solution of Nitrate or Silver, which was best applied with a soft brush, as this permits to be visible the point to which it is to be applied.*

Aceto-Nitrate of Copper.—This active agent operates on a similar principle when locally applied. Internally we have used it with good results.

It is advised to "introduce a feather into the fauces every two hours for the purpose of absorbing the noxious mucous." This draws away large quantities of the substance which forms into false membrane, and is an important adjunct to other remedial measures.

Local application of Nitrate of Silver muriated tincture of Iron, or Iodine, possess no curative virtues. In virtue of their escharotic influence, they may remove temporarily the deposits upon the tonsils and throat, but they speedily reform; the patient continues to fail in strength and vitality, and sooner or later succumbs under the typhoid symptoms consequent upon the blood-poisoning.

Let no one therefore rely at all upon local applications in the cure of this malady; but strike the cause and seat of the destroyer in the blood itself by the proper specifics.

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* Lancet, Nov. 1859, p. 409.

In the more malignant forms he succeeded with *Tincture Sesquichloride of Iron*, applied two or three times in twenty-four hours.

Counter-irritation to the throat should be avoided, especially in children. Mustard produces troublesome excoriations. A piece of folded linen, wet with tepid water, is least inconvenient; cover it with oiled silk or gutta percha.

Small pieces of ice may be held in the mouth.

The following mixture is proposed for local use by Dr. Meyerhoffer, (*Hirschel's Klinik*, 1863):

Brom. 0,1 gtt. xx.
Glycerini puri ʒ i.

A camel's-hair pencil is moistened with the fluid and carried over all places, covered with the exudation. To get a direct influence on the larynx, the first trituration of the Brom.-kali may be blown quickly into the larynx one or two grains through a flexed glass tube during an inspiration. In children, who refuse pertinaciously the introduction of the probang, or where the glandular swellings render it impossible to open the mouth, it may be blown into the mouth during sleep. Its local effect is quickly seen in the greater facility with which the patches dissolve, getting more friable and disconnected; furthermore, no fresh exudations appear any more on the cleansed mucous membrane; except where the exudation is very firm, it will take a little more time.

The blowing in of the Brom.-kali commonly produces severe coughing spells, during which the false tubulous membranes are expectorated. Local applications give temporary benefit.

Alcoholic Stimulants.—Brandy and wine, says Dr. Dake, "only serve to quicken the circulation, hurry *morbid* as well as normal processes, and thus precipitate the approaching danger. While the disease is yet in the system, in active progress, though far out of superficial view, stimulants increase the safety of the patient, and favor final recovery in the same way, and to the same extent that a double pressure of steam and a redoubled velocity would increase the safety and put in sound condition, a locomotive that is defective in the boiler, weak in cylinder, and loose at every joint. Worse than that, the stimulation exhausts the limited vital powers, the steam necessary to propel the engine, without the ability to furnish more."

During the entire course of the disease we have always derived unequivocal benefit from the use of stimulants.

Diet.—In bad cases a stimulating and nutritious diet is demanded from the commencement. Port wine every hour, warm milk, yolk of eggs beaten up in wine, strong coffee, beef-tea, white wine-whey, though it is useless to load the stomach with food that cannot be digested. A liberal allowance of salt is permitted in every kind of food.

Barley-water acidulated with lemon-juice, or mixed with honey, currant jelly or blanc mange.

After the first week, animal broths, perhaps given by enema.

In the early stages of all cases of diphtheria the use of meat-broths is actually indispensible. All cases may not absolutely require alcoholic or wine stimulants from the onset of the disorder, but during its course, stimulants will be useful in nearly all cases.

10. CYNANCHE TRACHEALIS.—CROUP.

Until the present century this disease was confounded with whooping cough, asthma and bronchitis, and the fatal cases were supposed to be violent forms of one of these maladies.

In the hands of the allopath, croup has ever proved a most formidable and fatal disease. Acting, in the application of their remedial measures, only indirectly upon the part affected, by venesection, leeches, blisters, emetics, mercurial cathartics, expectorants, &c., it is not a matter of surprise that they are so often baffled in subduing a malady of so violent a character as the one under consideration.

It is especially in diseases of this nature, that the truth and value of a system of practice may be satisfactorily tested; for it is here that a prompt, efficient and specific remedy is imperatively demanded, in order that the progressing inflammation may be at once arrested and the patient saved. These are the cases that try the truth and soundness of a theory; which convince the *public*,—who appreciate *facts* if they do not comprehend abstruse theories—which school possesses the knowledge and skill that should command approbation and support. On the result of these tests we are willing to rest the claims of homœopathy. Indeed the records of the homœopathic practice show conclusively a large balance in its favor, over the other systems in all maladies of an acute as well as chronic character.

Croup rarely occurs after the age of seven years, and may therefore be accounted a disease almost peculiar to childhood. Its seat is in the mucous membrane of the larynx, trachea and bronchia, and sometimes of the fauces and palate.

Diagnosis.—Croup may with propriety be divided into two principal varieties, viz.: first, the *false*, *pseudo* or *non-membranous*, comprising, however, under this head the *spasmodic*, *catarrhal* and *slightly inflammatory* kinds; and second, the *true*, or *membranous* croup.

Some recent writers have distinguished *four* distinct varieties, each one forming a distinct and independent disease, and not liable to run into either of the other forms.

It is doubtless true that these several varieties do often exist as distinct and clearly defined maladies, and that the remedies homœopathic

to these varieties are almost entirely distinct, but we are by no means certain that different forms do not run into each other. Be this as it may, it is of importance that an accurate knowledge should be acquired respecting the seat, nature and symptoms of the malady in all its forms, so that we can exhibit without delay a remedy which shall be truly specific and homœopathic.

1. *False or non-membranous Croup.*—*Spasmodic* croup usually makes its appearance suddenly, with considerable difficulty of breathing, noisy and wheezing inspirations, a short, *dry*, hoarse cough, occurring but rarely, and an entire absence of febrile symptoms.

Catarrhal croup also commences suddenly, with a "croupy cough," hoarse voice, shrill, wheezing and sonorous inspirations, oppression and tightness at the chest, and sudden attacks of dyspnœa; *but in a few days the croupy character will wear off of itself, leaving simple catarrhal symptoms only.*" (*Watson.*)

In the *simple inflammatory* croup, in addition to the loud, harsh and wheezing respiration, and hoarse, croupy cough, we have usually sore throat, some thirst, and nightly febrile exacerbations. This, like the preceding variety, will often wear off spontaneously, leaving only some slight symptoms behind.

An important peculiarity of all the varieties of false croup, consists in the *suddenness* of their attacks. Children may retire to their beds in the most perfect health, and yet in an hour or two be disturbed from a sound sleep with an apparently alarming attack of croup. It is important, however, that all should be aware that these seemingly dangerous cases are much less to be dreaded than those which make their appearance in a more slow and insidious manner, as will be seen by the following description of the *true croup*.

In all the varieties above described, although there may be difficult, labored, anxious, and wheezing respiration, hoarse, harsh and croupy cough, hoarse voice, and the patient may seem to be in imminent danger of suffocation, yet the fact that the attack has occurred *suddenly*, and that the cough bears no resemblance to the dreadful *metallic* cough of *real* croup, will afford us sure indications of its nature, and enable us to assure those interested that the attack will speedily be subdued.

2. *True or membranous croup*, is usually ushered in with the ordinary symptoms of catarrh, as chilliness, sneezing, some soreness of the throat, hot skin, thirst, slightly accelerated pulse, hoarse voice, and some little impediment in respiration. At this period a whistling or "buzzing sound may be heard at the rima glottidis by placing the ear upon the back of the neck, or over the larynx." (*Ware.*) Even at this early period the commencement of the false membrane may be observed upon the tonsils, and sometimes upon the uvula and pharynx, which

gradually increases in thickness and strength, unless the peculiar inflammation be arrested.

As the disease advances, the febrile symptoms increase, the respiration gradually becomes more labored and difficult, the inspirations, particularly after coughing, being slow, sawing, sonorous or ringing, while the expirations are quick; the cough is dry and gives forth a *metallic* sound; the voice becomes more shrill, the pulse is frequent and small, the expression of countenance swollen and anxious; the head is thrown back; the extremities are cold, while the rest of the body retains its exalted temperature; there is often a profuse perspiration, until finally the respiration is so much impeded that the blood is but slightly oxygenated; the cheeks and lips become livid, the eyes red and sunken, the pulse extremely small and frequent, the whole organism prostrated, and the child expires in a state of asphyxia or suffocation.

In membranous croup the inflammation is of a peculiar character; for from the very commencement of the attack, the mucous membrane continues to pour out coagulable lymph, which becomes adherent to the parts affected, forming the tough artificial tube known as false membrane. We believe that the progress of this fictitious formation is never entirely arrested until a healthy medicinal inflammation is made to supercede the peculiar morbid action.

"The false membrane which so frequently forms on blisters, is, of itself, sufficient to prove that it is much less to the *degree* than to the *nature* of the inflammation, that we are to attribute this concretion or coagulation of pus in certain cases." (*Laennec.*)

Causes.—A cold and damp atmosphere, wet feet, and exposure to the air which blows from seas and lakes. It appears to be necessary also that there should be a certain predisposition on the part of the patient, in order to contract the disease, since all of the children of some families are constantly liable to its attacks, while those of other families, constantly exposed to precisely the same influences, are exempted. This predisposition may frequently be traced back through several generations, while in other families the reverse is true, no instances of the malady having ever been known to exist in them. Croup sometimes follows as a sequence of scarlatina, measles, &c., and has by some writers been confounded with the former disease, and from this circumstance has originated the idea of its contagious nature.

Treatment.—Spasmodic Croup.—*Aconite*, *Spongia*, *Hyoscyamus*, *Belladonna*, *Nux*, *Musk*, *Cuprum*, *Ipecac.*, *Camphor* and *Lobelia inflata.*

Catarrhal Croup.—*Aconite*, *Tartar-emetic*, *Spongia*, *Hepar-sulph.*, *Drossera*, *Lachesis*, *Sambucus*, *Chamomilla* and *Nux.*

Simple Inflammatory Croup.—*Aconite, Spongia, Hepar, Tartar-emetic, Phosph., Iodine* and *Belladonna.*

True or Membranous Croup.—*Kali-bichrom, Bromine, Ammonia-caustic, Hepar-sulph., Argentum-nitr., Sambucus, Spongia, Iodine, Senega, Tartar-emetic.*

Aconite Croup.—Invasion in the evening, after first sleep, preceded by restlessness, accelerated pulse and dryness of the skin. The patient usually rouses from sleep, with restless, impatient movements, tosses from side to side, cannot be calmed, and, on attempting to swallow, cries as if from soreness and pain in the throat, followed immediately by a shrill, barking cough. The cough is frequent, *following every expiratory effort, but absent during inpiration.* This seems to result from a tickling sensation, excited by the rush of air from the lungs, through the over-sensitive and irritated larynx. The sibilant, stridulous, or sawing respiratory sound is also heard *only during the expiratory act, and not during inspiration*, as in some other forms of croup. The stridulous respiratory sound and cough, are *concurrent* and *present only during expiration*, which appears to be characteristic of *aconite croup.* The cough is more or less paroxymal, but the stridulous breathing continuous, till after midnight, when both gradually remit, and towards morning nearly or wholly disappear, but often to return on the following night.

Some five years since our attention was first attracted to the above peculiar concurrence of the stridulous respiratory sound, and barking cough, in the case of a boy about four years old. The disease resisted all our efforts for four days. No remedy touched it, but we gave *Aconite*, when the whole trouble vanished as if by enchantment. (Dr. *Paine*, of Bath, Me.)

The following excellent indications for the employment of *Spongia, Hepar-sulph., Bromine, Caustic-ammonia, Kali-bichrom*, and *Potash*, were arranged by several homœopathic physicians of Pressburgh, and translated for the Homœopathic Examiner by Dr. Hempel.

Spongia Croup.—"Hollow cough, with expectoration, and pain in the chest and trachea; roughness in the throat (night cough with weeping expression); breathing aggravated, as from a plug in the throat, slow or quick; panting; larynx painful, as if from pressure—worse when touched; scratching, burning and constrictive sensation in the larynx; painful feeling of swelling in the cervical glands near the larynx and trachea; stinging in the throat and sensation in the outer parts of the neck, as if something were pressing out, morning and evening; painful tension on the left side of and near the pomum Adami, when turning the head to the right side; the eyes are sunken; the urine deposits a thick, grayish-white sediment; general morning sweat; pulse quick and hard; drowsiness; lassitude of the whole body; out

of humor; every thing puts him out of humor, even talking and answering questions."

Dr. Paine says:* "It seems that *Spongia* covers nearly the same symptoms as Aconite, with this difference and addition: in *Spongia croup*, the stridulous respiratory sound is always during *inspiration*, and the cough less constant, and excited only by the *inspiratory act;* and the cough and sibilant respiratory sound are not so constantly concurrent as in *Aconite croup*. There is also, in *Spongia croup*, fluent coryza, and sometimes sneezing, with *saliva* drivelling from the mouth, which we do not see in *Aconite croup*. Neither of these remedies have any homœopathic relation with *membranous croup*, either in their symptomatic or pathologic bearing; and, in such cases, the time expended in their use, is, in our judgment, so much time lost."

Teste says, this remedy is, in general, only applicable in the second stage of croup, though he does not hesitate to place it in the first rank in the treatment of acute and chronic affections of the serous membranes, (pleurisy, pericarditis, peritonitis, &c.).

Hepar Croup.—"Violent fits of cough, as if he would suffocate or vomit; deep distress, occasioned by the tightness of breathing; husky, accompanied with painful soreness of the chest at every turn of cough, which is violent, the air rushing violently against the larynx, occasioning a pain in that part; sensation of scraping; scratching, with mucous expectoration; the cough being caused by tittilation in the throat, or by a scraping in the trachea, and increased unto vomiting by a deep inspiration; weakness of the organs of speech and chest, which prevents talking aloud; short breathing, pressure in the throat, occasioning a constrictive feeling as if he should be suffocated; urine pale, clear while being emitted, afterwards becoming turbid and thick, depositing a white sediment, or flocculent, turbid, while being emitted, or dark yellow; burning during emission; great unconquerable drowsiness; profuse sweat, day and night; viscid profuse night sweat; sweat before midnight; sad, apprehensive and inclined to weep.

Bromine Croup.—Formation of pseudo-membrane in the larynx and trachea; spasm in the larynx occasioning suffocation; cough with croup sound, hoarse, wheezing, fatiguing, not permitting one to utter a word; sneezing, with violent suffocative fits; respiration characterized by mucous rattling; wheezing; alternately slow and suffocative, and hurried and superficial; breathing painful, oppressed, gasping for air; heat in the face; increased secretion of urine; pulse rather hard, slow at first, afterwards accelerated."

Caustic Ammonia Croup.—"Deep, weak voice; fatiguing, interrupted speech; increased secretion of mucus in the bronchia; violent

* U. States Jour. of Hom., Vol. I.

cough, with copious expectoration of mucus, especially after drinking; difficult, rattling, labored breathing; stertorous breathing; suffocative fits; spasm of the chest."

Bi-chromate of Potash Croup.—"Symptoms approach gradually and insidiously; at first, slight difficulty of breathing when the mouth is closed; slight elevations of temperature; pulse irregular and intermittent, or frequent and small; as the disease progresses, the difficulty of breathing increases; the sound of the air as it passes through the trachea is shrill, whistling, as if it passed through a metallic tube; voice hoarse; cough not frequent, but hoarse, dry, barking and *metallic;* deglutition painful; tonsils and larynx red, swollen and covered with an appearance of false membrane; after a time, breathing affected in part by the action of the abdominal muscles, and those of the neck and shoulder-blades; head inclined backwards; breath offensive; finally diminished temperature of the skin; prostration; stupor."

The medicines, of which the pathogenetic symptoms are here detailed, are those which are most completely specific against croup. It is true that the other articles alluded to, as *Aconite*, *Iodine*, *Belladonna*, *Nux*, *Hyoscyamus*, *Sambucus*, *Tartar-emetic*, *Lachesis*, *Phosphorus*, *Drossera*, *Arsenicum*, &c., cover many of the symptoms usually present, especially in non-membranous croup, but they cannot be considered positive and reliable specifics against the disease fully developed. So far, however, as certain special indications are concerned, these medicines may often be employed with great advantage.

The following is Dr. Bosh's method of treating croup: "If the disease begins, as it frequently does, with an inflammatory fever, then I give first, according to the circumstances, every quarter of an hour, one or two drops of *Aconite* (the dilution, second or third, depending upon the age), and then I let the child rest from one to two hours, when I give the remedy, which I found in my practice to be the main remedy, *Spongia*, first, second, or third dilutions, according to the severity of the disease; eight drops, in four ounces of water,—of this every quarter to a half hour, or, in less intense cases, only every hour, half a table-spoonful. If the disease has proceeded further, and paralytic signs are perceptible (by continued obstruction of the respiration, congestions of the brain, &c.), then I give *Spongia* alternately with *Phosphorus*. If, notwithstanding these means, the disease increases, I give *Spongia* in alternation with Tartar-emetic."

Tartar-emetic.—Feeble voice, burning under the sternum, cough and sneezing. Tittilation in the larynx, inducing cough; cough with vomiting. Mucous rale in the bronchia with oppression. Eating excites cough and vomiting of food, and glairy mucous. Short, hoarse cough caused by tickling in the middle of the larynx, heat and sweats on the forehead when coughing, which is very fatiguing.

Tartar-emetic is not only useful in the early stage of croup, but it is also indicated when there are signs indicative of partial paralysis of the pneumogastric nerve; viz.: face livid and cold; cold sweat on the forehead or body; respiration exceedingly difficult, short, hoarse, shrill, or whistling; head thrown back; pulse small and rapid, or feeble and slow; great weakness, anxiety and uneasiness; difficulty in swallowing; short, hoarse and barking cough; disposition to sleep. The remedy should be given in the first attenuation, and the dose repeated every twenty or thirty minutes, until relief is obtained.

Pathology.—Larynx and trachea covered with large pustules *depressed* in the centre. Mucous membrane of the larynx and trachea red and injected.

The indications for this remedy in croup are based on the predominating symptoms of partial paralysis of the pneumogastric nerve. The short, hoarse, nearly suffocative breathing is accompanied by a whistling noise heard even at a distance, whilst the thorax expands only with the greatest muscular effort, and the greatest anxiety, uneasiness and prostration are manifested. The head is thrown backward; the face livid and cold; the forehead and sometimes the whole body are covered with a cold sweat; the pulse small and very much accelerated, or depressed and slow; the patient drinks with great difficulty, owing to the spasm and complete contraction of the muscles of the throat.

The remedy must be given at short intervals and generally succeeds best in a low dilution. If given every fifteen or thirty minutes the symptoms often diminish rapidly without inducing vomiting, purging, or profuse sweat. The child falls into a gentle sleep; the cough soon becomes loose and expectoration begins to be more free: it consists sometimes of a thick lumpy, greenish mucus; the skin becomes moderately warm, the pulse more natural. In cases in which the deposition of plastic lymph in the form of false membrane has not yet commenced, Tartar-emetic is one of the most efficient remedies: and is generally more applicable than any other remedy in all the ordinary inflammatory and spasmodic varieties of the disease. It has been very effectual in the first stages of inflammatory croup, with hoarse, barking cough, rough and hoarse voice, great painfulness of the larynx, with danger of suffocation when touching or turning the throat, when talking or taking breath; bright redness of the throat, spasmodic constriction of the throat, whistling, laborious respiration, wheezing and rattling in the larynx and bronchial tubes, the use of this drug in alternation with *Belladonna* is our most reliable remedy. In cases of this kind *Belladonna* has not received due appreciation. It is homœopathic to a majority of the cases that occur, and we believe that a prompt and reasonable employment of these two drugs will speedily break up fifty per

cent. of all the cases that occur in practice. (*Dr. Marcy. New Materia Medica*, p. 436.)

In *spasmodic* croup Dr. Dunford relies upon *Aconite*, *Hyoscyamus*, and *Belladonna*.

When in addition to high febrile excitement, the local croupy symptoms are urgent, we must alternate the proper local specific with *Aconite*. In this way we may often give *Spongia*, or *Hepar-sulph.*, and *Aconite*. When the disease obstinately resists *Aconite*, *Spongia*, *Hepar-sulph.*, *Tartar-emetic*, both alone and in alternation, we may consult *Phosphorus*, *Lachesis*, *Sambucus*, *Senega-pol.*, &c.

As we progress in the knowledge of medicinal substances, a still greater number of pure specifies will undoubtedly be added to our materia medica. Before taking leave of this subject, we ask attention particularly to the employment of one remedy, previously named, for the cure of membranous croup. We refer to the *Nitrate of Silver* as a direct application to the affected membrane. For some years we have been in the habit of employing a strong solution of this salt, by means of a sponge moistened with it, and introduced into the larynx; and in several instances the most satisfactory results have followed. This remedy has been used to a considerable extent by French as well as American physicians, and in many cases they have saved life when every other means had failed. The principle on which it cures, however, is strictly homœopathic, for it is due solely to the *medicinal* or *artificial action of the remedy*, that the morbid croupy inflammation is superseded, and the false membrane gradually destroyed and expelled.

It may be used in any stage of true croup, and will sometimes effect a cure when every internal remedy has failed.

A little tact will enable the physician to apply the solution to the larynx, or trachea, in an efficient manner and with perfect safety.

Administration.—In the treatment of croup we generally employ the lower potencies. In regard to the repetition of doses, no definite rules can be given, but the practitioner must be guided by the variety of the disease, the severity of the symptoms and the effects of his remedies.

Bœninghausen's Treatment of Croup.—He gives five powders. Thus: No. 1 and 2, Aconite 200°; 3 and 5, Hepar-sulphur 200°; 4, Spongia 200°.

He says, the true symptoms of croup nearly always disappear after the first powder, if no other remedies have been given. One hour should always pass between 1 and 2. If there be improvement after No. 1, the next, No. 2, should only be given after twelve or eighteen hours. No. 1 and 2 remove the inflammatory symptoms, No. 3 removes the cough and prevents the return.

Hahnemann experimented with the thirtieth dilution for twenty years and then decided that remedies at that potency were efficient in curing disease.

Bœninghausen says, he began trying high potencies in 1843 on a more extensive scale. At the end of seventeen years he says, that the result has been so satisfactory, that he prefers them decidedly to all lower dynamizations, and he shall never return to the lower attenuations. He has treated many cases as usual, and when the two-hundreth power failed, he only succeeded by using Jenichen's high potencies. He understands that these latter were prepared on Hahnemann's scale of one-hundred, potentizing each dilution with thirty shakes of an unusually powerful arm.

Jenichen commenced his high potentization January 1st, 1846, in trying to bring Arsenic up to the 8000°, and he finally carried it to the 40,000°, and found it to surpass all other potencies of Arsenic.

Dr. Wolf thinks, that "Croup has become more frequent and unmanageable through the influence of vaccination. He says, Bœninghausen's five powders have become famous against croup, and that he has often used the same remedies in the second or third potency generally with success, though now and then a child will die of paralysis. He can not decide whether the high potencies have been more successful in his hands than the lower. Where it is possible, he would give a dose of Thuya at the beginning, and afterwards nothing but Aconite 2°, 3°, or 200°. Apis appears also to be an excellent remedy in alternation with Aconite, and afterwards one dose of Thuya, 30°.

Case by *Dr. Kenyon of Buffalo.*—A child three years old had croup. In the night the mother gave Aconite, Spongia, Tartar-emetic, Mercurius-iodatus. The child grew worse. They tried hive-syrup till vomiting gave temporary relief. The symptoms returned. Cold compresses applied to the neck; mustard to the feet and wrists; used hot mustard-bath, then gave hive-syrup the third time. Five minutes after, Dr. Kenyon found the cough dry and shrill, breathing whistling with violent heaving of the chest, contortions of the face; skin dry and hot, pulse nothing but a tremulous motion. He feared, the Aconite could not succeed, if given in five minutes after the large dessert-spoonful of hive-syrup: but the case was growing worse. Aconite 200° was given, the child wrapped in a dry, warm blanket, the cold compress being left on the throat. Relief was manifest in less than half an hour. Aconite 200° repeated. Then Hepar 200°. After the last the child slept quietly two hours. Two hours later there was hoarseness, for which Aconite 200° was given.

Ipecacuanha.—Dr. Teste (*Materia Medica*, p. 364) says, he has seen Ipecacuanha arrest the following symptoms with such marked rapidity that he "can not help believing it capable of producing similar

symptoms, if not in full-grown persons, at any rate in healthy children:

"Rapid bloating of the mucous membrane of the pharynx, and very probably also of the larynx and trachea.

"Secretion, on the inflamed surface of this membrane, of a thick, plastic, whitish, mother of pearl humor, looking at first like small white or grayish points, either on the tonsils, or on the pillars of the palate, or even in the pharynx.

"If we unite these symptoms to those mentioned before, we shall have as complete an image of croup as possible."

Teste relies upon *Bryonia* and *Ipecac.* to a large extent in *croup*, employing them in the attenuations and in alternation.

At the same time he admits that croup may be cured by many other remedies, and also that "all the *analogues* of *Ipecac.* are capable of producing, each in its own degree, not only the general croup, but even the pseudo-membranous exudation which constitutes the pathognomonic sign of croup, and that they must therefore be capable of curing this disease." Peculiar constitutions may require other remedies. In the sub-acute form there may be occasion for "*Pulsat.*, *Silic.*, *Spong.*, *Hepar*, &c., in preference to *Ipecac.* or *Bryon.* But I maintain that these cases are rare, and that, as a general rule, *Ipecac.* and *Bryon.* constitute the specific remedies for croup."

"Ipecac. is almost the only remedy that is indicated in all cases of very acute inflammation of the throat, wind-pipe, bronchia, and even the parenchyma oi the lungs, *no matter what the cause of the inflammation may have been*, when the patient is from six to ten months old, with blond hair, of a sanguine and lively disposition, and if it is more particularly at night that the disease reaches its acme, or first breaks out."

Dr. Holcombe says, he never lost a case of croup, out of a large number. His treatment consists in: 1. Applying a cold water bandage to the throat at an early period. This is imperative; and he would not take the responsibility of a case, when this was objected to.

2. Aconite and Spongia alternately every 15 minutes or half hour till better or evidently worse. If growing worse, Iodine or Bromine in such doses as leave a sensible taste to the solution, every fifteen minutes, or half hour, the intervals to be lengthened as amelioration is perceptible.

If the disease progresses, give Kali-bichrom. Hepar, Phosphorus and Tartar-emetic are best adapted to pulmonary irritation which remains after the exudative stage is arrested.

Teste's plan of Bryon. and Ipecac. he thinks better adapted to bronchitis than to laryngitis or tracheitis. Dr. Hering gives Tartar-emet. in nauseating doses, but this is antipathic, not homœopathic treatment: the pathogenesis of Tartar-emetic does not resemble the early stage of true croup.

Genus V.--INFLAMMATORY AFFECTIONS OF THE ORGANS WITHIN THE THORAX.

These diseases may be divided into the following groups: 1. Those affecting the bronchial tubes; 2. Those more immediately connected with the air-cells and pulmonary parenchyma; 3. Those seated in the pleura; 4. Diseases affecting the trachea.

1. BRONCHITIS

This appears in two forms: 1. *Common acute bronchitis* consists in inflammation confined to the larger subdivisions of the bronchi; 2. *Capillary bronchitis* consists in inflammation restricted to the minute branches, or extending from them to include the larger divisions also; here the smaller ramifications are affected, but not the proper capillary tubes or terminal twigs of the bronchial tree. Bronchitis may also exist as an idiopathic affection, or co-exist with other diseases of the lungs or other organs; it may be general or circumscribed.

ACUTE BRONCHITIS.

This complaint is of most frequent occurrence in old age and in childhood. Its seat is in the mucous membrane of the bronchia, but authors assure us that the bronchial inflammation is always accompanied with considerable "sanguineous congestion of the lungs." Effusion into the substance of the lungs, is peculiarly apt to occur in this disease, and it is to this circumstance that its danger is to be attributed.

Diagnosis.—Constriction and aching sensation, extending over the whole chest; breathing very much oppressed, quick, anxious, irregular, labored; the voluntary muscles of respiration often called into play; expectoration is at first dry, but it soon becomes viscid and frothy, and sometimes streaked with blood; more or less cough, hoarse and painful in children; throbbing pain in the forehead and aching pain in the eyes, aggravated on coughing; face red or pallid; tongue moist and covered with a white fur; bowels costive; temperature of the skin nearly natural, but sometimes hot and dry; pulse at first but little increased in frequency, becoming, as the disease advances, very rapid; urine scanty and high colored; vertigo; rattling in the throat and chest; wheezing respiration. As the malady approaches towards a fatal termination, the skin becomes suffused with a cold perspiration; the cheeks and lips pale and livid; the extremities cold; rattling and sense of suffocation in the throat; extreme prostration and complete insensibility.

The peculiar respiration (the mucous rale or rattle of Laennec) which

is so apparent is owing to the "passage of air through the diseased secretion of the air passages, and may be heard by placing the ear to the chest, long before it becomes so severe as to be distinguished by any other means." (*Mackintosh.*)

The inflammation of bronchitis is of a much more intense character than that which is present in *catarrh* or *influenza*, and there is always more or less sanguineous congestion of the lungs. Many of the more urgent symptoms of the complaint are due to this last circumstance, like the great difficulty of breathing; the painful sense of tightness; stricture and oppression in the chest; wheezing respiration; severe cough; pallid countenance; vertigo; pain in the head, &c. During the progress of this disease, the substance of the lungs often becomes hepatized.

Summary of Physical Signs.—*In acute Bronchitis.*—Percussion-resonance clear on both sides of the chest. In the early stage, before liquid secretion takes place, the dry rales, especially the sonorous, irregularly present in a certain proportion of cases. After secretion, the moist rales frequently commingled with the dry. The rales heard on both sides. The respiratory murmur at the upper portion of the chest in front exaggerated and harsh in the early stage, subsequently liable to be diminished or suppressed over a part or the whole of the chest. Sometimes reproduced suddenly after an act of coughing. In some mild cases preserving its normal intensity and characters. A ronchal fremitus occasionally present.

2. *Capillary Bronchitis.*—This disease was formerly known by the title of *peri-pneumonia notha*, or *suffocative catarrh.* It consists anatomically in an irregular contraction of the calibre of the minute tubes, the presence of liquid within these tubes, and obstruction to the passage of air to and from the vesicles. This obstruction causes the principal physical signs.

Diagnosis.

Capillary Bronchitis.	*Œdema Glottidis.*
The reverse obtains in this disease.	The seat of the obstruction is indicated by the sudden arrest of the inspiration, the expiration remaining free; when there is no pulmonary complication, auscultation discovers only diminution or abolition of the vesicular murmur; not the rales of capillary bronchitis. The finger carried to the top of the larynx proves the existence of œdema by the touch.
Difficulty of respiration, although increasing at times, is persisting.	Spasm of the Glottis.—Common in early life, rare in adults. It is paroxysmal, the respiration in the intervals being either free, or but slightly em-

Capillary Bronchitis.

Pulse increased in frequency.

Voice unaffected.

Auscultation shows signs of inflammation.

Orthopnœa and defective hæmatosis in minute bronchial branches, and physical signs nearly the same as in asthma.

Sonorous and sibilant rales.

The affection is inflammatory, and not habitual nor paroxysmal.

Pulse greatly accelerated.

These symptoms are the same as in acute bronchial inflammation extending to, but not beyond the smaller branches. But the symptoms all more serious, pulse more frequent, indicating inflammation.

Peculiar to young subjects.

Inflammation extends from the larger to the minute bronchial tubes throughout the lungs, perhaps the air-cells, the lobules, in parts, become implicated.

Ordinary bronchitis exists in both these diseases.

Dyspnœa and hurried respirations in both. But in capillary bronchitis is a serious disease. Respirations frequent; asphyxiating symptoms strongly marked

Œdema Glottidis.

barrassed. It is characterized by a sonorous crowing inspiration, distinctive of its laryngeal origin.

Pulse not increased in frequency.

No positive signs of inflammation.

Laryngitis in the Adult and Croup in Children.—Voice hoarse, husky, or extinguished. In croup the soronous tubular breathing and cough are diagnostic.

No signs of inflammation.

Asthma, orthopnœa and defective hæmatosis evident.

Sonorous and sibilant rales well marked. But here the chief element is spasm. The affection is paroxysmal, though often of long duration. The patient is known to be subject to them.

Previous signs denote emphysema.

The pulse may remain unaffected, and is never greatly accelerated.

Acute Bronchial Inflammation in a Person affected with Emphysema.—When the inflammation extends beyond the larger, but not to the minute branches, there is suffering and laborious respiration, impaired oxygenation of blood. When there is emphysema, the sonorous and sibilant rales are present with mucous rales, but not the subcrepitant. The case is less dangerous than acute bronchitis, as is shown by the less excited pulse.

The dyspnœa is great in proportion to the obstruction. Spasm of the muscular fibres of the bronchial tubes.

Lobular Pneumonitis. Broncho-Pneumonia.—Peculiar to young subjects.

Inflammation extends from the larger tubes to a certain number of the air-cells of the lobules on each side, limited only to the minute, to the intermediate minute branches leading to the inflamed lobules.

A less grave disease.

Capillary Bronchitis.	*Asthma.*
by dyspnœa, restlessness, lividity; career more rapid.	Sub-crepitant rale belongs to both affections, but here it is limited in its seat to the minute tubes in immediate relation to the inflamed lobules. Thus it is confined to certain portions.
Sub-crepitant rale throughout the lungs, diffused over the surface of the chest.	

"Summary of Physical Signs of Acute Capillary Bronchitis.—Percussion resonance on both sides not diminished, but often exaggerated; sonorous and sibilant rales diffused over the chest, the latter more prominent and abundant than in ordinary bronchitis; the sub-crepitant rale on both sides, and observed especially at the inferior posterior portion of the chest; coarse and fine mucous rales intermingled to a greater or less extent."—(*Flint.*)

3. *Pseudo-Membranous or Plastic Bronchitis.*—Characterized by the exudation of fibrin on the mucous surface of the smaller bronchial tubes, forming what is termed false membrane, identical with the deposit which takes place within the larynx and trachea in croup. It commences not in the trachea as in croup, to extend downwards, but in the minute branches, and extends upwards towards the trachea.

Symptoms.—Cough, preceded by dyspnœa, is followed by expectoration of croupal matter. These characteristic sputa are expectorated at intervals varying greatly in different cases, days, weeks, months and sometimes years intervening; the remaining symptoms in these attacks are those of acute or subacute bronchitis. The expectoration of false membrane may be followed by relief more or less perfect; collapse of pulmonary lobules or solidification from an extension of the inflammation to the air-cells will add to the gravity of the symptoms and the danger. When the exudation is general throughout the lungs, the symptoms of acute bronchitis are urgent, and the disease may prove rapidly fatal. When but limited portions of the lungs are affected, recovery takes place after the expectoration of the membranous products.

This disease is rare. It is more common in males than females; is most common between the ages of twenty and fifty. It affects persons debilitated by previous ill health; may be acute or chronic.

Diagnosis.—*Summary of Physical Signs.*—In addition to the physical phenomena, positive and negative incident to other varieties of bronchitis, "a peculiar valvular or flapping sound (*bruit de soupape*) has been observed, the sub-crepitant rale, if present, less diffused than in most cases of capillary bronchitis."

Causes.—Protracted exposure to cold; alternations from heat to cold; inhalations of dust and other irritative substances; insufficient clothing, and improper exposure of the throat and neck, after much talking, public speaking, or singing

It is now generally believed that one great cause of the very frequent

occurrence of chronic bronchitis may be found in the reprehensible fashion of shaving the beard. That this ornament was given by the Creator for some useful purpose, there can be no doubt, for in fashioning the human body, he gave nothing unbecoming a perfect man, nothing useless, nothing superfluous. Hair being an imperfect conductor of caloric, is admirably calculated to retain the animal warmth of that part of the body which is so constantly and necessarily exposed to the weather, and thus to protect this important portion of the respiratory passage from the injurious effects of sudden checks of perspiration.

When one exercises for hours his vocal organs, with the unremitted activity of a public declamation, the pores of the skin in the vicinity of the throat and chest become relaxed, so that when he enters the open air, the whole force of the atmosphere bears upon these parts, and he sooner or later contracts a bronchitis; while, had he the flowing beard with which his Maker has endowed him, uncut, to protect these important parts he would escape any degree of exposure unharmed.

The fact that the Jews and other people who wear their beard long, are but rarely afflicted with bronchitis and analogous disorders, is now generally considered a forcible argument in support of these views.

CHRONIC BRONCHITIS.

Chronic bronchitis is at present an exceedingly common and fashionable disease. From the fact of its occurring for the most part in clergymen, lawyers and other public speakers, is has acquired "*caste*," and, therefore, it may be that every slight affection of the respiratory apparatus is now denominated *bronchitis*. It occurs at all periods of life, and, in general, is insidious in its approach, though it occasionally succeeds to acute bronchitis.

When the disease follows an acute attack, the patient will be left with some cough; expectoration of viscid or puriform sputa; dyspnœa on the slightest exertion; noctural exacerbations of fever; emaciation, and in some instances hectic symptoms.

The stethoscope usually gives us the sound of the crepitous ronchus at certain points, and now and then over the whole chest, while at the same time the respiratory murmur may often be heard.

Those cases which come on more insidiously, will be often found complicated with chronic laryngitis, indicated by *hoarseness* of the voice; raw or scraping sensation in the larynx, and extending over the chest; copious expectoration of opaque or purulent sputa, which affords relief to the patient; hoarse, hollow and painful cough; increased susceptibility to changes of temperature; night sweats, and general debility.

When the expectoration is copious, we shall have the crepitous

ronchus, either at isolated points or over the whole chest; but if there is no expectoration, then the sound which will be elicited by auscultation, resembles snoring, and has been termed "*dry sonorous rattle*;" or in some instances, the "*sibilous rattle*," like the chirping of birds. Laennec also mentions a clicking sound, which he compares to the action of a valve.

Percussion affords us no aid in our investigations of bronchitis, but pressure with the hand upon the chest, will often enable us to detect the mucous rattle without difficulty.

Complications of Bronchitis.—Bronchitis is frequently associated with laryngitis, and with inflammation of the fauces extending downward from the pharynx. This complication is often attendant on scarlatina, or follows that disease after it had appeared to be terminating favorably. Bronchitis often follows measles, continued fevers, tracheitis, whooping cough, catarrh of the stomach and chronic hepatitis.

Dilatation of the Bronchi.—This is one of the sequelæ of chronic bronchitis, or of whooping cough complicated with this disease. The expectoration is copious and puriform, and according to M. Louis it is fœtid.

Ulceration of the Bronchi.—This alteration of structure is frequently attendant on the advanced stages of chronic bronchitis, more frequently however when complicated with tubercular phthisis. It is often found in cases in which bronchitis has been caused by the mechanical irritation of mineral, vegetable or animal molecules. The existence of ulceration of the bronchi is not always suspected, as the signs accompanying it are the same as those which accompany the most chronic states of bronchitis or tubercular consumption.

Treatment of Bronchitis.—The medicines most worthy of consideration in the treatment of acute bronchitis, are *Aconite*, *Tartar-emetic*, *Belladonna*, *Bryonia*, *Hepar-sulph.*, *Carbo-vegetabilis*, *Spongia*, *Ammonia-carb.*, *Rhus-tox.*, *Mercurius*, *Sulphur*, *Sambucus*, *Arsenicum*, *Digitalis*, *Hyoscyamus*, *Pulsatilla*, *Sanguinaria*.

Aconite.—As in other inflammatory diseases, *Aconite* is also indicated in acute bronchitis, whenever there is a rapid and full pulse, hot skin, and other symptoms indicative of a high state of febrile excitement. It may be given at the second or third potency, and repeated every hour, till a decided amendment ensues.

Tartar-emetic is indicated when there are severe paroxysms of coughing, with suffocative obstruction of respiration; wheezing respiration; mucous ronchus; very great shortness of breath, with anxious oppression at the chest; great anxiety and agitation; palpitation of the heart; pain in the back and loins; pressure on the eyes; pains in the head; thirst.

During the progress of acute and chronic bronchial affections: severe

paroxysms of coughing, with rattling of mucus in the bronchia, difficult respiration, palpitation of the heart, nausea, vomiting, hoarseness, weakness; easy perspiration, cough aggravated by eating, speaking, inhaling cold air, or lying down. Repeated doses of the first trituration rarely fail to afford prompt relief in such cases.

ADMINISTRATION.—A grain of the first trituration of *Tartar-emeti* to four ounces of water,—a tea-spoonful every one, two, three, or four hours, as the urgency of the symptoms may demand.

Belladonna.—Cases of acute bronchitis, in which the predominant symptoms are: oppression and weight at the chest; short anxious and rapid respiration; shaking, spasmodic cough, and decided cerebral disturbance from the commencement of the attack.

ADMINISTRATION.—Same as *Bryonia.*

Rhus-toxicodendron.—Worse in the evening, at night, and with perfect rest. Symptoms lessened by rising from the bed and walking about, on the other hand they are aggravated by external cold, while frictions, warm applications alleviate them. Though gentle exercise relieves them, they are aggravated by all rough movements or severe exertions.

In a case of violent cough accompanied by convulsive paroxysms, with considerable oppression and mucous rale continued through the day, but redoubling its violence toward evening, after all treatment had failed, Rhus 5th was given. The patient slept eight hours, and the cough diminished daily. It returned in subsequent winters, but was always relieved by the same remedy.

Another case in which fatigue paroxysms came on worse in the evening toward eight o'clock. Rhus 12th produced aggravation the first evening; but there was great improvement the same night. Hepar-sulph. was given for the catarrhal cough remaining.

Bryonia.—Headache aggravated by movement; pressure in the eyes; dryness in the throat; respiration difficult, short and anxious; pressure on the chest as if from a weight; stingings in the chest; cough with stingings in the chest, or with severe aching pains in the head. In the acute attacks of children with suffocative cough, very great oppression at the chest, exceedingly difficult, rapid and anxious, or sighing respiration, loud mucous ronchus, rapid pulse, hot skin, thirst, great agitation and anxiety, this remedy is also especially called for.

The marked characteristics are: aggravation upon movements in the open air, after eating, and towards midnight.

It may be exhibited at the first to the sixth potency, and frequently repeated until the disease subsides. The practitioner may sometimes alternate it with *Aconite* with benefit.

Nux-vomica.—Symptoms analogous to those of Bryonia: like them, they are aggravated by motion, after eating and in the open air; but

they display their full strength about two, P. M., Rhus about midnight, and upon waking in the morning. They are also strongly marked at the beginning of the motion, by continuance of which they are diminished.

Pulsatilla.—Effects particularly discernible in the afternoon and evening, and in the recumbent posture; they are lessened by motion this not so decidedly as under Rhus-tox: but unlike the latter they are aggravated by local heat and relieved by cooling applications.

Pulsatilla is specially indicated in bronchitis in which the cough is dry in the first part of the complaint, but soon becomes moist, "with easy expectoration of abundant yellow matter; sometimes with nausea, or retching, or a sensation of reversion in the stomach, as if about to vomit. The cough occurs principally at night, on lying down; proceeds from a tickling or itching in the larynx, or by scraping and dryness in the trachea, accompanied with fatiguing pains in the abdomen, and stitches in the back, shoulders, sides, or chest, and relieved on rising up in the bed." (*Croserio.*) It may be given in the same manner as *Bryonia.*

In *chronic bronchitis*, *Hepar-Sulph.* is an important specific for the following characteristic symptoms: anxious, hoarse, and wheezing respiration, much aggravated on lying down; attacks of suffocation, which force the patient to throw the head back, in order to take breath dyspnœa; dry cough and hollow cough; cough with expectoration of mucus; hoarseness of voice; exacerbations of fever in the afterpart of the day, succeeded by night-sweats. In cases which seem to have been connected with suppression of *salt-rheum*, or other eruptive disease, or metastasis of arthritic inflammations, this remedy is frequently applicable. It is also useful in those cases which threaten to terminate in tubercular consumption.

The third trituration may be used: a dose from two to four times in twenty-four hours.

Sanguinaria-canadensis.—This plant was first noticed by Cornuti in 1635, in Canada, and was cultivated in England before 1640. Linnæus first settled the name. It belongs to the class *Polyandria order monognia*, in the sexual system, and the natural order Papaveraceæ.

Analysis shows it to contain: 1. Sanguinarine; 2. Porphoxin; 3. Puccine; 4. Chelidonic acid; 5. Fecula; 6. Saccharine matter; 7. Vegetable albumen; 8. Orange-colored resin; 9. Fixed oil; 10. Extractive matter; 11. Lignin; 12. Gum.

Sanguinarine, discovered by Dr. Dana, constitutes the active principle of the plant. Experiments, performed on animals by Dr. Fenwick, of Montreal, show that in its concentrated form, Sanguinaria is extremely irritating to man and animals, affecting principally the stomach and bowels. An excessive quantity produces: Violent vomiting, a burning sensation in the stomach, tormenting thirst, faintness, vertigo,

indistinct vision, alarming prostration of strength. In more moderate doses its effects are emetic-nauseant, expectorant, diaphoretic; also, in a lighter degree it acts as a narcotic, sedative stimulant, and alterant. It has long been known as an emmenagogue, escharotic and errhine. It has been employed in pneumonia, phthisis, bronchitis, catarrh, asthma, croup, diphtheria, cynanche-maligna and pertussis.

Sanguinaria stands at the head of the class of remedies known in the books as *Deobstruents*. They are supposed to produce a general change of action or condition in the whole secernent and absorbent system; more especially they remove torpor and occasion improved and increased secretions from the liver and from all the glandular viscera. In this way it has been supposed, they relieve various dysthetic or cachectic diseases, and certain affections of the skin; induce a direct resolution of many atonic, acute, and sub-acute, or chronic inflammations of the viscera, muscles and joints. These effects are entirely independent of any direct change in the degree of vital energies of the arterial system, or any material evacuations of any sort as necessary accompaniments. In short, when curative effects are obtained, they are obtained through the homœopathic action of the remedy.

In the concentrated form Sanguinaria is extremely irritating, affecting principally the mucous membrane of the stomach and bowels. A dose of from eight to twenty grains produces: violent vomiting with quickly-diffused, transient nervous thrill; burning sensation in the stomach; faintness extending to the whole system, the thrill extending to the fingers and toes; tormenting thirst; faintness; vertigo; indistinct vision; alarming prostration. (*Dr. Tully. Amer. Medical Recorder.* 1827.) In moderate doses it causes vomiting, nausea, expectoration, diaphoresis. It has also some narcotic, sedative stimulant and alterative properties; it diminishes the frequency of the pulse, and is used as an emmenogogue, escharotic and errhine. It is used in affections of the chest and throat; pneumonia, phthisis, bronchitis, catarrh, asthma, croup, diphtheria, cynanche maligna and pertussis. It has also been used with success in rheumatism, jaundice, dyspepsia, hydrothorax. It rarely diminishes the frequency of the pulse, till it has been continued for a week or ten days.

It has been successful in protracted and distressing affections of the chest with repeated attacks of pneumonia, hæmorrhage from the lungs, constitutional debility, habitual returns of spasmodic obstructions of respiration, in plethoric persons who suffer with extreme difficulty of respiration, the cheeks and hands becoming livid, pulse full, soft vibrating, easily compressed. In protracted catarrhal affections, assuming the appearance of incipient consumption, it often gives complete relief; though in many cases no amendment is perceptible till the remedy has been employed for about two weeks. After ten days or more the cough

begins to abate, the pulse diminishes in frequency, and this abatement goes on slowly and regularly till all symptoms of irritation disappear. At the same time, the appetite improves, digestion and the pulse are improved. The action of the mucous membrane of the bronchia is increased or diminished according to the condition; it is *specifically* affected beneficially. When emetic doses are given, the quantity of fluids evacuated is small; the nausea is of short duration; there is no refrigerant, diaphoretic, diuretic, or purgative power.—It differs from other emetics in the peculiar shock or nervous thrill that it sends throughout the system; and its beneficial effects are more specially obtained through the sedative and nauseating property it shows in large doses in acute cases, and the deobstruent power displayed by small doses in chronic cases.

It is specially adapted to the pretubercular stage in phthisis also in the second or third stages; it renders expectoration easier, breathing clearer, lessens the spasmodic efforts to cough; it acts here as an expectorant and mild stimulant.

In chronic bronchitis it allays the cough and irritation of the follicular inflammation of the throat. In chronic catarrh associated with emphysema, in coryza and cold in the head it has been much employed; also in membranous croup.

In *croupal diphtheria* it acts with energy, producing a thrilling effect upon the whole mucous membrane of the fauces and respiratory tract, with a feeling of warmth. In the form of decoction it seems to give vitality to the suffering throat.

An acetous decoction of Sanguinaria as a gargle is invaluable.

Lobelia.—Cough, sneezing, with gaping and flatulent eructation. Short, dry cough.

Chest.—General tightness of the chest with short and somewhat laborious breathing. Involuntary disposition to keep the mouth open to breathe; oppression of the chest, tightness of the chest, with heat in the forehead. Sensation of fullness of the chest; breathing short and superficial; 24 respirations in a minute. Oppression causing deep breaths to be taken; deep inspirations to relieve oppressive pain in the epigastrium; accelerated breathing; breath seems insufficient; inclination to sigh; short inspiration; slow expiration; difficulty in holding the breath; tickling, smarting sensation in the larynx; irritation to cough; feels oppressed; tickling, on taking deep breath, under lower part of the sternum. Feeling of a lump in the throat, impeding deglutition and respiration. Chronic dyspnœa, with feeling of a lump in the throat above the sternum, impeding deglutition and respiration; paroxysmal asthma; pain in chest increased by deep inspiration; burning feeling in the breast, passing upward.

Senega.—The Polygala-senega, Seneca-snake-root, is a popular re

medy for croup; given in a weak infusion it sometimes cures by causing free expectoration. There is a proving by Stapf. (*Additions, &c.*)

Larynx and Trachea.—Scraping and dry contractive irritation in the throat; roughness and dryness with cough; dryness in the throat, impeding speech; dry cough with oppression of the chest and roughness in the throat; disagreeable, long-continued cough; increased short, hacking cough in the open air; increased secretion of mucous inflammatory swelling of the fauces.

Chest.—Frequent and deep inspirations; oppression of the chest when going up-stairs; oppression of the chest with slight shooting pains; tightness and dull pressure on the chest; pain under the right scapula when coughing or drawing deep breath; aching pain in the chest, as if forcibly compressed; dull stitches in the left side when lying down or sitting; burning sensation under the sternum. Sore and violent pain in the chest on sneezing; congestions of blood in the chest oppression in the chest with flushes of heat in the face; frequent pulse, worse in the afternoon; pain in the region of the heart during deep inspiration; general sensitiveness and pain in the walls of the thorax.

Urine.—Frequent emission of urine with greenish tinge, depositing a cloudy sediment. Urine at first mixed with mucous filaments, afterwards it becomes thick and cloudy, or cloudy immediately after its emission; burning in the urethra before and after micturition; burning in the urethra in the morning in urinating.

Mouth.—Smarting burning in the region of the palate; dryness of the mouth; prickling and stinging in the mouth, with accumulation of saliva; ptyalism; putrid smell from the mouth; white-coated tongue; burning at the tip of the tongue; bad taste in the mouth; metallic taste; increased thirst; loss of appetite; eructations; deranged digestion; nausea; retching; vomiting of watery mucus; painful and gnawing sensation in the stomach; feeling of emptiness; aching or spasm of stomach; burning followed by retching and vomiting; feeling of hunger and gnawing below the pit of the stomach; pressure on the pit of the stomach; shifting boring pain in the umbilical region; stools increased in frequency and fluidity.

Apis-mel.—Chronic tendency to inflammation of the upper part of the alimentary and respiratory organs, popularly comprised under the name of bronchitis. It is characterized by recurrence of the troubles after every cold, particularly exposure to wet; highly inflamed or mottled appearance of the fauces and contiguous parts; constant discharge of a tough, stringy, clear phlegm, which produces a tendency to hawk frequently; hoarseness and huskiness of the voice, and returning after every cold, even if repeatedly cauterized. In a case of a minister who complained of cold, sore throat, great horseness, pain from talking, Apis 3°, a few doses restored him so thoroughly that he

was able to fulfill his clerical duties only two days afterwards. Many months afterwards a similar attack was cured by the same remedy.

Cedron.—Dr. Casanova gives a case of a gentleman in whom chronic bronchitis had lasted fourteen years. Predominant symptom: a troublesome cough which came regularly every morning about six o'clock and lasted two or three hours, after which he remained perfectly free from it during the rest of the day. It was at first dry, with oppressed rattling respiration, becoming easier when expectoration became free; expectoration viscous, frothy, with some streaks of blood. Inhalation of tincture of Belladonna in hot water gave some temporary relief. Cedron 3° in solution was given at night; it was so efficacious that it checked the troublesome periodical cough at once. Cedron is no specific for bronchitis. "The specificity lies in the relationship which exists between the *period*, producing powers of the remedy and the *periodicity* of the disease, no matter what the other symptoms may be.

Arsenicum.—In one case of chronic bronchitis, the face was bluish and the expression anxious; the eyes were injected; the intercostal spaces prominent; percussion clear; the heart displaced, and the beat of the apex felt in the scrobiculus cordis; fine rales in some parts and coarse in other parts throughout the chest; respiration short and quick. He was obliged to sit up constantly and grasp the side of the bed; pulse 90, small and intermittent; liver one inch below the ribs; the diaphragm also depressed; œdema of the feet; constant dyspnœa. Immediate relief after the first dose of Arsenicum, and almost well in four days. Cured.

Arsenic Inhalation.—M. Trousseau orders the inhalation of the fumes of Arsenious-acid, by means of cigarettes, each charged with one-fifth of a grain of Arsenic, and three or four of them being used during the day, the smoke being inspired as deeply as possible. It is said to give much temporary relief.

When bronchitis is complicated with *angina trachealis*, we may resort to *Spongia* with confidence, either alone or in alternation with *Hepar-sulph.* If febrile symptoms run high, these remedies should be preceded by *Aconite.*

When suffocation is threatened from loss of tone and power of the respiratory organs, rendering them incapable of expelling the morbid secretions which obstruct the free entrance of air into the pulmonary structure, *Ammonium-carb.*, *Rhus-tox.*, *Sambucus*, *Arsenicum*, *Digitalis*, *Hyosciamus* and *Stannum* are worthy of careful examination. In making our selection from these medicines, regard should not only be had to the actual symptoms present, but to the temperament, hereditary predisposition, and the remote cause of the disease. For example, if in any given case, the indications actually present point equally to *Hepar-sulph.* and *Rhus-tox.*, but if the attack was found to be con-

nected with a repelled eruption, our choice would evidently rest upon the former medicine; while if the disease was found to be dependent upon an arthritic habit *Rhus* would be the appropriate remedy.

In the last stages of acute bronchitis, when there is danger that the malady will run into the chronic form, *Sulphur* has been highly lauded by many eminent practitioners. If the disease occurs in persons of lymphatic constitutions, and subject to eruptions, swelling of the glands, &c., this remedy can scarcely be dispensed with during the progress of the attack.

For the profuse and debilitating sweats which now and then occur during the continuance of the symptoms, valuable specifics will be found in *Mercurius*, *Acid-nitr.*, *Acid-phos.* Many physicians have commended *Carbo-veg.*, in the strongest terms, in *chronic bronchitis*, and it has doubtless effected many excellent cures. It may be used at the third attenuation, one grain once or twice daily.

Mercury.—Aggravation occurs at night, and in bed; but this aggravation begins and ends with the night strictly so called; its pains are increased by the warmth of the bed and are not increased by cold, and are rendered more acute by motion. Compare this remedy with Rhus-tox., Bry. and Pulsatilla.

5. ŒDEMA OF THE LUNGS.—PULMONARY ŒDEMA.

The serous effusion takes place primarily and chiefly within the air-cells, but the infiltration extends to the intervesicular areolar tissue. The volume of the affected lungs is slightly augmented; it does not collapse or crepitate on pressure. A yellowish limpid fluid, somewhat *frothy*, oozes in abundance on cutting the lungs, showing that some air finds access to the cells; the texture is solid, resisting, non-elastic, pitting on pressure as in sub-cutaneous œdema.

Œdema of the lungs may in some degree be found in most of the lung diseases which terminate in death; in the congestion which is found in the latter stage of fevers, and may even be developed after death. As a separate disease it is always dependent on some previous malady; as scarlatina, organic disease of the heart with mitral regurgitation or obstruction, or hypertrophy affecting the left ventricle; Bright's disease, or morbid blood conditions, such as give rise to dropsies elsewhere. It may progress rapidly and be speedily fatal; then called serous apoplexy of the lungs.

Physical Signs.—There is dulness on percussion over the affected part. When the lung is made dense by serous infiltration, as when solidified from inflammatory exudation or tubercle the sound may be tympanitic over the lung. The resistance of the thoracic wall over the lung becomes notably increased. A subcrepitant rale is caused in the

air-cells and minute bronchial tubes, and discovered by auscultation. In other respects the respiratory sound is broncho-vesicular, though not so strongly marked as in inflammatory or tuberculous solidification; the high-pitched metallic sound often heard in the latter is wanting. Great feebleness and suppression of the respiratory sound belong to œdema rather than to pneumonitis or tuberculosis.

If the above given physical signs are found in a case in which there is evident organic affection of the heart, obstruction of the pulmonary circulation, such as belong to diseases which affect the mitral orifice, or in conjunction with general dropsy, the œdema may be considered as established with considerable certainty; provided, we have evidence against pneumonitis; such as the absence of pain, of the rust-colored sputa of fever, "and of the physical signs, which denote solidification of the lung from the deposit of inflammatory exudation, viz., a well-marked and intense bronchial respiration, broncophony and the true crepitant rale. The latter sign, however, may be present in cases of œdema." Hypostatic congestion always affects the lower and posterior portion of the lungs. Œdema is also more common in the same parts. If œdema should occur in the *superior* and *anterior* portion of the chest, this mark becomes a diagnostic. Hydrothorax may be distinguished by the change of level of the liquid on the change of position by the patient. (See that article.)

"Summary of Physical Signs.—Absence of vesicular resonance on percussion, with increased parietal resistance; sub-crepitant and, occasionally, crepitant rale; broncho-vesicular, or the bronchial respiration, never intense or metallic; absence of respiratory sound; increased vocal resonance and fremitus uncertain, and rarely, if ever present, in a marked degree." (*Flint, Respiratory Organs*, p. 515.)

Treatment.—When pulmonary œdema follows scarlatina it is always accompanied by congestion of the kidneys. The chief remedies for this condition are: Apis and Arsenicum.

Apis.—First dilution. Œdematous and erysipelatous appearance in the throat; rapid and laborious breathing, worse usually at night; face and lips livid; puffed face and eyelids.

Arsenicum.—(Second dilution.) General and rapid sinking of strength; œdema of the face; bleeding from the nose; bluish lips, black sores at corners of the mouth, ulcerating; fœtid smell of throat, involuntary micturition; hæmaturia; suffocative paroxysms of oppressive or arrested breathing.

Other remedies are: Digitalis, (first dilution); Nitrum, (first trituration); Cannabis-indica, (first dilution); Kali-hydriod., (first trituration); Apocynum-cann. (tincture); Mercur.-hydriod., (first trituration.) Bry. (first dilution); Terebinth (first dilution).

6. HÆMOPTYSIS.

Seat of the Disease.—The mucous membrane throughout its distribution in the lungs, their appendages and the fauces, being liable to sanguinous exhalations, we distinguish its immediate position thus:

1. When the hæmorrhage is from the latter structures, there is merely hawking without any pulmonary oppression, coughing or vascular excitement. On examination of the throat, we shall in some instances perceive the source from whence it comes.

2. Hæmoptysis proper. It appears in two forms:

   1. From the mucous membrane of the lungs;

   2. From the tissue of the lungs.

Diagnosis.—The latter, affecting the lung itself, is generally accompanied with all the violent symptoms, coming on more suddenly, and with such intense oppression as even to threaten suffocation.

External Exploration.—This cannot always be trusted; but much may be learned by it. In hæmorrhage of the mucous membrane, the chest on percussion is perfectly sonorous, and the stethoscope betrays the mucous rattle proportionate to the quantity of blood contained in the bronchia. Percussion, when pulmonary engorgement is considerable, elicits a dull sound over the affected part, and the stethoscope shows the want of the respiratory murmur in it, and the crepitus instead of the mucous rattle. In ambiguous cases these resources fail, as when the two affections are united, or the engorgement is slight, or is seated in a portion of the lungs beyond the reach of percussion. In any view, percussion is rather a point of curiosity than of practical utility. But in chronic lesions, as tubercles, hepatization, &c., of which hæmoptysis may be the effect, the discussion is important and is happily easy. Skill in applying these means gives the power of deciding at once with tolerable certainty.

Pathology.—The post-mortem appearances vary according to the conditions. The appearances after death from hæmorrhage have been seldom observed, as death seldom results from it. In the most simple cases, caused merely by turgescence of the vessels of the tissue, little is seen except the surface covered with blood, the congestion having been relieved by the previous effusion. When there has been actually phlogosis, the ordinary signs of that state are seen. And, if a chronic case, there are changes of structure, thickened, and either softer or more indurated or condensed than natural, with occasional fibrinous concretions in the form of polypi.

Extravasations in the parenchyma are rare and resemble much those appearances in cerebral apoplexy. Looking at the lung thus affected, we shall discover such portions of it circumscribed from one to two or three inches, of a deep dark-red color and of a density equal to the

completest hepatization. Cutting into these portions, they are found to consist of the concrete blood,—the surrounding tissue being crepitant and of the usual color, or reddish, as if tinged with blood.

In more complicated forms, there are discoverable in different instances, besides tubercles in their several stages of development, all those organic lesions to which the lungs are exposed. Extending our researches further, we may find the heart, liver, spleen or other viscera variously diseased; while the lungs shall escape in some cases and suffer in others. In the former case the irritation which caused the effusion of blood is entirely of a derivative nature.

Prognosis.—Inactive hæmoptysis is generally far more intractable than active hæmorrhage. But the degree of danger is influenced by the position whence the bleeding proceeds, and still more by the pathological condition. Coming from the larynx and adjacent structures, it has been deemed less alarming, but it is sometimes serious even when principally confined to the fauces. But it is presumed that the larynx was at the time, or subsequently became involved,— and when hæmorrhage from this structure are precursory symptoms as they are apt to be, probably the lungs were previously affected, the morbid action ascending upwards; or it may be the reverse, the irritation descending till the whole pulmonary system became engaged. Caused by tubercle or by any other organic lesion, an unfavorable result is sooner or later to be anticipated; such as emanate from the pulmonary substance itself, are almost uniformly and speedily fatal, but these are of rare occurrence. Belonging to the mucous membrane, there is little danger, even when the hæmorrhage is copious. Death indeed seldom happens as an immediate consequence of hæmoptysis. Heberden says, in sixty years practice he never lost a case by it. Dr. Chapman says, his practice of forty years supplies him with very few instances, and thinks none of these were from the mucous membrane.

The chief source of alarm in this disease is the apprehension, frequently well grounded, that it is an outward expression of disease of the lungs, especially tubercular. Exempt from tubercles they appear to suffer no more from hæmorrhage than other parts. In many cases we see the bleedings from the lungs repeated, year after year, and ultimately do well. A distinguished person in a neighboring city, who died at the age of ninety, was subject to very frequent hæmorrhages from the lungs nearly two-thirds of his life. It is, however, always desirable to effect a cure. The existence of hæmoptysis shows an undue afflux of blood to these organs, an undue irritation which causes their determination; and it is certain that this is the very state of things that, by continuance, is so apt to lay the foundation of permanent mischief.

Treatment.—The principal remedies are: *Acon.*, *Hamamelis*,

Millefolium, Arnica, China, Ferrum, Ipecac., Nitric-acid., Bry., Phos., Sulph., Arsen., Crocus, Bell., Hyosc., Nux-vom., Op., Puls., Rhus-tox.

Aconite.—The paroxysm is preceded by fullness or congestion of the chest, with burning pain; palpitation of the heart, anguish, restlessness, aggravation on lying down; pale face; expression of agony in the countenance; copious discharge of blood from the lungs even when coughing a little.

Arnica.—The hæmorrhage is caused by mechanical injury, fall, blow on the breast or back, expectoration of black and coagulated blood with heavy breathing, stitching, burning and contraction in the chest, palpitation of the heart; great heat in the abdomen, and fainting fits; or, discharge of bright-red, frothy blood, mixed with mucus and coagulated lumps; tickling under the sternum; stitching in the head, and bruised pain in the region of the ribs when coughing. A dose of Aconite may generally precede Arnica.

Ipecac.—Symptoms remaining after Aconite: Taste of blood in the mouth; frequent hacking with expectoration of blood-streaked mucus; nausea and debility. After Arsen. if the paroxysm recurs.

Achillea-millefolium.—Hafnie recommended this plant in 1720 as a remedy for hæmorrhoids. It has a specific power over hæmorrhages in various forms. In the form of tincture in drop doses it has often cured hæmoptysis. Dr. Ruckert (*Annales Hom. Allem.*, Vol. I. p. 114) says: A woman, aged forty-eight years, had every evening for eight days, spitting of blood, followed by a cough, bringing on a fresh expectoration of vermillion-colored blood, a pint in quantity, followed by extreme debility. She took *Millefolium* only three times in the course of three days, and was cured.

2. A young man, subject to attacks of cough with expectoration of pure blood, was cured by a single dose. (Gross.)

Hamamelis-virginica, Witch-hazel.—There has as yet been no complete proving of this remedy; but the clinical experience of many physicians goes to establish its value in certain forms of hæmorrhages, especially hæmorrhoids and hæmoptysis. It was used by the surgeons of General Wayne's army, in 1794, in the treatment of gunshot-wounds, bruises, sprains and hæmorrhages. Within a few years it has come into popular use for the same purposes. Homœopathists have employed it with success in all cases of injury accompanied by *bleeding* where Arnica would otherwise be used, and attribute to Hamamelis some of the powers also of Aconite. Its sphere of action is supposed to embrace specially the whole field of venous congestions which result in hæmorrhage. In one case in which it was given by Dr. Davison for hæmorrhoids, (*London Hom. Review*, 1859,) it produced the following symptoms: "A peculiar pricking pain from the wrist to the shoulder,

which pain was increased by pressure along the course of the superficial veins." On suspending the remedy these symptoms subsided Further use of it cured the hæmorrhoids. They, however, returned after some months, and Hamamelis was resumed (two drops of the tincture in six ounces of water; one table-spoonful every three hours.) "After taking four doses the hæmorrhoids were better; but the patient became alarmed by the pricking pain in the region of the heart. Two days later this pain had become very severe, and was renewed in the course of the superficial veins of both arms. It continued to increase in intensity for ten days, and was then cured by Arnica 12°; while under this treatment a peculiar *tightness of the chest* which had been felt from childhood was permanently cured.

Dr. Thomas (*Brit. Journ. of Homœop.*, Jan., 1858) gives the following synopsis of the powers of Hamamelis: Hæmorrhages from all mucous membranes; those with asthenia or anæmia. Diseases of the veins, inflammation of the veins, *varices*, hæmorrhoids, circocele, varicocele, evil effects of loss of blood, carbuncles, boils, abscesses, and injuries from falls.

Eyes.—Painful inflammations; excessive congestion of the conjunctiva.

Nose.—Bleeding from the nose; feeling of tightness over the bridge of the nose; crowding pressure in the forehead between the eyes, with a benumbed sensation over the whole forehead.

Stomach.—Painful vomitings of blood.

Abdomen.—Varicose veins.

Anus.—Loss of dark blood by stool in typhoid fever. Bleeding and painful piles. Those characterized by burning, soreness, fullness and rawness; weakness and weariness in the back, or feeling as if the back would break. Piles with profuse hæmorrhage.

Kidneys.—Bloody urine.

Sexual Organs.—Circocele and varicocele. Uterine hæmorrhage, (bright-red blood). Milk-leg, swelling of the labia, groin and thigh; difficulty of moving the leg; painful but benumbed sensation of the limb; swelling commencing at the ankle; difficult motion of the limb from stiffness and pain in the hip. Leucorrhœa; active or passive uterine hæmorrhage; dysuria; tenderness, of the os uteri; agonizing soreness over the whole abdomen after a violent blow on the ovarian region. Ovarian inflammation.

Larynx and Trachea.—Cough and *hæmoptysis* with taste as of sulphur in the mouth, and dull frontal headache. Tickling cough with taste as of blood on awakening.

Chest.—Return of inflammation of the diaphragm, with labored respiration, oppressive tightness of the lower part of the thorax; inability to make a deep and full respiration; when attempting to assume the

recumbent position, breathing impossible; a crowding fullness of the neck and head, and sensation that prevents him from lying down; inability to make a deep respiration when standing up.

Lower Extremities.—Varicose ulcers, varicose veins, milk-leg, inflammation of the femoral vein or of all the veins of the leg; with erysipelatous spots near the groin and over the vein, spreading over half the thigh; swelling of the entire leg and foot with tension; heat and pale appearance of the limb; urine scanty, containing sediment; tympanitis; œdema of the whole body, limbs and face.

Skin.—Purpura hæmorrhagica, with epistaxis and congestion of the conjunctiva.

Particular Indications.—The pains are often unbearable, with great sensitiveness to the touch, and fear of exciting new pain on moving.

7. PNEUMORRHAGIA.—PULMONARY APOPLEXY.

Definition.—Extravasation of blood into the parenchyma of the lungs. This may take place primarily either into the air-cells, or into the interlobular and intervesicular areolar tissue; the blood in both cases, coagulating and forming a consolidated mass resembling in density a hepatized portion of lung. The space thus solidified is generally small, seldom exceeding four cubic inches, generally confined to one spot, sometimes in several distinct ones. In very few cases it involves a lobe or an entire lung. Œdema may extend around the extravasation. It *may* terminate by absorption; also by suppuration, or gangrene of the lung. When there is much laceration of the pulmonary structure a cavity is formed containing fluid and coagulated blood. These have been discharged into the pleural sac. The extravasations are commonly deep seated in the parenchyma of the lungs, near the roots of the lungs or in the posterior portion of the lower lobes.

When the extravasation of blood takes place into the bronchial tubes the hæmorrhage is manifested externally as hæmoptysis, it occurs only when the blood gains access to the air-cells. In the greater number of pulmonary apoplexies the hæmorrhage is externally displayed in hæmorrhage from the lungs.

Diagnosis.—The expectoration of blood, though it reveals extravasation into the texture of the lung is not proportioned to its extent; and then it appears only in a small proportion of cases. In others the diagnosis is difficult. Besides hæmoptysis there will be cough expectoration, and embarrassed respiration; but they occur in other forms of disease. When they come on suddenly in one free from lung affection or when the patient has had such attacks before, they may be suspected to be dependent on pneumorrhagia. The disease is frequently seen in

association with heart disease, as hypertrophy of the right ventricle or affection of the mitral valves, as contraction or patency of the mitral orifice.

Summary of physical Signs.—"The evidence of circumscribed solidification, furnished by percussion and auscultation, present in a certain proportion of cases only; moist bronchial rales occasionally observed; cavernous signs succeeding those denoting solidification in some instances."

8. CONGESTION OF THE CHEST IN CHILDREN.

Nature of the Disorder.—Enlargement of the capillary and other bloodvessels of the lungs with partial stagnation of blood. The affection may be slight and may then pass away speedily, or may become serious and terminate in inflammation or dangerous hæmorrhage from the lungs.

Symptoms.—Oppression of the chest; palpitation of the heart; difficulty of breathing; sighing; anxiety. These symptoms are often followed by spitting of blood, or confirmed inflammation involving the pleura, heart or other organs as well as the lungs.

Prognosis.—The severity of the attack and the previous health of patient may indicate the degree of danger. Children threatened with phthisis are liable to have that disease developed by congestion of the lungs; if the attack be violent it may end in inflammation.

Causes.—Plethoric habit associated with tendency to affections of the chest; over-exertion; extremes of temperature; repression of discharges, eruptions or perspiration.

General Treatment.—*Belladonna.* Before inflammation is established; when there is an irritative condition, with dry cough, and difficulty of breathing.

Aconite.—When the congestion is accompanied with chill which may be expected to be followed by fever, it generally arrests the congestion and prevents the development of fever or inflammation.

9. PNEUMONIA—PNEUMONITIS.—PERIPNEUMONIA—LUNG-FEVER.

It has been estimated that in the cities of New-York and Brooklyn pneumonia causes nearly one-tenth of the deaths from all diseases; and that probably this proportion may hold good in other portions of our country. It has been claimed by the advocates of homœopathy that that system of practice where tried has reduced this mortality to only one-half what the old mode of treatment has been obliged to permit, or to five per cent. on the whole number of deaths.

Inflammation of the lungs begins with chilliness, in some cases increasing to a shaking chill followed by heat. During the heat the

patient experiences a pressure deep in the chest, which soon increases to an intense and seated pain. The pain may vary in degree, and may be described as acute, burning, cutting, sticking, aching, dull, oppressive, constrictive, and is accompanied by deep anxiety.

In this pain we observe the commencement of inflammation which extends from the seat of pain to the surrounding parts of the lungs and pleura; and it may involve one or both lungs. The respiration is impeded, painful, anxious, superficial, and is carried on only with the uninflamed portions of the lungs; and when inflammation occupies both lungs the motion of respiration is only visible in the labored action of the abdominal muscles and diaphragm, the thorax not expanding and rising as in health.

In some cases of pneumonia the pain is wanting and then other symptoms must be depended on.

Diagnosis.—The symptoms of lung fever vary so much in different cases, that an exact portrait, which shall be recognisable in all instances, can hardly be given. The signs, however, which are more particularly characteristic may be enumerated as follows: dull or deep-seated pain, or tightness in the chest; frequent short cough, with expectoration of a viscid, tenacious matter of a yellow green, or pale color, sometimes tinged with blood; rapid and difficult respiration; inclination for the most part to lie upon the affected side, or the back; great heat of the skin; headache; thirst; rapid and full pulse (though this symptom is not uniformly present, as the disease sometimes runs on to a fatal termination without any material change in the pulse); general restlessness; urine scanty, very red; and sometimes scalding. The character of the expectoration during the first stage of pneumonia is supposed by many to afford a characteristic mark of the malady: and it is from this circumstance that Laennec has denominated the sputa expectorated, *pneumonic*, or *glutinous*. During the stage of hepatization, the sputa diminish in quantity, become lighter in color and less transparent, until finally, when the third stage supervenes, expectoration of almost a mucous character occurs.

Pneumonia is characterized by: deep cough, at times dry, at times accompanied by expectoration; sometimes spontaneous and frequent, again excited by deep breathing, talking, or swallowing; expectoration tenacious, sticky, at first semi-transparent, slimy, afterwards bloody, saffron or rust color. The patient generally lies on the back.

The fever is acute, not intermittent, though almost disappearing in the morning, and increasing in the evening. The pulse is soft in the morning, becomes in the evening hard and bounding. The cough becomes also more violent. When the disease continues long the fever takes a typhoid form; and after it has reached its climax it manifests its effect on the brain and its membranes by delirium.

The face is intensely red; the head feels dull and painful, there is intense thirst; the urine diminished in quantity, and dark red.

All of these symptoms show inflammation of the lungs, but this is more decidedly proved by percussion: by which means it can be determined whether the inflammation is still confined to the stage of inflammatory engorgement or has passed to the stage of hepatization.

Percussion.—When the organic tension of the pulmonary cells is diminished in consequence of the exudation of bloody serum, percussion yields a tympanitic sound, which is at first clear and full, but becomes much less so as the condensation of the pulmonary tissue, in consequence of the congestion, increases. As soon as the process of hepatization begins the percussion sound becomes dull, *insonorous* and hollow. When exudation has set in, the so-called *crepitant rattle* is heard during an inspiration, and during cough. When a portion of the lungs into which one of the larger bronchial tubes opens, hepatizes, communication between the air in the lungs and the column of air in the trachea and larynx is interrupted: this gives rise to peculiar sounds, termed *bronchial* respiration, bronchophony and consonant rattle. These three sounds are not heard when the bronchus is stopped up, or when the voice and respiration of the patient are feeble. Over the hepatized portion we always hear a peculiar whiffing, bronchial respiration, but never the vesicular murmur.

Sometimes pneumonia is complicated by more or less derangement of the biliary organs, when we shall have superadded to the lung affection the symptoms indicative of such derangement. This variety of the complaint is termed: *bilious pneumonia.*

Latent Pneumonia.—This modification of the disease depends upon a certain peculiarity of constitution and is entirely unlike ordinary pneumonia. It seems to commence by the second stage, or that of hepatization. M. Saucerotte describes it as follows: "*Premonitory symptoms*, either entirely absent, or of slight importance, consisting of lassitude, with shivering, loss of appetite, and but little fever."

General Symptoms.—The temperature of the skin is not sensibly augmented; the pungent heat of ordinary pneumonia seldom present; pulse usually but little affected; respiration natural, and no pain in the chest. Percussion always elicits a dull sound over a considerable extent, and bronchial respiration is audible over the same locality. In some cases slight crepitation may be heard around the hepatized spot."

"Progress and duration variable. In some cases we have seen the disease linger for six or seven weeks. When the case terminates favorably the dullness gradually disappears, and the bronchial souffle is replaced by crepitation; respiration becomes more free, and the general aspect of the patient improves."

Diagnosis.—Pleurisy is the affection with which latent pneumonia

is apt to be confounded. In chronic pleurisy, however, there is more constantly a pain in the side, and the region of the dullness varies with the position of the patient. Apoplexy, and the bulging of the intercostal spaces, shortly clear up the diagnosis. The history of the case distinguishes it from phthisis.

"Causes.—For the most part, exposure to cold." Dr. Saucerotte's sole internal remedy in this affection is *Tartar-emetic*, which is the homœopathic specific in similar cases.

Causes of Pneumonia.—This disease is peculiar to temperate and cold latitudes, and usually occurs during the winter-months. The usual causes are: undue exposure to intense cold; sudden suppression of perspiration; epidemic influences, and the inhalation of noxious vapors or gases. Laennec and Forbes assert, that pneumonia is frequently induced by the bite of the rattlesnake (*Crotalus-horridus*), and of other venomous serpents; and that it may also arise from the "injection of various medicinal substances into the veins." These assertions go far to prove a specific action of these substances upon the respiratory organs, and may afford a valuable hint respecting their homœopathic application in pneumonia. Pneumonia is most frequent between the ages of 17 and 50 years. The predisposing causes are:

Tuberculous Diathesis; previous pneumonia; suppressed discharges of blood.

Exciting Causes.—Atmospheric influences; North-east winds; more frequent at the end of winter and the commencement of spring. In summer when the air suddenly becomes cool after sultry heat; taking cold after being heated by dancing or other severe exercise; the breathing of mechanical or chemical irritants; strong vapors of various kinds; vapors of muriatic or nitric acid; arsenious vapors; inhaling plaster, lime, coal-dust, flour or wool-dust; fracture of the rib, or penetrating stab, or gun-shot wound.

Viewed anatomically, inflammation of the substance of the lungs presents, according to Laennec three different degrees or stages, which he designates, first, *engorgement*, or *congestion;* second, *hepatization;* third, *purulent infiltration.*

In the first degree, the lung loses in a measure its crepitous feel, is of a livid color, and more solid than natural.

In the second degree, the lung presents the appearance of liver; it is not crepitous, is heavier than in the first degree, and shows a granular appearance when cut into, or torn asunder. Laennec, Andral and Louis suppose this hepatization to be owing to the conversion of the air-cells into solid grains, by the hardening of a concrete fluid, which is poured out during the inflammation; while Dr. Williams supposes, that "these granulations contain no viscid mucus, but consist of little bunches of

vesicles, which have been obliterated by the swelling of their membranous tunics, and the enlargement of their blood-vessels.

In the third degree, the external appearance of the lung is similar to that of the second degree, but of a lighter color. The same heavy hard, and granular character obtains, but when the lung is cut into, a yellowish and purulent matter makes its appearance. As the disease advances, the granular condition disappears, and purulent abscesses take its place.

The phenomena elicited by auscultation and percussion during the stage of engorgement are the *crepitous ronchus*, the respiratory sound being yet audible, and the ordinary healthy sound on percussion.

As soon as hepatization has occurred, percussion over the affected part yields a dull sound, and neither the respiratory murmur, nor the crepitous rhonchus can longer be heard. There are other sounds, like bronchophony, a kind of blowing, &c., which may exist in certain cases of hepatization, but these are so vague and uncertain, that immense practice is requisite to enable the physician to form an accurate judgment respecting them.

After the first stage has existed a little time, and the pus begins to soften, the mucous rhonchus may be heard in the bronchia. In some instances the pus is not expectorated or absorbed, but forms an abscess in some parts of the pulmonary tissue. We shall then have a mucous rhonchus over the seat of the abscess, also pectoriloquy, and what is termed a "bronchial cavernous cough.

Prognosis.—Pneumonia is a serious, but not necessarily a fatal disease in any case. When the general and local symptoms subside gradually; the fever, pain and cough abate; the matters expectorated become normal; the respiration becomes easy and regular, it may be decided that the patient is on the road to recovery; though auscultation and percussion show that there is still morbid condition remaining, it may be predicted that prudent management may provide against a relapse.

Unfavorable Terminations.—1. The plastic exudations change, taking a tubercular character. 2. An abscess forms in the lungs. 3. When the hepatization has lasted too long to admit of resolution, death may take place by excessive congestion or complication with an affection of the heart, or in consequence of some secondary disease. Recovery may be expected in young and vigorous subjects, and in persons who are attacked for the first time. It is more favorable in simple than in compound pneumonia, or when the inflamed lung was previously partially hepatized, or otherwise changed in structure.

When the disease terminates favorably, and resolution takes place, it will be found that the lungs gradually and by successive degrees return to their original state, as is indicated by the diminution of the

crepitous rhonchus, and the return to the natural respiratory sound when the inflammation had ceased at the first stage; also by the reappearance of the crepitous rhonchus, &c., when the malady had progressed to the second and third stages.

TREATMENT.—The prominent medicines for the treatment of pneumonia are: *Aconite*, *Bryonia*, *Belladonna*, *Tartar-emetic*, *Phosphorus*, *Ipecac.*, *Sambucus*, *Sulphur*, *Lachesis*, *Rhus-tox.*, *Arsenicum*, *Mercurius*, *Acid-phosph.*, *Arnica*. It is remarked of auscultation and percussion, that they may furnish us with *a knowledge of the condition* of the lungs, and they thus become *helps*, but not an *authority* in selecting the remedy. This knowledge may "direct us to *the class of remedies*, from which the proper one may be chosen. The individualization of the remedy must be reached by the comparison of the symptoms with the drug." (*Dr. P. P. Wells.*)

Aconite.—Synochal sthenic fever, with pulse hard, quick and full, face red, chilliness and heat expressive; pains in the chest violent; respiration oppressed and accompanied with anxiety.

In the first stage of the disease, when symptoms indicative of a high grade of febrile excitement are present, as hot and dry skin, great thirst, rapid and hard pulse, scanty and high-colored urine, &c., *Aconite* and *Belladonna* may be given in alternation, until the inflammatory symptoms subside. These remedies are often alone sufficient to break up the disease in this stage; and even when they fail to effect a complete cure, they generally moderate most essentially the fever and mitigate all the other symptoms.

If, after the subsidence of these symptoms, stitches in the side, difficult and anxious respirations, and troublesome cough continue to harass the patient, recourse must be had to *Bryonia*.

Bryonia.—The inflammation occasioned by exposure to dry and cold weather; by straining, or other violent muscular exertions; when the fever is not very violent or fully developed. The pains are moderate; the sputa white, slimy, streaked with blood, the cough loose and the oppression is not excessive, attended with constant desire to draw breath. Rheumatic or bruised pains in the muscles of the chest and extremities.

When, however, the second stage, or *hepatization*, has occurred, indicated by dull sound on percussion, bronchial respiration, &c., we should at once have recourse to *Tartar-emetic* or *Phosphorus*.

Tartar-emetic.—The external indications which point to this remedy are: dull sound on percussion; absence of the respiratory murmur, or bronchophony; skin cold, and covered with a clammy sweat; considerable expectoration of a yellowish or brownish color, and mixed with blood; pulse small, soft and frequent; tongue covered with a dry and dark fur, and perhaps red at the edges.

Great oppression and difficulty of breathing; cough loose, and ac-

companied with rattling of mucus (*Müller*); burning under the sternum, and sometimes as high up as the throat; sensation as if the chest were lined with velvet; want of air and want of breath previous to the paroxysms of coughing; also *pneumonia biliosa*, with gastric and bilious symptoms, as yellow tinge of the skin; yellow or brownish fur upon the tongue; bitter taste; nausea and bilious vomiting; yellow or dark urine; headache; general sensation of lassitude and debility.

Mental and moral Symptoms.—Anxiety; restlessness; confusion of ideas; sometimes furious delirium.

Pathology of Pneumonia caused by Tartar-emetic.—The lungs, says Magendie, are of an orange color, or violet; the tissue hepatized, gorged with blood at some parts, or resembling the substance of the spleen; lungs inflamed or hepatized. Dyspnœa followed by hepatization of the lung, produced and also removed by Tartar-emetic. In animals poisoned by it, the action on the lungs is more strongly marked when they are slowly poisoned. It also produces intense tracheobronchitis, developed along with the pneumonia, which shows its great efficiency in these forms of disease.

The specific Tartar-emetic treatment against inflammation of the lungs was commenced by Rasori in 1808. It was adopted and recommended by Laennec, who appears to have been more successful than was common in that day. It has been largely followed in this country, but not generally to the extent recommended by the French and Italian practitioners. Even when it partially subdues the pulmonary inflammation, the remedy in these large doses shows its poisonous powers in developing abdominal symptoms, when the patient is considered as doing well under the remedy. Dr. Billing says, in some cases the patient becomes restless, thirst is augmented; discharges from the bowels are increasing in quantity; then the abdomen becomes tympanitic and tender. The patient, who had acquired the power of retaining in the stomach large doses of the drug, now vomits, or makes efforts to do so; the tongue is dry and pointed; there are jactitations, anxiety of countenance, delirium, stupor and death. Sometimes there is jaundice; pulse frequent, hard and thready; the matters vomited have the appearance of those in yellow fever. While these things are progressing, the original disease subsides rapidly. This, with the occurrence of the slightest tympanitis, shows that the remedy is producing gastro-intestinal irritation and inflammation.

If *Tartar-emetic* be given according to the contra-stimulant theory in massive doses, the aim is to produce a drug-disease of such intensity that it will throw the original disease entirely into the shade. The doses given are so large, that direct vomiting and purging might be expected to result; but by persisting in its use "toleration" of the remedy is attained, and it is for a time retained in the stomach. But

even then it can never be predicted with certainty, that this tolerance will long continue. It is claimed, that in some cases the pneunomic symptoms subside under the remedy, but it is certain that in many other cases fatal purging, vomiting and prostration ensue.

Symptoms of Tartar-emetic in Pneumonia.—Short, difficult and oppressed breathing; frequent short, dry and painful cough with expectoration of frothy, sanguinous sputa (rusty expectoration); dull sound on percussion, mucous and crepitant rale; pressure and constriction of the chest; rapid and strong, or rapid and feeble pulse; febrile symptoms, hepatization.

This remedy seems to be specially suitable during the decline of the disease, when the bronchia or pulmonary vessels are full of a thick viscid secretion, which the patient finds it difficult to expel, when this substance is no longer tinged with blood. It is most appropriate during the resolution of the hepatization and in bronchitis, when the breathing is difficult and when there is a sub-crepitant or mucous rattle in the lungs, often accompanied by fits of suffocation with spasmodic cough. Tartar-emetic, in a *low* trituration given in such cases, affords prompt relief. In pneumonia it does not cause vomiting in children; but, if given for simple bronchial catarrh, every spoonful of a solution of one grain of the first trituration to four ounces of water may cause vomiting. In such cases dilute still farther.

Dr. Cl. Müller says: "It is indicated by: little or no stinging pain, great oppression and difficulty of breathing; loose cough with mucous rattling, and alleviation of the oppression by expectoration which is very profuse; the sputa contain little or no blood, but a quantity of mucus; a portion of the lungs is hepatized (stage of splenization as well as of red hepatization), the percussion-sound over a larger or smaller portion of the thorax is dull, with increased resonance; a portion of the thoracic walls adjoining the before-mentioned region has either tympanitic or normal sound. Auscultation reveals broncophony, the bronchial respiration and consequent rattle."

In bilious pneumonia Tartar-emetic is indicated by the following symptoms: slight bilious tinge of the skin, albuginea, alæ-nasi, and corners of the mouth; yellow, brownish coating of the tongue; bitter taste, disposition to vomit, nausea, vomiting; saffron-colored urine; stinging pain under the right false ribs, or pain in the pit of the stomach; frequent eructations and hiccough; violent aching, boring pain in the frontal region; sometimes increasing to furious delirium towards evening; the cough is frequently attended with vomiting, with scanty expectoration of somewhat blood-streaked frothy saffron-colored mucus.

Case.—A man, aged 73, intemperate and suffering from heart-disease, had double pneumonia; he took one grain of Tartar-emetic in

four ounces of water, a dessert spoonful every two hours. He continued delirious during eight days, but recovered and could walk on the sixteenth day. (*Brit. Journ. Homœop.*)

"Magendie ascribes to emetic Tartar a specific power of causing engorgement or inflammation of the lungs; for he found on opening the bodies of animals killed by it, that the lungs were of an orange-red or violet color, incapable of crepitating, gorged with blood, and here and there hepatized." "It has also been assumed that the same effects are produced in human pulmonary organs." Jules Cloquet says, a man died of apoplexy, who within five days of his death had taken 40 grains of Tartar-emetic. On examining "the lungs very irregular, blackish spots which extended more or less deeply into the parenchyma of this organ were observed." Pereira says, he can not understand how Tartar-emetic can have a tendency to inflame the lungs, since it is known to prove particularly useful in the treatment of such cases. (*Materia Med.* Vol. I., p. 698.) A homœopathist is not much perplexed by this question.

Case by Mr. Hartley: A boy aged three and a girl aged five, were poisoned by Tartar-emetic. After death it is recorded, that in the boy the lower lobe of the right lung was redder than natural, and serum was effused in the pleura; the girl presented similar appearances (*Lancet*, April, 1846, p. 460.) "Painful respiration" is a symptom of poisoning by this article. (See *Taylor. Med. Jurisprudence*, p. 118.)

It is proved by the pathogenesis of this remedy that it is capable of causing as well as of curing the following symptoms and conditions: Short, difficult and oppressed respiration; frequent, short, dry and painful cough, with expectoration of frothy, sanguineous sputa (rusty expectoration); dull sound on percussion, mucous and sub-crepitant rale; pressure and constriction of the chest; rapid and strong, or rapid and feeble pulse; febrile symptoms and hepatization present an excellent simile to a certain form of pneumonia, and ample clinical observation has confirmed the utility of the remedy. But in order to avail ourselves of its full benefit, it must not be employed stronger than the first, second, and third attenuations. With these minute doses the requisite curative impressions can be produced upon the affected lungs with certainty, promptness and safety. (*Marcy. New Mat. Med.* 434.)

Dr. Ozanne, of Paris, says of this remedy: "It appears to me to be suited to the particular state in which the bronchi or pulmonary vessels are full of a thick viscid secretion, which the patient finds it difficult to expel, when that substance is no longer tinged with blood. Hence it is most appropriate in pneumonia during the resolution of hepatization, and in bronchitis when at the same time the breathing is difficult, there is a sub-crepitant or mucous rattle in the lungs. This condition is often accompanied by fits of suffocation, with spasmodic cough. In such

cases Tartar-emetic gives very rapid relief. The first trituration does not usually cause vomiting in children; but if given for simple bronchial catarrh, every spoonful of a solution of one grain of the first in four ounces of water will cause vomiting.

Phosphorus.—Phosphorus has been highly extolled also in the second stage of pneumonia, and in certain cases of pleuro-pneumonia, where *Aconite* and *Bryonia* have failed in effecting a cure. Dr. Fleischmann has used it successfully in all the stages of lung-fever.

Symptoms.—Violent pneumonia with sticking pains in the chest, excited or aggravated by coughing or breathing also in pleuro-pneumonia, when they are violent and extend over a large surface, when a large portion of the lungs is inflamed with dyspnœa, the cough is dry, and the sputa *rust-colored* (a characteristic symptom of Phosphorus). Phosphorus is in many cases the only remedy and it affords relief in four or eight hours. Give two or three drops of the third or fourth dilution every two or three hours. Sometimes when the attack is very violent in the commencement, Phosphorus has to be given in alternate doses with *Aconite or Belladonna.* This alternation may be necessary in the second stage of pneumonia when the percussion-sound over the affected portion of the lungs is dull, and broncophony or bronchial respiration, or perhaps consonant rattle, is heard.

Phosphorus is also indicated when the inflammation threatens to assume the typhoid character, the physical symptoms of approaching paralysis of the lungs denote the passage of the inflammation into the stage of gray hepatization or purulent infiltration of the pulmonary parenchyma, attended with remarkable depression of the mental faculties; mild delirium and grasping at flocks; subsultus tendinum; rapid prostration; cold viscid sweats; small, frequent feeble pulse; dim eyes, sunken countenance, dry lips and tongue; short and difficult breathing oppression and anguish; difficult cough and respiration.

Barchner, Griesselich, Horner, Bosch, and Schellhammer have employed it with advantage when the third stage had set in with great prostration, livid or hippocratic countenance, sunken eyes, cold viscid sweats, tremulous and feeble pulse, dry and dark lips and tongue, difficult expectoration of a brown or rust-color, extreme anguish, subsultus tendinum, muttering or furious delirium, with grasping at flocks, sense of suffocation, involuntary stools.

Müller describes the special *pathogenetic* symptoms of *Phosphorus* having reference to pneumonia, as follows: "Sticking and violent stitches in various parts of the chest, left and right side, sometimes accompanied with burning, in rest and during motion, especially when sitting and taking an inspiration; pain in the chest, especially during an inspiration; itching in the interior of the chest, with dry cough; feeling of heaviness in the chest; anxiety in the chest, with arrest of

breathing, and beating in the right side of the chest; great oppression of breathing; great shortness of breath; oppressive tightness, and tensive sensation in the chest, as if a band were encircling it; tension and dryness in the chest; constrictive clawing and pressing in the upper part of the chest; loud rattling breathing; dry, hollow cough, without expectoration; a sort of hacking cough, with huskiness of the chest, and expectoration of some mucus; cough with expectoration of transparent mucus, accompanied with tensive pain, and afterwards with sticking pain in the chest; fatiguing cough, with white tenacious expectoration; the expectorated mucus is streaked with blood; bloody expectoration, with mucus, accompanied with short, slight cough; coughing up small clots of pus, with smarting burning behind the sternum; sticking pain in the pit of the stomach when coughing, compelling one to lay the hand upon the pit; short breath after every turn of cough."

From the above it will be seen that *Phosphorus* includes a greater range of symptoms than *Tartar-emetic*. In typhoid pneumonia especially it is often of distinguished service where hepatization has occurred, and the symptoms point to the third stage.

Administration.—It may be employed at the first, second, or third attenuation, and the dose repeated according to the severity of the case. In *typhoid pneumonia*, as well as in cases attended from the first with great debility and prostration of the energies of the system, *Rhus-tox.* will be found a remedy of much efficiency, either alone, or in alternation with some other specific. Should the case be complicated with pains in the chest or side, or of a rheumatic character, *Rhus-radicans* may occasionally be employed with advantage. This medicine is usually given after *Aconite* and *Bryonia*.

Mercurius.—Allopathic writers have not yet recorded any cases in which the symptoms or pathological conditions, characteristic of pneumonia or carditis, have been produced in the human subject by the use of Mercury; though experiments on the lower animals have shown that pneumonia may be produced by this article. But Orfila has noticed, "the lining membrane of the heart, in one part or another, most commonly on the valves, invariably presenting spots of a cherry-red or almost black color, and on one occasion these spots were so soft, that slight friction made little cavities." (*Christison, On Poisons*, p. 390.)

From experiments of M. Gaspard, made by injecting solutions of the bichloride of Mercury into the blood, the morbid appearances presented in the lungs varied, but are summed up in the following words: "either black ecchymosed spots or black tubercular masses, some inflamed, others gangrenous, others suppurated; or finally, regular abscesses, suppurated; or finally, regular abscesses, separated from one another by healthy pulmonary tissue." (*Journal de Physiologie*, I., p. 165.)

Symptoms.—Crampy, tonsive pain in the left side of the chest, with violent oppression of breathing, which is sometimes increased by a burning, lancinating pain; there is also cough which is at first dry and afterwards accompanied with bloody expectoration; the pulse is hurried, full; much thirst; the fever manifests symptoms of nervous irritation, great heat, profuse fœtid sweats, nightly delirium; violent pains in the limbs; vertigo; dry mouth and throat; great sensitiveness and painfulness of the region of the liver and epigastrium, and of the pit of the stomach.

When the disease assumes the more typhoid character, and there are profuse sweats and great debility; when there is congestion of blood to the brain, slight delirium, and quick and strong beating of the arteries; when cough is still present, with difficult, blood-tinged expectoration, Mercurius is to be given.

Phosphoric-acid.—In conditions similar to Mercurius: There is extreme debility and diarrhœa, loss of consciousness; strong, irregular, frequent and intermitting pulse; distention of the temporal arteries, &c.

Sulphur 30°, is an important remedy in certain protracted cases of pneumonia, occurring in psoric or scrofulous subjects, and which threaten to terminate in phthisis. Indeed in most of those cases of chronic pneumonia which seem to have arrived at a fixed point, the patient neither improving nor apparently retrograding, we should always bear in mind this powerful antipsoric.

When the disease has reduced the patient, notwithstanding our remedies, to a state of extreme prostration, with a very short breath on the slightest exertion; dry and dark tongue and lips; extreme anguish, stitches in the side; great thirst; diarrhœa; ringing and buzzing in the ears, *Arsenicum* is the proper remedy. In examples of this description, the remedy should be frequently repeated until a decided impression is produced.

Rhus-toxicodendron.—Typhoid Stage. In persons of middle age pneumonia often assumes a typhoid character. The symptoms of this stage develop themselves gradually, and the pains in the chest increase in violence during the course of the disease. The pulse is frequent, small, easily compressible; the pains, which the patient never defines or complains of very positively, are constant, without intermission. In robust persons typhoid-pneumonia frequently appears like true pneumonia, with a full, strong pulse, and without any of the characteristic typhoid-symptoms; but the sentient system is principally affected. The patient lies in a state of half stupefaction, is more or less delirious, complains too little, although the disease is very violent. He is in a state of stupor with stertorous breathing, and his eyes half open; he is roused with difficulty, and is scarcely conscious of any thing after waking. In this condition Phosphoric-acid is also appropriate, particu-

larly when the expectoration is purulent and the patient is troubled with profuse night-sweats.

American Hellebore.— *Veratrum-vir.* This drug possesses a great power of calming nervous excitement, and reducing the force and frequency of the heart's action; in pneumonia, pleuritis, acute rheumatism, croup, iritis, and other inflammatory diseases, when the pulse is strong.

It has operated with great efficiency in metritis, and puerperal fever, alternated with Belladonna. It is never necessary to cause emesis. One-fifth or one-tenth of a drop in water every two hours is generally sufficient.

But it is in pneumonia, that the Verat.-v. shows its most specific powers. Dr. Hale says, "it is the only remedy which will absolutely *cut short* the pneumonic inflammation before the seventh day. In my hands it has frequently *arrested* the progress of the disease on the third, fourth and fifth days, and a rapid convalescence followed in every instance."

If the pulmonary inflammation threatens to run into gangrene, as will be indicated by fœtid and greenish or dark expectoration, *Arsenicum* is appropriate, as are also sometimes *Carbo-veg.* and *China.*

Pneumonia occurring in old and feeble persons, and attended with symptoms showing a low grade of inflammatory action, will require the use of *Phosphorus*, *Ipecacuanha*, *Sambucus*, *Veratrum*, *Nux-vomica*, *China*, *Belladonna*, *Lachesis*, *Lycopodium* and *Cantharis.*

Arnica is applicable in pulmonary inflammations proceeding from mechanical injuries.

The symptoms of pneumonia and bronchitis combined, will be covered by *Tartar-emetic*, *Aconite*, *Mercurius*, *Phosphorus*, *Capsicum*, *Bryonia*, *Carbo-veg.*, *Pulsatilla*, *Senega* and *Nux-vomica.*

We usually select one of the low attenuations, and repeat the dose once in two, three or four hours, until a marked impression is produced upon the symptoms.

10. PNEUMO-THORAX.—PNEUMO-HYDROTHORAX.

Definition.—A diseased condition consisting in the accumulation of air or gas within the pleural sac, unaccompanied by liquid effusion.

This disease is certainly very rare; and many doubt whether "the secretion or exhalation of air or gas from the pleural surfaces" is ever seen. Pleural rupture over the dilated cells in vesicular emphysema, or of the blebs which are occasionally formed in the interlobular variety of this disease is a rare accident which *may* give rise to an accumulation of air in the pleura, and it may for a time be accompanied by any morbid product; but inflammation must soon result, and effusion must follow.

PNEUMO-HYDROTHORAX.

When, by any mode, air or gas finds its way into the pleural cavity effusion of liquid either precedes or follows; and the resulting condition is called *pneumo-hydrothoraæ*. In medical treatment it is only necessary to consider the latter.

Diagnosis.—Pneumo-hydrothorax is never a primitive disease, but is the effect of some antecedent condition. Generally it is a complication of pulmonary tuberculosis; in this case it arises from a perforation of the lung resulting from rupture of the pleura over a cavity or a collection of softened tubercle, broken into during an act of coughing. Pneumo-thorax is then developed, and acute pleuritis follows with liquid accumulation; the symptoms vary according to the size of the perforation, its persistence in remaining open, and the freedom of communication between the bronchial tubes and the pleural cavity. It occurs more frequently on the left than the right side, on the postero-lateral surface between the third and sixth ribs (*Walshe*). It may occur in connection with circumscribed gangrene of the lung, the pleura giving way over the eschar, inducing perforation and pleuritis; in connection with pulmonary apoplexy, tuberculous affection of bronchial glands, abscess, cancer, and hydatids, by ulceration commencing in the pleura, in cases of chronic pleuritis and empyema.

In certain cases of empyema abscesses situated in the walls of the chest may result in an external communication with the pleural cavity.

The disease is produced traumatically by penetrating wounds of the chest, or injuries of the lung from the fractured extremities of ribs, or by contusions. In a few cases a fistulous communication has been originated in some way between the œsophagus, or the stomach and the pleural sac, and through this opening gases have found their way into the latter cavity. In very rare cases, chemical decomposition of the effused fluid in the pleura has caused the development of gas.

Physical Signs.—The chest yields on percussion over the space occupied by the air within "a marked degree of sonorousness, purely tympanitic in quality, high in pitch, approaching frequently in intensity as well as character the sound in abdominal tympanitis. This clear hollowness is always found at or near the summit of the chest, extending downward a greater or less distance, unless the lung be attached at its upper portion so as to prevent its compression and the ascent of the gaseous fluid. The presence of the condensed lung situated usually at the superior and posterior portion of the chest, may give rise to dullness in that situation. If air or gas is present without liquid effusion the tympanitic sonorousness may be diffused over the greater part of the affected side. But as more or less liquid is almost invariably present, the sonorousness extends to a certain point, and below this point there

is flatness on percussion." "The escape of fluid by expectoration, or by external discharge, will of course effect the quantity within the chest, and thus occasion fluctuation in the amount." There is also variation in the quantity of air introduced, as well as in that produced by chemical changes. The tympanitic flatness of sound extends not only down to the level of the fluid, but also some distance below it, so that the amount of fluid contained is about twice what is indicated by percussion. (*Skoda.*) When the quantity of gas is so large as to distend the walls of the chest the sonorousness of the sound is diminished, becoming duller, though still tympanitic.

Evidence furnished by Percussion.—In pneumo-hydrothorax the tympanitic sonorousness is greater the nearer we go to the summit of the lungs. When gas exists in the stomach instead of the pleura the tympanitic sonorousness also exists but it is greater below, diminishing as we ascend.

The same tympanitic sonorousness is found in some cases of simple pleuritis, over the compressed lung, but it is less strongly marked, and is not purely tympanitic, but vesiculo-tympanitic, and the relative degree of sonorousness between the upper and lower part of the lung is not changed by change of posture. The walls of the chest are not so elastic, though "auscultation shows in the one case, the lung to be in contact with, and in the other case to be removed from the walls of the chest above the liquid."

Over a lung solidified by inflammatory exudation, the bronchial respiration and broncophony is associated with the tympanitic sonorousness, and "this combination is proof *against* pneumo-hydrothorax, and *for* the existence of pulmonary solidification."

In emphysema the resonance is exaggerated, but it is vesiculo-tympanitic, and there is evidence that there is no liquid in the chest. In pneumo-hydrothorax the amphoric modification of the cavernous respiration is strongly marked. In general the intensity of the sound is proportionate to the size of the fistula, and the calibre of the bronchial tubes to which it leads.

The respiratory sound is suppressed over the space occupied by liquid effusion; the bronchial respiration is discovered at the summit posteriorly, above the compressed lung which is also generally solidified by tuberculous deposit. Tuberculous cavities in the compressed lung may sometimes be ascertained by physical signs. On the healthy side the respiratory sound is exaggerated.

Vocal Phenomena.—The resonance is absent below the level of the liquid effusion; feeble, or more or less marked over the space occupied by air or gas, with amphoric intonation: at the summit over the compressed lung there is marked resonance, broncophony, or pectoriloquy.

Metallic tinkling is almost pathognomonic of pneumo-hydrothorax, at

least in cases involving perforation of the lung. It is heard nowhere else, except rarely in large tuberculous excavations, or in the stomach where it is unconnected with respiration, voice or cough.

Inspection and Mensuration.—The affected side is permanently expanded, and its movements accordingly limited. The accumulation of air and liquid may lead to great dilatation and complete immobility, even with forced breathing. The intercostal spaces are widened and pushed outward, sometimes beyond the level of the ribs; the diaphragm is depressed, the mediastinum displaced, the heart dislocated, being transferred, in some instances, to the right of the sternum. The signs furnished by inspection then are the same as those presented in chronic pleuritis or emphysema. *Percussion* and *auscultation* are necessary to supply the information necessary to enable us to distinguish between them.

In chronic pleuritis and empyema with dilatation, the affected side is flat on percussion, with absence of respiratory sound in the great majority of instances, except a small space at the summit. There is neither the tympanitic sonorousness over the affected side, cavernous, or amphoric respiration or metallic tinkling.

Dilatation of the chest is not always visible externally in pneumo-hydrothorax; for liquid and air or gas may exist in the pleural sac, and find room by compressing the lung without sensibly enlarging the thorax. Palpitation furnishes only evidence of diminution or addition of vocal fremitus and fluctuation in this disease, in empyema, and chronic pleuritis.

Succussion.—When air and liquid are contained in the pleural cavity, moving the trunk of the person to and fro, with the ear applied to the chest, produces the splashing noise resembling that caused by shaking a bottle partly filled with water. This sound is almost pathognomonic of pneumo-hydrothorax, and was noticed by Hippocrates. It occurs very rarely in pulmonary tuberculosis, where there may be a large excavation, partially filled with fluid. The distinction between tubercular consumption and pneumo-hydrothorax can always be made out by comparing the previous history of the individual case and the other general symptoms with those of each of these diseases, which are widely different.

General Symptoms of Pneumo-Hydrothorax.—It generally occurs in connection with tuberculosis which has resulted in the perforation of a lung, perhaps during an act of coughing. Immediately after the rupture of the lung, there is "sudden acute pain in the chest, speedily followed by great dyspnœa, hurried respiration, frequency of pulse, prostration, lividity, perspiration, diminished or suppressed expectoration, occasionally loss of voice, and an expression of great anxiety. At first and for a brief period, the affection may be simply

pneumo-thorax; but acute pleuritis is generally quickly developed, with more or less liquid effusion; and the disease soon eventuates in pneumo-hydrothrax." There are cases, however, in which all of these symptoms are produced in simple pleuritis, and others in which they are not all present, though pneumo-hydrothorax has taken place. In the latter case the perforation is small and the escape of air and morbid products into the pleural sac, and the subsequent inflammation in the pleura progress slowly; adhesions already existing may offer obstruction to the rapid accumulation of air and liquid. The intense dyspnœa which at first follows the rupture, becomes after a time diminished, and the respiration and circulation become adjusted to the morbid condition, and the patient suffers less, though the accumulation of air and morbid products within the pleura becomes larger.

Prognosis.—When pneumo-hydrothorax occurs as a complication of phthisis, it generally runs rapidly forward to a fatal termination; but a few patients partially recover and live several years, taking some exercise, and even performing some labor.

Treatment.—See remedies, pages 808 to 815, and 824 to 827.

PLEURITIS.—PLEURISY.

Diagnosis.—This malady commences with lassitude, chills, and other febrile symptoms, succeeded in a short time by the following local phenomena: "The stitch, dyspnœa, cough and recumbency on the affected side were given as characteristics by Laennec. Dr. Wurmbe, of Vienna, maintains, however, that the posture of the patient is usually upon the back." The inspirations are short and rapid, and attended with severe sharp stitches, unless the inflammation be very slight, in which case but little alteration will be observed in the breathing; there is often experienced a sense of tightness and oppression at the chest; there is generally little or no cough unless the lungs or the bronchia are involved, when there occurs a short and dry cough, with but a small quantity of glairy expectoration, and very painful; the pulse is rapid and full; skin hot and dry; urine scanty, and of a deep red or dark color; the pain is almost invariably confined to one side of the chest, and increased by inspiration, coughing, and movement; urgent thirst; great dyspnœa; constant inclination to lie upon the affected side or back; abdominal respiration, and pain in the intercostal spaces on pressure. These symptoms are speedily succeeded by others, which indicate that *effusion* has taken place. Laennec, Johnson, and Mackintosh believe, that effusion commences as soon as the inflammation is established; while others, equally eminent, contend that a considerable period elapses before it occurs. But the weight of testimony seems to be in favor of the opinion of the former gentlemen. Amongst the

signs which are characteristic of pleurisy with effusion, are, increased size of the affected part of the chest, apparent to the eye or by mensuration; also ægophony, perceptible by the stethoscope from the commencement of the inflammation, or after a moderate quantity of fluid has been effused, disappearing when the effusion becomes very large in quantity, and reappearing as absorption takes place, and the liquid diminishes; dull sound on percussion, and failure of the respiratory murmur in the affected side.

Should the lungs happen to be involved, the sputa will be tinged or streaked with blood, and more copious than in simple pleuritis. Other symptoms will also obtain which characterize pleuro-pneumonia.

The effusion of pleurisy may be either of a plastic, serous, or hæmorrhagic character. The severity of the febrile, and other symptoms will depend upon the rapidity of the effusion, and its quality and quantity.

Causes.—Atmospheric vicissitudes, sudden checking of the perspiration; metastases of rheumatism, erysipelas, gout, &c., mechanical injuries, surgical operations upon cancerous and scrofulous parts. We have witnessed two cases of pleurisy which supervened as a consequence of surgical operations. One of these cases occurred after amputation of the thigh for a malignant disease of the leg and proved speedily fatal. The other case came on about two weeks after excising a large fungous tumor from the breast of a female, which also proved fatal. Both of these cases were unusually violent, and ran their course with great rapidity. It is worthy of remark, that in both, the wounds made by the operation were progressing as favorably as usual. Whether pleurisy in these cases is attributable, as some writers suppose, to the absorption of pus into the system, or to some other cause we may not now be able to determine; but that the disease is peculiarly violent and fatal, has been observed by all who have witnessed its occurrence.

1. ACUTE PLEURITIS.

Next to bronchitis and pneumonitis in order of frequency of occurrence, pleuritis occurs as a most common thoracic disease. When not connected with tuberculosis or pneumonitis it is commonly a general disease of the pleura of one side. When confined to one side it is called *single* pleuritis, *double* pleuritis when it involves both sides.

Stages of Progress.—First. The period from the commencement of the inflammation to the accumulation of an appreciable quantity of liquid effusion within the pleural sac. This is the *dry* period.

Second. The stage of effusion, in which liquid accumulation is progressing.

Third. Period of absorption of the liquid effusion.

Pathology of the First Stage.—The whole inner surface of the

pleural sac has diffused over it plastic lymph, or it appears in patches, varying in size. It is supposed that in the initial period of this stage there is an abnormal dryness of the membrane, which causes certain sounds heard at this stage.

Second Stage.—Liquid effusion is poured out from the inflamed surface which sinks by its weight to the bottom of the sac, compressing the lung, and displacing it in a direction upward and backward, when not prevented by morbid adhesions. The bulk of the lung being diminished and the air expelled from it, it becomes a condensed mass, and is said to be *carnified*, later the fluid enlarges the size of the chest, depressing the diaphragm, stomach and liver, displacing the heart.

Third Stage.—The effused fluid diminishes in quantity and is finally dispersed by absorption. The compressed lung then expands, and slowly regains it former volume, except in certain cases in which that volume is never attained. Contractions of the chest often persist, and the relations of parts previously displaced are only restored after long intervals, if ever. The pleural surfaces again come into contact as the effused liquid diminishes, though these surfaces are roughened by a fibrinous coating more or less solidified. Finally the surface of the lung and costal pleura become united by adhesion through the complete organization of the intervening plastic lymph. These physical conditions apply to both acute and chronic pleuritis, though the effects of inflammation are more fully marked in the chronic form of the disease.

Diagnosis.—*Physical Signs furnished by Percussion.* Before the accumulation of liquid so far as to fill some portion of the pleural cavity at the bottom of the chest and raise the lung above it, the sonorousness on percussion is not much altered. Moderate or slight diminution of the vesicular resonance, replaced by a tympanitic sonorousness, indicates a lessening of the capacity of the lung, on account of the pain which accompanies the act of inspiration, the exudation of plastic lymph, on the pleural surfaces. If the patient will disregard the pain he *can* inflate the lung to the full size, and then the sonorousness is restored; though without this extra effort, the resonance is diminished over the whole or the greater part of the side affected. Percussion in this disease gives pain, unless very lightly performed.

The stage of effusion progresses rapidly, in some cases it supervenes in a few hours from the attack; it is seldom delayed beyond the third or fourth day; the liquid now accumulates around the base of the lung, and abolishes the vesicular resonance upwards over a space corresponding to the amount of effusion. The percussion sound is flat, except a gastric or intestinal tympanitic sonorousness be transmitted from below. Vesicular resonance is invariably abolished; the sound becomes flat; elasticity of the thoracic wall is diminished; and the upper boundary of the flatness is the limit below which the sense of resistance

s increased. The boundary of flatness varies in different positions of the patient, as the liquid changes its position when he turns another point lower. In some cases the boundary of flatness, which marks the level of the liquid is varied from the horizontal (though the position be vertical), by previous morbid adhesions, holding the lung down by an attachment sufficient to resist the upward pressure of the fluid. "Perfect flatness, although not conclusive evidence of the presence of liquid, for it may be caused by an intra-thoracic tumor, and occasionally even by consolidation of the lung, warrants a strong presumption that effusion exists. And this presumption is rendered still stronger by the flatness being found to extend from the base of the chest upward. The line indicating its upper limits being well defined, and pursuing a direction, if the body be in a vertical position, extending horizontally, or nearly so, around the affected side." (*Flint, Respiratory Organs*, p. 544.)

When the liquid is being removed by absorption, vesicular resonance gradually returns from above downward as the level of the fluid is lowered, but toward the base of the chest the flatness continues for a long time. The displacement of the mediastinum toward the opposite side is gradually changed into a displacement of the mediastinum toward the affected side.

Auscultation reveals feeble respiration in the affected side during the stage of liquid accumulation. The intensity of the respiratory sound is lessened by the restrained expansion of the affected side. Want of continuity in the respiratory movements caused by the pain produces an interrupted or jerking murmur. During the stage of effusion the respiration is rendered more feeble in proportion as the lung becomes compressed. When the quantity of the fluid fills two-thirds of the chest the respiratory sound becomes very different in the upper and lower portions. Over the condensed lung the respiratory sound is *broncho-vesicular*, or *bronchial*, as the degree of condensation is greater or smaller. In some instances it is loud, in others feeble: below the line of flatness on percussion it is frequently suppressed, the sounds of the heart being transmitted through the mass of liquid with increased intensity. In pleuritis in young children the bronchial respiration is more extensive than in adults of an equal degree of fluid accumulation and lung condensation. In common cases the bronchial respiration is more intense and seems nearer the ear over the condensed lung; over the liquid it is more feeble and seems more distant. When the effusion is very copious, the respiratory sound is usually suppressed over the greater portion of the chest, except, perhaps, at its summit, below the clavicles and in the upper portion of the inter-scapular region. When the bronchial respiration is very *loud* and *persistent* there is reason to suspect that the lung is consolidated.

DIAGNOSTIC SYMPTOMS OF ACUTE PLEURITIS.—During the first period, pain is a prominent symptom. It is sharp and lancinating, felt most at the moment of inspiration, shortening that act and interrupting it, though in character it may resemble pleuralgia. In pleuritis it is commonly felt at the lower part of the affected side, laterally, and in front, though sometimes extending to the back or over the whole side, even sometimes extending to the opposite side or abdomen. As effusion takes place the pain diminishes, and finally almost ceases.

Respirations at first frequent and short, first because of the pain, afterwards from the encroachment of the fluid, which compresses and diminishes the capacity of the lung. When the effusion takes place rapidly there is dyspnœa.

Cough, almost always present; it is dry, spasmodically excited at first, and partially suppressed to save the pain it excites. We will endeavor to distinguish between

ACUTE PLEURITIS	AND PLEURODYNIA, OR INTERCOSTAL NEURALGIA.
	The physical phenomena of acute pleuritis are wanting, though there may be diminished expansion of the side; feebleness of respiratory murmur, and some relative dullness, due to restrained movements from pain.
	Affected side often extremely sensitive.
The existence of fever is always a prominent feature, and proves the case more inflammatory than neuralgia.	Fever is not generally present.
Friction sound, after the first stage.	Not general.
Serous effusion gives positive evidence of inflammation. At *first* the pain may be merely neuralgic but then inflammation soon follows. Chill, increased pain and fever precede the latter.	Not present. No chill or fever.
	ACUTE PNEUMONITIS.
The reverse of Pneumonitis after effusion takes place.	Marked dullness on percussion over a certain portion of the affected side begins early. If the upper lobe is first inflamed, the dullness is at the summit, and on the anterior surface, the posterior surface below the scapula remaining resonant on percussion.
The line showing the boundary of dullness varies as the patient changes posture. The liquid accumulates rapidly, and flatness on percussion extends over a larger portion of the affected side.	But more commonly, inflammation begins in the lower lobe. Dullness is then found bounded on the chest by a line pursuing the direction of the interlobar fissure; the boundary not varying with the change of position of the patient.
When the quantity of liquid in the pleura is large there is *flatness* on percussion.	

Acute Pleuritis.	Acute Pneumonitis.
This is usually associated with suppression of respiratory sound; if any bronchial respiration, it is feeble, appearing distant.	Though an entire lung *may* become solidified, a single lobe is *first* attacked; and the dullness extends slowly to other parts.
These are absent when there is effusion.	*Solidification* of the lung produces only *dullness*; in some cases the vesicular is replaced by tympanitic sonorousness. The dullness, accompanied by bronchial respiration, often, intense, metallic, as if near the ear.
Sometimes Ægophony.	There is increased vocal resonance, broncophony, occasionally pectoriloquy.
Vocal fremitus is abolished by liquid effusion.	Ægophony is rare. Vocal fremitus is exaggerated by solidification.
There is enlargement of the affected side; intercostal depressions effaced.	Enlargement slight; intercostal depressions remain.
The heart, diaphragm and mediastinum are displaced, when the effusion is large.	These are little perceptible in pneumonitis.
Wanting.	Rusty expectoration and crepitant rale are very common, almost pathognomic

Treatment.—The most valuable remedies in the treatment of pleurisy are: *Aconite*, *Bryonia*, *Tartar-emetic*, *Phosphorus*, *Arsenicum*, *Rhus-tox.*, and *Arnica*. During the progress of the disorder we should also bear in mind *Sulphur*, *Scilla*, *Rhus-rad.*, *Lachesis*, *Silicea*, and *China*.

Aconite is eminently appropriate, either alone or in alternation with other specifics, whenever the inflammatory action runs high, accompanied with hot skin, quick and full pulse, urgent thirst, and general suspension of the secretory functions. Wurmbe and Trinks commend it in the highest terms in that variety of pleuritis which is characterized by the plastic nature of the effusion, and the severity of its inflammatory fever. It should be exhibited at the very commencement of the disease, and in the lowest potencies, and repeated in urgent cases every hour until the fever subsides.

Bryonia is a specific of great value in the malady under consideration, and the power which it possesses of promptly controlling and subduing the most violent cases of pleurisy, is a matter of astonishment to us, who formerly believed copious and repeated venesections to be the only safe means of effecting a cure. We have treated a great number of cases, in which *Bryonia* has been our chief remedy, and we have not failed in a single case, but our cures have been far more prompt, pleasant and satisfactory, than we ever effected under the old treatment. The effusion has invariably been more successfully absorbed, and the pleura and lungs as well as the system at large have more perfectly recovered their original tone and vigor than in cases which have

been treated by the old method. Nor will this appear at all strange, when it is remembered, that by one method the structure actually diseased is *alone* acted upon, while by the other the *whole organism* is subjected to the influence of the most powerful medicines, impairing the integrity and vigor of almost every part, without producing any certain or decided effect upon the pleura, or any other pulmonary tissue.

Let the skeptical allopath prove upon his own person in health the *pure* effects of *Bryonia*, *Tartar-emetic*, *Phosphorus*, *Lachesis*, Scilla, &c., upon the respiratory organs, and then test them judiciously in cases of disease after the homœopathic principle, *similia similibus*, and he will forever abandon the uncertainties and dangers of the lancet, mercurials, counter-irritants, &c.

Bryonia may follow or alternate with *Aconite* advantageously. The *external indications* are: cheeks flushed and hot, dry or moist; respirations short and rapid, and performed principally with the abdominal muscles; position upon the affected side; pulse quick and full; tongue dry; breath hot; urine scanty, and red or dark; dull sound on percussion of the affected side; respiratory murmur indistinct or entirely wanting.

Physical Sensations.—Stinging, shooting or burning pains in the side, aggravated on inspiration, coughing, or movement; respiration difficult, short, anxious and rapid; sense of tightness; a weight or oppression at the chest; painful cough, dry or with expectoration of a glairy sputa, sometimes tinged with blood; great heat of skin, alternating with frequent coldness and shivering; urgent thirst; pain in the intercostal spaces on pressure; weariness and inclination to retain the recumbent position.

Mental and moral Symptoms.—Anxious, apprehensive, desponding; fear, irritability, peevishness, restlessness.

In the plastic form Aconite is more appropriate. Bryonia is the specific for pleuritic serous effusions; fever, with violent shooting pains in the chest. In pleuritic effusions which follow a simple course without any dyscrasia, Sulphur seems well adapted for the removal of the effusion, especially after the fever subsides. (*Wurmbe.*)

In *pleuro-pneumonia* Wurmbe and Caspar recommend Bryonia, especially in the second stage; in cases not very extensive, but involving the mucous and serous membranes; there is severe stabbing pain in the chest, even when it does not seem to correspond with the seat and extent of the infiltration of the lungs; the pleura is deeply implicated, and there is moderate œdema of the lungs; when the œdema becomes more considerable, Tartar-emetic is to be preferred.

Administration.—A dose of the first dilution every hour, alone or in alternation with *Aconite*, until the pain, difficulty of breathing, &c., are relieved.

Tartar-emetic.—According to Magendie this medicine possesses the specific power of causing engorgement and inflammation of the lungs when given in large doses. There can be no doubt, that it is an absolute and decided specific over the respiratory organs, as well as the gastro-intestinal mucous membrane. This has been demonstrated by Cloquet, Müller, Magendie, Gross, and others, by autopsical examinations and by numerous provings upon persons in health.

It is a common remedy in the old school in affections of the respiratory organs; yet they are entirely ignorant of its curative action. It is only necessary to refer to the unsatisfactory and contradictory opinions of Laennec, Rasori, Broussais, Eberle, Payne, Blake, and Barbier, upon this subject, to be convinced of the utter want of accurate knowledge and uncertainty of principle amongst allopathists in the administration of medicines.

The homœopathist on the contrary, demonstrates by numerous provings in health, that it exerts a specific force upon the lungs and their appendages, and he therefore gives it in inflammations of these organs with confidence and success. With him there is no random and crude speculation,—no breaking down of the organism by violence, hoping in the general ruin to crush the malady, but, having a definite object, and seeing his goal, he quietly, safely and surely attains it.

The *indications* for *Tartar-emetic* are: face flushed, hot and dry, or pale, wan and anxious, and covered with sweat; respirations short and obstructed; surface burning hot and dry, or cold and bathed with cold perspiration; pulse quick, weak, or full; tongue moist and clean, or loaded with a white or brown fur; urine scalding hot, red or brown; mucous or bloody expectoration; general appearance indicative of great anxiety and physical prostration.

Respiration short, difficult, obstructed, and attended with stinging or shooting pains; cough with expectoration of mucus, sometimes tinged with blood; violent throbbing of the heart; coldness and shivering whenever the bed-clothes are raised, or on motion; fever with adypsia or moderate thirst; lassitude, debility, and disposition to syncope; trembling of the limbs from the slightest exertion; sense of suffocation.

Agitation; apprehension; discouragement; despair.

Administration.—Two grains of the first trituration of *Tartar-emet.* may be dissolved in a tumblerful of pure water, and given in teaspoonful doses, every one, two, three, or four hours, as the urgency of the case may demand.

Phosphorus.—Countenance pale, alternating with redness; eyes hollow and surrounded by a blue circle; respiration short, difficult and noisy; tongue dry; pulse quick and hard; expectoration slimy or bloody.

Respiration rapid, short and difficult; lancinating pains in the chest, mostly on the left side; sharp pains on pressing the intercostal spaces; anguish, fullness and tension of the chest; palpitation of the heart; dry, shaking cough, or cough with expectoration of the bloody mucus; weakness, pain, and trembling of the limbs; mouth and throat dry; thirst.

Uneasiness; melancholy; anguish; dread of the future; indifference to every thing; passionate and irritable.

ADMINISTRATION.—Same as *Bryonia.*

After the more violent febrile symptoms have subsided, and those of effusion into the cavity of the pleura remain, as enlargement of the affected side, dull sound on percussion, absence of the respiratory murmur, oppression and constriction of the chest; difficult and short breathing, with occasional attacks of suffocation; dry cough; coldness of the body; clammy sweats; anxiety and general sense of prostration, *Arsenicum* is our remedy. It may be given in these cases at the third potency, a dose once in two to four hours, lengthening the intervals as improvement occurs.

Rhus-tox. is sometimes useful after the febrile symptoms have subsided, and there yet remain wandering pains in the chest, shortness of breath, and general debility. In cases also which have arisen from metastasis of rheumatism or gout, this remedy is peculiarly appropriate. It may be administered in the same manner as *Bryonia.*

Arnica is our best specific when inflammation of the pleura has arisen from contusion, bruise, or other injury. It may be used internally in one of the lower dilutions; externally, a lotion made of a drachm of the tincture to twelve ounces of water may be applied to the contused part.

The other medicines which will frequently be found highly serviceable in some of the sequela of pleuritis are: *Sulphur*, *Scilla-mar.*, *Rhus-rad.*, *Lachesis*, *Silicea*, and *China.* Sulphur especially is recommended by Wurmbe in plastic pleurisy, and in cases complicated with pneumonia and hepatization, after *Aconite* has moderated the more active symptoms. He uses the tincture.

2. CHRONIC PLEURITIS.

This affection seldom follows or is preceded by acute pleuritis. In general the inflammation is sub-acute from the first; and the effusion commonly attains to a much larger amount than is observed in the acute variety. It is very often overlooked, and may only be detected by physical exploration.

First period.—That of Accumulation.—This continues while the

liquid is accumulating in the pleural sac or remains stationary. It is generally of brief duration.

Second period.—Stage of Absorption.—This may extend through a few weeks and even several months.

Diagnosis.—Percussion gives a flat sound on the whole or greater part of the affected side; tympanitic resonance at the summit; marked want of resistance and elasticity of the thoracic parieties; showing the pleural sac to be filled with fluid, compressing the lung into a small space. If any bronchial respiration is perceived, it is feeble, and sounds as if distant, except at the summit in front, and in the inter-scapular region. On the healthy side the respiratory murmur is intensified, but vesicular; greater vocal resonance in the inter-scapular space of the affected side.

Inspection shows immobility and enlargement of the affected side, and on the opposite respiratory movement increased. Ribs of the affected side raised towards a horizontal direction; intercostal depressions effaced; bulging between the ribs, nipple raised and removed further from the median line. Measurements show increase of size, perhaps to the extent of two inches.

The heart is displaced from the affected side and pulsates sometimes far from the natural position. Mediastinum displaced laterally; diaphragm depressed; this may press the liver downwards to make it project below the ribs.

During the second stage these signs gradually change towards the normal condition, but rarely reaching it; when the absorption is completed the contraction which began in the upper portion of the chest becoming general, the displaced organs recede towards their natural position. The whole process often extends through several months.

Chronic Pleuritis is not generally manifested by severe pain; cough and expectoration are not much complained of. The cough is more generally dry, except when there has been ulceration extending from the pleural sac into the bronchia, causing pneumo-hydrothorax. Other symptoms deceive superficial observers. Respirations but slightly increased in frequency; exercise or speaking reveal want of breath, dyspnœa and lividity of the prolabia, removed by rest. The pulse varies from 80 to 120 per minute; night-sweats, not always preceded by fever; slight chills occasionally felt, even when no tuberculosis; some indigestion common; but often the appetite is morbidly craving, and food digested without distress; pallid countenance not always present; emaciation not generally noticed. Strength often not much diminished; many continue laborious occupations though the chest on one side is filled with fluid undergoing a slow absorption.

The patient is generally supposed to suffer the effects of a "dumb ague," bilious fever imperfectly cured, dyspepsia, general debility, dis-

ease of the heart, chronic liver-complaint, or hepatization of the lung. The distinction, which shall separate it from each of these, is perhaps only to be drawn by physical exploration. If there be flatness over more or less of the chest in cases of chronic pleuritis, the probabilities are against pneumonitis. The acute inflammation of the parenchyma of the lung would have manifested itself by pain, rusty expectoration, fever, and confinement to bed for some days or more; and chronic pneumonitis, in such conditions as we find present, is not a common occurrence, either as a consequence of acute pneumonitis or as a primary affection.

The diseases liable to be mistaken for Chronic Pleuritis.—Infiltrated cancer of the lungs is not common. It may produce contraction of the affected side of the chest, and may resemble the pleuritis in the stage of absorption.

Mediastinal Tumor may lead to dilatation, and give rise to symptoms resembling those of pleuritis in the stage of liquid accumulation. Cancer of the lungs is more uniformly accompanied with cough and expectoration; the latter more abundant; it becomes purulent, resembling red or black currant jelly; hæmoptysis is frequent, pain more prominent and persisting than in pleuritis; pulse little affected till the disease is quite advanced. Contraction of chest not so great; the loss of strength, emaciation, and pallor denote the progress of a grave, serious malady.

Cancer of the mediastinum may extend into both sides of the chest, causing flatness on percussion, &c., not limited to one side. The pressure of the tumor may efface intercostal depressions, and unfrequently, a sense of fluctuation; but these effects are more rare than when the side is dilated by the presence of liquid. The dilatation from a cancerous or other tumor is often partial or circumscribed, irregular, and extends from above downward. In chronic pleuritis the dilatation is from below upward, is general and more regular in shape. Dyspnœa is more constant and prominent, if the tumor is considerable in size. If a tumor cause displacement of the heart and diaphragm other symptoms are added to those caused by accumulation of liquid: There is also "œdema of the face, lividity, swelling of the veins, dysphagia, as well as marked dyspnœa," which are caused by pressure on the air-tubes, large vessels, nerves and œsophagus.

Physical Signs.—*Cancer of the Lungs or Mediastinum.*—Percussion reveals bronchial respiration and increased vocal resonance, or broncophony is often found over parts of the chest where the percussion-sound is dull or flat. These signs show pulmonary solidification. In chronic pleuritis there is absence of respiratory murmur and abolition of vocal resonance below the level of the liquid. These signs with flatness on percussion eminently show the presence of liquid; vocal fre-

mitus may be preserved or increased in cases of cancerous infiltration or tumor; it is uniformly abolished below the level of the fluid in chronic pleuritis; and flatness of the chest extends from the base more or less upwards. In the former affections percussion reveals vesicular resonance at or near the base of the chest below the limit of flatness or dullness.

Retrospective Diagnosis.—*Examination of the Chest to determine whether Pleuritis has not existed at a former time.** —"Diminished width of the chest, apparent on inspection in the great majority of cases. Depression or flattening at the summit of the affected side, almost invariably observed; but occasionally enlargement, which probably denotes abnormal dilatation of the cells or emphysema. The reduction in size is also shown by mensuration. The shoulder generally depressed; but in some instances this is not apparent, and it may be even raised above the level of that on the opposite side. The nipple usually depressed, but not invariably, and nearer the median line. The lower ribs converging, sometimes almost overlapping; the upper ribs diverging. The distance from the posterior margin of the scapula to the spinal column lessened, often in a notable degree; an exception to this rule obtaining in some instances, when lateral curvature of the spine takes place, the concavity looking toward the affected side. Projection of the lower portion of the scapula occurring in a certain proportion of instances; also depression of the inferior angle below the level of that on the opposite side. The respiratory movements almost uniformly diminished in a degree more or less marked; the expansibility on the opposite side being at the same time exaggerated. Comparative dullness on percussion; the contrast rendered more striking by the great clearness of percussion-resonance on the opposite side. A vesiculo-tympanitic resonance at the summit, conjoined with enlargement, denoting the supervention of emphysema. Feebleness of respiratory sound over the entire side, with few exceptions; and on the opposite side, an unusually intense vesicular murmur. A bronchial respiration sometimes observed in the inter-scapular space, and in other parts of the side. In the latter, especially associated with broncophony, probably denoting dilatation of the bronchial tubes. The respiration in a certain proportion of cases, broncho-vesicular. The vocal resonance sometimes greater, but not uniformly. The same remark applicable to vocal fremitus. Curvature of the spine in some cases, the inclination usually lateral, the concavity toward the affected side. The position of the heart frequently normal, but in some instances displacement of this organ; it being found to the left of its natural position and elevated, if the pleuritis be seated in the left side." After pleuritis of the

* Flint on the Respiratory Organs, P. 577.

right side the heart is sometimes permanently drawn toward the right side. Such are phenomena observed in persons who have formerly suffered from chronic pleuritis, after complete recovery from the same, except there be remaining, in some instances, emphysema and dilatation of the bronchial tubes.

3. EMPYEMA.—PYOTHORAX.

A collection of pus within the cavity of the chest is one of the terminations of pleuritic inflammation. The termination of pleurisy in empyema is attended by difficulty of breathing, particularly on lying on the side opposite the affected one; and an œdematous swelling is generally externally perceptible.

Diagnosis.—Purulent accumulation within the thorax, the tumor showing itself without the ribs is regarded simply as a superficial abscess. But the mistake of so regarding it is avoided by employing physical exploration; if the physical signs reveal the existence of a large collection of fluid within the pleural sac, it may be inferred that there is a communication between the fluid within the chest and that immediately beneath the skin. We can also by compressing the tumor, if there be such interior communication, reduce the fluid from the outside of the ribs, through the perforation, making it entirely disappear by forcing its contents into the thorax; and if the tumor contains fluid which communicates freely with liquid in the chest, it will be observed to rise and fall with the successive acts of inspiration. The appearance of the tumor which belongs to empyema is not preceded by acute inflammation, pain, swelling, heat or redness. If the tumor be opened under the erroneous impression that it is merely a subcutaneous abscess, the abundance of the discharge of pus will lead to the discovery of the error.

When the fluctuating tumor pulsates synchronously with the beating of the heart, it might be mistaken for aneurism; but it is developed too rapidly, the liquid contents are too superficial, and the fluctuation of pus is evident. The bellows' murmur and thrill of aneurism are wanting and the certain presence of liquid in the chest removes all doubt as to its character.

Having discovered by physical signs that the pleural sac contains liquid of some kind, it is desirable to determine its nature as precisely as possible: It may be supposed to be purulent, if the quantity of liquid be large and it remains stationary, or continues to increase in spite of judicious treatment, calculated to cause its absorption. Serous fluid should have been at least diminished; but pus is more likely to increase rather than diminish; repeated exploration may assure us whether the quantity increases or diminishes. Positive certainty can only be reached by *paracetesis thoracis*. Dr. Morrill Wyman, of

Cambridge, Mass., proposed to perform this operation most safely by using "a small canula which is attached by a flexible tube to a suction-pump, so constructed that the fluid may be removed from the chest through the canula, and discharged through the pump by another aperture. (*Amer. Jour. Med. Sciences*, April, 1852.)

It is the tendency of this disease to terminate by progressing toward the surface; and, by means of ulceration and a fistulous communication, the contents of the pleural sac are discharged spontaneously, either directly through the thoracic parietes, or indirectly through some natural outlet, as the bronchial tubes. It has resulted in discharge of pus into the alimentary canal. When sudden and copious expectoration takes place from the lungs when the pleura was known to have been filled with pus, it may be considered certain that the ulceration has commenced within the pleural sac; speedily, however, we have evidence of the existence of air within the thorax and the existing disease is known as pneumo-hydrothorax. (*Flint.*)

Perforation of the Walls of the Chest.—The purulent fluid collecting beneath the thoracic integument first forms a fluctuating tumor which is evidently situated outside of the ribs. If there has not before been proof of the existence of an accumulation of liquid, this tumor may be mistaken for an external abscess. If physical signs show that liquid really exists in the chest, we may suppose the subcutaneous collection to be connected with that within. In this case the fluid beneath the skin can be pressed back into the chest through the opening by which it found its way towards the surface; the tumor would rise and fall with the successive acts of inspiration and expiration; and if opened by mistake, the large quantity of pus discharged will prove error in diagnosis.

Treatment.—In all ordinary cases the proper use of remedies in the earlier stages of pleuritis will prevent its proceeding to a termination in the formation of pus. When, however, it has by neglect, or in peculiar constitutions proceeded to suppuration, the treatment will be governed by the following principles: 1. The constitutional predisposition of the patient to scrofulous or tubercular disease; 2. the treatment proper for abscesses in general. See the Articles *Phthisis*, *Scrofula*, *Abscess*, *Pleuritis*, *Pneumonia*. 3. The operation of paracentesis may be necessary in some cases.

See an interesting case by Dr. Helmuth, U. S. Jour. Homœop. Vol. I. p. 489.

4. EMPHYSEMA.

Emphysema consists only of a swelling or enlargement from the admission of air into the cellular membrane. It is commonly caused by a wound or injury of the thorax, which has affected the lungs; in which

case the air passes from the injured lung through the wound into the surrounding cellular membrane; and from thence it spreads over the body. In some remarkable cases it arises spontaneously immediately after delivery without any known cause.

Emphysema is marked by an evident crackling noise; elasticity upon pressure; difficulty of breathing, oppression, and anxiety. The skin over the enlarged part is tense, elastic, and crepitating.

This affection is generally without danger; but it may be more or less serious, according to the extent of the injury with which it is associated. The only treatment required will be that proper for the injury, and the control of the attendant inflammation and fever.

5. EPIDEMIC INFLAMMATION OF THE PULMONARY MUCOUS MEMBRANE.—INFLUENZA.

This disease is usually described as an aggravated form of coryza; but it is far more serious than that disease as it commonly appears, and is essentially different in its nature. Arising from a specific cause, and spreading rapidly as an epidemic, it has often been simultaneously manifested in almost the same hour in every part of a large city; and in a very brief period it traversed kingdoms and crossed oceans, presenting everywhere the same general features. For centuries it was believed to originate in some mysterious influence of the stars; hence the Italian name *influenza*. It was also called *influenze del aria*, influence of the cold.

In addition to the symptoms of simple catarrh (described at p. 423) we find in influenza an immediate aggravation of all the febrile symptoms: hoarseness; severe cough, either dry and racking, or hollow and loose; wheezing, or difficult respiration; impaired appetite; soreness, oppression, or stitches in the throat and chest on coughing; incapacity for mental or physical exertion; bowels constipated or relaxed. Sometimes the inflammation appears to extend to the membrane of the thorax and of the bronchial tubes, giving rise to sharp, stitching pains, or a sensation of rawness in these parts; severe and painful chest cough; thick, tenacious, and semi-purulent expectoration; oppression of the chest and difficult respiration. In these instances, the inflammation is of a lower grade than obtains in acute bronchitis, pleuritis, or laryngitis, and consequently the symptoms are more slight and less dangerous.

Treatment.—The chief remedies are, *Nux.*, *Arsenicum*, *Mercurius*, *Dulcamara*, *Stibium*, *Cepa*, *Ammonium*, *Carbon*, *Ipecac.*, *Causticum*, *Belladonna*, *Bryonia*, *Pulsatilla*, *Chamomilla*. Their separate indications are given at p. 425. Camphor is promptly effectual.

SUMMARY OF PHYSICAL SIGNS

Name of the Disease.	Inspection, Palpation, Mensuration.					Percussion.
	Thorax.	Muscles.	Diaphragm.	Liver.	Heart.	
EMPHYSEMA.	Dilated, especially in regio mammaria. Like a barrel — elasticity wanting. (Compare Pneumo-thorax.)	Moveable, not pushed out.	Pressed down.	Pressed down.	Pressed down and to the inside: not moved over the medium line.	Clear sound, not tympanitic, even where the sound is dull, as over the liver and heart. Clear tympanitic sound in limited vesicular emphysema.
PLEURITIS.	Inferior dilatation with little or no motion. In left-sided pleuritis that side wider than the right one.	Not moveable, —pressed out.	Pushed down.	Pushed down.	Pushed to the right side over the median line, soon in left-sided exudations.	Empty, dull, firstly towards the back and below.
HYDROTHORAX.	As in pleuritis.	Some moveable, but not pushed out.	As in pleurit.	As in pleurit.	As in pleurit.	As in pleurit.
PNEUMOTHORAX	Increased convexity of the left side, and enlargement of it, especially in simultaneous exudation. Great elasticity of the walls of the chest.	Muscles show prominently outward; nearly paralytic; increased elasticity; yielding in percussion.	.....	.....	In left-sided pneumo-thorax the heart in scrobiculis cordis; or as in pleuritis, pushed to the right side.	Clear and tympanitic in front, with metallic second sound, especially on percussion, during auscultation (not tympanitic, only during large tension of the thorax) even on the back, where there is fluid exudation, tympanitic sound, moderated down only by milder percussion and large quantity of fluid.
Apoplexia pulmonum. Bleeding from the Lungs.	.....	.....	.....	.....	.....	Only in large bleedings on the periphery dull sound, with resistance of the finger.

OF DISEASES OF THE LUNGS.

AUSCULTATION.			DIAGNOSTIC REMARKS.
Breathing.	Sounds (Murmurs.)	Voice.	
Never bronchial; stretched and increased expiration. Diminution of the sound of respiration, but vesicular in front—may be even heard on the back in the hepatic region.	Rales dry, humid, whistling, surring, humming at the expiration.	Vibrations visible by the hand; not increased.	Muscles of the throat hypertrophied. Diameter of the chest from before backwards increased; chest little moveable; respiratory murmur may be wanting entirely; rattling murmurs more in the upper portion. On account of bronchial mucous membrane, raw vesicular breathing: imperfect rattling as in small vesicles. In larger vesicles dry vesicular rattling. The interlobular emphysem may physically not be diagnosed. *Differences from Pleurisy:* Erect position preferred; wall of the thorax elastic; thorax superiorly dilated; in pleuritis the contrary; dilatation below.
Weak, bronchial breathing in the corner of the shoulder-blade. Breathing trifling or entirely gone. In large exudation no breathing on the anterior side.	Friction sound in the beginning and end of the disease, (rattling murmur more seldom than in pneumonia.)	Vibration not felt by the hand. Broncophony weak. Ægophony near the corners of the scapula frequently.	The larger circumference of the left thorax (usually smaller than the right) is diagnostically of importance. Encysted exudations and resorption after the physical symptoms. Diagnostic differences: 1st, From pneumonia: The hollow dull sound appears quicker; more resistance of the thorax in pleurisy. Pneumonia neither dislodges the intercostal muscles nor other organs from their position. 2d, From pneumo-thorax: Percussion remains the same in pleurisy in every position. *Sequela of Pleuritis:* Hydropical mixture of blood with dilatation of the right heart, and great exudation. Atrophy of the lungs; sinking in of the thorax; friction sound is favorable, proving a plastic exudation. In phthisis pleuritis is circumscribed.
As in pleurit. after exudation.	No friction sound.	As in pleuritis.	
Never vesicular; on the back of the thorax uncertain.	Rattling, surring, whistling; sounds, with ringing noise; sounds of falling drops on sitting up. Metallic tinkling; especially strong in coughing and talking.	Vibration wanting. Metallic sound and resonance in speaking and coughing. Amphoric sound. Gurgling after sound on the back.	The surest symptom is the noise of fluctuation in motion or shaking the patient. Metallic sound may be wanting, or only be heard at different times on the same patient. Change of position, changing also the position of the exudation, modifies also the percussion sound. (Difference from pleurisy.) Enlargement of thorax rapidly, in emphysema slowly. Fluid exudation can only be diagnosed, when in large quantity, giving a dull sound. In pneumothorax from degenerate exudation the quantity of air is less. Clear sonorous sound of the enlarged left side with pulsation of the point of the heart on the right side proves fully the existence of pneumothorax.
Decreased vesicular breathing, or suspended breathing on a small space in infarctus and crepitant ronchus around the part. Bronchial breathing, when the infarctus extends over a larger space.	Moist, large vesicular rattling during the cough, especially between the shoulder-blades, and in the trachea. When the blood is fluid, rattling, surring, whistling noises.	Broncophony only by large extent of infarction.	*Diagnosis.*—More negatively by exclusion of concurring cases: Small bleedings and small infarctus give no physical symptoms. The same is the case with larger ones, going inward and surrounded by tissue containing air. Accumulation of mucus may be taken for fluid blood, both giving a moist rattle. Hæmorrhage is hardly ever so extensive as to make itself known by inspection and palpation.

Name of the Disease.	Inspection, Palpation, Mensuration.					Percussion.
	Thorax.	Muscles.	Diaphragm.	Liver.	Heart.	
Œdema-Pulmonum.	....	Chest less moveable, especially in comparison to the exertion.	Normal.	Normal.	Normal.	Nearly normal; in some cases more clear, and somewhat tympanitic. At the approach of death weakened and deadened towards the back; in front somewhat tympanitic.
Pneumonia.	Thorax sunk in and flattened; where indurated pieces, shrunk in.	Muscles always moveable, never pushed out. Extension uneven. The suffering side moves relatively less.	Normal.	Normal.	Normal.	*1st Stage*—Normal in the beginning; in pneumonia near the periphery tympanitic and full resistance of the percussing finger. Increasing dullness of the sound. The healthy parts around it give a full clear sound. *2d Stage.*—Sound dull and deadened. Resistance increased. *3d Stage.*—Sound full and clear again. Sometimes tympanitic as in the first stage: at last normal.
Tuberculosis. Crude Tubercles.	The known phthisical habit: chest wider below, narrower above, (in consequence of swelling of the liver and sinking in of the thorax.	Intercostal muscles less moveable; upper part of the chest being less raised. One-sided motion of respiration; intercostal spaces dilated, and motion of the heart visible there.	Normal.	Normal.	Position normal, but the stroke stronger and more diffused. Second sound of pulmonary artery increased. pulsations of the subjacent vessels on the apex of the lung clearly perceptible.	Normal in the beginning, after a while deadened in the regio colli, over the apex of the lung, in regio clavicular, next to the shoulder joint. over the crest of the scapula, increased resistance, want of vibrations. Fuller sound of the neighboring parts and in the sides and below, (on account of the increased extension of the cells.) Tympanitic sound next to the sternum (through the emphysema of the edges.

AUSCULTATION.			DIAGNOSTIC REMARKS.
BREATHING.	SOUNDS (Murmurs.)	VOICE.	
Lessened respiratory murmur; cell breathing higher, nearly hissing; never bronchial breathing. (Different from pneumonia.)	Moist crepitant ronchus, as in pneumonia, especially on the back. According to the extent of the bronchial branches large vesicular unrythmical murmurs. In simultaneous bronchial affection rattling sounds (surring, whistling, hissing) with the exception of the consonant.	Never broncophony.	The acute circumscribed œdema shows sometimes even vesicular breathing, usually diminished and crepitation; auscultation the same in acute and chronic œdema. In chronic the motion of the thorax not in proportion to the exertion. The hands laid on feel the vibrations of the internal moving tough masses. The partial chronic œdema chooses more the lower regions, giving a dull sound on light percussions, or moist rattling sounds. Simultaneous pleuritic exudation pushes the heart away.
1*st Stage.*–Increased vesicular breathing; puerile respiration; rougher breathing with cell-breathing. 2*d Stage.*–Bronchial breathing. 3*d Stage.*–Bronchial breathing, receding more and more; for some time rough breathing, diminished cell-breathing.	1*st Stage.*—Crepitant ronchus at inspiration, or (in simultaneous bronchial affection); dry and moist, but not consonant rattling noises covering the crepitation. 2*d Stage.*–Consonant rattling noise, surring, whistling, purring. 3*d Stage.*–Moist rattling and crepitation at inspiration and expiration.	Vibration felt everywhere. In the second stage broncophony.	*In* 1*st stage*, cell breathing covered by the rattling noises, heard again at the expiration. 2*d Stage.*—Emphysema on the margins or serous infiltrations in the neighboring parts may produce tympanitic sound. Also when the pneumonia does not pass through the whole thickness. Consonant rattling murmurs are known by their high clear sound, by the dull empty sound on percussion, and by the greater resistance over the suffering part. Palpitation increased over the hepatized part. The indurated hepatization shows the symptoms of the second stage increased and continued. In abscess of the lung: sound full tympanitic, noise of the cracked pot, metallic sound. Breathing strongly bronchial, churning sound as in a bottle shaken, or rattling murmurs; cavernous voice with metallic sound, amphoric resonance. Lobular pneumonia of grown persons can not be physically diagnosed; it has only the symptoms of catarrh; lobular pneumonia of children gives the same symptoms as the croupous of grown persons. Pneumonia differs from bronchitis in the deadened sound, resistance of the suffering part, bronchial breathing, and development of stages.—Comparison of both lungs is necessary. They may be in different stages of pneumonia.
Isolated tubercles have symptoms mostly belonging to bronchial catarrh. According to Stokes: increased respiratory murmur; dry, sharp, long-continuing expiratory sound, with crepitant ronchus. Weak respiration in a circumscribed point. Continued murmuring breathing, without pause, after the expiration and stopped inspiration in two or more pauses. Symptoms of catarrh and pleuritis only in the upper parts. In conglomerated tubercles in great extension bronchial breathing.	Sequela of catarrh: Ronchus sibilans; dry cracking, moist rattling. Consonant rattling sounds over a thickened plane.	Voice in solitary tubercles not strenghtened. Broncophony in conglomerated tubercles in large extension.	No safe physical symptoms for the first stages of tuberculosis. Pneumonia in the upper part of the lung frequently indicates tubercular infiltration.

Name of the Disease.	Inspection, Palpation, Mensuration.					Percussion.
	Thorax.	Muscles.	Diaphragm.	Liver.	Heart.	
Tuberculous Phthisis.	Thorax flattened; great sinking in of the clavicular region. Over a vomica the thorax sinks in.	Intercostal muscles sunk in; region below the clavicle immoveable; the upper portions do not expand during breathing. Where the vomica reaches the periphery the intermediate spaces are pushed out.	.. ..	.....	Stroke of the heart and sounds audible in a large vomica with metallic sound.	Sound normal, if air-holding parenchyma surrounds the vomica; tympanitic in large and superficially situated caverns; metallic sound and cracked-pot murmurs in very large caverns. Large deep-seated vomica, surrounded by thickened substance, and containing air give a weak tympanitic sound.

DISEASES OF THE HEART AND ITS APPENDAGES.

The heart and its appendages are subject to several kinds of morbid action, which authors have described under the terms *angina pectoris*, *hypertrophy*, and *dilatation* of the heart, diseases of the *valves*, *carditis*, and *peri-carditis*, and *palpitation*. Many of the symptoms of these affections are similar, but we shall endeavor, in the following brief description, to point out a sufficient number of signs to enable the physician to form a ready and accurate diagnosis.

12. CARDITIS AND PERICARDITIS.

Diagnosis.—Inflammation of the fleshy substance of the heart, uncomplicated by disease of the pericardium, of the pleura, or of the aorta, is an occurrence so rarely met with, that some authors have described under one general head, the symptoms resulting from inflammations of the heart and its appendages. The signs usually present in carditis often render our diagnosis very obscure, on account of their resemblance to affections of the lungs, and of the pleura, and of their frequent complication with the latter. Frank believes that much of the uncertainty which prevails respecting cardiac affections, is attributable to the general neglect of the profession in investigating the movements of the heart during disease, and in examining its morbid appearances in those who have died in consequence of diseases of the chest. "*Il n'est pas doteux que, si les hommes de l'art observaient avec la même attention les mouvements et les vibrations du coeur*

AUSCULTATION.			DIAGNOSTIC REMARKS.
Breathing.	Sounds (Murmurs.)	Voice.	
Vomicæ surrounded by air-holding parenchyma, show only catarrhal symptoms; at the utmost uncertain breathing: or: small vomicæ, through the influence of the bronchia, or: Larger ones (especially on inspiration and coughing: Extensive vomicæ with bronchial tubes and containing a good deal of air, give: Bronchial breathing and surring (churning sound as in bottles shaken); metallic sound, amphoric resonance, and: Consonant rattling murmurs with metallic sound and amphoric resonance.	Rattling murmurs. Increased rattling murmurs. Large vesicular murmurs, not uniform.	Vibrations of the voice and cough felt in superficial vomicæ. Broncophony with metallic sound and amphoric resonance in extended vomicæ.	The tuberculous infiltration shows the same symptoms as the second stage of pneumonia. If rattling mucus appears during their softening, it indicates vomicæ. Only where the percussion sound is empty and clear, at any rate tympanitic, do we feel justified in diagnosing excavations from the clear and sharply consonant rattling murmurs over a tuberculous infiltrated portion of the lung. In acute miliary tuberculosis: Never bronchial breathing, always signs of mobility, rattling murmurs, crepitations. In subclavian artery of the suffering side sometimes stronger pulsation by pressure after a stoppage of the tuberculosis. There are diseases of the heart, with such influence on the lungs as to prove by their physical signs the absence of tuberculosis.

que les battements des artères, s'ils multiplaient leurs recherches sur les cadavres, ils viendraient à bout dissiper les epaisses ténebrès qui environment les maladies de l'organe central de la circulation." (*Frank.*)

The ordinary symptoms of inflammation of the heart and its envelop, the pericardium, are acute pains in the region of the heart, increased by motion, or on assuming the horizontal posture; sense of fullness and oppression in the chest; palpitation from the slightest exertion, or from mental excitement; rapid, difficult, and irregular respiration; short, dry spasmodic cough; rapid, small, irregular, and intermittent pulsations of the heart and arteries; great anxiety, dread of suffocation; "absence of the respiratory murmur, and dull sound on percussion." (*Hall.*) General febrile disturbance almost always accompanies the inflammation, although the heat is unequally distributed, some parts being intensely hot, while other parts are cold. The countenance is always expressive of anxiety and distress, the patient is desponding, irritable, and restless, and experiences alarming palpitations, faintness on rising up in bed, or on talking.

Causes.—Protracted grief; anxiety, or mortification; violent muscular efforts; external injuries; asthmatic, and other pulmonary affections; metastasis of rheumatism, or gout.

Influence of Mental Emotions on the Heart.—Fear, grief, and mental anxiety make the greatest depredations on the functions and structure of the heart. It was Corvisart who first in modern times drew especial attention to diseases of the heart, having his attention strongly

drawn to the subject by the melancholy examples of it, which were known to have been developed by the exciting scenes of the French Revolution. But many of the ancients have observed similar diseases. Chrysostom describes sorrow as a cruel torture to the soul, consuming the body and gnawing the very heart. Agrippa alludes to the palpitations of the heart and syncope induced by fear. But the most remarkable passage in all the old authors is the following by Melancthon: "Sorrow strikes the *heart* and makes it palpitate and pine away with *great pain;* and the black blood drawn from the spleen and diffused under the ribs on the left side makes those perilous hypochondriacal flatulences which happen to those that are troubled with *sorrow*." This is a true picture of cardiac disorder from nervous irritation of grief or sorrow. (*Johnson on the Liver, &c.*, p. 209.)

Broken Heart.—The question of the possibility of rupture of the heart by violent mental emotion has often been discussed. 1. Zimmermann gives one authentic case, in that of Philip the Fifth of Spain. On hearing, that his army had been defeated near Plaisance, he was overcome with grief and suddenly died. The author says, on opening his body the *heart* was found ruptured.

2. At the Hospital de Sal Petriere in Paris, Mary Glinn, a widow, 70 years of age, and of remarkably good health previously, was astounded with the horrible intelligence that her daughter with two children in her arms had thrown herself out of a window and been dashed in pieces. The mother was so affected that she changed to the color of a negro in one night. The black color was permanent, and she died in two years of pulmonic disease. (*Jour. De Med.*, 1817.)

13. ORGANIC DISEASE OF THE HEART.

Diagnosis.—The patient affected with organic disease of the heart, in addition to other bodily sufferings, manifests habitual irritability, melancholy, despair,* suicidal tendencies, hysteria and hypochondriasis.†

"Gastric, cerebral and cardiac irritation," says Dr. Forbes, constitute in many cases such a strong chain of disease, of which every part influences and strengthens every other part,; that, therefore, no plan of treatment that does not embrace the whole can be attended with success. The subjects of heart-disease are liable to hæmorrhage which is a very important symptom, as also is the change of position in bed. "The assumption in bed of a position previously intolerable is a sign of extremely bad omen." Syncope, epilepsy and apoplexy are com-

* Corvisart. † Kreysig.

mon; and in many cases of convulsions disease of the heart appears to be the essential cause.*

Watson says (*Lectures*, p. 744), that while palpitations aud functional irregularities of the heart's action are frequently dyspeptic symptoms, so structural change in the heart is very apt to derange the digestive functions. Flatulence is one of the most common and distressing symptoms; and free eructation wonderfully mitigates the cardiac distress, by relieving the diaphragm from the upward pressure of gas, which had embarrassed the motions of the heart: dyspnœa and cough.

There are also in these cases an impeded and sluggish circulation of blood from the abdominal viscera; this causes congestions of various parts; the liver is enlarged, grows tender, and its functions are deranged.

The circulation through the brain is disturbed; this causes headaches, giddiness, causeless apprehension, cowardice, and irritability developed in men previously intrepid and of strong, firm nerves; propensity to frightful and distressing dreams; sudden startings from sleep in agitation and alarm; one or more chambers of the heart (See page 457.) may become thicker and stronger than natural, while the capacity of that chamber or of the others may remain natural; in other cases the thickening of the muscular texture is accompanied by corresponding enlargement of the cavity also, constituting *hypertrophy with dilatation*.

Causes.—Some mechanical obstacle prevents the free and thorough exit of blood from the chamber, or hinders the easy play of the organ. In the *former* condition there is a gradual yielding of the sides of the affected chamber to the continual and undue pressure of the accumulated blood against them; in the latter there is a *striving* action of the muscle to overcome the hindrance, or to counterbalance the obstacle. Thus the muscle, compelled to do extra-labor, grows in thickness while performing it. If it could increase in *strength* in proportion to its increased labor, it might resist the internal pressure, and there would be no dilatation of the cavity within. In very many cases it fails to increase in strength in the necessary ratio; there is therefore *some dilatation*, and this and the hypertrophy commonly progress together for a series of years or for life.

Sounds of the Heart in Health.—The heart may be heard by the ear alone, or through the stethoscope, to beat within the space corresponding to the lower half of the sternum and the cartilages of the fifth and sixth left ribs; about two inches below the nipple and one inch

* Dr. J. J. C. Moll. Dissertation on the Connection of Heart-Disease and Convulsions. 1823.

from it towards the sternum. When the heart is larger than natural, it may be heard over a larger space. It may also be heard over a comparatively large space when the lung between the ear and the heart has become hepatized, or solidified by the presence of crude tubercles or cancerous deposits; also when the chest contains a liquid from pleurisy

Symptoms usually present in Disease of the Heart.—Pain, palpitation, or excessive action of the heart, perceptible to the patient; irregular, or intermittent action discovered in the pulse; dyspnœa; cough; dropsical accumulations; hæmorrhages; various affections of the nervous system, as increased and morbid sensibility or *nervousness*. These symptoms, though present when there is organic disease of the heart, often arise from other more trifling causes.

Irregular Action of the Heart consists in derangement or discord of rythmical movements, and is discovered by the pulse at the wrist. The pulse fluctuates in frequency, in strength and in regularity; some beats succeed each other very rapidly, and are followed by others more slow and full. Some beats are omitted entirely, and are made up for by the next one being full and strong.

Treatment. *Digitalis*, *Aconite*, *Bryonia*, *Arnica*, *Cannabis*, *Pulsatilla*, *Lachesis*, *Spigelia*, *Iodine*, and *Arsenicum* are the medicines commonly employed in this malady.

Digitalis, on account of its specific power over the sympathetic nerve and the cardiac plexus, is especially adapted to those cases of pericarditis which have been caused by violent emotions and protracted grief, care and anxiety. The special indications are; sharp stitches, or contractive pains in the region of the heart; uneasy sensations in the left side of the chest, often extending to the shoulder and arm; palpitations, excited by talking, movement, or on lying down, particularly on the left side; pulse rapid, weak and irregular, or slow, soft, and intermittent; sense of oppression and anguish in the thorax; general weakness; frequent attacks of faintness; respiration slow, difficult, and unsatisfactory, or short, painful and sighing; frequent flushes of heat in the chest, face and head, while the extremities remain cold; general feeling of anxiety and despondency. A drop of the second or third dilution should be prescribed in water every two hours.

Aconite is a suitable remedy when the movements of the heart and arteries are more rapid and vigorous than in health, and when the congestion to the heart is accompanied by an unusual degree of erethism. The pains in the cardiac region are of a constrictive, oppressive or lancinating character; the breathing is short, anxious, and labored; the pulse is rapid, strong and intermittent; the action of the heart is exalted and often irregular; febrile symptoms are strongly pronounced; the patient inclines to sit with his body bent forward, in order to relax the muscles of the thorax, and thus to obviate the liability to pain from

this cause. The first or second dilution of *Aconite* may be selected, and a single drop administered in water every two, three or four hours, as the nature and severity of the case may demand.

Bryonia will occasionally be required in inflammations of the heart and its appendages, which are complicated by disorder of the pulmonary structures. It will likewise prove servicable in cases which are connected with rheumatism or gout. The following are its indications drawing and stitching pains in the chest, aggravated by breathing, or by movement; rapid, anxious and painful respiration; dry, spasmodic and painful cough; lancinating pains, extending into the shoulders and back, between the shoulder-blades; oppression in the chest, which causes frequent sighing; determinations of blood to the chest and head; rapid, weak, and intermittent pulse; anxious, depressed and irritable. Its administration is the same as *Aconite*.

Arnica is chiefly useful when the inflammation has been caused by external injuries, like contusions, wounds, &c. The special indications are: lancinating pains in the region of the heart; oppression at the chest; great difficulty of breathing; short, dry and irritating cough; sharp pains through the heart, which cause faintness; irregular action of the heart; pains and dyspnœa, increased by mental or physical exertion.

It may be given in the same manner as *Aconite*.

Cannabis, *Pulsatilla*, *Lachesis*, *Iodine*, and *Arsenicum* have been employed with success in cardiac inflammations which have arisen from suppression of eruptions or the drying up of old ulcers. They may be used at the second or third attenuations,—the repetitions of doses to be governed by the urgency of the symptoms, and the medicinal or other effects produced.

Should the disease terminate in dropsy of the pericardium, our best remedies are: *Arsenicum*, *Apis-mel.*, and *Iodine*. We prefer the first or second attenuations,—a dose once in six hours until an impression is evident.

Tartar-emetic is a powerful therapeutic agent. It controls the action of the heart and arterial system, lowers the force and frequency of the pulse, depresses the action of the vascular system generally, increases the urinary secretion, and produces diaphoresis.

In pleuritis it is necessary to give it with caution, as its emetic effect produces extreme pain. It is generally more useful in inflammations of the mucous membranes than the serous, which are more under the influence of Mercurius.

In palpable doses Tartar-emetic is antipathic. It is proper in very small doses, when there is short, difficult and imperfect respiration; feeble action of the heart and arteries; nausea; diminishing animal

heat; impaired muscular and nervous force. These effects are produced by the primary action of the drug.

Spigelia.—Dr. Epps says, he obtained good results in carditis from metastasis by Cannabis after Spigelia.

Calcarea.—In a case of considerable hypertrophy of the heart, which had been treated two years allopathically, *milk disagreeing with the patient*, there was considerable amendment from repeated doses of *Calcarea;* and *Spigelia* completed the cure. (*Croserio.*)

14. ENDO-CARDITIS.

TREATMENT.—The most important remedies in the treatment of endo carditis are, Aconite, Veratrum-viride, Digitalis, Kali-hydriodicum, Bryonia, Mercur., Arsen., Spigelia, Lactic-acid, Kalmia, Cuprum-acet.

These medicines should, in most cases, be used in the lower attenuations, and the doses frequently repeated until the disease begins to yield.

The venerable Dr. Hirsch, of Prague, says, that in the course of his twenty-four years experience he saw much mischief done by the treatment of rheumatism by alcoholic embrocations; and charges that organic diseases of the heart frequently result from this treatment. Dr. Jaeger, of Elgin, Ill., gives one severe case of rheumatism, which was recovering well under homœopathic treatment, when the patient was induced by the persuasion of a friend to try the external application of a strong solution of common salt in French brandy. The application appeared to relieve the shoulder, but the disease took possession of the knee. The solution drove it from the knee and the patient slept well for one night. But, in the morning he was suddenly attacked by the most intense chill, followed by palpitation of the heart, with an indescribable anxiety and violent dyspnœa. "I found at my visit the countenance of the patient much changed; face pale, lips cyanosic, his looks unsteady, very restless and crying for help. The palpitation was exceedingly strong, tumultuous and unrythmical, and was distinctly visible in the region of the apex of the heart; the pulse considerably accelerated and irregular; the tongue and extremities cold."

Aconite in solution, every five minutes one table-spoonful. After one hour, amelioration of symptoms, and in the afternoon the patient lay very quiet; the palpitation and pulse better, countenance cheerful, profuse perspiration all night and good sleep.

In the morning he was free from the endo-carditis but the pain in the right shoulder-joint was again felt. This was removed by the alternate use of Bryonia and Mercurius-solubilis, continued for three days. No abnormal sound of the heart remained. (*United States Jour. Hom.* Vol. I., p. 424.)

Kalmia-latifolia, has the most remarkable power over the pulse of

any remedy in the materia medica, except Digitalis, and perhaps we shall find its best powers in diseases of the heart which alternate with rheumatism. It is a narcotic, poisoning domestic animals, and the honey made from its flowers is poisonous; also the flesh of birds as quails and pheasants. Indians killed themselves with infusion of the leaves, which externally applied produce subsultus, startings and convulsions.

SYMPTOMS OF POISONING: Nausea, with entire loss of sight; continued retching, pain in the crown of the head, extending down the cervical vertebræ; cold extremities; pulse imperceptible; when the pulse returned it was only forty per minute. Peculiar noise while breathing like that from spasmodic affection of the glottis; paleness of face; excessive nausea. (*Am. Inst. Hom.*, Vol. I.)

Hering proved both with high and low dilutions.

Cuprum-acet.—*Dr. Kissel.*—First. A patient, aged twenty-five years, had cold and hot fits, both intense, ending in permanent high fever. There was first pressure under the lower part of the sternum, and oppression of the chest. After three days pain, rheumatic heat and redness in the knee joints, with immobility; then in the hips; lastly, of the elbows. Pressure on these joints is painful, and they are all swollen. Can not move any joint, the affection beginning in the shoulder; obliged to lie still, quite helpless. His head is free; skin moderately warm; pulse eighty-five, full, quick pulsation of the heart and the tone feeble and dull, as if it came from a great depth; tongue slightly coated with white; stool normal; urine deep yellow, clear, frothy, and acid. After seven days, during which time some other treatment was tried, and at the end of which the inflammatory affection had moved from the joints above named to the ankles, he is directed to take *Cupri-acet-tincture.*

The next day the pains in the ankle are gone and no new ones appearing elsewhere. Pulse sixty, soft, full; urine bright yellow, clear, acid; heart pulsation and tone less feeble.

Two days later the patient could walk about the room. Recovered.

Second. Another case was that of a man, aged forty, who had chill, heat, palpitation of the heart, oppression of the chest, pressure under the sternum and in the præcordium, had vomited.

Two days after. Auscultation revealed a bellows sound at every other beat of the heart; feeble pulsation of the heart; and tongue thickly coated. An alkaline mixture having first been tried with some improvement. Acet-cupri was given for five days when he was well.

Third. A lady, aged forty-five, who was first treated by bloodletting. She had at first chill, heat, palpitation of the heart, oppression of the chest, pressure under the sternum and in the præcordium, great feebleness and tearing pains in the limbs, not affecting the joints,

stools normal; urine reddish and turbid, with red flaky sediment, and acid. Instead of the second beat of the heart Dr. Kissel heard a bellows sound and friction sound. The pulse soft, thin, one hundred. She lost twelve ounces of blood with no benefit.

March 1. In the night she had a paroxysm with more severe oppression of the chest, restlessness; the palpitation with feeling of anguish increased. Cured with *Cupr.*

15. PERICARDITIS.

Treatment.—The principal remedies are, Aconite, Bryonia, Spigelia, Arsenicum, Apis, Kali-hyd., Lobelia, Gelseminum, Mercurius-hyd., Digitalis, Veratrum-vir., Cannabis-ind., Apocynum-cannab.

We usually prescribe these medicines in palpable doses, frequently repeated.

Case.—*By Dr. Laurie.— Bryonia.* A girl, aged thirteen, complained of severe darting pains in all her joints, which were swollen, tense, shining and sensitive to touch. The face was flushed and anxious; tongue furred and white; mouth parched; great thirst; skin hot and dry; pulse one hundred and thirty, full and bounding; breathing hurried; the heart's impulse abnormally strong; the pulsations loud, accelerated, and re-duplicated; about the middle of the sternum a gentle rustling sound was audible. *Aconite* 3° was prescribed.

On the second day the fever was less, but she could not lie on the left side; the breathing quick and laborious; and friction sound increased in extent and loudness and audible in all positions. She had passed a restless night, and was now and then delirious; the joints inflamed and painful, Belladonna 3° was given. In the evening the rheumatic sufferings were alleviated; the heart sounds the same; skin hot and dry. Aconite 3° again given. On the third day she had perspired freely; pains of the joints aggravated by movement; a darting pain through the heart in sitting up in bed; the friction sound continued the same. Bryonia 3° was given. On the fourth day there was improvement. On the tenth day she was convalescent.

Lobelia-inflata.—Slight deep-seated pain in the region of the heart. Burning pain in a small spot under the right breast near the epigastrium; on a quick movement of the body, deep breathing, sneezing, a feeling as if something had fallen out of its place and went back again with great pain. Violent boring pain through the back under the right shoulder, becoming more painful by motion: the painful place feels as if palsied.

Pressing pain at the left side of the lower part of the sternum. Pain about the third, fourth and fifth dorsal vertebra.

Rheumatic pains between the scapula. Muscular stitches over the ribs of the left side near the spine.

16. CHRONIC AORTITIS AND CARDO-AORTITIS.

DIAGNOSIS.—*Dyspnœa* and anasarca are the prominent symptoms, but a great many others are present in each case.

The patient is likely to be a man of full strength and courage, but about the time of the turn of age he becomes suddenly undermined by an extraordinary but obscure disease which may carry him prematurely to the grave. He has not had apoplexy, diabetes, hypochondriasis, nor inflammation of the urinary passages, nor visceral tumors. But a great change has come over him, he has become ill-humored; common affairs of life trouble him; he has become excessively anxious about everything,—business, fortune, position, present and future conditions; he has perhaps become miserly; he shuns society, but fears to be alone with himself. Restricting himself within his own family, he is disturbed by noise, irritated by "trifles light as air;" he excuses himself a moment afterwards and laments that he has lost his self-control. He now suffers from ennui, then sadness. His friends try to amuse him and find it impossible. The crowded party or the theatre oppress him. His food distresses him by day and with fearful dreams at night; he wakes in agitation. Going abroad, the walking oppresses him; there is contraction or pain at some point of the chest, as at the lower end of the sternum, or lower down and towards the left side; his head becomes confused, there is vertigo, jolting of a carriage fatigues; on moving slowly he drops to sleep; he is easily chilled, but can not bear the air of a close room. Stomach feels empty, hollow, no appetite, bad taste in the mouth; he imagines that his heart is flaccid and powerless; some acquire a morbid appetite, become gluttons; but the countenance becomes more sallow and the flesh falls away.

After many fluctuations between better and worse, the symptoms of chronic aortitis are confirmed; the dyspnœa becomes habitual, or returns by spells; the nocturnal agitation is aggravated, the skin becomes livid and dry, sometimes cold, or cold in one part and hot in another; urine scanty, turbid, palpitations by spells, pulse small, irregular, unequal, frequent; generally the feet swell, and the œdema progresses from the ankles to the legs, the thighs, loins, and coats of the abdomen. After some weeks, oftener months, this state passes into the third or last period.

The patient now, says Dr. Tessier,* becomes sleepless; he desires to sleep, but instantly rises and runs about the room; he sits down, then rises; he shuns the fire, which increases the dyspnœa; but his anasarca has enfeebled his power to endure the cold; he can not find an easy position, and passes days and nights for weeks in torture. A time

* L'Art Medical, 1861.

comes at last when torpor of brain predisposes to sleep. There come moments of oblivion alternated with delirium. The dyspnœa is followed by orthopnœa, tending to apnœa, till suffocation is threatened. There is next, cough, expectoration, streaked or tinged with blood, then dark, blackish; hydrothorax on one or both sides; œdema, congestions, even pulmonary apoplexies; bronchitis; accumulations of mucus. The countenance is haggard; cheeks flaccid or face puffed, pallid; anasarca encroaching; legs almost bursting; dropsical cushions extending up the loins, and in front to the umbilicus, scrotum, &c., enormously distended, extreme difficulty of micturition; excoriations; œdema of the arms, hands, fingers. Constipation now insuperable; every general movement causes suffocation. Finally the skin becomes marbled, ecchymosed; phlyctenæ of lower limbs; gangrenous spots, precede death.

DISEASES OF THE ARTERIES.

1. *Organization and Structure of the Arteries.*—The arterial vessels are essentially constituted: 1. Of an external coat consisting of a very delicate and condensed cellulo-filamentous tissue; 2. Of a middle coat composed of fibres, and bundles of fibres which surround the vessel in a circular direction, but which differ in chemical and physical properties, as well as in form from muscular fibres. They resemble what is elsewhere called the elastic tissues. The elastic tissues are distinguished from all other tissues by their yellow color and the peculiar mode of division and anastomoses among their fibres. Like the cellular tissues they yield gelatine by boiling. The elasticity of arteries depends on their elastic properties and not on any muscular fibres interwoven in their structure. 3. The third coat is a very delicate cellular tissue or pellicle in which the minute vessels which supply the arteries, and which proceed from the adjoining parts terminate. Here also the ultimate distributions of the arterial nerves are supposed to ramify, though they can not be clearly traced further than the proper fibrous tunic. This is the most vascular of the arterial tunics and in it many of the pathological states to be described first originate. 4. "An internal membrane, presenting no linear or fibrous structure, semi-transparent, more readily detached from the one next to it in the longitudinal than in the transverse direction, and fragile. This delicate membrane is not possessed of vessels carrying red blood in the healthy state, but it is penetrated by minute red vessels when inflamed." It lines the canals of the vessels conveying red blood, and the cavities of the heart.

The arteries are surrounded by loose sheaths of cellular tissue which permit the vessels to accommodate themselves to their varying

state of constriction or dilatation and to transmit to them the vessels and nerves employed in their nutrition. During life they are considered as in a state of distension by the blood impelled into them by the contraction of the heart; when the blood ceases to distend the vessels when the heart's action is withdrawn they contract to expel from their cavities the fluid already received. (*Copland.*)

The arteries are surrounded by a reticulum formed by the ganglial nerves, and they receive minute fibrils of these nerves which convey the nervous influence from the brain to these vessels, and perform an important part in the changes effected by the brain and spinal marrow in the functions and diseases of the arteries, as well as on the pathology of the blood, and assimilation of the chyle.

Diseases of the Arteries.— Nervous Affections. — 1. Neuralgia of the arteries is "characterized by acute pain in their course, with increase of their pulsations and bellows sound:" distinguished from inflammation by its sudden accession, and the sudden remission of the symptoms.

2. Violent pulsation of the arteries. A loud bellows sound heard in some of the principal arteries, with violent pulsation but without severe pain. It is most common after large losses of blood. (*Copland, Marshal Hall.*)

Causes.—Ossification of the interior of the ascending aorta, which generally produces preternatural pulsation above the clavicles; a peculiar state of the nerves in hysterical females and nervous irritable persons; adhesions of the pericardium produce spasmodic contractions of the heart for many months or a year or two after an attack of pericarditis; pulsations may be occasioned by tumors, serous effusions, &c., which come in contact with the aorta and transmit to the surface its pulsations; they may arise from the use of mercury; from spinal irritation, the excessive use of tobacco, opium, and other narcotics. (See *Copland's* Dict. Geddings, &c.)

17. INFLAMMATION OF THE ARTERIES.—ARTERITIS.

Arteritis is defined as characterized by "great and tumultuous vascular excitement, palpitations, sense of heat and throbbing in the course of the principal arteries, followed by collapse of the vital energies, and occasionally by gangrene of the limb." (*Copland*, Dict. Vol. I. p. 126.)

It is a disease of not unfrequent occurrence, but not always easily recognized. The inflammation of a small portion of a single artery, as that produced by the application of a ligature is attended only by a small increase of sensibility, heat or tumefaction; the artery may be obliterated without exciting any perceptible general fever. When the arteries extending to a considerable portion of the system are inflamed, fever more or less violent always attends the inflammation. It begins

in alternation with slight chills, followed by flushes of heat; and, as it proceeds the pulsations of the heart and arteries become violent: "there is red suffusion with capillary injection of the skin, burning heat, unquenchable thirst, extreme restlessness, jactitation and general distress, laborious and hurried respiration, and sometimes a dry harassing cough." (*Geddings*, Amer. Cyclop. Pract. Med., &c.)

When the inflammation embraces the aorta there is a sense of heat beneath the sternum or in the vicinity of its upper extremity; sometimes a sensation like that of a "hot iron, drawn along the course of the aorta, descends as low as the crural arteries." When the arteries of the the extremities are affected the pain may simulate rheumatism, fixing itself upon a particular part which is tender to the touch, and the inflamed vessel may be felt through the integuments when it is superficial. The pulsation is violent along the whole course of the artery until the thickening of the arterial coats diminishes the size of the cavity of the vessel, and the elasticity of its walls; the throbbing and expansion of the vessel are afterwards chiefly "confined to the portion above the principal seat of the inflammation, while lower down the pulsation becomes feeble, and, when obliteration takes place, ceases altogether." When the carotid artery is affected there is pain and tenderness and strong pulsation along the side of the neck, and in all the arteries of the head, flashes of light before the eyes, obscuration of vision, or the objects seen are tinged with an unnatural color; ringing or roaring in the ears; in some cases delirium, convulsions or apoplexy. The veins and capillaries of the affected part are always preternaturally turgid and injected with blood from the excited arteries.

From the commencement of the disease the heart beats violently; there are palpitations when its lining membrane is affected; the pulse is full, strong, and sometimes so frequent as scarcely to be counted. In one of Frank's cases it was from 185 to 200 per minute; the respiration is hurried, embarrassed, amounting to distressing orthopnœa; dry cough, sometimes hæmoptysis. The tongue is red on the edges, its pupillæ erect, the base and middle covered with thick yellow fur. The thirst is intense; the stomach irritable, bowels constipated; urine high colored, sometimes bloody; strangury; preternatural turgescence of the capillary vessels; surface deep red or mottled.

At a later stage the inflamed arteries become loaded with coagulated blood, the coats of the vessels are thickened; general anxiety and distress increase; the pulse becomes quicker, small, wiry, weak, irregular, with a peculiar sharp thrill. The palpitations and dyspnœa become more distressing; vertigo or syncope follow the slightest exertion; the tongue is dry, scabrous, covered with brown sordes; intense thirst; sunken cadaverous expression of countenance, sinking of the vital powers, delirium, subsultus tendinum, or convulsive movements,

diarrhœa, and purplish hue of the skin mark the progress towards a fatal termination. When the inflammation has invaded one of the principal arteries of the extremities, the fibrinous concretions, formed by the coagulation of the blood within, gradually obliterate the cavity of the vessel, the pulsation begins to be perceptible *above* the seat of the inflammation, and the part below becomes at length pulseless, cold and numb. When the obliteration is complete the limb becomes œdematous, the blood accumulates in the radicles of the veins, and appears in dark ecchymoses, the part is cold and numb; small purplish phlyctenæ appear; when the anastomosing vessels are insufficient to supply the part with blood, the affected part becomes gangrenous. The powers of life are now more hopelessly prostrated, the pulse still more frequent, small, sharp, and irregular; the clammy sweats more profuse, delirium ends in profound coma; involuntary evacuations, hiccough and coldness of the extremities mark the progress of fatal disease; and death is ushered in by convulsions. (*Geddings, Copland, Frank, &c.*)

When arteritis terminates favorably it sometimes pursues a regular course for a week, exacerbating twice in the twenty-four hours, and then terminates by a free perspiration, hæmorrhage or the deposit of a copious sediment in the urine. (*Puchelt, System de Med.*)

Diagnosis.—There are no symptoms peculiar to this disease. It may be inferred when any considerable number of the above symptoms are present; when the heat and pain are chiefly felt along the course of the arteries, with strongly marked impetuosity of action propagated from the larger to the smaller arteries; and when anasarcous injection of the surface or of the limbs is followed by viscations or ecchymosed patches on the skin.

Causes.—The predisposing causes are, gouty or rheumatic diathesis; middle and advanced periods of life; epidemic influences; cold and damp climate; stimulating food; spirituous liquors; plethoric habits; sanguine and irritable temperaments; hot weather; effects of syphilis or mercury; suppression of accustomed discharges, nervous or spasmodic diseases; defective action of the kidneys, liver, skin, &c.

Exciting causes. Great cold, and congelation of parts, followed by heat; excessive heat, wounds and surgical operations, amputations or ligature of arteries, umbilical cord, &c., violent muscular action; injury from extension of a part lacerating the internal coat of a vessel; fits of passion; great exhaustion; animal, vegetable or mineral poisons absorbed; suppressed exanthamatous fevers or eruptive diseases, as measles, scarlatina, erysipelas; absorption of sanious matter from the uterus in puerpural fever. (*Copland, Portal, Breschet.*)

Pathology.—First. When arteritis arises from external causes which are local in their operations, it is generally confined to a part only of the arterial system; it usually affects all the coats of the vessels; and the

inflammation is sthenic in its character. The common consequences of inflammation result from it. The coagulable lymph effused on the interior surface of the vessel forms fibrinous concretions and false membranes which obstruct or obliterate its cavity. The vessels of the walls of the artery are injected with red blood, thickened or softened; and there is occasional suppuration or ulceration of its internal membrane.

Second. When the disease originates from causes existing within the vessels, when complicated with malignant and eruptive fevers, erysipelas, or the absorption of morbid secretions into the general circulation, the febrile excitement is rapidly followed by asthenic symptoms. Inflammation extends through the whole arterial system involving in many instances the lining membranes of the heart, as well as the veins. In these cases dissection shows dark red or violet injection of the inner membrane and connecting cellular tissue; softening of these tissues and infiltration of the parieties of the arteries. (*Copland, Breschet.*)

Prognosis.—The prognosis of arteritis is more unfavorable than most other febrile diseases of equal severity. Its immediate effects in acute cases are generally serious; but the disease is still more dangerous when it is complicated with other diseases. Some of the worst cases are those which supervene in the progress of eruptive diseases in which the eruption is prematurely suppressed; and when it arises in the course of small-pox, erysipelas, phlebitis, or puerpural fever, the inflammation extends through the lining membranes of all the arteries and veins; and a morbid influence from the poisonous humors received into the blood vessels vitiates the blood itself and prostrates the nervous powers.

Treatment.—The general treatment of arteritis will be the same as that of other inflammations and febrile diseases. The same specific remedies may be employed in subduing diseased action, supporting the general strength; the same rules of diet will be necessary; and when the disease assumes a chronic form, the same local and general treatment will be continued. In every case the proper management will depend greatly on the character of the constitution and that of the disease with which the existing malady is complicated. See the general treatment of inflammation and inflammatory fever.

Genus VI.—INFLAMMATION OF THE ABDOMINAL VISCERA.

1. GASTRITIS.—INFLAMMATION OF THE STOMACH.

When severe inflammation of the stomach results from direct local injury, whether this be caused by mere mechanical irritation, or by the action of heat or strong acids the *local symptoms* are: excruciating pain and frequent vomiting; heart's action depressed, which may be so extreme as to destroy life; and the inability to eat or digest may cause death also. But if there be some restoration of the vital powers

by which the most essential functions are resumed, there may be no high degree of resulting fever, and no serious disorder of the functions of the brain.

When the irritation from undigested, alcoholic drinks, or irritating drugs, excites only slight inflammation, there is but little constitutional disorder, and the stomach rapidly recovers its general healthy state. But these recuperative powers depend much on the previous state of the stomach, nervous system, and the muscular power of the heart. The degree of injury which in some persons would do but little harm, would in another cause terrible irritability of the stomach, or excessive pain or collapse. Some persons previously in good health have died speedily and unexpectedly after a gluttonous meal of some indigestible substance. In such cases the immediate cause of death is faintness or stoppage of the heart's action, under the influence of pain. The heart has perhaps been previously in a diseased state, or the vital powers have been weakened by intemperate habits. (*Budd*, p. 79.)

INFLAMMATION OF THE LINING MEMBRANE OF THE STOMACH.

Inflammation is a generic term, which is applicable to a great many specific forms of disease which may be designated by different names according to its peculiar nature or its specific cause. Thus we have rheumatic, gouty, syphilitic, suppurative or adhesive inflammation according to its cause.

First.—The rheumatic inflammation of a joint may lead to the effusion of a fluid that does not coagulate; it is commonly soon absorbed.

Second.—Inflammation of the pericardium and of the valves of the heart which so frequently co-exists with the inflammation of the joints and is excited by the same agent, leads to the effusion of coagulable lymph, and produces lasting and permanent changes of structure.

Inflammation of the mucous membrane may produce

First.—Secretion of viscid, opaque or otherwise altered mucus.

Second.—Effusion of plastic lymph, forming a layer or coating over the surface.

Third.—Formation of pus.

In the air-tubes the different kinds of inflammation may exist and their products may be expectorated separately and thus examined separately, and may also be examined separately in the dead body. But in the stomach the products of secretion are blended with the contents of the stomach; and they are all liable to be speedily changed by the action of the gastric juice. If they pass into the intestines they become still more confusedly blended with the various fluids they meet with. Inspection of the secretions of the mucous membranes has therefore taught us little of the nature of the diseased surface by which they are furnished.

Diagnosis.—Burning, pricking, or lancinating pains in the stomach; nausea and vomiting, great soreness, tenderness, and pain on motion or pressure, intense thirst for cold drinks, which are ejected almost as soon as swallowed, affording some temporary relief, pricking and sore ness in the throat and œsophagus, tongue red at the tip and on the edges, and covered through the centre with a white or yellowish fur position mostly on the back or side, with the limbs drawn up and the abdominal muscles relaxed, great depression, anxiety, and fear of death; pulse rapid, sharp, contracted, sometimes almost threadlike; bowels constipated; disgust for food and warm drink, either of which is expelled as soon as received into the stomach; and in severe cases there is delirium and fever of a synochal grade; unusual fullness in the epigastric region, and often, of the abdomen. As the disease progresses the extremities become cold, the features contracted and sunken, the eyes glazed or suffused, and finally diarrhœa, cold sweats, coma, and convulsions supervene. When death occurs, it is usually caused by ulceration or spacelation of some portion of the mucous and sub-mucous coats of the stomach.

Causes.—Excessive use of highly seasoned food, stimulating drinks, the introduction of irritating substances into the stomach, poisons, injuries, and the use of emetics, drastic purgatives, stimulants, and other medicinal poisons with which allopathic practice, governed by no scientific knowledge, frequently induces this and other diseases, and destroys the existence it is intended to preserve.

Case.—Maria Ladan drank by mistake a tea-spoonful of *Aqua-fortis;* the most violent symptoms supervened. Under palliative treatment these effects gradually subsided. After some time she passed from the bowels a long membranous substance rolled up and which represented the form of the œsophagus and stomach. This was found to be the interior membrane of those organs. From this time forward the sensibility of the digestive organs became excessive; and, after two months of suffering, she experienced a sudden shock and died. (*Paris and Fonblanque*, p. 147.)

Treatment.—The ordinary remedies used in the treatment of gastritis are *Arsenicum*, *Veratrum*, *Nux*, *Pulsatilla*, *Aconite*, *Iodine*, *Ipecacuanha.*

Arsenicum.—Countenance contracted, sunken, and expressive of anguish and anxiety; stomach swollen and hot to the touch; position upon the back; respiration short, rapid, and suppressed; tongue red, clean, or red on the edges with a dirty fur in the centre; pulse contracted, tense, and frequent; voice hoarse, stifled, and suppressed; skin dry and hot, with perhaps cold and clammy extremities.

Burning, sharp, or shooting pain in the stomach; aggravation of the sufferings from motion, pressure, coughing, and inspiration; scraping

and burning pain in the throat and œsophagus; weakness and trembling of the limbs; urgent thirst for cold drinks; persistent nausea and vomiting; all food and drinks speedily and violently rejected; exceeding tenderness in the epigastric region on pressure; respiration suppressed and painful.

Intense anxiety, anguish, depression, and despair; expectation of speedy death; sometimes delirium.

ADMINISTRATION.—Two drops of the sixth dilution in an ounce of water; a dessert-spoonful once in two to four hours, until the proper impression is made upon the inflammation.

Veratrum.—Hippocratic countenance; nose pointed; eyes sunken and glazed; lips bluish and dry; tongue red at the tip and on the edges, with a dark, dry fur running through the centre; pulse quick, weak, and almost imperceptible; stomach and abdomen distended; extremities cold, and covered with a clammy sweat; position on the back, with the knees drawn up; hiccough; and whole appearance indicative of extreme prostration.

Feeling of great exhaustion; burning pain in the stomach; rough; dry, and scraping sensation in the throat, rendering deglutition difficult and painful; great soreness in the epigastric region; short, troublesome cough; severe and continued nausea and vomiting; great dread of warm food and drinks; intense thirst for cold drinks, inability to retain anything upon the stomach; spasmodic contractions of the throat, œsophagus, and abdominal muscles; hiccough; painful respiration.

Excessive dejection, discouragement, and sadness; fear of death, complete despair; delirium.

ADMINISTRATION.—In urgent cases we may give a dose of the sixth dilution in water, once every hour until an amendment declares itself, or there occurs a well-pronounced medicinal aggravation. We may then await the result, and hold ourselves in readiness to repeat this, or whatever other medicine may more fully correspond with the symptoms that may arise.

Nux-vomica.—Face bloated; eyelids red, weak, and watery; stomach distended; tongue tremulous, red, and clean, or furred with a whitish coat in the centre; offensive breath; frequent hiccough; pulse frequent, small and feeble.

Burning pain in the stomach, with pulsations and spasmodic contractions in the epigastric region; nausea and vomiting, aggravated after eating and drinking; tenderness and pain in the pit of the stomach when pressed, or during movement; contraction and obstruction in the œsophagus when attempting to swallow; painful sensation of dislocation of the stomach; dizziness and confusion of the head, on rising from the recumbent position, or in attempting to walk; sour or bitter eructations.

Mental and moral symptoms: great uneasiness and anxiety; morose, peevish, sad, and often disposition to commit suicide.

Administration.—This medicine is peculiarly appropriate in those cases which are induced by abuse of coffee, wine, spirits, condiments, and stimulating food. One drop of the sixth dilution to an ounce of water; a table-spoonful once in two to four hours, so long as the symptoms remain stationary. Occasionally we shall have conjoined with the above symptoms, cerebral disorder, indicated by delirium, optical illusions, and great derangement of the nervous system. In such instances an occasional dose of *Belladonna* will prove specific.

Pulsatilla is a valuable remedy when the inflammation is brought on by the use of crude, indigestible, and irritating food. It covers the following symptoms: pressing or shooting pains in the stomach; pulsations in the pit of the stomach; epigastrium sensitive, and painful to the touch, or on pressure: nausea and vomiting after eating or drinking; nausea and disagreeable feeling extending even to the œsophagus and throat; regurgitation of food; eructations; hiccough; painful distention of the stomach; pulse quick and small; and bitter taste in the mouth.

Aconite, at the third or the sixth dilution, will do good service when the febrile symptoms run high; to be repeated often until amendment ensues, either alone or in alternation with the gastric specifics, as the nature of the case may demand.

Iodine, at the third potency, has afforded relief in inflammations of the stomach caused by abuse of Mercury and other irritating drugs. The indications for its use are: frequent nausea; vomitings, especially after eating; burning pains and pulsations in the stomach, pyrosis, sour eructations, contraction and burning of the œsophagus; pulse frequent, small and hard.

Colchicum is an important remedy in cases of metastasis of rheumatism to the stomach. It acts specifically as an irritant to the stomach, even when injected into the veins.

Ipecacuanha; a single dose at the sixth potency, will sometimes afford prompt relief in cases where vomiting is violent and incessant. It is applicable to inflammations caused by excessive doses of *Tartarized-antimony*, *Corrosive-sublimate*, *Arsenic*, *&c.*, for the purpose of allaying the excessive irritation and vomiting which follow poisonous doses of these articles.

Gastritis from the Effect of boiling Water.—A few years ago M. Bretonneau poured three ounces of boiling water into the stomach of a young dog. The animal uttered frightful cries and vomited violently several times. The next day it appeared languid and oppressed, drank with avidity, but refused food. Convalescence commenced on the third day and progressed up to the seventh when

the dog was killed, having the evening before caressed his master and rolled at his feet in play. On dissection the mucous membrane, the underlying cellular tissue, and over a large space the muscular coat of the stomach, were found in a state of gangrene.

In another experiment he threw into the stomach eight ounces of boiling water of each of four cats in such a manner as not to injure the œsophagus. Three days afterwards they played together and snatched food from each other. They were then killed, and in their stomachs were found marks of injury like those observed in former experiments. (*Budd*, p. 78.)

From the Effects of Mineral Acids.—Dr. Budd says (p. 78) a man swallowed Sulphuric-acid, which destroyed the entire lining membrane of the œsophagus and charred a small portion of the lining membrane of the stomach. Of the lining membrane of the œsophagus a large portion was brought up entire, and is now preserved in the museum of the college (*King-street, St. James's.*) The man lived many months, and at length died from the combined effects of stricture of the œsophagus and tuberculous disease of the lung.

A case is given in the Medical Gazette (*Sept.* 11, 1846) of a patient who swallowed Nitric-acid and lived twenty-three days. After death the mucous membrane was almost entirely destroyed.

These cases and others like them, show that the effects of these poisons are mainly due to their local action. The acid chars the tissue with which it comes in contact; coagulates the blood in its minute vessels. So long then as the acid is sufficiently concentrated to have this chemical effect it is not absorbed into the general circulating fluid; although it may continue to permeate the tissues as it would permeate dead membranes.

Inflammation of the Stomach from the direct irritation of hard indigestible substances.

Symptoms.—Pain in the stomach, sense of heat there, occasional vomiting of matters tinged with blood. When the injury done the stomach is very great, the pain is severe, the pulse depressed, and as in severe peritonitis, the pulse is small and rapid, the skin cold and clammy, countenance shrunk. These symptoms are followed by some degree of fever. And when no poison is retained in the stomach or absorbed into the blood, no great nervous or constitutional disturbance is seen. The stomach possesses remarkable powers of tolerating the presence of irritating substances, accommodating its action to the necessities created by new emergencies, and recovering its original condition after they are expelled.

In December, 1705, a sailor, in imitation of a juggler, swallowed fourteen clasp knives, most of which were nearly four inches long, and a full inch in the extreme breadth. The mechanical irritation and in-

flammation caused severe pain in the stomach, frequent vomiting and loss of flesh, fragments of the knives passed into bowels; and, though the man eventually died in Guy's Hospital in March, 1809, there was little fever, and not much disturbance of the nervous system at any time. In less than two months after the knives were swallowed (*Jan.* 1806) he moved about, and at times performed the duties of a sweeper In the course of the following autumn his strength and flesh improved, he ate and drank voraciously, and performed various easy duties in the ship (*Dr. Marcet, Med. Chir. Transactions, Vol.* 12). Numerous corroded blades and other fragments of the knives found in the stomach after death are preserved in the museum of Guy's Hospital.

Inflammation of the Stomach from swallowing melted lead.— Henry Hull, a man 94 years of age, who with two other men had charge of the Eddystone Lighthouse in the winter of 1755. At two o'clock on the morning of Dec. 2d, fire broke out in the lantern, and Hull attempted to extinguish the fire by throwing water four yards higher than his head. While looking upward, a quantity of molten lead fell in a torrent from the roof upon his head and face, over his clothes, burning his neck and shoulders through his shirt collar. From a violent burning sensation felt internally he thought some of the lead had passed down into the stomach. After the fire had burned eight hours, Hull and his comrades were found in a state of partial stupefaction in a cave on the east side of the rock to which they had retreated to avoid the falling of the timber, and red hot bolts upon them. They were taken off the rock by boatmen, who threw them a rope, by which they were drawn off to the boat. Taken to Plymouth, 14 miles distant, Hull was *treated* by Dr. Spry. The patient in a hoarse voice told all who saw him, that a mass of lead was certainly in his stomach; but the physician considered the statement incredible, as he did not suppose a human being could live in that condition, through such suffering, exposure and fatigue; and the symptoms were not very strongly marked, till the sixth day, when he was thought to be better. Continuing to take his medicines and food, both liquid and solid, there was little change till the tenth or eleventh day, when he suddenly grew worse; on the twelfth day he was seized with cold sweats and spasms, and soon afterwards expired.

On dissection, Dr. Spry found the cardiac portion and orifice of the stomach greatly inflamed and ulcerated, the coats of the lower portion were burnt; "and from the great cavity of it took out a great piece of lead," weighing seven ounces, five drs., eight grs.

The history of this case was transmitted to the Royal Society by Dr. Spry, but that body regarded it as incredible and they deferred reading it till further proof of its authenticity were received. Dr. Spry, to establish his veracity, made further experiments on dogs and fowls

In one of these he poured molten lead through a funnel down the throat of a dog that had fasted for twenty-four hours. The next day the dog was very brisk, and on being killed, six drachms and one scruple o lead were found in its stomach. The internal coat was much corrugated, but was not excoriated.

Dr. Spry gave to another dog a half pint of milk, and soon afterwards poured molten lead down its throat. The dog immediately after took freely of milk as if nothing was the matter with him, and continued to do so for three days. When quite lively he was killed, and six ounces and two drachms of lead were taken from the stomach. "The pharynx and cardiac orifice of the stomach were a little inflamed and excoriated, but the œsophagus and stomach seemed in no manner affected." These experiments being attested by the oaths of Dr. Spry and others, were reported to the Royal Society and published in its transactions.

TABLE OF POWERFUL POISONS AND THEIR ANTIDOTES.

Poisons.	*Antidotes.*
First. — Gases. — Gas produced in wells, privies, &c., deprived of fresh air.	Chloride of Lime.
Vapor of charcoal.	Vinegar and Vapor of Vinegar.
Second.—Acids.—Prussic or Mineral Acids.	Spirits of Hartshorn.
	Tepid Soap-suds, Magnesia.
Sulphuric, Muriatic, Nitric, Phosphoric Acid, Spirits of Vinegar, and strong Wine Vinegar.	Chalk, powdered and mixed with water.
	Wood-ashes mixed with water.
Vinegar.	Potash or Soda.
Third. — Alkaline Poisons. — Pot and Pearl Ashes, Lapis-infernalis, Salt and Oil of Tartar.	Vinegar; Lemon-juice, and other Acids.
	Sour milk; mucilaginous drinks and injections.
Fourth. — Metallic Poisons. — Arsenic.	Soap-suds, White of Eggs with Water; Sugar-water; milk; Rust of Iron. Hydrated per Oxide of Iron, in large doses.
Corrosive Sublimate; Copper; Verdigris.	White of Eggs in water; Sugar-water; Milk; Starch from Wheat-flour.
Lead.	Epsom Salts; Glauber's Salts.
Lunar Caustic, Nitrate of Silver.	Common Salt, dissolved in water.
Tin.	Sugar, White of Eggs, and Milk.

Vascular Nerves of the Abdominal Cavity. — Our knowledge of the influence of the vagus on the stomach wants further confirmation

and extension. Cl. Bernard, on examining the fluids of the stomach of a dog by means of a gastric fistula, saw the pale rose tint, which was present during the absence of food in the organ, change to deep red, under the influence of mechanical irritation, and this last give place to complete discoloration of the mucous membrane. After section of the great sympathetic in the neck, the discoloration persisted, even when the membrane was irritated. In experimenting with similar conditions, Panum observed the membrane return to its original color, four, six and twenty-two hours after the operation.

2. CHRONIC GASTRITIS.—CHRONIC INFLAMMATION OF THE STOMACH

Diagnosis.—Many of the symptoms of this malady are similar in character to those which occur in the acute form, but there is a material difference in regard to their grade of violence in the two diseases. Sometimes chronic gastritis is the result of a partially subdued chronic attack, which from various causes is kept up for a long period in this state of sub-acute inflammation. At other times it comes on slowly and insidiously, from a combination of causes operating at the same time. Amongst the symptoms which usually attend this complaint may be enumerated the following: pain and tenderness in some particular part of the stomach, excited by pressure or by certain kinds of food and drinks; frequent vomiting of food and drink soon after they are swallowed; loss of appetite; putrid taste in the mouth; thirst; fœtid breath; acid or bitter eructations; acidity; distention of the stomach with wind, which causes distressing vertigo and pains in the epigastric and hypochondriac regions; tongue red and clean, or furred in the middle with a dirty fur; melancholy; peevishness; irritability; discouragement, and, finally, hectic fever, emaciation, sudden prostration, and death.

The symptoms are identical with dyspepsia. There is no fever; the pain, flatulence, intense acidity, loss of appetite, &c., are the same in both. If the disease has become chronic it may be considered as most probably *gastritis*, at least if it has continued long, and been treated as dyspepsia.

The distinction between chronic gastritis and phthisis may be thus made out:

CHRONIC GASTRITIS.	PHTHISIS.
The cough and pulmonary symptoms have, perhaps, not continued long; have been treated as pulmonary disease without success. The symptoms are not accompanied by important lesions; and, if the cough, labored respiration, &c., have continued for a considerable time,	Recollect that, if the symptoms belong to the lungs, the disease must, in two or three days, produce lesions capable of being easily detected. If we cannot find these we may refer the phenomena to sympathetic irritation, most commonly of the stomach. In those

we may set it down as belonging to the stomach.

The gastritis may be nearly latent, and may want the most of those symptoms by which it is commonly attended. cases in which the sympathetic irritation is most strongly marked the local symptoms of the disease are most apparent.

TREATMENT.—The medicines to which we have alluded under acute gastritis, will be the most applicable in the ordinary forms of the chronic form of the same disease. The following medicines will likewise cover many symptoms of sub-acute gastritis, namely *Bismuth*, *Baryta-muriatis*, *Bryonia*, *Cuprum-metallicum*, *Digitalis-pur.*, *Hyoscyamus*, *Ignatia*, *Mercur.*, *Phosphorus*, *Arnica*.

Tartar-emetic. — The higher attenuations are valuable in a large class of gastric derangements; nausea and vomiting that accompany chronic gastritis; loss of nervous energy of the stomach; enfeebled and irritated state of the mucous membrane; nausea, oppression, tightness in the epigastric region, heaviness in the head, distaste for food; lassitude, accompanying dyspeptic and bilious symptoms.

Inflammation of the Stomach, vomiting of matter tinged with blood. Præcordial anxiety after eating, pain in the epigastrium, burning heat in the stomach, which increases so much as to cause syncope. Epigastric region swollen and painful rotary movement at the epigastrium in the evening on lying down; with strong and rapid pulsations at the heart. (*Hahnemann.*)

Alcohol.—In the case of St. Martin, a Canadian, who, in consequence of a gun-shot wound, had a permanent fistulous opening through the abdominal parietes into the stomach, the rare opportunity was afforded of *seeing* much that went on in the stomach during digestion. At one time Dr. Beaumont observed that the interior of the stomach exhibited erythematous and aphthous patches on the mucous surface, caused by the drinking of ardent spirits during the preceding eight or ten days; but there was no pain, and the patient had a good appetite. This state continued several days; the secretions were vitiated, and the small quantity of gastric juice extracted by a syringe from the stomach was vitiated and impure in appearance. At another time the small quantity of this fluid extracted, in the morning before eating, was mixed with an unusual proportion of vitiated mucus, saliva, and bile, tinged lightly with blood, which appeared to exude from the surface of the erythematous and irritable patches of aphthous inflammation. On succeeding days the same morbid appearances were observed. The aphthous patches grew larger and more numerous, the mucous covering became thicker, the gastric secretions more vitiated and purulent, resembling the discharges from the bowels in protracted cases of chronic dysentery; yet, with all this evidence of local disease of the stomach, there was little derangement of its functions, and no

pain, except an uneasy sensation in the epigastrium. There was some vertigo, some dimness and yellowness of vision, a thin yellowish coating on the tongue, the countenance sallow, pulse uniform and regular, appetite good, sleep as good as usual.*

But, during all this period, the appetite, though sufficiently craving, was not that of health. Digestion, when the stomach is in this state, is very imperfect, and under a full diet and indulgence in stimulants there can be no recovery of the lost strength. After being confined for a few days to a restricted diet, avoiding stimulants entirely, an improvement was visible. On the sixth day of observation, at eight o'clock in the morning, before eating, the stomach was observed to be "empty, its coats clean and healthy as usual; secretions less vitiated; extracted two ounces of gastric juice of more natural and healthy appearance, with the usual gastric acid flavor; he complains of no uneasy sensations, nor of the slightest symptoms of indisposition; says he feels perfectly well, and has a voracious appetite."†

The accuracy of Dr. Beaumont's observations have been attested by Professor Sewall, of Washington, D. C., and they have been more recently confirmed by other experiments.‡ All observations show that large quantities of alcohol may be taken repeatedly without exciting the pain and sensible systems of inflammation in other delicate surfaces; but that inflammation is nevertheless excited by the harsh action of the stimulant, and digestion is deranged and health undermined before the cause of the insidious danger is suspected. It has also been shown that the inflammation excited by a too free indulgence in stimulants soon subsides under the influence of low diet and cooling drinks. "Such," says Dr. Budd, "is the power of reparation possessed by the lining membrane, without which it would be unfit for the functions of digestion. When, in consequence of the continuance of appetite, the usual diet continues to be taken, the surface of the stomach is long in recovering its healthy state; in many cases it continues fretted and sore, under an amount of food that in a healthy condition would produce no irritation."

When brandy is prescribed as a medicine it is quite common to begin with doses small enough to avoid a rapid development of those *drug-symptoms* which are often found at last far worse than the original disease. After repeated exhilarations, alternated with depressions, not permitted to last long, the confidence of the patient is gained, and Brandy becomes established in reputation as the real "staff of life." Now, whatever the progress of the original disease, the remedy will

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* Beaumont on Digestion.

† Ibid.

‡ See Amer. Jour. Med. Sciences. 1857.

soon assume a conspicuous position. The chronic disease which Alcohol generally creates is slowly developed, and in many cases it is not possible to refer to any serious lesion of the nervous system, appreciable during life or discoverable after death. There are some men who can drink habitually six or eight glasses of brandy daily, for several years, without greatly deranging their health, but these are extraordinary men. It is much more common to see a gradual change come over the habitual spirit-drinker, until he finds himself in the height of a paroxysm of delirium tremens, from which he never recovers.

The symptoms of Alcohol, habitually taken, are thus given by Dr Huss, of Sweden: "In some cases the patient begins to find his digestive powers impaired, he becomes dyspeptic, and can only eat solid food by taking a drink of brandy with each mouthful; some, when trying to keep sober, take only vinegar or spices." In other cases there may not be intoxication at any time. In many the morbid symptoms begin with "loss of appetite, indigestion, nausea, vomiting, occasional diarrhœa; emaciation and cachexia; pustular eruptions, eructations, and offensive breath; there is soon serious functional disease of the liver, kidneys, heart, and the coats of these vessels, which finally lead to chronic structural disease of those organs. At a later stage we have fatal serous effusions or general dropsy, hæmorrhages, extravasations, or apoplexies. Intercurrently with these states are sometimes seen fits of intoxication, delirium tremens, sexual debility, suicidal melancholy; and life terminates with epileptiform convulsions, general paralysis, or idiocy."

Causes.—The most powerful predisposing causes of this malady are protracted sufferings under the depressing mental emotions, and the habitual use of irritating drugs. It often succeeds to acute gastritis which has been but partially subdued. It may also arise from high living, the abuse of wine, liquors, coffee, &c., repelled eruptions, metastasis of rheumatism and gout, injuries, and occasionally as a consequence of other diseases which have been badly managed.

Slow Poisons.—There are instances of poisonous substances retained for a considerable time in the stomach before their effects are felt. It has been said that pulverized diamonds, or glass, enamel, &c., slowly lacerate the coat of the stomach, and thus destroy life. On the same principle it is said that human hair, chopped very fine, constitutes the active ingredient of a slow poison employed in Turkey for the purpose of inducing a chronic disease resembling cancer in the stomach. (*Paris and Fonblanque on Poisons.*)

The most celebrated case of this disease recorded in the books is that of Napoleon I., who died at St. Helena, May, 1821. The Emperor had avoided medicine generally during his life, as he had no faith in physicians. His plan was, when he was unwell, to balance his con-

dition of health by running into an opposite extreme from that which caused the disease; thus, as he said, restoring the equilibrium of nature. If he had been long inactive he would ride about sixty miles, or hunt a whole day. If he had already borne great fatigue he would resign himself to rest for twenty-four hours. During the latter portion of his captivity his health became more and more deranged. The disease was called hepatitis. "The lymphatic system was deranged, and his blood circulated with difficulty. Nature had endowed him with two important advantages: that of sleeping whenever he needed repose, at any time or place, and, second, that of a constitution incapable of committing any excess, either in eating or drinking; the least excess caused his stomach to revolt immediately."

In his last illness he was only attended by Dr. Antomarchi and Mr. Arnott. They had a consultation March 25th. The Emperor had long been laboring under some severe derangement of the function of digestion: he had nausea and vomiting, especially after taking food; obstinate constipation; great wasting of flesh and strength. On the 17th of March he had an attack of fever, for which he was treated with emetics, cathartics, and antimonials. On the 25th he still suffered from heat, great prostration of strength, pain in the epigastrium, most distressing vomiting, and constipation. April 1, evening, Dr. Antomarchi requested Dr. Arnott's aid. Passing "through a labyrinth of passages and rooms dimly lighted they reached the Emperor's bedroom. There was no light whatever in it—it was perfectly dark." Dr. Arnott was introduced by Count Montholon; he inquired into the symptoms in the dark, as no light was permitted. The pulse was tranquil, the heat moderate; moisture on the skin rather more than natural; much pain in the abdomen, but no tension or hardness perceptible on examination; the bowels slow; appetite bad; voice strong; some cough. Several severe fits of vomiting followed, notwithstanding purgatives had been recently given with temporary relief. The matter vomited on the night of April 11th was "black mucus." After this he became quite exhausted, and expressed the opinion that medicine would be of no avail. He took some jelly with wine, which he retained. He afterwards asked: "How long does a man live who eats so little as I do?" He now continued better and worse till the latter end of April, when hiccoughing came on, and all the symptoms were aggravated. May 4th there was a total loss of muscular motion; the under-jaw had dropped; the eyes were fixed; the pulse varied from 102 to 110 per minute, small, weak, and easily compressed.

He was now evidently dying; but sinapisms were applied to his feet, and blisters to the legs and sternum. They had no effect—all the symptoms increased. At eleven minutes before six, P. M., of the 21st of May, he died, at the age of fifty-two years. His dissolution

was so calm that not a sigh escaped him, and his attendants had no thought that his end was so near. His last words were "*tête armée*," distinctly uttered at five o'clock, A. M.; what association the words had in his mind could not be known. "His countenance after death was calm and serene, and as having in it something commanding and noble."

Post-Mortem Examination.—The whole of the internal surface of the stomach "was a mass of cancerous disease, or scirrhus portions advancing to cancer. The contents of the stomach consisted only of a large quantity of fluid, resembling coffee-grounds, or black grumous matter mixed with some specks of blood, which he had been accustomed to vomit. The remainder of the abdominal viscera were in a healthy state.

3. ACUTE CATARRHAL INFLAMMATION OF THE STOMACH

This is an affection of frequent occurrence, attended with little danger. It is usually cured without medicine by the observance of a regulated diet. When it originates in cold, mental emotions, night watching, or endemic or epidemic influences, it is more severe than when it arises from some direct affection of the stomach. It is usually cured without difficulty by Acon., when the fever is perceptible; Pulsatilla, Bryonia, Nux-vom., Ipecac., Arsen.

In some cases, associated with intestinal catarrh and great tympanitis, Coloc. and Carbo-veg. See also page 515.

4. CHRONIC CATARRHAL INFLAMMATION OF THE STOMACH.

The researches of Broussais and Andral have established the doctrine that this disease is identical with gastritis in pathology. The patients complain of loss of appetite; tongue coated; taste sour or insipid; directly after a slight meal there is fullness or feeling of distention of the epigastrium; this is followed by a tasteless, sourish, or putrid eructation; food taken is afterwards tasted; there may be annoying heartburn, at times nausea and sickness; vomiting seldom occurs; evacuations from the bowels either normal, hard, infrequent, or loose. General health only affected by long continuance of the disorder, when there comes slight weakness, emaciation, and hypochondriacal humor, generally no fever; sleep little disturbed, except perhaps by troublesome dreams or nightmare. The most frequent reflex symptom is headache, more or less violent; stomach somewhat distended; pain on pressure in the epigastrium very slight. See p. 515.

5. ULCER OF THE STOMACH.

General Remarks.—It commonly begins with obstinate vomiting, showing either congestion or inflammation of the stomach. In some cases the vomiting recurs almost daily for months after signs of active inflammation have subsided. The stomach becomes distended and feels like a large tumor, which is removed by the expulsion of a gallon or more of fluid.

There is a greater liability to perforation in the cases of young females, contrasted with the greater frequency of the occurrence of ulcer of the stomach in advancing life.

Diagnosis.—Pain, whether epigastric or dorsal, increased by pressure; and this symptom is considered by Brinton as an "important test." But it may only be considered as indicating an inflammatory irritation of the mucous surface of the stomach, rendering it tender and irritable. It may *concur* with ulcer, but is not a *sign* of it. To assure us of the existence of ulcer the numerous symptoms commonly attending it must be well marked. The pain is accompanied with vomiting and hæmorrhage at some stage of the malady in nearly all cases. When we meet with a case of sudden profuse gastric hæmorrhage we consider the probabilities of its being connected with scirrosis of the liver, vicarious menstruation, purpura, or heart disease. If it cannot be attributed to any of *these* it may be suspected to arise from ulceration. It is true that we meet with many cases of gastric hæmorrhage, complicated with lowered nerve-power and malarious disorder, apart from any special gastric affection. "The gastric mucous membrane may be flushed by reason of the paralysis of the arterial nerves, and hæmorrhage may then occur by capillary rupture, in the same way as it does in epistaxis." (*Brinton.* London, 1857.) Ague is regarded by Dr. Brinton as a cause of ulcer of the stomach; it may rather be regarded as a cause of hæmorrhage only. And the existence of hepatic scirrosis or other portal derangement should also be considered as possible. The former may occur in perfectly temperate persons, in those young in life, and may declare itself by hæmorrhage, with or without dropsy. A case of this kind long occupied our attention a few years ago.

Pathology.—There is nothing specific in the nature of ulcer of the stomach. It may originate in various ways; and when it terminates fatally it is likely to be by perforation of the stomach. When this occurs there is a violent paroxysm, attended with unusual pain in the abdomen, ending in collapse and death in a few hours. The abdomen is found distended with air and fluid similar to that vomited; the stomach greatly enlarged, its coats thickened, especially in the parts near the ulcer, which is more common near the pylorus.

TREATMENT. *Diet.*—Give only bland nutriment, in small quantity and at short intervals, to avoid distending the stomach. Dr. Brinton then proposes to give Opium, to relieve the pain, check irritation, and support the strength. It is regarded as possessing the most reliable powers for buoying up the nervous energies and checking the expenditure of the tissues generally. In one case Dr. Parker, of Boston, relieved the vomiting and effected temporary improvement by giving syrup of Iodide of Iron, a few drops three times a day; though the patient died a year after on the disease progressing to perforation of the stomach. (*Trans. Soc. Med. Impr.* 1850.)

Aqua-calcis, Calcarea-caustica (*Quick-lime*).—Eructations of air; regurgitations of food; inflammation of the mucous membrane; nausea and vomiting of a sour fluid; raising of a frothy yeasty fluid; spasmodic contraction of the stomach.

Arsenicum.—Nausea and vomiting after eating or drinking, with great exertions, mixed with mucus and water, with bitter taste; thick glassy mucus, or brownish black substances, with great exhaustion.

6. GASTROMALACIA.—PERFORATIO VENTRICULI.

PERFORATION OF THE STOMACH.—SOFTENING OF THE STOMACH.

A softening of the membranes of the stomach always precedes the formation of ulcers and suppurative process which takes place in tuberculous and carcinomatous formations. Most common among children of from a few weeks to two years old. (*Hartmann*, vol. iv., p. 83.)

DIAGNOSIS.—The most remarkable peculiarities consist in symptoms resembling, cholera, gastritis, hydrocephalatous fever, or slow nervous typhus. The mild cases begin with loss of appetite, peevishness, low spirits, eructations of food, aphthæ, persistent diarrhœa, vomiting, the sleep restless, and the child has a pale and distressed appearance. Fever increases, and is attended by obstinate diarrhœa—the discharges consisting of a watery mucus with putrid odor, and mixed up with gray green filaments and flocks; the abdomen becomes distended, the head and extremities cold, while the abdomen continues burning with heat, rapid emaciation, especially shown about the neck. There is constant sleep, or the child is aroused with difficulty. Sometimes the disease breaks out suddenly with violent fever, restlessness, screaming from pain; there is quick pulse and insatiable thirst. The abdomen is distended, the region of the stomach hot to the touch and painful when pressed; the lower limbs are drawn up to the abdomen. There is repeated and persistent vomiting of greenish-slimy sour-smelling fluid; and diarrhœa of which the discharges consist of watery, green, acrid, sour-smelling stools; the breathing is oppressed, with dry cough, while

the breath and skin are cool. These symptoms are followed by extremely rapid collapse of the features and emaciation; the screams gradually change to a mere moaning, stupor and delirium increase, and terminate in convulsions and death.

Causes.—Infantile age; scrofulous or tubercular diathesis; epidemic influences; the usual causes of autumnal fever; atmospheric vicissitudes; swallowing corrosive saliva in cases of gangrenous diseases of the mouth and adjoining parts. (*Hartmann.*) Disease of the brain, as hydrocephalus and tubercular meningitis. (*Rokitansky*, &c.)

Prognosis.—Discouraging, but not always hopeless; the symptoms when most urgent often arise from a pathological condition, which may be changed by the usual remedies.

Treatment.—Begin by treating the general febrile and inflammatory symptoms on the general principles which are usually found successful in other gastric affections. For these and the cephalalgia, *Aconite*, *Belladonna*, or *Bryonia* may first be tried. After these have subdued the fever and mitigated the local symptoms, if there be persistent diarrhœa, give a few drops of *Calc.-acet.* per day. It is a good remedy for troublesome dentition and also for scrofulous affections in children, and is better than *Calc.-carb.* in this disease. (*Hartmann.*) *Hypo-phosphite of Lime* is one of the best remedies. When the diarrhœa becomes habitual, and the central organ of the abdominal system of nerves becomes more deeply invaded, *Phosphoric-acid* is more effectual. *Tartar-emetic*, in a low attenuation, is successful in the cases in which the *head*-symptoms predominate; when there is evidence of actual *gastromalacia*, with erosion of the coats of the stomach, this remedy should be given in a high dilution only. *Arsenicum*, Sulphuric-acid, and Argentum-nitratum have cured some cases.

Kreosotum is said by Dr. Arnold to be the principal remedy in this disease. He uses the second trituration, others prefer the sixth. He says, under its use the symptoms soon abate, and finally disappear—the emaciation requiring its persistence for a considerable time. *Oxalic-acid.* Softening of the stomach; burning pain, hiccough, vomiting, erosion of the mucous membrane.

7. SELF-DIGESTION OF THE STOMACH, or,

Changes in the Coats of the Stomach from the Action of the Gastric Fluid after Death.

This change of the structure of the coats of the stomach is visible in a large proportion of the bodies examined after death, though it is usually attributed to disease. The earlier pathologists, from Morgani downward often observed the mucous membrane of the stomach as well as all its tissues in a softened state; but the real nature of the change was not understood till John Hunter found it in a remarkable degree in the stomach of a man who after eating a hearty supper of cold meat,

cheese, bread and ale, was suddenly killed by a single blow which had fractured his skull. On dissection Hunter was perplexed on finding the stomach so far dissolved at its greater end that part of its contents had escaped into the cavity of the abdomen. A second case was seen, at St. George's Hospital, in a man who died a few hours after receiving a blow on his head which fractured his skull. He afterwards found the same appearance in many other cases, most of whom had died from injuries of the cranium; and in one man who had been hanged. In some cases the digestive action had extended through the diaphragm, into the spleen, and was beginning to corrode the surface of the lung. On making an extensive series of observations, he concluded that there were few stomachs after death which were not in some degree marked by this post-mortem digestive action, that it was most plainly seen in persons who had died violent deaths, and who had recently taken food. Spallanzini was led by Hunter's observations to extend his own on the nature of digestion and concluded as Hunter already had done that the gastric juice was a true menstruum or dissolving fluid; and that its action on the food might continue after death; also that when so employed while still remaining in the stomach at a proper temperature, it was capable of digesting the coats of the stomach itself. Later observers have amply confirmed the truth of these opinions. Although little has been recently said on the subject, it is well known that the fluid formed by the stomach for the digestion of food during life becomes an agent of destruction to the same tissue that formed it, as soon as the vital power leaves the body.

Circumstances that favor Self-digestion.—The process is most active when the temperature is greatest; hence Hunter, Budd and others found it very frequently in hot weather, others looking for it in winter have less frequently observed it. Thus it is necessary first, that there should be a certain quantity of active gastric fluid in the stomach, or at least, muriatic or lactic acid. The temperature for some hours about 98°. The stimulus of food after eating excites a full flow of gastric fluid into the stomach, which, if death be suddenly brought about by some external cause, goes on dissolving the contents of the stomach and the viscus itself, particularly at its large or cardiac end, where the fluid collects, and where the mucous membrane is thinner and less protected by mucus. When digestion is not going on there is no gastric juice in the stomach. (*See Digestion*, p. 217.)

Action of the Gastric Juice in the Process of Digesting the Coats of the Stomach.

It first renders the mucous membrane firmer and thinner, making it capable of removal by pressure of the fingers; the blood in the capillaries is blackened. If the capillaries are full when the action commences it turns the softened membrane of a grayish brown and renders

it paste-like and opaque; but if the minute vessels are empty, the softened tissue is rendered gelatinous and transparent. Similar changes are effected in albuminous structures out of the body. In a higher degree of the digestive process, the coats of the stomach are eaten entirely through the edges of the opening, says Hunter, "appear to be half dissolved," the fleshy parts appear "pulpy, tender and ragged," like flesh half digested, or half dissolved by a caustic alkali. In the pyloric portion of the stomach perforation is less frequently seen, but the edges of the folds seen on its contracted surface become softened, and when the capillaries were empty at the beginning of the process, the folds appear as whitish, semi-transparent lines or narrow bands, which have a brownish tint when the capillaries have been congested. In some cases the gastric fluid having regurgitated through the cardiac orifice, perhaps from spasmodic action of the gastric muscular fibres in articulo mortis, lodges in and dissolves the lower end of the œsophagus; here, also, the projecting folds of the under or back part of the œsophagus being acted on first.

It is known that irritation from other causes than the presence of food may excite a flow of gastric fluid into the stomach. Spallanzini obtained some from his own stomach by tickling the fauces and thus exciting vomiting before breakfast in the morning; and the fluid was known to be pure from its power to dissolve meat. In one case, given by Dr. Budd, it seemed that the flow of the gastric fluid into the stomach was excited by irritation of the brain by an injury so severe as to fracture the skull. A gentleman was thrown from his horse in the park in London before dinner, and when the stomach was probably quite empty and he remained insensible till his death, twenty hours after the fall. On examination eighteen hours after death, the great end of the stomach was completely dissolved and the digestive action was extending to the adjoining parts. As the stomach was supposed to be quite empty when the accident occurred, and the power of swallowing was entirely lost by the shock, nothing was taken afterwards; it is therefore probable that the gastric juice by which the stomach was dissolved after death, was secreted under the influence of the irritation of the brain and spinal nerves, resulting from the injury; and, being undiluted by food in the stomach, its active powers were expended on the coats of the stomach.

When death results from ordinary diseases, the appetite having been weakened, the power of the digestive fluid is feeble and seldom acts so powerfully on the coats of the stomach.

Solution of the Coats of the Stomach by the Gastric Juice after Death from excessive Acidity discoverable during Life.

Though in health the gastric juice is only secreted when food is taken, but in certain diseases it is secreted when the stomach is

empty. In some catarrhal states of the stomach lactic acid is formed by fermentation of the saccharine principles of the food; and this acid forms with the mucous membrane of the stomach a digesting mixture which continues its activity after death; and the coats of the stomach are more or less digested or destroyed.

First. Symptoms of the presence of free gastric juice or of a digesting fluid in a stomach otherwise empty are met with during life in cases of *simple ulcer of the stomach.* Pain in the epigastrium is felt when there is no food in the stomach; there are thirst, impaired appetite, frequent sour eructations with occasional vomiting of sour food; probably the flow of juice is excited in the empty stomach by the irritation of the ulcer or its secretions, as it was in Spallanzini's experiments by the mechanical irritation of pebbles or of bits of sponge or glass.

Second. *Gastric Disorder in advanced Phthisis.*—For some weeks or months before death there is pain and tenderness of the epigastrium; loss of appetite, thirst, frequent nausea and vomiting of matters slightly acid. These symptoms exhaust the strength, and often give more distress than the diseased lung; and are probably excited by the irritation of that organ. In persons who have died of phthisis, the mucous, muscular and serous coats of the great end of the stomach are often found dissolved, leaving a large aperture with ragged, flocculent edges. Louis found this condition in about one-fifth of the consumptive cases he dissected.

Third. Some inflammatory diseases of the brain cause gastric disorder; as frequent vomiting and nausea; pain in the stomach, thirst, loss of appetite; this gastric disorder is associated with increased secretion of the gastric fluid or its presence in the otherwise empty stomach. In typhoid fever the same excess of acid often accompanies the delirium or other brain symptoms of that disease. When there has been pain and soreness of the stomach, and vomiting for some days before death, the stomach has been found partially digested after death. The softened tissues are of a rust color, from the presence of blood gravitating to the lowest part of the stomach.

Fourth. Cancer of the uterus, peritonitis and other abdominal diseases which lead to functional disorder of the stomach. In all these instances the pathological change is believed to be effected after death.

Fifth. In infants during the period of dentition, the stomach and parts of the intestines are often found in a softened state after death. It is common in those who have died from hydrocephalus, phthisis, or the exhaustion consequent on eruptive fevers or improper food after weaning. Symptoms during life: frequent vomiting, loss of appetite, great thirst, crying as from pain; diarrhœa; discharges from the bowels green, like spinach, supposed to be caused by the presence of bile acted on by muriatic or lactic acid from the stomach. In children the

functional gastric disorder rapidly exhausts the strength, causing collapse and death.

Softening of the stomach then is usually found in persons who die of disease in some other organ, and of *those diseases especially which have long been known to lead to secondary functional disorder of the stomach.* This secondary disorder of the stomach is produced through the intervention of the nervous system. The excessive secretion of acid in the stomach in these cases is effected through *reflex nervous influence* from the other diseased part thrown back from the brain through the nerves; and the secondary disorder of the stomach thus excited affects the secreting apparatus of the stomach as well as its muscular coat. The extra gastric juice thus formed when not needed is wasted in merely exerting an irritation on the coats of the stomach; and when it has passed away and more food is taken it is but imperfectly digested and becomes a new source of offence to the mucous membrane, causing it to secrete an unhealthy mucus; and this acts as a ferment in forming lactic acid from the saccharine elements of the food.

In phthisis the stomach is often found enlarged as well as softened; being often found three or four times its usual size. It is believed to have been caused by the enlarged fatty degeneration of the liver which always exists in these cases. The enlarged liver compresses the pyloric division of the stomach and prevents the wasted and weakened muscular fibres from propelling the contents through the pylorus. Some of the acid then remains in the stomach and softens its tissues after death.

Influences that diminish the power of the digestive fluid.— First. Low temperature.— Spallanzini found that its powers were only perfect when the temperature was near that of the human body or near 100°. When cooled to 60° the action becomes very slow and feeble. Second. *Antacids* taken into the stomach render the gastric juice inert, as was proved by the experiments of Schwann on artificial digestion with *rennet.* He destroyed its power by carbonate of potash, and restored it by adding the proper quantity of hydrochloric acid. Ammonia is sometimes given just before death to avert the sense of sinking. If the juice be in small quantity it will be neutralized by the Ammonia and the digestion of the stomach prevented. The same may in some degree result from the transudation of the alkaline serum of the blood after death.

Alcohol.—It is often given in large quantities in the vain hope of relieving the sense of sinking. If not absorbed before the circulation ceases it may prevent the action of the gastric fluid on the stomach. Many medicines given when the stomach is full and digestion going on arrest that process. They have often been given in large quantities without regard to their strong deranging powers. (*Budd*, p. 25, &c.)

DIAGNOSIS.— *Varieties exhibited by the stomach on dissection.*—

1. *Pulpy softening of the stomach from self-digestion.*

2. Gelatinous softening of the stomach from self-digestion.

Cruveillier gives these distinctions, and Rokitansky specifies three varieties; but they both regard them as the results of disease. Dr. Budd is confident that they all result from the action of the gastric juice. He gives the essential characters of this change:

1. Softening of the mucous membrane, over a considerable space in the great end of the stomach *and along the edges of the folds*, extending from this towards the pyloric end.

2. A blackening of the blood in the tissues so acted upon, giving various shades of brown to the softened tissues when much blood was contained in them at the time of death.

3. The softened tissues have an acid reaction; they putrefy less readily than other parts, as the gastric juice exerts on them an antiseptic power.

Gelatiniform softening appears to be nothing more than the result of the same process occurring in a stomach, the capillaries in the coats of which were empty of blood at death; and they are thence rendered more or less transparent or gelatiniform, as all albuminous tissues are when acted upon by the gastric juice or by acetic acid.

8. HYPERTROPHY OF THE COATS OF THE STOMACH.

This has been by many writers considered as an earlier stage of *Carcinoma of the Stomach;* but Dr. Alderson of the Hull Infirmary says, it differs materially from that affection, and is much more common. The subjects of hypertrophy of the gastric mucous membrane are generally between the ages of forty and fifty, who have used alcoholic drinks too freely. It has seldom been seen except in the pyloric portion of the stomach. The disease generally commences in a state of irritation or chronic inflammation which render the lining of the pyloric orifice of the stomach so exquisitely sensitive that the contents of the stomach excite it to contract spasmodically. The natural efforts to overcome this obstruction cause a spontaneous or "instinctive" deposition of nutritive material in these coats which thickens them and adds to their power of resistance. The indigestion attendant on this state of the stomach tempts the sufferer to take stimulants daily to excite the stomach to increased action; thus keeping up for weeks or months an unnaturally increased capillary circulation of the mucous membrane; the muscular coat partakes of the irritation and the hypertrophy extends to it. When a section of the muscular coat of the stomach is made, the interlacing of the muscular fibres is very conspicuous. (*Alderson, on the Stomach &c.*)

Diagnosis.—The general system is not much affected till the disease is far advanced. The most striking early symptoms are morning sickness and want of appetite; and in the later stages constant retching and nausea; drinks are much desired; but, whatever their quality be they are instantly rejected, and a dark colored fluid is vomited in large quantity. Every thing taken into the stomach gives pain, and is immediately thrown up, accompanied by large quantities of the vitiated secretions from the mucous lining of the stomach. There are frequent alternating heats and chills; the pulse is quick and the tongue furred; the pain is often felt at the pit of the stomach, but not invariably, though it is more common in cases arising from unsubdued chronic inflammation than in those depending on mere obstruction of the pylorus. Emaciation is not a symptom of this disease, and its absence materially distinguishes it from carcinoma of the stomach.

Treatment.—This has not yet been generally satisfactory in any of the *structural diseases* of the alimentary canal, and the chief reliance is upon palliative measures which might be successful if there was no malignant disease, and those specific remedies which are supposed to have some power in controlling carcinoma whether in this system of organs or in others more external.

The first symptoms of structural disease resemble those of disordered function, but they are really the consequence of actual change of structure. We begin by attempting to restore healthy secretions and to counteract the constitutional tendency to the morbid deposit. As soon as structural disease in the pyloric portion of the stomach is suspected let all stimulants and internal irritating medicines be suspended; restrict the diet to the least irritating substances: milk, beef-tea, mucilages, and farinacious articles may be allowed, and when the disease affects the œsophagus and cardia, but few things can be taken and them we can not prohibit. Solids may be swallowed when fluids can not. Rest, pure air, mental and physical quiet are indispensible. External irritation, applied over the seat of the disease or to the spine, has been supposed in the early stage to check local inflammation. The celebrated Bichat employed it in his own case.

When the disease is so fully established that the mucous membrane has given way, counter-irritants can not be useful; and before this stage is reached we have better resources in the homœopathic remedies already mentioned under *Gastritis*, (p. 861.); *Ulcer of the Stomach*, *Gastromalacia*, (p. 868,) and hereafter under *Carcinoma* of the stomach in its incipient stages. Of these, Oxalic-acid, Kreosote, Arsenicum, Merc.-cor., Tartar-emet., and Argentum-nitr. are most reliable.

The internal use of water, as directed, page 297, will contribute very much to the favorable effects of remedies.

9. DUODENITIS.

Inflammation of the Duodenum. — The disease called jaundice consists very generally in inflammation of the duodenum, though the icteric hue of the skin is not a necessary attendant upon duodenitis and is often independent of any mechanical obstruction of the biliary ducts. In some cases the jaundice is accompanied with duodenitis and we have the yellow skin at the same time that the bile is flowing freely. See p. 401.

Bichat first showed that where jaundice had existed during life there had sometimes been no obstruction in the liver or ducts; but in such cases there was more or less inflammation of that part of the tube into which the bile is discharged, and this observation led ultimately to the discovery of the connection between inflammation of the duodenum and jaundice. In speaking of the sympathies which depend on continuity of surface Bichat refers to the connection between the surfaces of the mucous membrane and the ducts that open into them, and endeavors to show that the natural mode of exciting all the secretory glands is a stimulus applied to the surface on which their ducts open. As examples he instances the effect of food and other substances to the mucous membrane of the mouth in stimulating the salivary glands; the effect which stimulants applied to the conjunctiva or nose have on the lachrymal glands. Hence it is concluded that when the mucous membrane of the duodenum is thrown into a state of excitement we may have a consequent affection of the liver, for the duodenum has the same relation to the liver that the mouth has to the parotid gland.

It is now decided that the cause of yellowness in what is called yellow fever, is disease of the upper part of the digestive tube, in which the duodenum is always involved; and that the disease itself, (the Typhus Icterodes of some nosologists), has been found to be to a large extent connected with inflammation of the stomach and duodenum. During the epidemic of 1826 many cases of the fever prevailing presented a striking resemblance to yellow-fever, in intense jaundice and inflammation of the upper part of the digestive tube. In the investigations of Rush and Lawrence on yellow fever we find that few bodies were examined by them in which there was jaundice in connection with liver disease, but in all cases there was intense duodenitis or enteritis.

And even where the duodenum is not inflamed, continued use of calomel may cause an irritated condition of the duodenum as well as of the whole system. The large quantities of green bile poured out by the liver produce the greatest irritation. When this excessive flow of bile exists as the result of febrile irritation of the liver and duodenum allopathic doses of calomel (by causing medicinal aggravation), keep

up this discharge and all its disastrous accompaniments. Ptyalism can not here be induced by any quantity or repetition of doses; and, if it could, would not arrest the disease until the force of the fever is broken by other means. "Calomel," says Dr. Monette, "is the Sampson of the Materia Medica, and like him has slain its thousands when wrongly directed. It is generally improper when the tongue is *clean and red*, whether it be dry, or smooth and moist; also when the tongue is dry and rough, whether brown or red. These appearances always show different grades of mucous inflammation, and in all of these calomel (as well as quinine), is injurious."

This picture by a good observer is well drawn, and fortunately so much truth needs not to be thrown away, because it was spoken by an author who then did not see its full value. By "turning the picture upside down" it becomes more true to nature and to our purposes than it was to those of the author. The picture he gives us of the injurious effects of calomel is that precisely which we would have tried to draw of the curative powers of that celebrated agent when used in an attenuated form.

Causes.—Ulceration of the duodenum has been excited by causes acting only on the surface of the body. Mr. Carl (in *Med. Chir. Transac.* Vol. 24) gives twelve cases which originated in *burns*. It is certain that the burns could not by direct action produce this injury. It must depend upon the diseased constitutional state caused by the burn. A transfer of this diseased constitutional state, induced in the skin by a burn must have taken place, and thus the lining membrane of the intestinal tube became affected.

Treatment.—See pages 410 and 574.

10. GASTRO-ENTERITIS.

Broussais, in his "*Medical Doctrines and Symptoms of Nosology*," gives in a compact form a synopsis of the modern doctrine on this subject.

First.—Inflammation of the mucous membrane of the stomach can never be verified by dissection, but in connection with inflammation of the internal membrane of the small intestines; it should therefore be called "*gastro-enteritis.*"

Second.—Inflammation of the internal mucous membrane of the small intestines is sometimes seen in the dead body without any corresponding state of the stomach; but this isolated enteritis can never be positively recognized in the living body.

Third.—Gastro-enteritis presents itself in two forms, the one being marked by the predominance of the *gastric*, the other by the excess of *intestinal* disease. The pain of stomach, the nausea, vomiting, and in-

ability to bear nourishment characterize the *gastritis*; the power of satisfying the thirst, the rapid absorption of fluid swallowed, are signs of the predominance of enteritis. The other symptoms are common to both, with few exceptions.

Fourth.—Acute inflammation of the mucous membrane of the small intestines, without affection of the peritoneum, is not attended with colic pain, in the majority of cases, but only with a sense of heat, or *malaise*, or constipation of the bowels. Invaginations of this part of the intestines seldom cause ileus, or even pain, except slight colic.

Fifth.—Colic, diarrhœa, and tenesmus are the proper signs of inflammation of the mucous membrane of the *colon*.

TREATMENT.—See *Gastritis*.

11. ENDEMIC GASTRO-ENTERITIS.—INTESTINAL PARALYSIS. MILK SICKNESS.

Milk-sickness is an endemic disease known only in certain localities of the new and little cultivated parts of the Western States, unknown to foreign authors.

The Disease in Animals.—In its active form the animal is affected with universal tremor, lassitude and inability to make physical exertion; it is restless and anxious; the muscles are rigid and lose their power of action, after being fixed for some time in one position. Cattle have been mangled and torn by hogs while they lay trembling and unable to move. Thirst is ungovernable; and the drinking of water only hastens the fatal termination. The bowels are completely constipated and there is a peculiar fœtor arising from the skin. The appearances on dissection show that the intestines have lost all vital power before death; and their contents are dry and parched. In animals the disease commonly runs for some time an insidious course, and its existence is not suspected till the milk, cheese or beef is eaten. The first alarm is often excited by the sudden seizure of the calf with the characteristic "trembles" and vomiting immediately after it has sucked heartily. Dogs, hogs and buzzards have been often found dead by the side of dead bodies on which they had been feeding. Animals that recover scarcely ever regain their former strength. We have seen dogs attacked by the "trembles" after running, though they had been for many years considered as fully recovered from the original diiease.

The Disease in Man.—When the quantity of the poison taken has been small, there is at first only a feeling of weakness, stiffness of the joints, especially the knees, trembling and anxiety, great depression of mental and bodily powers, oppression of the stomach, nausea and constipation. The pulse is slow and irregular, or excited as if by some irritating agent. In some cases the patient, by remaining quiet, may escape the impending attack, but the slightest exertion develops the

effects of the poison. Suspected animals, when offered for sale, are tested by subjecting them to violent exercise, which speedily reveals the presence of the poison by bringing on a paroxysm of the characteristic "trembles."

In the more active form the patient is suddenly seized with vomiting, peculiar distress and burning at the pit of the stomach; anxiety, restlessness, anxious and uneasy countenance, with great prostration. Vomiting gives but a few minutes rest, when the same symptoms return. Unquenchable thirst calls constantly for water alone, which in a few seconds is rejected by the stomach. All cold drinks increase the vomiting, though it returns at regular intervals if nothing be taken. There is a peculiar fœtor from the body which none can mistake who have once entered a room pervaded by it. This symptom is often the first to excite alarm, and purgatives are often resorted to, to avert the dreaded attack. As the disease progresses, the extremities become cold, though the heat of the chest and epigastrium is increased. There is little apparent fever, though the skin is dry, without huskiness; often it is cool and natural. The face, though cold, often shows the external appearance of high fever, with dusky purplish hue, showing *want* of action in the extreme arteries, especially of the lungs. There is violent palpitation of the heart, a peculiar burning distress, a feeling of heavy nausea, or other extreme uneasiness at the pit of the stomach; and this organ being contracted into a globular mass by the spasmodic action of its muscular fibres, is believed by the patient to contain a quantity of some acrid substance that could be expelled by vomiting. There is constant desire to change the posture of the body, and the limbs are constantly thrown into new positions. The tongue is clean, though slightly furred; pulse not much excited. The matters ejected from the stomach are generally without color, sometimes dark-green, and of a ropy consistence. In the latter stages of the disease, the symptoms increase in severity; and though after four or five days the vomiting ceases, the nausea still continues to be as distressing as ever. The bowels seem to have lost all vitality; the brain becomes implicated, and there is a low muttering delirium, with great insensibility and torpor of the whole system. In some cases the black or "coffee-grounds vomiting" precedes the termination in death.

Diagnosis.—Milk-sickness may be distinguished from acute gastritis by the constantly recurring vomiting, which in gastritis only takes place when something is swallowed which irritates the stomach. The peculiar fœtor of the body and of the matters vomited is clearly characteristic; and the extreme torpidity of the intestines, as if from complete *paralysis*, is so different from constipation arising from deficiency of the natural secretions, that it could hardly be mistaken in a district where milk-sickness could be suspected. In late years congestive fever has

often simulated this disease, but the former is generally traceable to the commonly-known existing causes of fever, and the manner of attack in the two diseases is quite different.

Cause.—The only cause of milk-sickness is a *specific poison* received into the human system by the taking of animal food which contains it. What this poison really consists of has never been definitely settled. After reviewing many thousand pages devoted to the discussion of the subject, I am satisfied that the cryptogamic vegetable theory is the only one that can explain the immense mass of conflicting facts we have collected. In 1840, Dr. Winans, of Green county, Ohio, gave the opinion, "that the disease is produced by the *Champignon*, or at least some of the mushroom tribe. It never prevails except adjacent to thick, shady forests. When woods are cleared off, it vanishes; and it never prevails in prairies or open grounds of any kind." He says, he was led to this opinion "by reading of the poisoning of some inhabitants of the West Indies by champignons or mushrooms. Those gathered from dense forests were poisonous, while others from open grounds were eaten with impunity. I notice in our forests many mushrooms of small growth and gaudy colors, some deep-red, others yellow or brown, I also observe many growing upon beds of moss, of which animals are remarkably fond." *

It is not probable indeed, that any of the large species of mushrooms, which are common objects of botanical observation, can be proved to be the cause of this mysterious disease; but there are vast numbers of smaller fungi which escape the attention of naturalists, though all of them are known to be poisonous. The localities suited to their growth, their habits, minute size and well-established toxicological properties indicate some species of the tribe as the probable source of this fatal disease, which has furnished a subject of curiosity and wonder during the whole of the present century.

Of the many *supposed causes* of milk-sickness it is not now necessary to speak at length. In Eastern Ohio it has been attributed to the *Caltha-palustris*, or marsh marygold. In a part of Kentucky it was believed to be caused by the *Symphorea-glomerata*. On the Wabash it was ascribed to the *Eupatorium-ageritoides;* and by others to the *Rhus-toxicodendron*. In Tennessee Dr. Nagle recently reached the conclusion, that the disease could be artificially produced by feeding animals with *fungus-grass*.† But of all these plants it is sufficient to say, that they all grow in profusion in places where *this peculiar* disease was never seen; and that they are all well-known, and have failed to cause the disease in any authenticated case when fully tried. This

* Western Medical Journal. 1840. p. 191.

† Nashville Journal. Oct. 1859.

disease has originated in places, where *no unknown plant*, large enough to attract the eye of a botanist, could by any search be found. The examination of mineral waters has led to no better results. The sickening of some of Lewis and Clark's men on the first exploring expedition to Oregon in 1804, is referred to, as furnishing an analogous case; and the spring from which they drank was said to contain Cobalt or Arsenic. More recently Dr. Evans, of Monroe county, Ky., has attributed the disease to water in the vicinity of a lead-mine. But all reasonings of this kind seem to be set aside by the fact, that we have often seen localities where milk-sickness has displayed its most fearful powers and where no water of any kind could be found.

All observations yet published refer us at last to the poisonous cryptogamic plants, perhaps those of the most minute size, for an adequate cause of a disease involved in so much mystery. All other plants are better known, and, when rigidly tested, produce no disease resembling the object of our present search, though many of them are known to be poisonous.

Pathology.—In the most strongly marked cases, the first stage, or that of depression, is probably one of congestion of the stomach and large intestines, and this is followed by inflammation of these organs. The torpor of the whole nervous system is such, that but little effect is at first produced by any remedy that has been tried. At a later stage, gastritis and spasmodic or paralytic suspension of the functions of the large intestines, especially the colon, prevents the passage through the prima via of any thing taken into the stomach. The extension of inflammation to the diaphragm is pointed out by the hiccough, which, though a symptom of gangrene in many other diseases, is not so here. Some patients have lingered more than two weeks and then died with the usual symptoms of gangrene, and yet on dissection there was no such thing found, and death appeared to have resulted from complete exhaustion.

Prognosis.—The disease is dangerous according to the violence of the attack and the degree of influence exerted by medicines. Children are less liable to take it, and they also recover more easily than older persons. Intemperate persons are more susceptible than others, and their cases are less manageable, in consequence of the impaired condition of their digestive organs and the general *enervation* produced by habitual stimulation.

Treatment.—The disease in its worst forms has hardly ever been subjected to homœopathic treatment. Nearly all who have encountered it, have tried to restore the natural action of the stomach and bowels by purgatives, and scarcely ever with success. Every thing given promotes the persistent vomiting. Even *Calomel* is generally rejected, and when retained, it produces little effect. Enemas also fail to reach

the seat of the obstruction. When *mild* purgatives and enemas have re-excited the natural peristaltic action of the intestines, a slow recovery has followed; *active* purgatives have always failed. *Croton-oil* has been often tried, but it only increased the irritability of the stomach without any purgative operation. *Nux-vomica* would effec the object by a different process.

It was long a popular and not unsuccessful practice in the Western States to administer various animal oils, as lard, butter, goose oil, bear's oil, &c. Another successful mode sometimes resorted to consists in introducing into the colon, through the sigmoid flexure, a gum-elastic tube about eighteen inches in length, and injecting through it a large quantity of some warm oleaginous liquid. The best thing for this purpose is chicken-broth. As soon as one, two or three quarts of this fluid are thrown into the abdomen, which becomes largely distended with it, the skin and the whole system give evidence of an immediate change for the better. The relaxed skin is immediately covered by a gentle perspiration; the pulse rises in strength at the same time that it diminishes in frequency (from one hundred and twenty-four to eighty per minute). All the soothing, relaxing influences of the warm bath, all the benefits promised by the use of oils and mild purgatives, are directly gained at the same time that the sinking powers of life are supported by a nutritious fluid which is rapidly absorbed from the whole surface of the large intestine.

Homœopathic Remedies.—The most reliable will be found to be *Arsenicum*, *Tabacum*, *Veratrum*, *Nux-vomica* and *Antimonium*.

Arsenicum.—Countenance sunken, nose sharp, face pale, and covered with cold sweat, expression of fear, anxiety, of utter misery; lips and tongue bluish, distorted by twitching movements; tongue burning, or cold and moist, white in the middle; disgusting taste; nausea extremely distressing; appetite when returning, capricious, morbid; thirst unquenchable; hard retching and persistent nausea before vomiting and continuing constantly after it; constriction and cramp-like contraction of the stomach; vomiting always after drinking; burning sensation in the stomach with pain in the abdomen and nausea; pressure on the epigastrium causes uneasiness; burning heat in the intestines; respiration much oppressed, shortness of breath; action of the heart weak and quick; hiccough; hands and feet icy cold; hands trembling; hands and forearms livid as in the cold stage of cholera; coldness of the hands, feet, face, nose and ears; with great prostration and debility; coldness of the body can not be diminished by external warmth; cold thick perspiration on the skin; convulsive, small, rapid, irregular pulse, hardly perceptible. Great physical restlessness and anguish; eyes sunken; unable to lie still for a moment; throwing himself here and there incessantly, and tossing from side to side; followed by relaxation and

physical apathy; sudden and involuntary muscular contractions; paroxysms of fainting during which the coldness of the surface increases; emaciation, and rapid diminution of flesh.

12. ENTERITIS.

Under this head we shall proceed to describe two varieties of intestinal inflammation, the peritoneal and muscular, and that of the mucous membrane. The older writers have confounded peritoneal enteritis with ordinary acute peritonitis; but the researches of modern pathologists have pointed out the true location and nature of these different maladies.

PERITONEAL ENTERITIS.

Diagnosis.—Lassitude, rigors, chills, acute pain in some part of the abdomen, swelling and exceeding tenderness in the affected part, nausea, vomiting, *obstinate and persistent constipation*, urgent thirst, bitter taste, loss of appetite, parched mouth, hot skin, inspirations short and painful, position on the back with knees drawn up, and inclination to preserve the recumbent posture, pulse frequent, tense, contracted, and irregular, urine scanty and high colored.

The above symptoms will be modified according to the particular location of the inflammation. If the small intestines are the principal seat of the disorder, symptoms will obtain which simulate gastritis; if the colon be the part affected we may expect symptoms resembling hepatitis to be present. This form of enteritis is violent and rapid in its course, and according to most writers is "particularly prone to terminate in gangrene. When this termination is about taking place the pain suddenly subsides, the pulse sinks rapidly, the countenance becomes pale and cadaverous, the extremities cold, the surface covered with a cold clammy sweat, and hiccough, slight delirium, and occasionally convulsions close the scene. This affection is seldom protracted beyond the seventh or eighth day, without terminating either in resolution or in death." (*Eberle.*)

Causes.—The employment of irritating cathartics like calomel, jalap, croton-oil, aloes, scammony, colocynth, gamboge, &c., poisons, alcoholic liquors, sudden suppression of accustomed discharges, repelled eruptions, worms, external injuries, persistent constipation, atmospheric changes.

Treatment.—*Arsenicum*, *Veratrum*, *Aloes*, *Aconite*, *Nux-vom.*, *Lycopodium*, *Opium*, *Ipecacuanha*, *Sulphur*, *Plumbum*, *Rhus-tox.*, *Ac.-cuprum.*

Administration.—The principal remedies in the treatment of this malady are *Arsenicum* and *Veratrum*. They may be given at the

third potency, at intervals of one to four hours, according to the severity of the symptoms. Should vomiting be very violent and persistent, after the proper administration of *Arsenicum* or *Veratrum*, recourse should be had to *Ipecac.*, third attenuation. When the inflammation attacks the large intestine, *Aloes* and *Plumbum* may be given in some cases, at the third dilution, after *Veratrum* and *Arsenicum*. If the disorder has arisen from repelled eruptions, or metastasis of rheumatism, gout, erysipelas, &c., we may resort to *Sulphur*, *Rhus*, or *Ac.-cuprum*, as circumstances require. During the course of the disease *Aconite* will occasionally be found useful in controlling the action of the heart and arteries. It may be given at the second potency, either alone or in alternation with another appropriate remedy, according to the symptoms.

Auxiliary to the above remedies, the employment of fomentations, either of warm or cold water, as the case may demand, prove of eminent service. Cloths should be wrung out, and applied over the affected part, (care being taken to protect the body-linen and bed-clothes), renewing them once in fifteen or twenty minutes, when the inflammation and pain are severe.

13. FOLLICULAR ENTERITIS.

Structure of the Gastro-Intestinal Mucous Membrane. — The Epithelium which lines the whole alimentary canal with all its appendices, even to the minutest ramifications of their tubes, also covers the skin; it forms the surface of all the serous and synovial cavities, and lines the heart, blood-vessels, lymphatic glands, and all other secreting surfaces. On the external surface of the body, it consists of numerous layers of minute scales or laminæ which are easily separated by rubbing the skin with a flesh-brush. These scales are formed by the drying of the vesicles or cells of which the epidermis primarily consists. The structure of the epithelium which lines the mucous membrane of the intestinal canal is essentially the same. It consists of spheroid cells of very small size, each containing within it a roundish oval nucleus, which is a hollow sphere, and sometimes encloses within it a nucleolus more minute. They are situated on a primary membrane, from which they appear to grow; are bound together by a delicate tissue, and are believed to perform important services in the function of secretion. The epithelial cells are constantly undergoing the process of further development. Those composing the outer layer burst and discharge their contents, and the next layer of cells is pressed forwards to supply the place of the former. "New cells," says Sharpey, "are developed from germs contained in the *basement membrane*, and are formed and nourished from the blood which transudes from the blood-vessels beneath. No vessels enter the tissue of the epithelium, but the nutrient fluid penetrates a certain way into the growing mass, and the

cells continue to assimilate this fluid, and pass through their changes at a distance from, and independently of the blood-vessels." Even in the finest vascular network of mucous membrane, as well as in the muscular structure, the nutrient fluid, on exuding from the vessels, has to penetrate the adjoining mass by *transudation*, in order to reach and yield new substance at every point where secretion or renovation is going on.

As the mucous membrane of the alimentary canal performs the important function of *absorption*, and its covering of epithelial cells are at the same time the agents by which the secretion of mucous is effected, its structure must be highly complicated. The extent of its surface is prodigiously increased by means of numerous folds and projections, as well as by the pits or follicular depressions dispersed along its whole extent. And it is believed that the function of *absorption* is performed by the epithelial cells of the villi which cover the folds and projections on this surface; while that of *secretion* is performed by those cells which line the follicular pits and depressions dispersed along its whole extent. The villi, like the spongioles of the roots of plants, are endowed with the peculiar property of selecting the nutritive fluid and conveying it to the lacteals. These absorbents do not reach into the extremity of the villi; and they do not open on the surface of the mucous membrane by any appreciable apertures; but the end of each villus is composed of a loose spongy tissue, in which a number of *cells* may be seen in various stages of development, during the process of absorbing the chyle.

In health this delicate surface of the mucous membrane is either of a grayish-white or yellow color, from the coloring principle of the bile, or of a darkish livid hue, from the imbibition of blood. It adheres closely to the subjacent tissue, and can only be detached with difficulty. The solitary glands of the small intestines and colon, as well as the villous layer and the glands of Lieberkuhn, are invisible to the naked eye. The patches of Peyer's glands may be distinguished at the earliest period of life by their greater opacity when the membrane is held up to the light. When distinctly seen they are always in some degree diseased. The largest patches are situated near the ilio-cæcal valve; the smallest are in the jejunum. They vary in number from 18 to 36 patches, and are referred by pathologists to atrophy of the mucous membrane.

In the first stage of this follicular enteritis, when the disease consists chiefly of an abnormal development of the mucous follicles of the digestive organs, the fever and irritation can always be removed by change of air, proper temperature and clothing, restricted diet with only a few doses of Aconite and perhaps Calcarea-carb. or Merc. The child should occupy a large airy room; should lie on a mattrass rather

than on a feather-bed; and cleanliness and comfort should be secured by proper washings, bathings, &c. When there is much fever, dryness of skin and restlessness, a warm bath procures better rest and diminishes the internal local disease. It may be repeated at intervals regulated by the violence of the fever, and continued each time just long enough to show evident relaxation. If the *external* heat should be increased by the bath it will be found to have reduced the *internal* irritation, and this is always a real gain which facilitates recovery.

The diet should be regulated with the greatest care. Nothing is so good for a child in health, as the mother's milk when it is perfect; and when her health is good it must be almost exclusively relied on, giving reasonable care in her choice of food and attention to health in all other respects. But there are cases in which the mother's milk acts as a poison, even when her health is considered good. In these cases it acts as a drastic purgative, passing off from the bowels in a curdled state, undigested, but giving severe griping pain. Here it is necessary to prohibit the milk entirely. Sometimes by changing the food for a single day the child so far improves as to be able to bear the milk again; but in other cases it never agrees with the child again.

DIAGNOSIS. — First stage, diarrhœa, succeeded about the second day, sometimes later, by vomiting and remittent fever with evening exacerbations. Pulse varying with the fever, small and quick, or full and tense; slight delirium, when the brain is sympathetically affected; there is then a fierce wild expression of the countenance, which at other times is bright and animated; the stools are thin, watery, pasty, or mushy, and variable in color, sometimes resembling mucus in color, or like eggs chopped and scalded with water. The vomiting occurs three or four times a day, the matters thrown up consist of the food but little changed, or only mixed with mucus. The milk of the nurse is thrown up in an acid, coagulated state. The skin is generally dry, warmest on the head and abdomen, while the lower extremities are cooler; respiration little affected; tongue moist, red at the tip and edges, with a yellow or brownish coating toward its base; sleep generally quiet, except when the fever is highest: the child is then irritable and restless. As the disease progresses the abdomen grows tense, tumid, painful on pressure; and the thirst becomes more intense.

Characteristics of

FOLLICULAR ENTERITIS.	TUBERCULAR MENINGITIS.
Frequent discharges from the bowels. The bowels are *primarily* affected. The cerebral symptoms occur only in the later stages of the disease; there is then drowsiness or stupor. The rattling of	The bowels are usually torpid; the brain is the primary seat of the disease, and it commonly occurs in delicate scrofulous children. The pain in the head is intermittent, and is manifested

wind in the stomach and the lenticular spots seen in typhoid fever are absent, and there is agitation and delirium at night.

by a peculiar cry, disturbed sleep, tossing about of the hands, rolling of the head from side to side, moaning, grinding the teeth, delirium, and a peculiar expression of countenance; the drowsiness and stupor often accompanied by convulsions.

Causes.—The heated, confined, and impure air of the city in summer acts directly on the skin, and indirectly on the mucous membrane. The irritation of the teeth during the process of dentition, produces inflammation and even ulceration in the lining membrane of the mouth; and since the same membrane extends throughout the whole intestinal canal, the irritation is usually propagated along this delicate surface, producing indigestion, vomiting or diarrhœa; and at the same time there is also increased development and activity of the muciperous follicles. If this period of infantile life could be passed in a pure atmosphere of a moderate temperature, the disturbance of the health caused by dentition might not be very great; but it is always sufficiently so to strongly predispose to disease, and to aid other agencies in exciting or perpetuating diseases of the most serious character; and often such maladies are excited by dentition alone. The other causes which originate the fatal "summer-complaint" of cities and towns are: improper food whether too stimulating or indigestible; irritating drugs; vicissitudes of temperature; insufficient clothing in the summer, when hot days are succeeded by cool nights; intestinal worms, and all other irritating substances originating in, or received into the digestive organs. But in addition to all these causes which operate in the country as well as the metropolis, there is certainly a zymotic or other poisonous miasm in the air of all large cities, which conspires with bad diet, bad clothing and inefficient medical treatment to originate this disease, as well as render it more unmanageable when excited by other causes. A large proportion of the cases in large cities occur in ill-ventilated houses, situated in courts and alleys in which bad air stagnates, and filth accumulates, where light is deficient, and where heat during the summer months is intense.

Pathology.—*Effects of Congestion.* 1. In the mucous membrane. The membrane presents a rose-red or cherry-red color, diffused in isolated patches, or in arborizing trunks. It is diminished in consistency but still adheres firmly.

2. The glands of Peyer, which occupy the free border of the intestine, are rendered more red and prominent. These glands are only mucous follicles which are not perceptible until about the fourth month, or about the time when nature by pushing forward the teeth is preparing the digestive organs to digest and assimilate a higher order of food, they are found distributed over every part of the intestinal sur-

face, and each receives an artery, a vein and a nerve. These follicles perform an active part in the process of digestion by furnishing the surface of these organs with a fluid which assists in the elaboration of the food. In carnivorous animals, as dogs and lions, they are largely developed. From them is usually discharged the excess of mucous fluids thrown off by diarrhœa at the time of teething. In severer cases of cholera infantum and follicular enteritis they are inflamed, and in protracted cases are destroyed by ulceration.

3. *Inflammation of the Peyerian Glands.*—When this disease has continued in the chronic form the patches show gray-blue or slate-gray color, contrasting with the mucous membrane, which is quite pale. The tissue appears atrophied or elevated according to the stage at which death took place. As inflammation of the Peyerian glands constitutes the essential pathological basis of *follicular enteritis*, or *summer complaint*; so a continuation of the same diseased action in the same glands becomes the anatomical base of *marasmus or atrophy.* These inflammatory affections are extremely common; whereas enlargement of the mesenteric glands, aphthous formations, gastro-malacia, &c., are comparatively rare.

4. *Softening of the Intestinal Mucous Membrane.*—This pathological change of structure occurs more frequently in the small intestine than in the colon. The adhesion of the mucous membrane to the tissue below it is lessened; it becomes œdematous, homogeneous, pulpy, and easily lacerated. When this state continues long, the red color it presents in earlier stages disappears, as the inflammation subsides. The softened membrane becomes white, in the same manner as the softened brain does in ramolissement, and from the same cause.

It is thus seen that acute inflammation of the Peyerian glands is the most frequent and dangerous of the diseases of children during the first and second years of life. That it is a *real inflammation* is proved by the fact that tubercular disease is seldom complicated with it, inflammatory affections of the lungs and purulent effusion in the brain are quite common, and frequently cause the fatal termination.

In children of a tubercular diathesis, secondary acute inflammation of Peyer's glands, as well as of the solitary glands, often occurs; but it is observed that abdominal tubercles and typhoid fever belong almost exclusively to the second and later years of life; whilst follicular enteritis is peculiarly severe and fatal in the first year, which is to every child, especially in the city, the most perilous of earthly existence.

"In summer complaint, resulting apparently from dental irritation, the brain is predisposed to erethism; it is *sympathetically* affected; the irritation of the terminal branches of the second and third divisions of the fifth pair is transmitted through the pneumogastric and sympathetic system of nerves, on the organs of assimilation, giving rise to

the various phenomena of this disease." There are, however, cases in which the affection of the brain is *primary*. "The fever, vomiting and diarrhœa, together with the general *malaise*, which are among the first symptoms, seem to point unequivocally to derangement of the nervous centres as the cause of impaired assimilation; these symptoms always originate from a brain lesion, whether induced by agencies operating *primarily* upon the tissue of the brain, or secondarily from irritation elsewhere.

Prognosis.—*Favorable.*—When the pulse becomes slower, the skin warmer; when the vomiting ceases, the alvine discharges become more frequent and natural; a gentle perspiration appears over the whole surface.

Unfavorable.—The pulse continues quick, feeble and more irregular; the skin is cold, the discharges continue, increasing in frequency and resemble the washings of meat; the uneasiness and restlessness increase; the limbs are tossed about in restless agony, or become rigid and partially paralysed. Cerebral symptoms, as stupor, and delirium increase. The pulse becomes imperceptible, the surface cold.

Treatment.—*Prophylactic.*—When the hot weather of summer arrives, examine the general condition of every child in which marks of indisposition are noticed; and if convenient let each be removed to the country, or at least to the most healthy situation attainable. From the commencement to the termination of the process of *dentition* the teeth should receive special attention. After the first teeth come through, the child may be allowed a greater variety in food; but whatever is used should be often prepared fresh, and never kept long enough to permit it to undergo any change. Mucilaginous drinks, rice, barley, farina, pure starch, toast-water, sago, tapioca, and many other articles are in common use.

Medical Treatment.—Follicular enteritis is in its first stage an incipient inflammation. As soon as all exciting causes of irritation are removed, *Aconite* will be found a specific for the congestive stage of the irritation and fever. It is indispensable when there is great heat of the skin, thirst, sleeplessness, or agitated sleep; fretfulness with inflammation of the mucous follicles imperfectly established. It may be alternated with *Belladonna* when the head is the chief seat of suffering, or with Mercurius when the dysenteric symptoms are prominent, or with *Calcarea-carbonica* when the child shows imperfect development, rickets, softness of the bones, slow ossification, or scrofula.

Second Stage.—The disease if not arrested in its first stage advances to the second, in which the same general features are presented, though in an aggravated degree. The vomiting becomes less frequent, but the alvine discharges are more painful, accompanied by nausea and great

prostration; and the limbs are drawn up towards the abdomen. The matters evacuated become more watery, stained with blood, or more generally of a dark-green color. The abdomen now becomes tumid or painful on pressure; its temperature increases while the extremities are cool. As the disease progresses, the pulse increases in frequency from one hundred and thirty to one hundred and fifty per minute, and often intermittent, irregular or entirely imperceptible. Emaciation progresses till the skin hangs about the neck in folds; the eyes are sunken in the orbits, with a dark areola around each; the nose becomes sharp, the lips shrivelled, the feet œdematous; the skin loses its sensibility, and the flies are permitted to collect on the face; petechiæ come out on the skin; the tongue is dry, encrusted and covered with aphthæ; deglutition is painful; the mouth dry and the child thrusts its fingers far back towards its throat. The appetite is capricious; thirst constant; an eruption of minute vesicles often come out on the chest. As death approaches, the brain becomes more strongly engorged with blood; the eyes are suffused, the lids tumid, conjunctiva injected; the pupils are generally dilated, though they contract on exposure to light; the hand is frequently raised to the head; twitchings of the muscles, and throwing back the head, portend convulsions, which often terminate in death.

Pathological Appearances.—Autopsical examination of children who die of the disease at this stage, show: Inflammation and softening of the mucous membrane; ulceration of the follicles, particularly of the large intestine. The inner surface of the stomach is less changed, though it is sometimes injected and softened; the change of structure extending to all the coats. More frequently there is found a layer of whitish opaque mucous covering the lining membrane of the stomach; the mucous follicles of the stomach and intestines are visible, the mucous membrane of the latter being softened and pale. The duodenum is often inflamed, presenting a shade of pink, with injection of the minute vessels. The large intestine is generally inflamed and softened, sometimes in bands extending longitudinally for several inches, injected with fine arteries, and of a deeper red than the surrounding membrane. In some cases the whole lining membrane of the colon is thickened and of a vivid red. The follicles of the colon, having been the points first inflamed, proceed to ulceration as the inflammation extends to the surface around them. The rectum presents the deepest ulcerations; its lining membrane being thickened, inflamed, or covered with a thick layer of mucus.

The brain or its membranes, in all cases after death consequent on the above symptoms, present marks of active disease. The pia-mater is more or less distended or injected. The arachnoid is pale and moist, with effusion into the sub-arachnoid cellular tissue. When the brain

itself has not been the seat of active inflammation, it is usually injected, showing that congestion had existed at the time of death.

Treatment of Follicular Enteritis in the Third Stage.—1. *Aconite* is specific for the hot and dry skin, flushed face, tormina and tenesmus; pain in the head and back; flushes of heat alternating with chills; burning pain in the abdomen; eyes glistening and painful, suffused and red; urine high-colored; alvine-discharges watery, frequent, attended with nausea and exhaustion, manifested by paleness and perspiration, followed by reaction and fever; mourning and weeping.

Belladonna, in alternation with Aconite, in all the periods of active febrile excitement.

Mercurius-solubilis.—This with other preparations of Mercury is peculiarly applicable in cases in which the symptoms most resemble dysentery in children that exhibit scrofulous tendencies; who are often affected with glandular swellings of cutaneous eruptions. They are pale, sickly; precocious in intellect; suffer much from slow and imperfect dentition, during which the superficial glands about the neck are enlarged. When the intestines become slightly irritated from any cause, the resulting inflammation assumes a dysenteric form. Constipation is more or less complete; and instead of natural fæces the evacuations consist of bloody mucus, passed with pain, tenemus and nausea. In other cases of cholera-infantum, in which the stools are watery and of a dark-green color, frothy, or composed of undigested, chopped matter, mixed sometimes with dead lumbrici, Mercurius has given immediate relief. When the chronic stage, usually called marasmus, commences, when emaciation is progressing, and aphthous crusts begin to form on the lining membrane of the mouth, Mercurius-sol. generally destroys the parasites of which the crusts consist.

Ipecacuanha.—Serous diarrhœa, with vomiting of green or white mucus, with much griping pain; nausea, eructations, flatulent colic, faintness from excessive efforts to vomit, pain in the head relieved by vomiting.

Bryonia.—Diarrhœa, thirst, and vomiting, caused by cold or by excessive hot weather. The heat is more internal than on the surface. Digestion is imperfect; all food disagrees, causing acidity, pain in the head, pleuritic pain in the sides of the chest, constipation, dry cough with quick, anxious breathing.

Dulcamara.—The diarrhœa is excited by exposure to cold, damp air, and commences with cold and aching in the epigastrium.

Veratrum-album. Senna, Kreosotum, Tartar-emetic, *Arsenicum*, chronic cases tending to marasmus, Iodine, emaciation, Argentum-nitricum. Rhus-toxicodendron.

Cholera Infantum.—*Croton-tiglium.* Vomiting; purging; stools watery; sunken countenance; cold extremities; fever of remittent type

stools light-colored, at times offensive; emaciation; cadaverous countenance; sunken eyes; stools resembling gray neurine and marked by extreme and sudden debility after each evacuation, sometimes complicated with dentition, and constituting that formerly called "nervous diarrhœa," intermittent diarrhœa.*

14. ACUTE PERITONITIS.

DIAGNOSIS.—Three varieties of this disease have been recognized, viz: first, acute peritonitis; second, puerperal peritonitis; third, chronic peritonitis.

1. *Acute peritonitis* is usually ushered in with more or less of the ordinary symptoms of fever, as lassitude, irregular chills, succeeded by flushes of heat, headache, frequent pulse, uneasiness, or pressure in the region of the stomach, nausea, and loss of appetite. These symptoms are speedily succeeded, and occasionally accompanied by a pain and tenderness in the abdomen, either confined to circumscribed points, or universally diffused over its whole extent. Generally the abdomen is exquisitely tender and painful upon pressure, often rendering the weight of the bed-clothes intolerable; but in some instances the pain is slight from the commencement to the fatal termination of the malady. The tongue is moist and covered with a white fur in the first instance, which soon becomes dark and dry in the centre, with red edges. The bowels are constipated, but may be readily acted upon by appropriate remedies. The pulse is commonly frequent, tense, corded, wiry, though in some instances it varies but little from the natural standard. This, like most other inflammations of the abdominal viscera, imparts to the countenance a contracted, sharp and anxious expression, indicative of both acute physical and mental suffering. The patient inclines to relax those muscles which operate upon the abdominal parietes, and on this account we find him with his legs drawn up, his head and shoulders elevated, and his respiration short, imperfect, and exercised almost entirely by the muscles of the chest.

In severe cases of peritonitis we have acute pain diffused over the whole abdomen, aggravated by movement or by pressure; even the weight of the bed-clothes is sometimes insupportable. The abdomen is swollen and inflated with air; the skin is hot and pungent; the pulse is frequent and small; the stomach irritable; the breathing hurried, and the countenance expressive of acute suffering.

2. Puerperal peritonitis is that aggravated and specific form of the disease, which occurs in females after confinement, and is known as puerperal fever. It differs from ordinary peritonitis in being more sudden and violent in its attack and in having a tendency to run its

* Ill. State Hom. Med. Association Proceedings. 1860.

course with greater rapidity. It occasionally rages as an epidemic, and is by far the most agonizing and fatal disease to which women are exposed after parturition. Among the first symptoms are pain and tenderness in the hypogastric region, occurring soon after delivery, and succeeded by chills, &c. The lochia are generally entirely suppressed, though some eminent authors assert, that they have found this discharge but little affected and never entirely suspended. The secretion of milk is also either partially or entirely suppressed; and if the secretion has not yet taken place, it does not occur at all. In many cases of both forms of peritonitis the brain is affected at an early period and demands special attention.

In regard to the precise character this malady may be likely to assume, much will depend upon the peculiar constitution of the individual, the season of the year, the prevalence of epidemic or contagious influences. "There is," says Dewees, "an entire extinction of the maternal feeling," and this he regards as one of the most remarkable features of the disease. There is also strangury with frequent efforts to evacuate the bladder, producing constant burning pain.

3. *Chronic peritonitis*, although often consequent upon a partially subdued acute attack, may also arise independently from sudden changes of temperature, insufficient clothing, irritating food, external injuries, surgical operations and chronic bowel-complaints. Many of the symptoms of this disease are like those of dyspepsia, as sensation of fullness, distention, weight, and occasional pains in the region of the stomach and bowels, constipation, loss of appetite, depression of spirits, restlessness at night, distress and pain, aggravated after eating, emaciation, thirst, frequent pulse, foul tongue, &c. This form of peritonitis may terminate in a few weeks, or it may run on for a year or more, and then result in ulcerations opening into the intestines.

Causes.—Certain occult conditions of the atmosphere; undue exposure to cold; excessive physical exertion; injuries; labor; miscarriage; over-exertion, when the organism is weakened by previous disease; atmospheric vicissitudes; metastasis of rheumatism and gout; suppressed discharges, &c.

Treatment.—The most important remedies in the treatment of peritonitis are: *Aconite*, *Belladonna*, *Bryonia*, *Arnica*, *Bismuth*, *Chamomilla*, *Coffea*, *Colocynth*, *Ipecac.*, *Mercurius*, *Nux-vom.*, *Pulsatilla*, *Rhus-tox.*, *Sulphur*, *Veratrum*, *Arsen.*

Administration.—We advise the employment of the first three attenuations, and a repetition of the dose every one, two or three hours, according to the urgency of the case.

In the treatment of acute peritonitis we have, in most cases, relied upon Aconite and Belladonna in alternation, at the first dilution. We believe that nine out of every ten cases may be cured with these two

remedies. When the malady has made much progress, and the vitality of the system has become much enfeebled, with weak and rapid pulse, tympanitic abdomen, parched mouth and tongue, cold extremities, delirium, and other phenomena of a typhoid character, Rhus and Arsenicum will be required. They may be prescribed in alternation, in the second or third dilutions.

Should cerebral symptoms become strongly pronounced, in connection with a marked typhoid condition, Opium or Belladonna may be required in alternation with Rhus or Arsenicum. Apis will be demanded in cases tending to result in dropsical effusions, and in cases complicated with derangements of the kidneys or bladder.

Should diarrhœa ensue during the progress of the disease, we may consult Arsenicum, Veratrum, Mercurius, and Ipecac.

Opium.—In some extraordinary cases of abdominal inflammation some peculiar and little understood properties of Opium may become highly important. The action of Opium on the cerebro-spinal-nervous system is evident in the calmer and quieter condition of sufferers from peritonitis; it renders the sensorium less impressionable and the system less liable to be exhausted by the disease. Its action on the sympathetic and vaso-motor nerves is probably similar, as it will relax contracted arteries, and admit a freer transit of the blood. This is probably the *rationale* of its beneficial effects in the cold stage of ague, and in similar conditions; it does away with the contraction of the superficial vessels and skin. In many choleraic attacks, which have much resemblance at first to an attack of ague, a dose of Opium and chloric ether is of the greatest efficiency. So in exposure to severe cold and in gangræna-senilis, the beneficial effect of Opium probably depends on its preventing the arrest of the circulation in the limbs and superficial parts, by keeping the arteries, especially the smaller vessels, relaxed and patent. At the same time it protects the heart from the depressing, inhibitory influence of the cold, and so enables the circulation to be well sustained. The latter remark will also apply to the case of peritonitis and of the shock from burns. (*Dr. C. Handfield Jones, in Brit. Med. Journal*, 1861.)

It is therefore a tissue sedative. If the action of the heart be in danger of failing from asthenia, the administration of Opium in my opinion is unsafe from this very sedative effect. Yet where the depression is the result of violent irritation in another part, as for instance in peritonitis, the action of the heart may greatly improve under the Opium. The narcotic, by rendering the cardiac ganglia less impressionable, takes off all the inhibitory effect of the peritoneal irritation. (*Jones on Tissue Sedatives. British Med. Journ.*—See Symptoms of Opium, pages 706, 710.

In peritonitis from rupture of the gall-bladder, strangulated hernia,

rupture of the uterus, Opium in the necessary doses to control the pain furnishes the only reliance generally thought of.

In two cases of peritonitis after tapping, when the patients were in a low state previous to the operation, large doses of Opium, without loss of blood, removed the inflammation and saved life.—In such cases the patient is generally cachectic, and labors under visceral obstructions; and collapse generally follows the operation. In one case, Dr. Graves tapped a woman, who was apparently in the last stage of ascites. The operation was followed by peritonitis; there was constant vomiting, hippocratic countenance, cold extremities, abdomen exquisitely tender, pulse one hundred and sixty per minute and scarcely perceptible. Dr. Graves gave one and a half drops of Laudanum, expecting only to palliate the pain. The patient fell into a sleep from which she awoke refreshed, with a warmer surface and fuller pulse. Opium in small doses often repeated cured her.

Peritonitis from Escape of the Intestinal Contents into the Peritoneum.—*Opium.* When there has been perforation of the intestine, by ulceration or otherwise, and escape of fæcal matters into the serous cavity of the peritoneum, or when there has been discharged into that cavity the contents of an abscess, or when peritonitis follows the operation of paracentesis abdominis in debilitated subjects, there is usually no resource but Opium.

Dr. Stokes says: "A more appalling calamity can hardly arise than perforation of the intestine and escape of its contents among the bowels, with the rapid and exhausting peritonitis that will follow. It generally occurs in the course of a wasting disease, as typhoid or enteric fever." The only indications are, to support strength and prevent further effusion, so that nature may have time and opportunity to surround what has been already extravasated with coagulable lymph. Large doses of Opium may effect these objects. The operation of a purgative is certain death.

14. DYSENTERY.

Perhaps no disease known to American practitioners annually causes more deaths than dysentery. It is almost constantly present, in every season, and almost every locality. In malarious districts it appears as a form of remittent, typhoid, or congestive fever; when the causes of scurvy exist, the scorbutic affection takes the dysenteric form as the most direct to a fatal termination; and everywhere the usual causes of fevers and inflammations excite the common form of intestinal inflammation known by this name. In 1860 the number of deaths from dysentery in the United States was 10.461.

In tropical climates the American seaman finds dysentery his most

formidable enemy. At one time, in the East Indies, the U. S. Ship *Constitution* had one-half of her crew affected by dysentery; and scarcely a vessel returns from the tropics without bringing back a number of dangerous cases. American seamen, accustomed to full diet and free use of stimulants, suffer more, perhaps, than men of any other nation from inflammatory and febrile diseases in hot climates.

Diagnosis.—This disease sometimes commences with *griping pains in the bowels, with frequent discharges of mucus* mixed with *blood, attended during the evacuations with more or less straining and burning pain.* After the first two or three evacuations nothing but mucus or mucus and blood are passed. Occasionally the griping and diarrhœa are preceded by lassitude, chills, weakness, and pains in the limbs, thirst, bad taste in the mouth, furred tongue, hot and dry skin, frequent and hard pulse, anxiety, and general restlessness. The disease is peculiarly apt to be ushered in with these last-named symptoms when it has been caused by sudden suppression of perspiration, atmospheric vicissitudes, or miasmatic influences. The appearance of the fluids discharged will depend much upon the climate, temperament, the exciting cause, and the particular portion of the intestinal canal affected. If the small intestines are chiefly disordered the evacuations will consist of dark watery matter with mucus and blood, while inflammation of the colon and rectum will give rise to discharges of *pure mucus and blood, preceded and attended by distressing tormina and inclination to remain a good part of the time at stool.* These discharges, which are highly offensive, afford some temporary relief to the patient, only to be renewed with increased severity. There are tenderness of the bowels on pressure, pain and burning in urinating, inclination to lie upon the back with the knees drawn up, great depression of spirits, short and painful inspirations, universal heat and dryness of the skin, more or less derangement in the function of the liver, indicated by a jaundiced hue of the skin, and the absence of bile in the evacuations; rapid emaciation, loss of strength, and increasing disinclination to physical effort. As the disease advances towards a fatal termination the countenance assumes a contracted and cadaverous expression, the pulse sinks, the evacuations become more fœtid, and are discharged involuntarily, the pains abate or cease entirely, a cold sweat occurs, hiccough, delirium, cramps, and extreme prostration obtain, and then death.

Dysentery is distinguished from hæmorrhoids by the fever and inflammation which attends dysentery; its rapid and peculiar course; the character of the discharges, which, in hæmorrhoids, though marked with blood, are otherwise natural; by the well-marked hæmorrhoidal tumors, which are not attended by the cutting pains in the abdomen which attends dysentery.

Causes, Remote.—Sydenham says, researches after the remote causes of disease "feed the vanity and engross the thoughts of curious inquirers; their discovery is impossible." In a great part of our country the remote cause of dysentery is the same as that of bilious fever—that poisonous miasm already treated of under *Malaria*, p. 477. In exciting dysentery its malignant powers are exerted, mainly, on a different set of organs; but its nature is essentially the same. Dr. Calhoun, in his edition of *Gregory's Practice*, says dysentery is generally a form of bilious remittent fever; and in this opinion all American authors agree. It is endemic in all localities where marsh fever prevails (*Rodener*, *Williams*, *Wagner*). In places calculated to develop malaria and diffuse it in confined air this disease is rapidly propagated; it is even said to become contagious in some peculiar conditions. It spreads most rapidly in prison-ships, jails, camps, poor-houses. It is increased by famine, hardships, and the breathing of air contaminated with vegetable and animal effluvia; and, under such circumstances, typhus with petechia and hospital gangrene are common. The potent agent which is capable of communicating the disease seems to be so highly volatile as to be carried in the atmosphere, as it is clearly conveyed by the exhalations from the close privies used by those suffering with the disease. The close alliance between dysentery and other malarious or epidemic diseases shows that its origin is in some way similar to theirs. Epidemic dysenteries are frequently preceded or followed by cholera, or fever of a typhoid character, in the same patient.

Among the predisposing causes may be mentioned: cachectic condition, constipation, frequent abdominal diseases, dropsies, scurvy.

Exciting Causes.—Cold, chills, exposure to cold damp air; sleeping in the open air and on wet ground. Some kinds of food are peculiarly liable to excite it. Fresh pork has done it in many cases known to us. In hot climates the exemption which the Jews are said to enjoy from dysentery has been attributed to the dietetic prohibitions of the Mosaic Law; and the prevalence of the disease among Negroes is often attributable to their use of crude and indigestible food, green fruits, melons, cucumbers, bad water, excessive quantities of strong food, &c. Ripe fruits are generally innocent, and in some instances curative (*Tissot*). In the South, where great numbers of negroes are annually carried off by epidemic dysentery, it has often been arrested by allowing them to eat freely of ripe blackberries. Dr. McLeod, of the U. S. Ship *Constitution*, says the French on the East India station had to a great extent avoided dysentery, by allowing none but distilled water to be drunk, or otherwise that which had purified itself by spontaneous fermentation in the course of at least two months. (*Dr. Harris, Chief Bureau Med. and Surg., U. S. Navy.*)

PATHOLOGY.—The results of dissection show pathological changes in various abdominal organs, which, according to their frequency, are arranged under the following heads:

1. The cases in which appearances of inflammation are confined to the internal surface of the cæcum, colon, rectum, and a small portion of the ileum.

2. Cases in which they are confined to the internal surface of the cæcum, colon, and a small portion of the termination of the ileum.

3. Cases in which these appearances are confined to the internal surface of the cæcum and colon.

4. Cases in which the internal surface of the digestive tube, throughout its entire length, shows traces of inflammation (*O'Bierne*, p. 79).

The primitive seat of dysentery is the mucous membrane of the intestinal canal, and its nature is strictly inflammatory. The disease is not a mere "colitis," as given by the author of that article in the *Dict. Med. Chirur. Pratiques.* Constipation is usually the first symptom; the contents of the lower intestines become hard, indurated, irritating. Nature then tries to throw off the burdensome scybalæ, and glairy mucus and bloody serum come away with pain and straining. The first morbid actions which produce it consist in the determination of blood from the surface of the body to the abdominal organs, particularly the liver, stomach, and intestines. The small intestines receive more arteries and veins, and they are more highly organized than the large; and there is perfect freedom of anastomosis between all the arteries, and an absence of valves in all the veins of both small and large intestines. Of the blood diverted from the surface, the small intestines then receive more than the large; and the acrid and vitiated bile formed at this stage must pass along the irritated surface of the small intestines, and must generally excite or exasperate inflammation.

The nature of the disease is, first, of a congestive, secondly, of an irritative, and lastly of an inflammatory character. The general phenomena presented by an ordinary attack of dysentery clearly illustrates its pathology. Exposure to cold, or cold and damp air when the body is overheated, repels the blood from the surface to the internal mucous membrane, which is closely united with the skin by sympathy. The congestion of the internal organs is marked by rigor, want of appetite; nausea, and paleness of the skin. This engorgement of these organs breaks up the equilibrium between the vascular and nervous systems, and soon the latter becomes excited in an equal degree with the former. This is the irritative stage, which is marked by the beginning of the wandering tormina, but there is as yet no effusion of blood, but all the hepatic and intestinal secretions are arrested. When the patient at this stage suddenly dies from some other cause, "the

solitary glands in the rectum, sigmoid flexure of the colon, or the cœcum are swollen, forming round prominences on the surface of the mucous membrane, varying in size from a millet seed to a full-sized shot. These prominences are of a uniform pale-red color, or have a ring of brightness on their base, or present this evidence of vascular turgescence only at their summit." (*Baly.*)

Inflammatory Stage.—The whole mucous membrane of the entire digestive canal, with the continuation of this membrane lining the biliary and pancreatic ducts in all their ramifications, become involved in inflammation. From this extensive surface the morbidly sensitive secreting vessels pour out vitiated and irritating secretions. The effusion of blood from the intestinal surface might be expected to relieve the engorged organs; but the whole contents of the intestines are too acrid and irritating to pass forward without adding to the general distress. The small intestines are excited to irregular spasmodic contractions, which cause intense cutting pains called *tormina.* Thus do the original contents of the bowels and their acrid secretions reach the large intestines, to which they are generally very promptly admitted by the ileo-cæcal valve.

The Condition of the Large Intestines in dysentery, in which the chief characteristic feature of the disease consists, has been imperfectly explained by pathologists. Dr. O'Bierne of Dublin approaches a clear exposition of the subject, and we will modify his ideas to meet our own. (*See New Views of the Process of Defecation, Pathol., &c., Diseases of Stomach, Bowels, &c.* 1834. p. 81.)

In all ordinary states of health the rectum is firmly contracted, but easily gives way to the gentle pressure by which the bowels are evacuated. As soon as the inflammation which constitutes dysentery begins the whole mucous surface of the rectum is involved in it; and, becoming exquisitely sensitive, it contracts with spasmodic power, and prevents the passage of all solid substances, permitting only fluids, as blood, mucus, or flatus to escape. The bowels are indeed *completely constipated.* The contents of the upper bowels then being passed freely forward to the cæcum and colon, are retained within these capacious sewers of the body, being prevented by the ileo-cæcal valve from returning into the ileum. This "principle of accumulation of fæces in the cæcum and colon" is applicable to many other diseases, but is peculiarly important and characteristic in dysentery. Here alimentary matters, blood, air, and vitiated secretions are propelled forward by increased peristaltic contractions behind. The lining membrane of the colon is already inflamed; and it now becomes subjected to a high degree of mechanical and chemical irritation. This irritation and distention soon arouses the abdominal muscles to frequent and violent expulsive efforts; but they are generally ineffectual; for the upper an-

nulus or entrance of the rectum is inflamed in the same degree as the surface of the colon, and is so excessively irritable that the pressure of the harsh matters above only excite it to more violent contraction. Even the blood and mucus which are constantly being discharged are to a large extent poured out from the inflamed surface of this upper entrance of the rectum. It is the point which presents the greatest difficulty in the treatment of dysentery; and just here ulcerations are more frequently found after death; though they are found in every portion of the cæcum, the transverse arch and sigmoid flexure of the colon. The ulcerations would be found much more numerous and extensive, did not nature make an effort to arrest the activity of the inflammatory process, first by a diminution in the activity of the secretory functions of the small intestines, which no longer pour out such large quantities of acrid and vitiated secretions; and secondly: the inflammation of the mucous membrane of the upper annulus of the rectum becomes extended to the muscular structure of the same organ. These muscular fibres becoming weakened by disease have less power to keep the cavity so obstinately closed; hence some fluids, as blood, mucus, flatus, and some fluid fæces are permitted to escape, as the disease progresses to a chronic form. Some solid as well as fluid fæces and sometimes purulent matter are permitted to pass.

The Condition of the Small Intestines is very different from that of the large intestines. From the beginning of the attack they relieve themselves from the presence of their contents, with all the morbid secretions poured out by their own vessels. The blood poured out from the minute vessels on their inner surface relieves in some degree the engorgement with which the disease commenced. And it is only in the *lower* part of the ilium, when the cæcum and colon are so fully distended as to admit further accumulations reluctantly, that alimentary matters and morbid secretions can stagnate and produce any great degree of local irritation.

Condition of the Rectum. In the early stage its "mucous membrane is attacked by inflammation simultaneously with that of the whole superior portion of the canal, and copiously pours out blood and a vitiated mucous secretion;" but its great muscular power enables it to pass off these fluids and discharge them, being in some degree relieved by the effusion of blood from its surface. But in later stages, when the disease advances towards a chronic form and ulceration extends to the upper annulus of the rectum, the whole of this intestine becomes similarly affected, and, in many chronic cases, it is extensively disorganized. (*O'Bierne*, p. 84.)

Appearances of the Mucous Membrane.—Redness and swelling of the plaits of the membrane; infiltration of sub-mucous cellular tissue, redness and softening, disposed to bleed; "the epithelium of the mu-

cous membrane is elevated into small miliary vesicles, and is cast off in minute portions, or is easily detached," the membrane beneath appearing excoriated. The swollen solitary glands are surrounded by deep and extensive redness, and some of the prominent points are disorganized. As the disease progresses the color of the mucous membrane becomes of a *rose*, or *bright* red, or reddish brown. The disorganized portions form minute yellowish sloughs, easily separated from the surrounding tissue. The mucous tissue is macerated to softening; the layers continually extend in depth, and larger portions are excoriated or laid bare, leaving small ulcer-like cavities in the spots previously occupied by the enlarged glands. The softening extends over the surface in large stripes or in smaller circumscribed spots. (*Humphreys*, p. 13.)

Changes in the Intestinal Follicles.—From the sixth to the tenth day they become dilated, and form small ulcers, covered with a pseudo-membranous material. Numerous dark points are found along the whole length of the large intestine, discernible with the naked eye, surrounded by whitish plain broad elevations, which mark the mouths of swelled follicles. The surrounding membrane, besides being red and tumid, is covered with a rough layer, composed of epithelium and fibrine. Frequently the central dark point is replaced by a small grayish ulcerous opening which leads to the base of the krypt. Some of these ulcers are two or three lines in diameter. (*Gely.*) "These small ulcers," says Baly, "are produced by a process of mortification, and not of ulceration."

The serous infiltration penetrates by degrees into the muscular tissue; hence the intestine may become thickened to extend from three to five lines; at the same time the muscular coat contracts and presses the folds of the mucous coat inward, producing a hypertrophied appearance. As the disease advances, some parts of the surface become overlaid with a dark-red or brownish scurf which adheres firmly and degenerates into a dark substance which is thrown off in tubular patches, called spacelated membrane. "From the destruction of the mucous membrane the muscular and even peritoneal folds may be exposed, and even entire perforation at times be produced." (*Humphreys*, 15. *Rokitansky.*) If death does not occur at an early stage and the disease assumes the chronic form, the ulcers enlarge and secrete a quantity of transparent opaque or yellowish fluid. (*Baly.*)

This disease, as we meet it in the malarious portions of the Western States, is usually more fatal than any other form of febrile affection. For at least twenty-five years it has been the disease most frequently encountered, and, through many years of that period, the disease most dreaded we have always found it curable by any treatment that dislodged hardened scybalæ or masses of fæces from the colon; and long ago

learned to regard the inflammation and ulceration of the colon at or near its termination in the rectum as the cause of death in nearly all fatal cases. Dr. Bowling, of Southern Kentucky, says, that after much unsatisfactory experience, he examined the body of a negro, who had died suddenly. The usual appearances were found, including the congestion of the portal circle and inflammation of the colon. The cells of this intestine contained a quantity of hardened fæces, covered with tenacious glassy mucus, which seemed to confine the scybalæ to the cells. The tormina and tenesmus, excited by the spasmodic efforts to expel these irritating masses, "had been distressing beyond the power of description; and death had seemed to result from the violence of the pain rather than the termination of the disease. I do not now believe these scybalæ to be the cause of the disease, but I do believe that accumulations in the colon are the cause of death." (*West. Med. Jour.* 1840, p. 166—173.)

At a late stage of the progress of a severe case, says Dr. Baly, of the Millbank Penitentiary, "the small sloughs enclosing the solitary glands are found to have been thrown off; the thin superficial layer of the surrounding mucous membrane which had lost its vitality, is also gone, leaving erosions of the surface; and the mucous membrane with the sub-mucus tissue is in most cases much thickened and turgid with blood and serum. The cavities which contained the spacelated solitary glands appear as small round ulcers with sharply cut edges, resembling holes made with a punch, and give to the inner surface of the intestine somewhat of the aspect of a worm-eaten piece of wood." In some places the ulcers communicate with each other at their deepest part, and in others they coalesce in their whole depth, after the destruction of the septa of mucous membrane, which had previously separated many small ulcers. When the intestine is only partially affected, the rugæ are the portions chiefly occupied by the small ulcers. The large ulcers also are usually situated on the same prominent parts, and these commonly extend in depth to the muscular coat, and often perforate it as well as the serous coat. There are other cases of equal severity, in which morbid results of a different character are found after death. The entire mucous membrane appears in these cases to be simultaneously destroyed in larger or smaller tracts; the inflammation spreads more uniformly over the surface, the membranous folds become gangrenous and detached, leaving large ulcer-like excavations. (*Baly, on Dysentery*, p. 10.) In young adults, previously healthy, the mucous membrane around the gangrenous parts is intensely red, but in old and feeble persons it is often pale. At an early period the sloughs are dark-green in color and of firm consistence, but detached and leaving irregular excavations. In all parts of the intestinal mucous membrane, except the cæcum, the disease expends its principal force on the trans-

verse rugæ and other prominent points of the surface; but the cæcum which is nearly devoid of rugæ is frequently the seat of dysenteric ulcers, which, "whatever their size or shape, originate by a process of sloughing and not by simple ulceration." (*Baly.*)

"Two forms, then, of structural change attend cases of acute dysentery of the second degree of severity. In the chronic stage they still retain distinctive characters. In the one we have large ulcers of irregular shape, chiefly occupying the situations of the rugæ and longitudinal bands, while in the other the predominant feature is constituted by the small round ulcers. When the inflammatory action has continued long in a sub-acute form, the sub-mucous coat in both cases is found thickened and, at an advanced period of the disease, much indurated in the situation of the ulcers. The contraction of these thickened parts in the manner of the cicatrices of burns, is sometimes productive of stricture of the intestine."

When the lower part of the intestine is the seat of the disease, "a tolerably accurate estimate of the extent of mucous membrane affected may be formed from the mere quantity of bloody mucus discharged. The source of this bloody and mucous discharge in the acute stage of dysentery is not the solitary glands, but the tubular follicles of the mucous membrane. The granular matter contained in the solitary glands is composed of solid particles of flattened figure, and strongly defined outline, resembling the nuclei of certain cells or globules; the contents of the cells sometimes consist of epithelial particles; at other times they are composed of round nucleated globules exactly resembling those of mucus. "Now the bloody mucus discharged in dysentery is composed of such nucleated globules, generally mixed with numerous blood-discs. Sometimes the globules are seen here and there still connected together in a cylindrical mass, such as they form while in the tubular follicle; the puriform matter occasionally discharged in dysentery has probably the same source. In the chronic stage of dysentery, also, pus or a puriform matter is often excreted. But here this matter seems to have a different source, it probably comes in the severer cases from the enlarged and diseased solitary glands, and in the most severe cases from the numerous ulcers, which have been left after the destruction of the glands, and of smaller or larger portions of the mucous membrane." (*Baly, on Dysentery.* London, 1847. p. 120.)

Prognosis.—The prognosis will vary according to the climate, the location, the season of the year, the constitution of the patient, and its complications with typhus, cholera, or other maladies.

Hot and alluvial regions, abounding in luxuriant vegetation which is constantly undergoing decomposition, and filling the air with miasmatic particles, predispose the system to dysenteric affections, and serve to render them violent and dangerous. Low, marshy, and damp situations

favor the formation of the disease more than elevated and dry locations. It is far more common, severe, and fatal in the months of July and August in this country, than at any other season of the year; and it is rare that individuals who are strongly predisposed to it entirely escape during these months. When it is succeeded or accompanied with typhoid symptoms, or when it occurs as a symptom of typhus fever, it may be looked on as a malady of the most dangerous character, and one which will require the most judiciously-directed resources of our art. In these instances we have to combat, not only the local intestinal disorder, but also constitutional symptoms of the greatest severity. During the prevalence of Asiatic cholera, dysentery has been observed to assume a more malignant form than in those years when this destructive epidemic has not prevailed. While the cholera was destroying its thousands weekly in our large cities, during the summer of 1849, a malignant dysentery prevailed in most of the smaller cities and towns, sweeping off numbers entirely unprecedented. In these last examples, the epidemic influence was not sufficiently active to generate the actual cholera asphyxia, but it conduced to aggravate, very materially, the type of dysentery. The constitution and previous health of the persons attacked often determine the degree of danger. Young children, pregnant females, and very old persons are considered least likely to recover. Abortion is very often excited by the disease; and in some epidemics it is generally followed by puerpural fever which is often fatal. In those rapid cases in which gangrene speedily follows inflammation, the mucous membrane is swollen and of a dark purple color, its texture is disorganized, the color black, green or brown. In these cases death results in a very short time.

Unfavorable symptoms are: extreme severity of the attack, evinced by high inflammation progressing rapidly; at a later stage the discharges are mixed with fragments of cast-off epithelium, pseudo-membrane, bloody water, and gangrenous exfoliated membrane; dark brown fluid with cadaverous smell, or coffee-ground deposits. An evacuation recurring at regular intervals of reddish or dark-colored water, or resembling the washings of fresh meat, indicates well-established local inflammation kept up by hardened masses of fæces, which harsh purgatives can not expel, and yet, which always terminate in complete exhaustion and death, when the offending mass is permitted to remain; great exhaustion; increase of the cutting pains; distension of the abdomen; vomiting in later stages; increased agitation; hiccough; coldness of the skin and tongue; pulse above 120 per minute and increasing in frequency, becoming small and irregular; delirium; paralysis of lower extremities; sunken lead-colored face; ecchymosis; putrid aphthæ; sudden cessation of pain; increasing emaciation; colliquative diarrhœa, &c. When life is prolonged, as it often is for several weeks, the de-

stroyed parts of the membrane become softened, and the sloughs separate. "It seems scarcely possible," says Baly, "that life should be long maintained with a portion of the alimentary canal in such a state as this; but where the gangrenous process has not affected the coats so deeply, the patients survive for some time the loss by sloughing of the mucous membrane, and of the sub-mucous tissue, through more than half the length of the large intestines."

Treatment.—The first object is to counteract all the unfavorable circumstances in which the disease originated. Pure air, cleanliness, perfect rest, and prompt removal of putrid effuvia from the evacuations are indispensible. While the air of the room should be moderately cool the skin should be kept comfortably warm, and every care taken to avoid all expenditure of strength; all rising from the bed should, if possible, be avoided.

The diet should be restricted to the most mild and unirritating articles. Well-cooked milk and flour-gruel have been generally allowed; but it is better to give at first no animal food whatever. Barley-water, gum-water, slippery elm-water, mucilaginous articles, such as sago, or the finest gruel of farina, pure starch, arrow-root, oat-meal or rice-flour will furnish a sufficient variety till the disease is arrested. Of fruits the finest grapes or black-berries, fully ripe, and freed from the seeds and hulls are almost the only ones that may be considered safe. These and also whortle-berries are known to often cure dysentery. In Europe, the use of fruits was proved a century ago to prevent as well as cure dysentery. (*Tissot.*) In *scorbutic* epidemics they are sometimes found specific remedies. Mutton broth, from its mild, oily qualities, has been often prescribed, but we have very often seen the disease excited by broths and soups of different kinds, and regard all fresh meats and all preparations of them, as dangerous in every stage of the disease. Milk and farinaceous articles are allowed by nearly all writers.

Drinks.—Pure water made mucilaginous with slippery elm, gum-arabic, or by beating up the albumen of an egg in a pint of water, toast water or black tea, weak, are as good as any thing for drink. But all drinks should be moderately warm, *never cold.* The treatment of dysentery by cold drinks, and ice-water injections is founded upon a false view of its pathology; and, although it is still persisted in by many who have charge of public hospitals, as well as in private practice, it causes uniformly increased suffering and cures none, though some of the milder cases may survive its pernicious influence.

On ship-board in hot climates the subject of *hygiene* becomes in the highest degree important. Dampness exists everywhere through all the apartments; and frequent washings are required to keep the ship in a state of sufficient purity. It it now considered most judicious to flood the decks with water and wash them thoroughly when the weather

is bright, and evaporation will be rapid; but when cold damp raw weather prevails, the health and comfort of the crew is best promoted by dry cleaning. Lord Collingwood, the model naval commander, relied chiefly upon "attention to keeping the ship dry, (rarely permitting washing, even between decks), frequent ventilation of hammocks and clothes, and circulation below of fresh air." (*Memoirs*, p. 266.) As the result of this system he reports in October, 1803, "H. B. M. Ship Venerable, eighteen weeks at sea, very rotten. On sick list none." "H. M. Ship Ocean, off Toulon, May 15, 1808. Long time at sea, never getting fresh beef nor a vegetable; not one man sick." (*Mem.*, p. 265.) "This flag-ship had usually 800 men; on one occasion was more than a year and a half without going into port; during that time never had more than six, and generally but four on the sick-list." (*Ibid*, p. 266.) If similar results can not be reached in tropical climates they might be approximated in all climates. (*Dr. Mc Sherry, Amer. Med. Jour.*, Oct. 1849, p. 406.)

Medical Treatment. — *Selection of the Proper Remedy.* The question has been asked "In dysentery, what is the 'like,' which cures, and how are we to find it?" * We must learn to distinguish it by separating between the two classes of symptoms, the *generic* and the *specific*. The *generic* symptoms belong to all cases of this disease. They are: "*Frequent*, for the most part *small discharges from the rectum of blood, or mucus, or both, with colic pains, tenesmus, and fever.*" If we seek for a remedy that covers *these* symptoms only, we may well be confused with the vast number of remedies under which they are found. We may try one after another before we stumble on the right one, feeling all the way that there is no precision attainable in the application of the boasted *law of cure*. Though these symptoms have only misled us, they certainly are "striking" symptoms. "They stand on the very surface, and are the first to arrest the attention. And yet we have failed to cure." Why have we failed? Because the symptoms we have attended to were such as might have been produced by a large number of irritating agents and we could not distinguish which one was *specifically* qualified to do it.

The generic symptoms of disease are analogous to those symptoms in the pathogenesis of a large class of drugs, "which rather indicate that the organism revolts against drug assault, than point out the particular active agent in the assault;" as "the vomiting produced by one irritant poison is so like that of every other, that from this alone it can not be told what that irritant is." The *generic* symptoms, then, in which so *many drugs* agree must be excluded from the circle of curative relationship." "Where then are we to look for this? Evidently in the

* Diarrhœa and Dysentery, by Dr. P. P. Wells, pp. 26—31.

list of those symptoms which *individualize* both the *disease* and the *drug*. That which distinguishes the *individual case* of the disease to be treated from other cases of the same disease, is to find its resemblance among those effects of the *drug* which distinguish it from other drugs. This is what we mean when we talk of *characteristics*. When we say *like cures like*, this is the '*like*' we mean."

The principal remedies are: *Mercurius*, *Arsenicum*, *Chamomilla*, *Pulsatilla*, *Colocynth*, *Aconite*, *Ipecacuanha*, *Nux-vomica*, *Carbo-veg.*, *Sulphur*, *Dulcamara*, *Aloes*, *Acid-nitr.*, *Acid-mur.*

Aconite one drop, or twenty pilules of the sixth potency may be dissolved in six or eight spoonsful of water, and a tea-spoonful given every hour in urgent cases till the fever moderates; then at longer intervals, or till followed by the next remedy.

Symptoms of Aconite: Skin hot and dry; high inflammatory fever; colic pains and tormina; frequent small soft stools with tenesmus; rheumatic pains in the head, neck, shoulders: heat, chills, thirst, (*See Symptoms of Acon.*, p. 651.) In every form of dysentery it is the remedy first to be thought of. Dr. L. Pratt, of Ill. says (*State Hom. Med. Asso.*, 1859) that the patients who took Aconite in small doses every half hour during the first twenty-four or forty-eight hours recovered much sooner than the others (*U. St. Journ. Homœop.*, *Vol I.*, p. 146.)

Aconite is the best remedy when dysentery occurs during very hot weather, followed by cold nights, and when the case is characterized by a violent chill, great heat and thirst, with rheumatic pains in the limbs, head, neck, and shoulders. (*Hering.*)

In epidemic dysentery with inflammatory symptoms, it is necessary to administer at first a few doses of *Aconite*, before we can count on the efficacy of Mercurius. Here Aconite proves its efficacy as an antiphlogistic, in curing the inflammation in 24 hours. But it is necessary to repeat the doses at intervals of from four to six hours. (*Engelhardt, Communications. Pratiques, Cap. III.*, p. 34.)

A little girl, ten years old, had dysentery, took Veratrum twelfth, on the twentieth of September. On the twenty-second, a dose of Acon. and many doses of *Mercur-sol.* twelfth. On the twenty-fourth of September there were: griping pains of such violence as to cause her to scream with pain; frequent alvine evacuations, bloody mucus, greenish, and mixed with whitish fibres; nausea, retchings, and occasionally mucous vomitings; bowels much bloated, and excessively sensitive to the touch; violent thirst, painful micturition, skin dry and very hot, headache and delirium.

After the administration of Aconite, twenty-fourth, a dose every four hours, the external heat ceased on the next day, thirst still remained, the gripes were less severe, the stools less frequent, less painful and

less bloody, micturition not painful, still some delirium during the night, no perspiration. (*Engelhardt, Commen. Prat.*, p. 25.)

Symptoms particularly characteristic.—Inflammatory fever. Skin hot and dry, great thirst, *rheumatic pains in the limbs*, headache *greenish* and bloody *stools*, acute pains in the intestines. (*Jahr.*)

Aloes.—This remedy has often caused dysentery when given as a purgative in different forms of fever. The abdomen is distended and sensitive to the touch; the colon is inflamed, particularly at its termination in the rectum; pressing, burning and rending pains along the course of the colon; fluid slimy, evacuations mixed with blood; tenesmus, heat, faintness, burning in the rectum; colic, hæmorrhoids; excoriations; heat, thirst, tongue dry and red, congestion of the abdomen.

Rau says, he used Aloes with distinguished success in *purely inflammatory dysentery.* The indications are: abdomen distended and tender to the touch; stools slimy and mixed with blood, or thin and watery; urine scanty and high-colored; tongue red and dry; pulse full and rapid; skin hot and dry, &c.

Severe pressing, cutting and burning pains in the lower part of the abdomen; violent tenesmus and smarting in the rectum, during the evacuations, with sharp pains extending to the sacrum and abdomen; high fever; pain in urinating, &c.

Anxiety and general indications of nervous excitement.

ADMINISTRATION.—Same as *Chamomilla.*

Belladonna. Alternates well with Aconite in sanguine temperaments, of full habit, lively ardent disposition, with tendency of blood to the head, distention of superficial vessels, face red and hot; delirium; whitish tongue, the tip dry; spasmodic pain of the bowels, distended, sensitive abdomen; tenesmus and fruitless urging to stool; violent pressing; intense thirst and sleeplessness.

Colocynth.—Cramp-like, colicky pains in the bowels, with inflammation of the whole abdomen; slimy or bilious evacuations, with pains and contractions at the rectum; bitter taste, with urgent desire for cold drinks; nausea and vomiting of bilious fluids; shooting and cramp-like pains on one side of the body; pains in the head, and throbbing of the temporal arteries.

This is one of the best remedies, and applicable to almost every form of dysentery, especially for: "Violent colic pains, griping in the hypogastric region, causing the patient to bend together, restlessness, frequent evacuations of greenish yellow or watery mucus," afterwards streaked with blood or bloody mucus; pain relieved by the evacuation but soon returning on taking food or drink, tenesmus only slight; fullness and pressure in the abdomen, white-coated tongue, chills, thirst and febrile heat, irritable dejected state of mind. (*Humphreys*, p. 59.) Broackes says, two globules of Colocynth, given immediately on the be-

ginning of the disease, cured one case in twenty-four hours. In other cases, after beginning with Chamomilla, a single dose of Colocynth gave relief in six hours, and nothing further was given. Meyer gives it for dysentery with severe colic pains and pressure on the rectum; Trink's regards tenesmus as a characteristic of Coloc.

Arsenicum-album.—Where dysentery has arisen from the abuse of drastic and other debilitating medicines, after excessive loss of blood, or after the organism has been enfeebled from previous disease, Arsenicum will be found an efficient remedy. It is also peculiarly useful in dysenteric affections, occurring in individuals of a nervous, dropsical, or lymphatic constitution, and when the disease is attended with typhoid complications.

General appearance of debility and prostration; trembling or stiffness of the limbs; face pale or yellowish, hollow or cadaverous; position on the back, with tendency to sink to the foot of the bed; eyes dull and sunken; lips dry and dark-colored; tongue dry and brownish; abdomen swollen and hard, or tympanitic; fæces offensive, putrid, and variable in color, but generally slimy and streaked with blood, or greenish or darkish; skin cold and bluish, or dry and shrivelled; breathing short and oppressed; pulse frequent, small, thready, sometimes irregular.

Violent, sharp and cramp-like pains in the abdomen, accompanied with nausea and vomiting; sensation of fullness and burning in the bowels; frequent eructations; flatulency; frequent evacuations with some tenesmus, burning pain at the anus, with nausea; retention of urine, or burning pain in making water; pain increased by the slightest motion; faintness upon the least exertion; great tenderness of the abdomen; colliquative sweats; entire inability to sit up, or make any effort; puffiness of the eyes or cheeks; disturbed sleep, with constant jerking of the limbs, and tossing.

Sad; desponding; anxious; discouraged; irritability; impatience; delirium; loss of consciousness.

Administration.—One grain of the first trituration to two ounces of distilled water.—A tea spoonful once in two or three hours until the required effect is produced.

Chamomilla,—A useful remedy in dysenteric affections arising from a sudden chill, from difficult and protracted dentition, from violent grief or passion. It applies especially to affections of this nature which occur in women and children; and, when judiciously prescribed, will often act promptly and efficiently. Laurie prescribes it in cases attended with inflammatory symptoms, after these symptoms have been partially subdued by *Aconite.* It may be given at the third potency as circumstances may require.

Pulsatilla.—This remedy has been highly recommended in *fall dysenteries,* and in some cases of *chronic dysentery.* The indications

for its use are nausea, vomiting, bad feeling in the head; bruised sensation in the integuments of the abdomen; cutting pains in the bowels, with discharges of sanguineous mucus; pain in the small of the back; chilliness, especially towards night; bad taste in the mouth; eructations, acid or bitter; prickling or numbness of the skin; constant inclination to sleep during the day; yellow tinge of the skin.

ADMINISTRATION.—Four drops of the third dilution to an ounce of distilled water; a dessert spoonful every two, four or six hours in acute cases. One dose every afternoon in chronic dysentery.

TREATMENT.—*Ipecac.* Dysenteries occurring in autumn, in which there is great nausea; repugnance to food; vomiting; pain in the region of the stomach; coated tongue; pressing headache; slimy stools, afterwards mixed with blood, with violent urging; tenesmus following fœtid discharges; more chilliness than heat; evening exacerbations. Dysentery in its early stage, where cramps prevail; also in the latter stages after inflammatory symptoms are removed, great weakness of the intestines and tendency to tenesmus remaining.

Mercurius-sol.—This form of Mercury is more particularly adapted to the treatment of those cases, which are principally located in the upper portion of the intestinal canal.

Yellowish color of the skin; offensive breath; tongue covered with a white, thick, tenacious mucus; distention in the upper part of the abdomen; evacuations of fœtid mucus and bilious matter of a darkish or green color, or of bloody mucus; prolapsus of the rectum, which is red and inflamed; urine of a deep red or brown color and offensive; position, respiration, pulse, temperature, thirst, &c., the same as under *Merc.-cor.*

Violent cutting pains in the abdomen, accompanied by shivering during and after the evacuations; great tenderness on pressure in the region of the small intestines; frequent desire to evacuate the bowels, accompanied by violent tenesmus; discharges small in quantity; aggravation of pains at night; frequent and urgent desire; nausea and vomiting, with pain in the stomach; thirst for cold drinks; cramps and contractions in the umbilical region; weakness and rapid sinking of strength; painful sense of distention in the abdomen; sense of fatigue and great weakness in the limbs.

Morose peevish; irritable; great anguish and discouragement; peevish; quarrelsome.

ADMINISTRATION the same as *Merc.-corrosivus.*

REMARKS.—In malignant dysentery, *Mercurius-sol.* and *Nitric-acid* are remedies of the highest importance. In all cases where the symptoms are not covered by one of them *alone*, we may use them in alternation or alternate either with another appropriate remedy.

Mercurius-corrosivus.—Autumnal dysenteries of the most violent

form. The disease seems to be caused by cold nights succeeding hot days, in persons saturated with marsh-miasm. Symptoms are: Very frequent small stools of bloody mucus, or of chopped-up greenish masses mixed with blood, continuing day and night with almost constant cuttings in the bowels, and an unsupportable and painful urging and tenesmus. Sometimes the dysenteric discharges are *bilious*, very fœtid green or brownish; frequently after long-continued violent straining and pressing, a little bloody mucus only is discharged; the tenesmus scarcely abating for a moment, and then returning again. The colic pains, griping and cutting in the bowels are very severe, often extend to the back with chills, heat, thirst and anxiety.

This remedy is more efficacious in the higher than the lower attenuations. Prepare by dissolving the pure crystals in distilled water for the first attenuation, dilute Alcohol for the second, pure Alcohol for the third. Give of the twelfth or higher potence, every hour, till some improvement is manifested, then at longer intervals. Becker says, a few doses of the sixth dilution were sufficient to stop the most violent attacks. In one case, antiphlogistics did not diminish the anxiety, the tenesmus, or thirst, and sanguineous mucus mixed with blood was vomited every ten minutes. On the third day he took Mercur.-corros., sixteenth, which cured him in a few days. (p. 102.)

Administration.—One grain of the third trituration may be given every hour until the violence of the disease is subdued, when the intervals may be lengthened, or the medicine suspended, according to the exigencies of the case. Sometimes when the symptoms of this remedy as well as those of *Colocynth* are present, these two articles may be given in alternations and their beneficial influence will be speedily manifested. In inflammatory cases alternate with Aconite.

Mercurius-vivus.—General range of symptoms the same as *Mercurius-sol.*, and mode of administration the same. It has been used quite frequently and always with success.

Nux-vomica.—As dysentery scarcely ever occurs except in connexion with constipation, Nux-vomica often prevents it, by removing the constipation that leads to it. It is useful also when the disease is about to assume an adynamic or an intermittent type. Indications: "frequent small stools, consisting of bloody mucus, or when from time to time scybalæ are seen in the discharges." But for this purpose it should be used at the beginning of the disease. "Frequent small slimy stools with urging and tenesmus; violent cutting pains about the umbilical region; intense heat; great thirst, or pitch-like ragged or villous discharges; pressure on the rectum." Urine suppressed, or voided by drops, after repeated fruitless efforts; retching or vomiting; bitter putrid taste in the mouth; confusion of intellect; aggravation in morning hours; tendency to hæmorrhoids.

Nux-vomica sometimes effects a speedy cure in protracted dysenteric discharges, which appear to be kept up from relaxation and loss of tone in the abdominal mucous membrane rather than from actual inflammation. By imparting tone and vigor to the enfeebled nerves of the stomach and intestines, it cures the disease, and enables these organs to resume their healthy functions. The indications for its employment are: fullness and distention of the abdomen; contractive or cramp-like pains in the umbilical, epigastric, or hypochondriac region; frequent, small evacuations of mucus and bloody matters; contractive pain in the rectum during the discharges; bowels and cheeks hot; thirst; fæces offensive.

ADMINISTRATION.—A drop of the third dilution may be given every two to six hours, as the urgency of the symptoms demand, until an impression upon the disease is apparent.

Iodide of Mercury.—(*Ill. State Hom. Med. Association*, 1859.) In first or second triturations it was successful in cases where Merc.-sol., Merc.-viv., Coloc., Nux-vom., Podophyl. had failed. The evacuations containing less blood but more of green mucus, violent tenesmus and griping pains. Evacuations twenty-four to forty in twenty-four hours. Iod.-mer. produced most satisfactory and surprising results. Only two doses being in many cases sufficient to change the dark, grass-green discharges to a whitish fermenting character, with from six to twenty ascarides. (*Dr. C. A. Jaeger. Elgin.*)

Dr. Christison says, a man tried to cure himself of rheumatism by having half a drachm of Corros.-sublim. rubbed into the affected part before going to bed. It produced at the time only a sensation of heat in the part, but during the night there were pains in the stomach, retching and vomiting. Purging and tenesmus followed and became incessant, producing extreme debility; the arm to the shoulder was largely swollen, red and blistered. Next day there was a brassy taste in the mouth, tenderness of the gums, regular salivation supervened. (*On Poisons*, p. 392.)

Apis-mel.—Dr. Wolf recommends Apis for almost every form of dysentery. Dr. Lorbacher, of Germany, says, he has found it effective, where Mercury had entirely failed.

Sulphuric-acid has been highly commended in *putrid dysentery.* Indications: thin, bloody, and very fœtid stools; red or darkish urine, turbid, or depositing a dirty sediment; burning, hot skin; aphthæ; petechiæ; blood-blisters; vomiting of water and food.

Frequent inclination to go to stool, with severe tenesmus; nausea and vomiting; desire for acids, fresh fruits, &c.

Indifferent or irritable; irascible and peevish. It may be given in the same manner as *Nitric-acid.*

In *bilious*, *catarrhal*, *erethistic* and *rheumatic* forms of dysentery examine *Colocynth*, *Puls.*, *Nux-vom.*, *Cupr.*, *Cham.*, *China*, *Rhus.*, *Sulph.*, *Ipecac.*, *Dulc.*, *Euphor.*, *Canth.*, *Antim.-crud.*, *Rheum.*

We have often observed the most decided benefit follow the employment of enemata of moderately cold water in dysenteric inflammations. Administered after each evacuation they afford evident relief.

Dulcamara may be used in dysentery arising from cold, and attended with cutting pains in the intestines, bloody discharges, burning and itching of the rectum, heat of skin and thirst. It may be prescribed at the third potency,—a dose once in two to six hours, according to circumstances.

China—Cases which seem to have a malarious origin, and assume the intermitting form. The stools in other instances assume a black, putrid character, and the disease fails to yield to Arsenicum or Carbo-veg. We have seen cases of malarious dysentery, in which the patients were rapidly sinking into a hopeless typhoid state, rapidly change their character under the use of China, given in a fine trituration or tincture. In a few hours the black fœtid sores on the skin assume a red inflammatory appearance. In the last stage of this form of the disease Bark, Wine and Brandy are often indispensible. But we should make every effort to subdue the inflammation before this stage is reached.

Nitric-acid.—Constant pressing in the rectum *without any* or only very slight discharge; bloody dysenteric stools with tenesmus, fever, and headache over the whole head. Frequent stools consisting only of mucus, sometimes with cuttings in the abdomen and violent tenesmus, constant urging to stool with only slight discharge of slimy mucus. Long urging and pressing; small fluid evacuations, passing off with great difficulty; great heat; thirst, with unequal intermitting pulse.

Dr. Freitag has related the results of a poisoning case by Nitric-acid, and Clotar Müller considered the case a highly interesting one, inasmuch as the mouth and pharynx showed very little erosions; the ileum perfectly healthy, and only in the colon was found a state perfectly corresponding with the pathology of dysentery.

Rhus-toxicodendron.—In dysenteries where typhoid symptoms appear, the patient is weak, becoming emaciated; the plasticity of the blood is diminished; the stools are of sanguineous mucus, often passing off voluntarily without pain or tenesmus; incontinence of urine; great weakness and prostration; bleeding from the nose; confusion of head; evening-chills, followed by heat with excessive thirst, dejection and anxiety also form further indications for its employment. Broackes says: In a case of a child of eight years there was pain over the right eyelid; violent colic in the epigastrium; evacuations painful; mucous, blood-stained, containing ascarides and pure blood; thirst; general coldness; paleness; emaciation; fever in the afternoon, ceasing to-

wards evening. After Sulphur, Mercurius-corros. and Colocynth failed, Rhus three times repeated cured.

Veratrum.—Watery sanguineous flocculent discharges, in which portions of fæces are manifestly present, or dysentery with vomiting; coldness of the surface; extraordinary weakness; cramps in the muscles of the legs; cold sweat; retention of urine; evacuations more frequent at night than by day, with colic, chills, and rarely tenesmus.

Tartar-emetic.—Becker says, Broackes cured a case of dysentery with this remedy. The skin was dry; sharp, shooting pains in the abdomen; thirst; bitter taste in the mouth; bilious and bloody evacuations. A few doses cured in three or four days.

It is more appropriate after dysentery, cholera-infantum, cholera or abdominal typhus, when there remains great prostration, frequent cold sweats, colic pains, distention of the abdomen, tenderness on pressure, nausea, diarrhœa, borborygmus, putrid eructations, rapid, weak pulse, &c. (*Marcy, New Mater. Med.*, page 426. Also proper in dysentery, after the tenesmus, mucous and bloody discharges have nearly subsided, the patient remaining weak from brownish, sanguineous discharges accompanied by nausea and occasional vomiting. The third trituration preferred.

Carbo-vegetabilis.—Adynamic or malignant dysentery: putrid stools great prostration, pressure on the rectum and burning, burning pains cold breath, cold surface.

Carbo-veg. may succeed or alternate with *Arsenicum* in certain low forms of dysentery, when the former does not act with efficiency. It may be given for the same train of symptoms and at the same potency as Arsenicum.

Sulphur.—In many of the worst cases where the disease yields slowly after other remedies have been tried, or where there is a psoric poison or dyscrasia, perhaps inherited, which prevents the proper remedy from taking effect. Characteristic symptoms: mucous stools streaked with blood; violent tenesmus; frequent urging to stool, especially at night; discharges of mucus, with or without blood, preceded by cuttings in the abdomen with tenesmus, fever, vomiting and griping pain, irritable disposition, hæmorrhoids, &c. The thirtieth attenuation is more effectual than any lower.

Sulphur deserves consideration in instances where the more ordinary remedies fail in affording prompt relief, and especially if any latent miasm is suspected to have conduced to the disease, or prevented the usual action of medicines administered. It is often serviceable in the dysenteries of hæmorrhoidal patients.

In no disease have allopathic physicians come nearer reaching the true ground without finding it, than in the treatment of this disease by mild purgatives. It is useless to pass in review the long catalogue of

the articles they have tried, and show in each the reason of their failure. In severe autumnal dysenteries purgatives always aggravate the disease instead of curing it. Often have we seen a common case of bilious remittent fever take the form of a most dangerous dysentery from the operation of a common purgative. The people accustomed to relieve the common constipation in the marshy districts with pills, composed in part of Aloes, Gamboge, Calomel, &c., try the same remedy in fever. Small doses fail to operate and they are followed by large ones. At length a large evacuation is procured though with great irritation. It is followed by several others in succession. Each succeeding discharge is more fluid than the last. In a day or two the evacuations take place at regular intervals of three or four hours, and consist of reddish water only. The pulse was one hundred per minute on the first day; it gradually increases to one hundred and twenty in an adult, and continues to increase in frequency. Is it possible that further purging is needed now? In some cases a purgative syrup, of which Rhubarb is the strongest ingredient, may pass through the bowels, carry a small quantity of solid fæcal matter. If this occurs, a change is affected for the better. But if it will not pass, a few large injections of warm water with some oleaginous substance in it may be thrown far up the colon and, aiding the purgative, may wash out the inflamed colon. In a bad case it will either not pass into the colon, or will be instantly expelled, bringing nothing with it. Just here many a case has been abandoned as hopeless, and death has always followed.

There is one resource more in the flexible gum-elastic tube first used in dysentery by Dr. O'Bierne, of Dublin, though often used by others for other purposes. In one case, after all common efforts had been made for twelve hours and the patient was rapidly sinking, we directed the gradual and careful introduction of the tube through the rectum into the colon. When the upper end of the tube had entered the sigmoid flexure, it encountered an obstruction, which for several minutes resisted its passage. The tube was made to press its way gently through a solid mass of some inches in length, when it passed the obstruction it moved freely several inches further. About three pints of tepid water, or weak beef-tea, was now thrown up through the tube with a common syringe. The quantity of water, though not large, was sufficient to dissolve away by degrees the solid mass through which the tube had passed. A sudden and permanent change was at once visible. The pulse was immediately reduced in frequency below one hundred per minute; perspiration was established; the skin recovered a natural warmth; and the spasmodic action of the large intestines and abdominal muscles gradually subsided.

In none of the common cases of dysentery is this treatment necessary. Indeed under judicious homœopathic treatment few cases, if

any, would ever run into the condition above described. But such cases will be met with among patients who have passed through the perils of other systems of treatment, and the characteristic of the true physician is, that he is never without a resource.

The single objection of the tenderness of the rectum and the difficulty of passing *any* substance through the curvatures of this canal and the colon is only met by the consideration, that although these difficulties *are real*, there are cases where it is better to meet them than to do worse. In no case have we directed this treatment, except where death would have resulted from any common allopathic efforts. In every instance life was manifestly saved by the course pursued, and the result was at least satisfactory to those interested.

16. MUCOUS DYSENTERY.—MUCO-ENTERITIS.

Dr. Chambers* says: The excreted matters vary greatly in appearance, presenting almost every aspect but a healthy one. Sometimes they are light-colored and abundant, of a faint, putrid smell, and containing principally unaltered food; sometimes they are dark, like pitch, scanty and slimy. There is often separated from them, when fluid, a good deal of oily matter, probably derived from undigested adipose tissue of the victuals. The mucus itself may look like lumps of fat, being in white, opaque masses, which however are easily distinguished in the microscope by the presence of the usual globules of mucus. At other times it has more the appearance of macaroni, drawn out into adhesive strings. The appetite is always very bad. The urine is high-colored and thick; but, except when the disorder *is at the worst*, it is most frequently natural. The pain in the abdomen is very difficult to assign to any particular spot. If any one place is fixed upon, it is usually either the right hypochondrium, or the neighborhood of the navel, and sometimes the sensation seems to follow the food from the former to the latter situation. Sometimes acute attacks of spasmodic pain around the waist come on, and sometimes the skin around the navel is so sensitive, that the case might be almost mistaken for one of perforation or peritonitis. There is almost always distressing flatulence, causing palpitation. Intestinal mucous flux has very generally a periodic character. The patient is pretty well for a week, or a fortnight, or a month, and then the symptoms above described, or an aggravation of them occur.

Prognosis.—"It can hardly be immediately fatal of itself, yet it reduces the body not unfrequently to such a state of anæmia, that other diseases supervene and conduct the patient to the grave. I have known

* Digestion and its Derangements.

degeneration of the kidneys so induced, which finally destroyed by dropsy and diarrhœa."

TREATMENT.—*Hygienic Measures.*—Long and hurried journeys may be injurious, but some variation of air and scenery is often very beneficial and often produces an immediate change in the appearance and smell of the fæces, which is often speedily followed by return to health and strength. Riding is specially beneficial as it induces more active secretion of the liver and promotes absorption from the bowels. Dr. Chambers says, "the fœtor of putridity, which it is the business of the bile to prevent, and the undissolved muscular fibre, which it is the business of the bowels to take up, disappear simultaneously from the stools."

Of the value of sleep in chronic diseases he says: "It is sadly underestimated by medical men;" and "there is probably no disorder in which this is so important as in the mucous flux of the intestines, and I have known the expedient of lying in bed till 9 o'clock in the morning, make treatment effective, which previously had been perfectly useless."

DIAGNOSIS.

ACUTE ENTERITIS.	MUCO-ENTERITIS.
Violent abdominal pains, aggravated by pressure and accompanied by vomiting, and marked symptoms of inflammatory fever. The more numerous the coats of the intestine implicated in the inflammatory process, the more acute and violent the symptoms.	The mucous coat being less sensitive than the serous or peritoneal coat, the suffering and danger are less extreme and threatening.
Uncomplicated peritonitis is almost invariably attended with constipation.	Inflammation of the enteric mucous membrane is not generally attended by constipation; but almost invariably by diarrhœa or dysentery.

TREATMENT.—*Mercurius.*—Cases resembling genuine dysentery with symptoms of acute sthenic inflammation, the evacuations being composed of a mixture of blood and mucus; urging, tenesmus, with febrile and inflammatory and bilious symptoms, marked by rheumatic lesion of the muscular coat of the lower bowels; acute cases of recent origin, aggravated by night, while the patient is lying down.

Nux-vomica.—The discharges from the bowels consist of simple mucus in small quantity, voided with considerable pain in the rectum, and urging, which is sometimes ineffectual; mucus of green color and excoriating in character; dyspeptic symptoms, including persistent anorexia, with a sallow complexion and some colic marked and decided.

Arsenicum-album.—It has some especial relation to the gastric and enteric mucous membrane: sensitiveness of the præcordial region, irritability of the stomach; more or less thirst, with vomiting of the fluid

taken; alternate constipation and diarrhœa, with yellow, slimy stools; tenesmus; sense of excoriation at the anus, debility and emaciation.

Chronic Ulceration of the Intestines.—Dr. Chambers (*Digestive Organs and their Diseases*) says: There is no disorder, of which emaciation is so marked a feature throughout its whole course, as chronic ulceration of the whole intestines. Ulcerations of the cœcum, tubercular or not, produce as much, nay often more diarrhœa, but they are not by any means so distinguished in their power of reducing the patient. In this lesion of the ilia even the parts, which are not the actual seat of disease, seem incapacitated from absorbing nutriment, and the victuals pass through the alimentary canal in the same state, as when they left the stomach, except being made putrid by chemical deposition; all the stages of digestion are equally suspended.

Remedies.—*Arsenicum, Calcarea, Hepar-sulph., Nitric-acid, Silicea, Phosphorus.*

17. COLITIS.—CAMP-DIARRHŒA.

In that form of intestinal disease that prevails extensively in the Mississippi valley, and was extremely common among the soldiers and volunteers of the American army in the war with Mexico, (more recently known as the camp-diarrhœa in all the American armies) medical treatment was peculiarly unsuccessful; and it has been asserted, that more men died of this disease than did from the bullets of the Mexicans. (See *Prof. Adams. U. S. Jour. Homœop.* Vol. I., p. 65, &c.)

Predisposing Causes.—Previous derangement of the bowels and debility. It most commonly attacked persons not acclimated to a malarious climate, and varied much in its intensity in different cases.

1. Mucous diarrhœa.—Discharges composed entirely of gelatinous mucus, pale gray, mixed with white slime or mucus.

2. Serous diarrhœa.—Discharge merely a clear or muddy water.

3. Bilious diarrhœa.—Evacuations more or less tinged with bile.

4. Lientery.—Evacuations consisting mostly of undigested food, paste-like, and sometimes in a state of fermentation, frothy, like chalk and beer.

5. Purulent diarrhœa.—Evacuations consisting partially or entirely of pus.

In none of these forms is blood generally passed, though the tormina, and tenesmus are extremely distressing and exhaustive. In moderate cases the pain in the abdomen is only felt before each evacuation. This takes place every three or four hours, is attended with much rumbling uneasiness and feeling of prostration; the appetite being at the same time morbidly craving. In severer cases the stools occur fifteen or twenty times in twenty-four hours; and sometimes become

quite liquid and often involuntary. The pain in some of these cases becomes excruciating, in some even causing fainting; emaciation and debility progress. When the disease involves the mesenteric glands there is hectic fever well marked. The abdomen is flat, inelastic, and retracted, though sometimes it becomes tympanitic. The skin is dry shrivelled and desquamating, and of a sallow hue. The inflammation in many cases involves the cæcum, and there is *dull aching* pain in its region. Sometimes this becomes acute for a time, during which the countenance expresses anguish, sadness, and extreme dejection; it is worse a few hours after eating, may be excited by riding, or other jolting exercise, by anger, or wrong diet. In severe cases the inflammation of the cæcum proceeds to disorganization in the course of ten or fifteen days. This severe inflammation of this organ is detected by the "round, doughy, inelastic tumefaction of this organ, felt on pressure with the hand. After death in fatal cases may be found "a mass of disease and inflammation with induration in the right iliac region." (*Adams.*)

Treatment.—*Aconite* in the earlier stages of colitis will of itself prove efficacious in removing every vestige of the disease. To make a deep impression on the disorder and diminish the congestion and inflammation of the engorged mucous membrane give the pure tincture in repeated doses during ten or twelve hours. *Aconite is the great remedy* of colitis, controlling all its symptoms.

Colocynth.—After Aconite, when tenesmus and tormina continue.

For Lientery give *Arsenicum* and *China* in alternation; also for chronic colitis, with debility and emaciation.

Mucous Diarrhœa.—Arnica, Pulsatilla, Chamomilla, Merc.-sol.—When stools are muddy and watery: Arsenicum, Cham., Dulc., China, Ferrum, Phosphoric-acid, Pulsatilla, Rhus.

Bilious Diarrhœa.—Mer.-corrosivus, Dulc., Puls., Podophyllum.

Purulent Diarrhœa.—Arnica, Silicea, Phos.

Pursue a rigorous dietetic system, keep the colon as empty as possible till the disease is cured, guard against atmospheric influences. Bathing and frictions to the surface. (*Prof. R. E. W. Adams, St. Louis.*)

The National Hotel Epidemic at Washington, D. C., in the summer of 1857, is believed to have originated in a poisonous miasm generated in stagnant water and the accumulations of animal and vegetable materials left to putrefy in the sewers and communicating with the privies of the house. At the time of the outbreak of the disease the water from the Potomac was unusually high, and flowed through the Tiber, having for a time overflowed the low and filthy foundations of the Hotel. When thus established in a house crowded with occupants the cause of the disease followed the usual laws of infectious dysenteries. The germs by which the disease communicated itself to

new subjects consisted of *organized*, though excessively minute sporules, capable of reproducing themselves, and so extremely minute as to be able to diffuse themselves to some extent in the air.

18. STRUCTURAL DISEASE OF THE COLON.

DIAGNOSIS.—*Sympathetic effects of Structural Disease.*—The kidneys and bladder, being immediately in the vicinity, are often much irritated during attacks of colic, but these affections are but secondary, and subside when the colic is relieved. Numerous other symptoms are sometimes traced to disease of the colon which in other cases are considered as primary diseases or symptoms of other secondary disorders. Some of these are: Epilepsy, loss of power approaching to paraplegia, pains simulating rheumatism, cramps, spasms in the limbs, &c. Any of these alarming symptoms may be excited by nervous irritation originating in the colon and communicated to the brain and spinal marrow. A single attack of epilepsy is sometimes induced by this irritation in younger persons, who may not afterwards be subject to it. In habitual epileptics, irritation of the canal, more particularly of the colon, multiplies the number of the attacks and increases their severity.

Symptoms of fæcal accumulations in the Colon.—The structure and position of the colon show that nature has not designed that collections should take place here as they do in the cœcum. The colon is not supported in its position in the same way, and, therefore, its weight, when fully loaded conveys an uneasy sensation, described as if something was dragging the bowels away from the stomach; the arch thus gives notice by pain that matters are retained within it for which it was not constructed. There is also a pain under the left shoulder-blade which is relieved by pressure, referred to the external respiratory nerve through the medium of the stomach. The collections in the arch of the colon interfere mechanically with the stomach, and cause the dyspeptic symptoms that come on when the stomach is empty and in a disordered state; as eructations of wind, pyrosis, and other severe symptoms often mistaken for structural disease, great and long continued pain, fullness of the abdomen, pains in the lower extremities, lassitude, despondency of mind, &c., which cause the patient to regard his disease as structural and beyond the reach of the simpler remedial measures, and he flies from one active purgative to another to find only temporary relief, followed by increased debility and local accumulations. (*Condensed from Alderson, Diseases of Stomach, &c.*)

To review all the diseases of the colon, says Alderson, would be to recapitulate the whole train of dyspeptic symptoms. When the colon is obviously the point of derangement and the seat of pain, and the more prominent symptoms are not those of a more dyspeptic character,

accumulations to a large amount, accompanied by a large evolution of gas generally exist. This often leads to severe colic. Collections in the *cœcum* do not produce such distressing dyspeptic symptoms as when they take place in the arch; the cœcum is so bound down by membrane, and so preserved in its natural position, and it is so supported from the effects of gravity by lying on the side of the pelvis, that it is only from distention that pain is felt in this spot.

The cœcum being out of the current appears to be the natural depot where collections to some extent are always intended to exist. There are probably especial reasons for this delay, and though the function of the appendix vermiformis is not well understood, it is presumed that some change takes place at this point for which delay is neeessary. The cœcum is also situated out of the reach of other organs and is less likely by its state of distention to interfere with them. The mere collection, therefore, of matters within the cœcum is not necessarily a cause of colic, as it is designed as a depot for a specific purpose, unless, by too long continuance here, decomposition or fermentation should take place. In this case gas may be evolved, which being obstructed by accumulations in the colon above, may excite severe pain from distention of the intestine. (*Alderson.*)

19. MALIGNANT ULCERATION OF THE COLON.

This disease would hardly be considered as carcinomatous except for the accompanying secondary deposit of encephaloid matter in the liver, as there occurs no such deposit at the seat of ulceration.

Diagnosis.—The general symptoms are those that accompany cancerous deposits in other parts of the system; loss of flesh, change of color and complexion anxious countenance; pulse and tongue natural to a very late period. When ulceration occurs in the colon its commencement is marked by dysenteric symptoms which appear many months before the disease approaches a crisis. When the symptoms become chronic, the ulceration progresses through the coats, and, as an instinctive effort of nature to prevent rupture into the cavity of the abdomen, lymph is poured out, and neighboring organs as the bladder, or vagina, agglutinated together. The lymph thus thrown out is of a smoky hue, of a melanotic tinge, and is easily torn through. A shivering fit, accompanied by delirium, marks the time when perforation is effected through the coats.

This instinctive or preservative process of throwing out lymph is properly but a prolonged process of destruction. It occurs only in chronic disease, and where the constitution is in a failing state, and never in early life or in acute disease, where we would naturally look for such a restorative effort of nature. In one case of malignant ul-

ceration in the sigmoid flexure of the colon, lymph was poured out, and adhesion took place between the intestine and the bladder; the contents of the colon passed through the bladder;. and the urine in turn produced irritation of the rectum. The patient had through life suffered from indigestion, from gall-stones, and spasms of the gall-ducts. After death, a large gall-stone was found in the gall-bladder, and the liver was extensively studded with encephaloid deposit.

Ulceration of the cœcum of a character not malignant, is a common result of obstinate constipation. (*Alderson, on Diseases of the Stomach and Alimentary Canal, Lond.* 1847.)

Treatment.—In malignant structural disease of the colon we can trust only to those specifics mentioned under cancer of the stomach, and those mild palliative measures which may soothe if they can not cure.

In many cases positive relief may be given by regarding the case as one of functional derangement already terminating in local hypertrophy or other structural disease of the affected organ; and making judicious efforts to wash out the offending accumulations from the entire colon. Here all the measures we have presented under *Dysentery* are available. Active purgatives, which in most cases may be suspected to have caused the disease, are highly dangerous, as they destroy the tone of the digestive organs, and however persistently used, may never dislodge the contents of the cells of the colon. "The peculiar construction of the colon," says Alderson, "admits of a passage along the course of a channel, the sides of which consist of so many loaded cells; thus, though there is action of the bowels, the disturbing cause may still remain, and can only be fully dislodged by a change of aperient and other remedies." It is certain that large collections in the colon may exist, and be for a long time retained, while at the same time a daily evacuation of some kind may take place. This fact is made the basis of a purgative treatment which only perpetuates and increases the difficulty. (*See Ware on Purgatives, &c.*) The only treatment admissible in cases of structural disease of the colon are those already pointed out under Dysentery and Colitis. See pp. 904 to 917.

20. CARCINOMA OF THE RECTUM.—Cancer of the Rectum.

Symptoms.—Local pain, sometimes dull and aching, at others acute and lancinating; sense of weight and confinement in the part, with uneasiness around the loins and pubes; numbness in the hips and thighs, aggravated by standing, walking, or sitting, relieved by lying down. Operation of the bowels increases distress. The fæces passed in a liquid state or in small fragments, and, after repeated efforts, blood and mucus expelled with them. Females suffer in addition from irritation

of the bladder, pain in urinating, incontinence of urine, &c., bearing down of the uterus, also from fæcal accumulations; fits of abdominal distention and pain, with tenderness, hiccough and vomiting.

Treatment.—In these melancholy cases palliation may be the only thing possible; and, in our efforts to reach this, we must resort to such expedients as have been tried. When we have given a trial to the constitutional remedies, which are found successful in cancer in other localities, we may be driven back to mere palliatives. It is proposed to allay the pain with Opium in a solid form, or with Morphine, extract of Stramonium, or other narcotics. Solid Opium taken into the stomach acts better than it does applied locally to the diseased surface, though many use a watery infusion of Opium, adding to it Acetate of Lead. As constipation increases the pain of the diseased part and hastens its progress, it is desirable to prevent it by only such means as are entirely unobjectionable. The free drinking of water, if it can be borne to a sufficient extent, is the best reliance; injections of blood-warm water may be used when they give no pain. Purgatives of almost every form are injurious and must be avoided.

In the use of Opium we are not expecting to cure, but only to palliate in incurable cases. In these, if we begin with it, it should only be in the latter stages, when the pain is extreme and when there is no probability of continuing it long. The constipation it causes ceases to be an objection after the patient has become habituated to its operation. For further remedies see *Cancer* in its different forms.—*Index*—Volume II.

INFLAMMATORY DISEASES OF THE LIVER.

1. Congestion;
2. Inflammation, and its consequences;
3. Diseases which result from an abnormal nutrition of the liver, or from "faulty secretion;"
4. Diseases which result from some growth foreign to the natural structure.
5. Jaundice.—See page 401, 405.

Congestion of the Liver.—*General Remarks. See Article Congestion.* This disease is generally compicated with congestion of other abdominal organs. It may take place suddenly from a sudden suspension of the cutaneous perspiration, which very frequently happens from a slight change of temperature after exposure to great heat. The complexion is usually purplish with a mixture of dingy yellow.

Diagnosis.—When the circulation of the liver is unusually impeded and the organ is materially engorged with blood the liver increases in

size. Its edge can be felt two or three inches below the false ribs. If the congestion be relieved by treatment, by diuretics or by rest, the organ returns to its former volume. Enlargement and subsidence thus alternately follow each other in quick succession. In judging of its relative size and position it must be noted that it naturally sinks an inch or two lower after a full inspiration, or when the patient is in the erect position and that it can be pushed down by fluid in the cavity of the pleura, or by a bloated emphysematous lung. (*Budd, Diseases of the Liver*, p. 41.) It may be sufficiently distinguished from inflammation by the shortness of the time that has elapsed from its commencement; the evidence plainly visible of imperfect decarbonization of the blood, and the presence of the materials from which the bile should have been secreted.

Causes.—Sudden exposure to cold after great heat. It is a common disease in malarious districts where all the functions are deranged by the poisonous influence of marsh miasm. (*See Malaria.*) In autumn, when hot days are succeeded by cold nights, the action of the liver is checked by a sudden chill, or by long-continued exposure to air not extremely cold. All the causes of congestive fevers may excite congestion of the liver in persons in whom the organ has been debilitated or injured by marsh fevers imperfectly cured, and by the reckless use of mercurials. In ague the liver is almost always temporarily engorged with blood; in purpura congestion of a different character occurs; but it requires a very different treatment.

Pathology.—The condition of the internal secretory apparatus of the liver in a state of congestion is easily comprehended when the minute anatomy of the hepatic parenchyma is recalled to the mind. "The lobules of the liver," says Dr. Budd, "are spaces mapped out by the ultimate twigs of the portal vein, which are hairy, as it were, with capillaries springing immediately from them on every side, and forming a close and continuous network; and the interstices of these capillaries are filled with nucleated cells. It is in these cells that the vital chemistry of secretion goes on. It is seen by the microscope that in different livers, the cells vary in size; that in some they are almost transparent, in others opaque, and apparently more solid; that in some they contain but a few very small oil globules, while in others, they are distended almost to bursting with globules of oil; that in some they are colorless or nearly so, and in others yellow with bile; that in some specimens, again, they are broken down and destroyed." In some cases the cells are only slowly reproduced; and, without complete destruction they become less productive of new cells, so that at length the number of active cells is much diminished. These differences in the condition of the cells cause corresponding differences in the size, color and texture of the liver. (*Diseases of the Liver*, p. 197.)

The first effect of congestion of the liver is to suspend the secretion of the bile, permitting the large quantity of carbon usually carried off in this secretion to remain in the blood. In addition to the retained carbon there are left in the blood those numerous impurities which the veins from the stomach and intestines carry to the liver to be there thrown out, and also, all the waste materials collected by the absorbents from the wear and decay of the same organs. All of these matters are unfit to form new blood or serve any other purpose in the body. And yet, a sudden suspension of the biliary secretion throws all these elements of disease again upon the general circulation. When the congestion continues for a considerable time, the proper secretory apparatus (the nucleated cells) of the liver seems to be more and more injured until it may become irretrievably damaged; and then the secretion of bile almost entirely ceases. Dr. Budd gives some cases in which the common bile duct of the liver had been entirely closed; and "the liver had entirely lost its lobular appearance and contained no nucleated cells; so that, when a portion of it was examined under the microscope nothing was seen but free oil globules and irregular particles of greenish or yellow biliary matter." The same effect may arise from other serious lesion of the extreme vessels or biliary tubules, as we see in that granular state of the liver so frequent in drunkards, called *Cirrhosis.*

ACUTE INFLAMMATION OF THE LIVER.

1. Adhesive Inflammation.
2. Suppurative do.
3. Gangrenous do.
4. Inflammation of the Veins.
5. Inflammation of the Gall Bladder and Ducts.

ADHESIVE INFLAMMATION.—HEPATITIS.

1. *Inflammation attended with the effusion of coagulable Lymph* may exist on the surface of the liver, or may penetrate the parenchymatous substance of the organ. The latter is most important and is most common. It is characterized by well-marked symptoms of inflammation of the liver, pain in the right side, vomiting, fever and yellowness of the skin. When these symptoms have continued for a time they subside; but the patient does not regain his former health. The liver has been permanently injured; part of its secreting substance has become atrophied from closure of the small portal veins. The patient still has difficult digestion, has a sallow complexion, and does not recover his former strength.

Diagnosis.—When the disease occupies the convex surface of the

liver, we shall have fullness and severe pain in the region of this organ, increased on pressure, either of a sharp, aching or burning character; pains extending into the chest, under the clavicle, between the shoulder-blades, into the top of the right shoulder, and sometimes down the arm; short, dry cough; dyspnœa; difficulty in lying upon the left side; hot and dry skin; thirst; scanty and high-colored urine; constipation; clay-colored evacuations; full, hard, and frequent pulse; headache, and more or less mental disorder. If the inflammation is in the *concave* portion of the liver, we shall have, in addition to the symptoms already enumerated, distressing nausea and vomiting; tongue covered with a white or yellow fur; bitter taste; urgent thirst; an aggravation of the pain in the hypochondrium on pressure; urine scanty, and of a dark yellow or saffron color; eyes and skin tinged with yellow; bowels constipated or relaxed; pains in the back and limbs; ideas confused; mind clouded or delirious.

In most instances of acute hepatitis, it is highly probable that the peritoneal covering of the liver is implicated to a greater or less extent, and this may serve to render the pains more severe, and the accompanying symptoms more violent.

The characteristic symptoms of adhesive hepatitis vary according to the acuteness of the attack and the stage in which it comes under our notice. Pain and tenderness over the region of the liver in a spirit drinker may be regarded as suspicious. When the organ has become seriously diseased the complexion is always jaundiced and the skin dry and rough. There is in most cases a tendency to ascites. "If the subject of diseased liver," says James Johnson, "will not forsake at once the use of intoxicating drinks, his fate is sealed; and bloated dropsy with all its horrors will soon be upon him." (*Morbid Sensibility of Stomach, &c.*) Hæmorrhagic phenomena are common: bleeding from the nose or rectum, hæmorrhoids, purpuric spots on the face; enlarged or varicose veins of the abdomen, arising from impediment to the free return of blood along the deep-seated vessels. The portal circulation is at first chiefly involved, hence the ascites often exists alone, and without œdema of the legs or any other part. In a later stage the œdema of other parts is established, showing a more permanent and serious form of the disease.

Causes.—Habitual drinking of alcoholic liquors; exposure to vicissitudes of weather; residence in hot climates; all the causes of deranged functions of the chylopoetic viscera; organic affections of the stomach, &c.

Pathology.—On dissection lymph is found effused into the areolar tissue in the portal canals; and, if life be long continued after the effusion took place, all the considerable branches of the portal vein are found surrounded in some places to a distance of half an inch by new

fibrous tissue, which sometimes contracts and puckers the adjacent portions of the liver. The main branches of the vein are pervious, but many of the small twigs that spring from them are obliterated; and the parts supplied by these branches are atrophied, reducing that much of the liver in bulk. There are also thick false membranes on the capsula of the liver, or extensive adhesions between this and the neighboring organs. The deposition of lymph having rendered the parenchyma of the liver tougher and more indurated than in health, its tissue is paler than natural, contains but a small quantity of blood; and it is sometimes yellowish from accumulation of biliary matter in the cells. This gives in section the yellowish gray color of impure bees-wax, for which reason the French have called the disease *cirrhosis*, (Greek *Kirros*, yellowish), the "gin-drinkers' liver." In its early stage the viscus is enlarged; but, later, the more watery parts are absorbed; the lobular part receives less blood and wastes till it becomes smaller than in health. When hepatitis is caused by ardent spirits, the alcohol, being carried directly to the parenchyma of the liver, makes its first impression on it; and here we find the first traces of structural disease, the capsule and investing membrane being secondarily affected. In dogs poisoned by alcohol, says Percy of Birmingham, the spirit could be extracted from the liver in greater quantities than from the blood, brain, or other organs. (*Prize Essay.*) M. Becquerel has shown that in about half the cases of cirrhosis there is also disease of the heart. (*Archiv. Generale*, 1840.)

Prognosis.—This is only unfavorable when extensive structural disease already exists and the dropsical symptoms show important complications in other organs. Hepatitis, however induced, is a curable disease so long as permanent organic alterations have not been developed in the intimate structure of the liver. The extent to which these may be believed to be present; and the degree in which the general system is already involved in the consequences of obstructions and cessation of function already in existence, must govern our estimate of the degree and proximity of danger.

2. *Suppurative Inflammation of the Liver.*—Not only is the liver subject to the formation of abscesses, as the legitimate result of a common inflammation of that organ, it is peculiarly liable to the formation of abscesses of a peculiar character, which have been supposed to be in some way related to suppuration going on in some other organ.

Causes.—It may occur from a blow or other mechanical injury on the side, (*Andral,*) but it more frequently arises from inflammation of some vein and consequent contamination of the blood with pus. An abscess of the liver, and more frequently the lungs, often follows injuries or surgical operations. It is believed that the immediate cause of the abscess consists in the presence of some poisonous substance,

commonly pus, conveyed from the inner surface of a vein to the minute capillaries of the lungs where they excite suppurative inflammation. If any of the purulent globules pass through the capillaries of the lungs, and proceed to other organs, they become arrested in some of them, excite inflammation progressing rapidly into abscess. (*Budd, on Diseases of the Liver.*) When abscess of the liver, lungs, heart or spleen follows injury of the head, we may believe that suppurative suppuration of a vein somewhere exists, either in the soft parts or between the tables of the skull. (See *Researches by Dance, Cruveilhier and Larrey in France*, and *Arnott in England.*) The purulent matter must, in such cases, pass through the capillaries of the lungs, hence these "metastatic abscesses are more common in the lungs than elsewhere. But, if the seat of the suppurative phlebitis be in one of the veins that go to form the venæ portæ, "the pus will be carried *first* to the liver; and then the abscess will be found in it alone. Cruveilhier injected Mercury into one of the the mesenteric veins, and found that it was stopped in its course through the liver, and caused circumscribed abscesses throughout its substance. When the Mercury was injected into the cruval vein, it was stopped in the lungs, and the abscesses were formed there. When the mesenteric veins become inflamed from any cause, as they may do after operations on the rectum or for strangulated hernia, the abscess formed as a consequence of translated pus is always in the liver alone, as there the peccant matter is stopped. (*Dance* and *Cruveilhier.*)

Abscess of the liver is most frequently caused by ulceration of some part of the alimentary canal, or of the gall-bladder or ducts, the veins of which parts empty into the portal system. They convey the purulent matter, the poisonous fluids generated by the softening of tissues, and also the fœtid gases and liquid contents of the large intestine; all these contaminating fluids, when absorbed, must pass directly to the liver. There the fluids that readily dissolve in the blood cause diffuse inflammation of the liver. Morbid matters that do not readily mix with the blood, as pus, or globules of Mercury, produce small circumscribed abscesses. (*Budd*, p. 64.)

Broussais first showed, that ulceration of the stomach often led to hepatic abscesses. (*Stokes. Cyclop. Pract. Med.*) Ulceration of the gall-bladder and ducts, which are nourished by the hepatic artery, and not by the portal vein, cause ulcers of the liver in the same manner as that of the parts already mentioned. Another cause of purulent abscesses in the liver is the deadly miasm developed in marshy regions in hot climates.

Diagnosis.—The characteristic features are not well marked, and the disease is often overlooked during life. The pain in the side or shoulder, the vomiting and the jaundiced color looked for are often absent.

(*Andral*, *Abercombie*, *Annesley*.) When the pain *in the right shoulder* exists, it indicates, that the disease is in the right lobe of the liver. Tension, *or rigidity of the right rectus muscle* may be found in other forms of liver-disease. When the pain yields to tonics, we may presume it was neuralgic, if to Colchicum or Alkalis, we may presume it was of gouty origin, if to depletion and purgatives it must have been inflammatory or congestive. Of the action of Mercury it has been said by Mr. Annesley, that its specific powers can not be induced after suppuration has taken place. (*Med. Chir. Rev.* Vol. 47, p. 503.)

Abscess of the liver may generally be distinguished by the presence of a soft tumor, which may be felt under the ribs of the right side, fluctuating on pressure. If by rupture of the abscess, pus is discharged, the matter is distinguished by its resemblance to wine dregs, with some mixture of bile. There is jaundiced color of the skin, rapidly increasing emaciation of the whole body, and the fever peculiar to hepatic phthisis with periodical exacerbations.

The termination of acute hepatitis in suppuration is announced by rigors, a sense of sinking in the præcordia, night-sweats, prickly sense of creeping in the skin; fullness and sense of weight about the margin of the ribs; dull, throbbing pain in the liver. (See *Abscess*, p. 652.) If fluctuation be distinctly felt under the ribs, aud we may believe, that the suppuration is complete, and the abscess not at too great a depth, it should be opened. When the pain and general fullness are diminished, and replaced by a distinct tumor without acute pain; if it is soft and fluctuating at the apex, elastic, yet livid or red on the surface, while the base is somewhat hardened and elevated, we may puncture the abscess with confidence in a successful result. The inflammation which leads to abscess is often confined to the substance of the liver, and does not involve its capsule. As the abscess approaches the surface, adhesive inflammation of the peritoneum immediately above it usually takes place, and a small quantity of lymph is poured out, which causes adhesion between the wall of the abscess and the parts with which it is brought into contact. These adhesions are often of very small extent, sometimes they do not form at all and the abscess bursts into the cavity of the peritoneum, causing speedy collapse and death. By opening an abscess of the liver before adhesions have formed, we may be directly instrumental in bringing on this fatal issue,—the pus may escape into the cavity of the peritoneum, and the patient die in a few hours, ob viously in consequence of the operation. Another danger is also encountered in allowing air to enter the cavity of the abscess and decomposition of both results, air and pus, and fresh inflammatory action is developed.

Abscesses of the liver often attain an immense size. Dr. Budd saw one that contained two quarts of pus. Annesley examined one that

contained ninety ounces, and Dr. Inman of Liverpool saw one that contained thirteen pints.

Prognosis.—The abscess may burst externally through the walls of the abdomen, inwardly into the lung or pleura, into an intestine, or into the cavity of the abdomen. The opinion formerly entertained that the pus could be absorbed and eliminated from the pleura is erroneous. Pus-globules are too large to enter the minute blood-vessels, or to escape from them. The matter found in the bladder during the progress of purulent phlebitis is not pus, though it has the appearance of it. The microscope shows it to be composed of "beautiful phosphatic crystals." (*Budd. Diseases of the Liver*, p. 73.)

Cragie says, that besides the abcess discharging into the abdominal cavity, the pus may pass through the air-cells into the bronchi, by the adhesive process into some part of the intestinal canal, the stomach, transverse arch of the colon or even the duodenum, and Rokitansky mentions several other outlets, as into the gall-bladder, or one of the larger branches of the hepatic duct; through the diaphragm into the pericardium, and even into the large vessels, as the vena cava. He mentions a case, in which a communication was established between a hepatic abscess and the venæ portæ and the duodenum. A case is given in the *London Medical Repos.* (July, 1827), in which an abscess of the liver spontaneously made its way into the chest, and the purulent matter was evacuated by paracentesis thoracis.

21. INFLAMMATION OF THE GALL-BLADDER AND DUCTS.

Symptoms.—Pain in the situation of the duct, followed, in two or three days, by jaundice and distinction of the gall-bladder; fever, constipation, nausea, vomiting; pain, limited to a small spot in the situation of the common duct.

Causes.—Mechanical irritation of gall-stones, which in turn are promoted in their growth by the thickening of the lining membrane of the ducts.

Diagnosis.—Distinguished from inflammatory jaundice by the early appearance of a large, moveable, pear-shaped tumor, produced by projection of the gall-bladder, this is painful and tender.

Pathology.—In a case, given by Graves (*Clinical Medicine*), the pain during life had been confined to a point between the right hypochondrium and epigastrium, was greatly increased by pressure. On dissection, the gall-bladder was distended, being completely filled with a dark-green mass of a tenacious viscid nature, apparently lymph. It was of the shape of the gall-bladder. On removing it, the lining membrane of the gall-bladder was found of a bright scarlet color and villous appearance, not softened or ulcerated, the walls of the gall-bladder

much thickened; no obstruction or vascularity in the common duct, the cystic or hepatic ducts; duodenum and stomach stained with bile, but otherwise healthy.

Ulceration of the Gall-Bladder.—This lesion often occurs in remittent fever of the more severe forms, as the Walcheren fever, as described by Sir Gilbert Blane, and the Sierra Leone fever. (*Dr. Boyle.*) In the more temperate climates this affection is connected with the presence of gall-stones, which also often close the cystic, or even the common biliary duct. This last condition always terminates in incurable jaundice, and ultimately certain death. The gall-bladder in some cases acquires a large size.

Pathology.—When the gall-bladder and ducts become thus largely distended, the proper nucleated cells of the liver, which secrete the bile are damaged or totally destroyed, the capillaries waste, and the whole organ shrinks and no longer presents any appearance of distinct lobules. (*Williams, in Guy's Hosp. Reports.*) Nothing is now visible in these structures but minute free fatty particles and floating granular matter. In cases of closure of the common duct, there is often present a voracious appetite, arising as in diabetes from an imperfect digestion of food. Hæmatemesis is a frequent symptom of this as well as other forms of hepatic disease; the cause is seen in the obstruction of the circulation through the *portal vein.* This produces a back-pressure upon the current of blood in the gastric and mesenteric veins.

In some cases of obstructed secretion of bile, the brain is affected with delirium, coma or convulsions before death, which is often at a long period after the disease begins. In some cases the common gall-duct has been closed, and the parenchyma of the liver was in a great degree atrophied at the same time; and thus for several years there was suspension of the *secretion* of the bile and of its *excretion* also. The duration of life under such circumstances depends on the condition of the other chylopöetic viscera, the nature of the food taken and the state of the other excretory functions. Death, however, always ultimately follows this state from gradual but progressive wasting from impaired nutrition. The use of ox-gall in pill, after eating, is not a substitute for the natural secretion.

Treatment of Inflammatory Diseases of the Liver.—The principal remedies are: Acon., Bell., Bry., Cham., Chin., Lachesis, Merc., Nux-vom., Puls., Sulph.

Aconite.—Inflammation of the liver with fever, stitches in the region of the liver; intolerable pain; moaning; tossing about; anguish, and dread of death. (For further symptoms see p. 410.)

Bryonia.—Aching pains, with tension in the hypochondria; yellow-coated tongue; violent oppression of the chest, with hurried, anxious breathing; constipation; aggravation of the pains by motion.

Chamomilla.—Dull aching pains, not aggravated either by pressure, motion, or breathing; pressure in the stomach; tension in the hypochondria; oppression of the chest; yellow color of the skin; yellow-coated tongue; bitter taste in the mouth, and paroxysms of anguish.

China.—Disease of the liver, originating in malaria; aggravation every other day, with stitching, aching pains; swelling and hardness of the region of the liver and stomach; headache; bitter taste in the mouth, and yellow-coated tongue.

Lachesis.—Disease of the liver, caused by intemperance; after Acon., Merc., and Bell. have been used without sufficient effect.

Belladonna.—Aching pains extending to the chest and shoulder; distention in the pit of the stomach; tension in the region of the stomach; labored and anxious breathing; congestion of blood to the head; obscuration of sight; vertigo with fainting; burning thirst; anxious tossing about and sleeplessness. It may be given after Aconite, in alternation with Mercury or Lachesis.

Mercurius.—After Aconite, Bell. and Lachesis have been used with partially good results; and there remain aching pains, which do not permit one to lie on the right side; bitter taste in the mouth; loss of appetite; thirst; constant chills; very yellow color of the skin and eyes. For effects of Mercury more at length see page 403 to 405.

Nux-vomica.—Stitching or beating pains, with excessive sensitiveness of the region of the liver to the touch; bitter and sour taste; vomiting or nausea; pressure in the hypochondria and region of the stomach, with short breath; thirst; red urine; headache; vertigo, and paroxysms of anguish.

Pulsatilla.—Paroxysms of anguish, especially at night; diarrhœa; greenish and slimy stools; desire to vomit; bitter taste in the mouth; yellow-coated tongue; oppressed chest; tension in the hypochondria and pressure in the stomach.

Sulphur.—Chronic cases in psoric constitutions, persisting after Nux-vomica and the above remedies have been partially successful.

Podophyllum.—Appetite voracious; eating followed by nausea and vomiting. Diarrhœa immediately after eating or drinking. Stomach sour; eructations; nausea; fullness of the head; vomiting an hour after eating, and then craving for food immediately afterwards; extreme nausea continued for several hours; heartburn; waterbrash and heat of the stomach; exudations of hot flatus very sour. Sensation of hollowness in the epigastrium; throbbing in the epigastrium and stitches from coughing. Gastric affection attended by depression of spirits.

Fullness of the right side of the abdomen with flatulence and stitches; weight and dragging in the region of the descending colon; colic with retraction of the abdominal muscles; pain in the transverse colon, followed by diarrhœa; pain in the bowels relieved by warmth and by

bending the body forward; the pain attended by coldness, pain, heat and perspiration. It diminishes the frequency of the pulse from seventy-six to sixty-one.

Chronic hepatitis with constipation; fullness and soreness of the right hypochondrium; constipation with flatulence and headache; constipation with remittent fever; fæces dry and hard; extreme weakness with cutting pain in the intestines after stool; chalk-like stools, very offensive, with gagging and incessant thirst in children; large countenance; sunken and blue under the eyes.

Chronic diarrhœa with prolapsus ani at every stool; prolapsus ani with diarrhœa for six years in an adult; descent of the rectum from small exertion, followed by stool or discharge of thick, transparent mucus mixed with blood; involuntary discharge of urine during sleep; diminished secretion; suppression; leucorrhœa with bearing down, producing prolapsus uteri; pain in the region of the ovaria.

In 1819 Dr. Snow gave a decoction made from one ounce of the root, simmered down from a pint to four ounces, to a full grown dog. In ten minutes after the last dose, the pulsations of the heart were very weak and from fifty to fifty-five per minute. In an hour he vomited. There was copious salivation, no narcosis; he vomited almost incessantly till he died.

Leptandra-virginica. Culver's physic Blackroot. Tall Veronica. Corresponds in a slight degree to mercurials in its action on the liver. It is said to promote the biliary secretion in a gradual manner, correcting the secretion and leading to restoration to the healthy action of the bowels, when they have been affected with diarrhœa, cholera infantum, dysentery, or constipation; and when there is habitual torpor of the liver, jaundice, hæmorrhoids, dyspepsia.

When suppuration has occurred and the abscess has been favorably evacuated, one of the best remedies is *Nitro-muriatic-acid.*

Nitro-muriatic-acid Foot-bath.—Add one-half ounce of the acid to a gallon of water, increasing the strength, if the skin will bear it without irritation; and use it thirty or forty minutes every evening.

Nitro-muriatic-acid.—Has been used with success in chronic hepatitis with obstinate constipation, torpor of the liver, dyspepsia, some forms of scrofula, and many cases of pseudo-syphilis. It has a prompt and decided effect on the biliary secretion, and determines the action to the skin.

It is best suited to cases of chronic hepatitis with indolent engorgements of the capillary and parenchymatous structures. In its deobstruent properties it corresponds partially with Mercury.

In attenuated doses it is applicable in inflammatory cases where undiluted it could only increase inflammation and fever. Whether applied externally or internally its effects are the same. When the doses are

too large, it produces excessive secretion of acrid bile, which irritates the bowels, producing tenesmus and bloody discharges. Diluted and in small doses it cures these conditions and exerts a curative influence on diseases of the parenchymatous structures, the glandular system, secerning, secreting and absorbing surfaces.

22. CHRONIC HEPATITIS.

DIAGNOSIS.—The symptoms of chronic liver complaint are somewhat similar to those of the acute form, but more mild in their character. For example, the pain in the right hypochondrium is dull, heavy, and dragging, that in the shoulder and arm of a vague and heavy kind; the skin is somewhat hot and dry; the tongue furred; the countenance and albuginea yellow; the urine and perspiration of a dark or yellowish color; the bowels costive, sometimes alternating with diarrhœa; evacuations light; occasional cramp-like pains in the stomach; great weakness and loss of energy throughout the entire system; inclination to sleep a good part of the time; trembling of the knees on the slightest exercise; dejection and indifference to life; enlargement and induration of the liver.

CAUSES.—This is a disease of hot, rather than of temperate latitudes, and may arise from a too free use of animal food, stimulating drinks, and other articles abounding in carbon. As the blood passes through the liver, its office is (*in part*) to separate the carbon, &c., which is not wanted in the system. We can therefore readily perceive how prone this important organ must be to be overtasked in so rarefied a temperature, unless the utmost care is taken to retain the organs in a healthy state, as well as to avoid highly seasoned animal food, stimulants, &c.

The chronic form of hepatitis often follows, and is a consequence of dyspepsia. Indeed, there are but few, if any, cases of the latter disorder, which are entirely unattended with derangement of the liver.

Want of exercise, depression of spirits, misfortune, sudden suppression of perspiration, accustomed discharges, &c., may often exercise a powerful influence in inducing this disease.

TREATMENT.—The best remedies are: *Acon.*, *Mercur.*, *Bry.*, *Nux-vom.*, *Sulphur*, *Aurum*, *Lachesis*, *Lycopodium*, *Natrum-magnes.-mur.*, *Alum.-amb.*, *Calc.*, *Chin.*, *Sil.*, *Chelidonium*, *Ignatia*, *Iodine*, *Conium*, *Pulsatilla*, *Podophyl.*, *Leptandra*, *Sanguinaria*.

For Swelling or Induration of the Liver. — *Arsen.*, *Calc.*, *Chin.*, *Nux-vom.*, *Sulph.*, *Graph.*, *Mercurius*, *Natrum-mur.*, *Taraxacum*.

Abscesses of the Liver.—*Lachesis*, *Silicea*, *Bell.*, *Hepar*.

ADMINISTRATION.—The medicines may be used from the first to the sixth attenuations. and repeated, in acute cases, every two, four, or six hours, according to circumstances. In chronic hepatitis, a dose of the

appropriate specific should be given once or twice in the twenty-four hours, at the same time inculcating the importance of rigid dietetic regulations.

In chronic hepatitis there is a peculiarly dry and harsh state of the skin, and on this account we strongly advise the daily use of *cold sponging*, or *bathing*, to be followed by vigorous exercise in order that the pores may be opened, and the cutaneous functions thus restored.

Hypertrophy of the Liver.—Aurum.—A gentleman, aged forty-five, dark complexion, had undergone long courses of treatment within the last ten years; and now presents the following *symptoms*: Weight in the right side of the abdomen; occasional sharp pain felt there; quick darting, and alternating with a similar pain in the upper arm; obstinate constipation; urine scanty, colorless during the first hours, then turbid, with brick-dust sediment; little appetite; deep sadness; discouragement; desire for death, and inclination to suicide, notwithstanding the open profession of religious ideas. The right hypochondrium gives resistance on palpation. In pressing the palm of the hand under the false ribs, from in front backwards are felt three hard lumps belonging to the thin edge of the liver; this pressure causes sharp pains, and much difficulty of breathing. The left side sound from the umbilicus. No disturbance of the circulation.

Treatment.—Aurum 6°, a drop in 120 grammes of water, a teaspoonful in the evening. Diet exclusively of white meats, fish, and fresh vegetables. Avoid all milk and fermented drinks. At the end of one week no change, Saccharum-lactis for ten days. By that time the stools were regular; urine normal. The patient feels less heavy, less sad, more confident. Aurum 30°, 4 globules. A week later the whole condition was improved; stools free, appetite better; he is calmer; no further ideas of suicide; some pain in the right hypochondrium on pressure. Magnes.-mur. 6°, one drop in 120 grammes of water. A month later, cheerful, appetite and stools normal; no pains, no longer pain in region of the liver on pressure. Magnes.-mur. 6° one drop.

The efficacy of Aurum is most marked when the local symptoms are added to the mental troubles, deep sadness and desire for death which so often accompany liver diseases; these moral symptoms are indispensable to its success.

A priest, of whose liver the left lobe was enormously hypertrophied, presenting the corporeal but not the moral symptoms. Aurum 6° and 30° were continued three months without effect. Nux and Magnes.-mur. failed, and he had already been drinking the Vichy waters several years; within the last two months the engorgement considerably diminished under Sulphur 30°, alternated every fortnight with Lycopodium 30°. (*Journal de Société Gallicane*, July, 1859.)

Fatty Degeneration of the Liver.—Mr. Bowman has shown that the

greater portion of the superabundant fatty matter in the liver exists in the form of oil-globules within the proper nucleated cells of the affected organ. In this disease the number and size of these oil-globules is enormously increased; in some cases one-half the entire bulk of the liver is composed of them, and it is often much larger than natural. When the quantity of oil is less the liver presents what is called the "Nutmeg" appearance. The functions of the organ may not be much deranged, though the distention of the abdomen causes inconvenience. But, as the disease advances, the increase of the fatty matter, which was first destined to constitute a portion of the bile becomes a poison, by its presence obstructing the process of secretion. As fat contains 50 per cent. of carbon, its secretion at first is a protective measure.

Diagnosis.—The great enlargement of the abdomen in the region of the liver in a corpulent inactive person, particularly of a lymphatic temperament, may be suspected to be of this nature. Though no positive characteristics have been pointed out. As the disease progresses, the effects on the general system and on the tuberculous degeneration of the lungs make its character intelligible. (*Williams, on the Pathology of Cells.*)

Causes.—Corpulent tendency generally; inactive life; gross and full living; free use of heavy malt liquors; oily food in excess, or vegetable products which are chemically nearly the same, as potatoes, sugar, &c. "Sugar furnishes a material for respiration which is soluble in the blood, and is acted upon more readily than the insoluble fat, which is thus protected and laid up in the system. Alcohol has a still stronger protecting power, and for similar reasons." (*Budd.*) Magendie found that dogs fed too exclusively on oleaginous matters, as butter and lard, died of inanition although they became remarkably fat; in all the liver was fatty. Wasting disease: of consumptive patients about one-third have accumulations of fat in the liver, and in many cases about the heart, though its muscular tissue is wasting at the same time. (*Louis.*) "The mode by which the fat is accumulated is displayed in all those diseases in which emaciation is a striking feature;" in the process of wasting, the fat stored up in the body is largely taken up by the veins, so that it comes to be in excess in the blood, and is then laid hold of by the hepatic cells which have a natural affinity for it." In fatty degeneration of the liver then the essential disease consists in the accumulation of fat in the veins from the food beyond what the organs of nutrition can properly appropriate; it is lodged in the liver on the effort being made by that organ to eliminate it from the system. Faulty assimilation is then the essential disease.

Mr. Bowman says in one-third of the cases in which the lungs are disorganized the epithelium cells of the liver become more or less gorged with adipose particles. It is noticed that no fat globule has

yet been found within the *nuclear* cell. It always occupies the interval between the nuclear and outer capsule. (*Williams.*)

During the progress of fatty degeneration of the liver the parenchymal cells distended by accumulated fat, fail to perform their part in the process of secretion and they eventually *burst.* A universal suspension of the secreting agency takes place; and thus the last avenue for the elimination of the carbon from the blood suffers fatal obstruction, and the whole body is soon oppressed by its accumulation in the blood. (*See Cell Formation*, p. 641, 646, 647.)

Treatment.—The remedies most likely to correct these structural degenerations of the liver must be sought for among those already enumerated under the forms of hepatic disease. *Taraxacum*, *Muriate of Ammonia*, Nitro-muriatic-acid, Mercur.-proto-oxide, Podophyl., Leptand., Sanguinaria and Aurum are the most important.

23. CANCER OF THE LIVER.

This is one of the most severe as well as the most common of structural diseases of the liver. It appears in the form of *disseminated cancer*, as we have already seen *disseminated abscesses* in the section on suppurative inflammation of the liver.

Diagnosis.—The most significant symptom is enlargement of the liver till it reaches below the false ribs, even to the brim of the pelvis; its surface is then often tuberculated with cancerous growths, and is felt to be irregular and knobby to the feel on applying the hand. The size is diminished in but few cases. In some there is ascitic effusion, but seldom so much as in *cirrhosis;* jaundice is common. The enlargement comes on in the middle of life, is progressive; there is no probable cause for it. There is no obstructed circulation in the chest, the patient is not consumptive, has not been intemperate to cause cirrhosis; when many of these circumstances are present, cancer of the liver may be expected, especially if it be of great size and is nodulous or uneven, there is no longer room for doubt. Constant pain and tenderness also are almost decisive symptoms of cancer. (*Budd*, p. 326.)

Causes.—Cancer of the liver is generally consequent on cancer in some other part, especially the stomach or mammæ. In few cases it originates in the liver. When cancer exists in some other organ, the liver, next to the lungs, is most likely to be the seat to which if will be likely to be transferred. The reason is, that the entire venous blood of the stomach and intestines has to pass through its substance, and all abnormal substances contained by the blood are liable to be detained in the capillary vessels. The *cells* of pus, of cancer, and other morbid degenerations are apt to be arrested in their course. The matters thus arrested become *foci* of purulent cancerous or other disease of the

parenchyma of the liver. When therefore the stomach or any portion of the intestines become affected with cancer, we may expect the liver to become the depository of some of the morbific germs. These are likely to be located in a great many different points, often hundreds. Some of these are found of the size of a bean, or even as large as an orange; others are so minute that they are distinguished with difficulty.

Pathology.—Cancerous tumors in the liver are sometimes white and fibrous, usually termed *scirrhous;* but more frequently they are soft or medullary; in a few subjects they are found of both kinds. We find the same variety in cancer of the liver as in other organs. In some soft cancers we find some with but few vessels, in a substance pulpy and whitish, resembling softened brain, called by Laennec *encephaloid.* In others the tumors are extremely vascular, resembling fungus hæmatodes; others again are melanotic. The color of the melanotic tumors of the liver varies according to the pigment they contain, and they are found of every shade from light-brown to black. (*Budd*, p. 302.) (See *Cell Formation, Diseased*, p. 646.)

The prognosis is always unfavorable, such cases being in general ultimately fatal.

Treatment.—The only reliance will be upon the general treatment of cancer, to which we refer. The worst treatment is that which is quite likely in most cases to be adopted. The use of large or often repeated doses of Mercury can only prove speedily injurious by exhausting the patient's strength, and always aggravating the local malady. But much benefit will be derived from minute homœopathic doses of Mercurius-hyd.; also from Kali-hyd., Iodine, Silicea, Arsenicum, Arsenicum-hyd., Cannabis, Aconite, Hepar-sulph., Calcarea-carb.

24. SPLENITIS.—INFLAMMATION OF THE SPLEEN.

The function of the spleen has been regarded as more abscure than that of any other of the abdominal viscera. From its immediate connection with the stomach and the several organs pertaining to the portal system, it is believed to be at least a "chylopoetic agent;" and it may be classed with the lymphatic glands, which in its anatomical character it closely resembles. This organ is only found in those classes of animals in which a distinct lymphatic system exists; and its size is always proportioned to the development of that system. When the spleen becomes hypertrophied, the lymphatic glands are often inflamed, as a sympathetic phenomenon; hypertrophy of the spleen is also often a consequence of disease of the lymphatic glands of the abdomen. The mesenteric glands have also been observed to become enlarged after extirpation of the spleen (Mayer and Czermak), and

the thyroid gland also became enlarged after the same mutilation. (Tiedemann.) Thus there is a vicarious activity of other lymphatic glands to supply the action of the removed spleen.

There was a time when physiologists thought to ascertain the function of this organ by removing it from animals. At first they seemed to get along well; and soon, says Mr. Abernathy, "every man who could procure a dog was cutting out the spleen, and publishing the history of the case." But disappointment followed. The dogs, which had improved in appetite on the loss of the spleen, all died after trying for a short time to live without it; and the experimenters confessed that nature must have had some object in creating it.

Forms of Diseases of the Spleen.—1. *Hyperæmia with consequent Hypertrophy.*—This consists in a morbid increase of the vital activity of the spleen. It results in intumescence, and then in alterations of structure, such as fibrinous, fatty, albuminous, serous, or other degeneration of structure. In malarious countries, enlargement of the spleen or "ague cake" is as common as the ague which originates it.

2. *Atrophy of the Spleen.*—Phlebolitia.—Morbid diminution of the vital activity of the spleen.

3. *Sehnen-Fleisch.*—Exudation of firm, white, tendon-like, inseparable exudations which appear on the upper surface of the spleen, as well as on some organs.

4. *Cartilaginous, bony, and earthy* degeneration of the spleen.

5. *Episplenitis.*—Inflammation of the capsule of the spleen.

6. *Splenitis.*—Inflammation of the spleen. It may be acute or chronic; and may terminate in hepatization, suppuration, softening, or gangrene.

7. *Spleno-Phlebitis.*—Inflammation of the splenic veins.

8. Other structural diseases of the spleen have been described under the names of *emphysema of the spleen*, *pseudo*-morphosis, including *melanosis*, *lipoma*, and *steatoma*, *hydatids*, *acephalocysts*, *scirrhus*, and *tubercles*. The accidental injuries described consist of *rupture of the spleen*, *rupture of the splenic artery*, with or without the formation of *aneurism*, *rupture of the splenic vein*, *and wounds of the spleen*.

The distinction between these obscure forms of disease, in an organ to which no very influential position has been assigned by medical philosophers, and the specific treatment proper to each cannot be given in detail without devoting to the subject a space disproportionate to its importance. We shall be content with a general view of essential points only.

Diagnosis.—The symptoms which indicate the existence of splenic inflammation are liable to be confounded with those of disease of the

left lung, the heart, the diaphragm, peritoneum, the stomach, the left lobe of the liver, the cauda of the pancreas, the omentum, the descending colon, or the left kidney. The symptoms which more particularly point to disease of the spleen are: location of the seat of complaint in the left hypochondrium; functional disturbance of the stomach; thirst; variable appetite, as desire for unusual articles of food, sour or bitter taste in the mouth; acid eructations; redness, dryness, with whitish or yellow coating on the tongue, with indentations of its edges; sponginess of the gums, with offensive breath; ptyalism, nausea and vomiting; diarrhœa only occasionally; perceptible hardness or intumescence felt by the hand in the region of the spleen; obstinate constipation and occasional colic pains.

The disturbance of the respiration is only secondary. The fever corresponds with that seen in the more common forms of disease of the liver. The morbid condition of the blood is manifested by ecchymosis, pemphigus or pompholyx, erysipelas, erythema, herpes, and other eruptions on the skin; also by hæmorrhages from the stomach and bowels, melæna, &c.

Causes of Splenitis.—The spleen being deeply concealed beneath the short ribs, is not often injured by mechanical causes or severe blows or falls on the left side, except when diseased. In cases in which tumefaction and softening of the liver are already present, violent concussions may produce a rupture of its enveloping membrane, and give rise to a fatal hæmorrhage into the abdominal cavity. The spleen is liable to be wounded when morbidly enlarged, or when during digestion it is distended with blood. In one case given by Mayer, a lumbricoid worm, which had penetrated the coats of the colon, entered deeply into the substance of the spleen, and caused active splenitis. Other causes of this disease are: drinking of ice-cold water when the body is overheated; sudden chilling of the surface after exposure in the sun; sudden arrest of menstruation, or of hæmorrhoidal bleeding; over-distention of the organ with blood after the amputation of a limb; long-continued running or swimming, or excessive dancing; tumefaction and inflammation of the spleen occur in drunkards, in gluttons, and in persons under the influence of malaria, from distention and irritation of the texture of the organ, as well as through the morbid changes produced in the composition of the blood. Splenitis has been caused by terror, fear, grief, despondency, and other depressing emotions. Bree describes a case in a female who had been, in a frolic, six times immersed in the sea. The immoderate use of alcoholic drinks by overloading the blood with carbon, produces a dyscrasia which is connected either with simple tumefaction of the spleen, with tumefaction and softening, or with dropsy or scirrhous hardening. Disease of the

spleen is produced, also by drinking the water of marshy grounds, and has been often observed in persons subject to epilepsy.

Articles of food supposed to predispose to disease of the spleen are: grains rich in amylaceous matter, peas and beans, potatoes, the fat vegetable oils, sugar, in short, all nutritive substances which introduce into the blood a large amount of carbon and hydrogen.

Narcotics, especially hydrocyanic-acid, when taken in a certain quantity, produce a decomposition of the entire mass of the circulating fluid, reducing the blood to a black, thin fluid, and are enumerated among the causes of softening and distention of the spleen; though H. Meyer, in his experiments with hydrocyanic-acid on different animals, never found the blood-cells altered, and says nothing of morbid appearances in the spleen. Sulphuret of Ammonia and sulphuretted hydrogen, also the miasm of typhus and different kinds of malaria are known to produce similar effects upon the blood.

Certain employments and habits predispose to abdominal plethora. Among these are shoe-making, weaving, and many others in which we see sedentary position of the body, continued with much pressure or bruising of the abdomen.

Meteorological causes have been enumerated under malaria (pages 477, 469, 399).

TREATMENT.—Congestion and inflammation of this organ are so commonly met with in connection with intermittent fever, that we have already noticed them under that head. (See pages 512, 516.) The physiology of the spleen being not in all respects satisfactory, the treatment of its diseases is generally embraced in that of the general affections in which they are involved. In addition to remedies already mentioned some others have been thought to act specifically on the spleen. The most important of these is the Iodide of Potassium.

It is generally conceded, that a great destruction of blood-cells occurs in the spleen. In cases of ague we often observe congestive enlargement of this organ followed rapidly by anæmia. A short course of Iodide of Potassium, especially taken early, is general followed by subsidence of the congestion, diminution of the size of the organ, and a stop of the anæmia. The *modus operandi* is not the point in question; it is certain that there is primarily congestion; that this is accompanied by destruction of the blood-cells; and this results in anæmia BECAUSE the iron is *discharged*, and fresh, red corpuscles are not formed in sufficient quantity to replenish the loss; but when the congestion is *removed*, the destruction of blood-cells *ceases*, and the anæmia is soon replaced by the ruddiness of health.

Other Remedies are: China, (see page 489, this volume.) Natrum-muriaticum, (*Symptoms*, p. 504.) Common Salt is a popular remedy

25. PANCREATITIS.—INFLAMMATION OF THE PANCREAS.

The office of the pancreas is supposed to relate to the complete conversion of chyme into chyle. (See page 220.) It is also probable that it has something to do with the conversion of chyle into blood, or in the formation of hæmatozine, since great emaciation and anæmia have been observed in cases in which chronic disease and obstruction of this viscus terminated in death. The diseases of the pancreas are divided into:

1. *Functional Disorder.*—Alterations in the quality or quantity of the pancreatic fluid. The only known symptoms of this condition are: indigestion, emaciation, anæmia, imperfect sanguification and assimilation. Brunner made the experiment of extirpating the pancreas; but he only learned by his cruelty that the alvine evacuations became scanty and indurated.

Copland has endeavored to show that the fluid discharged from the stomach in pyrosis, consists chiefly of augmented pancreatic fluid regurgitated into the stomach, there occasioning pain and irritation, followed by its rejection. Dupuytren, with less plausibility, attributed the enormous fluid discharge in epidemic cholera to an excessive secretion from this viscus.

2. *Inflammation of the Pancreas.—Diagnosis.*—There is deep-seated pain somewhat below the pit of the stomach, or between this part and the umbilicus, extending to the back and under the left shoulder-blade; there are also occasional vomiting of an albuminous and ropy fluid; great thirst, and symptomatic fever. This inflammation may be either *acute*, *sub-acute* or *chronic*. Its existence may be inferred when the pain beneath the pit of the stomach is increased by bending the body forwards, and is but little affected by pressure. There is a sense of constriction or of anxiety at the præcordia; unusual dryness of the fauces, thirst and symptomatic fever; feeling of heat and tension at the epigastrium; and, the organ being much tumefied when inflamed, there is pressure upon the bile-ducts, producing jaundice. In some cases, a hard, painful, deep-seated tumor is felt between the scrobiculis cordis and the umbilicus, entirely distinct from the liver and the stomach. Occasionally there is a flow of ropy fluid into the stomach which is discharged without retching, nausea or anorexia; in other cases there is nausea, with vomiting of a ropy mucous fluid of a whitish-gray color, or tinged with bile; and the flow of saliva is increased; the bowels at the same time are confined. At other times there is a mucous, loose diarrhœa with ropy fluid evacuations.

Chronic pancreatitis presents the above symptoms in a less perceptible form; the pain at the epigastrium, the tension and heat are

felt only after a meal, or are aggravated by it. There are flatulence, eructations, pyrosis, and uneasiness in the back; some enlargement or tumor; the pyrosis appears every morning; salivation occurs in some instances.

Pancreatitis terminates in: 1. resolution; 2. The effusion of coagulable lymph on the surface of the organ; 3. suppuration; 4. gangrene; 5. chronic enlargement and induration.

Causes.—The first and most pernicious cause of this disease is abuse of Mercury. The following also operate in a deleterious manner on this organ as well as on the system generally. Tobacco in all the modes in which it is used; abuse of alcoholic drinks; frequent resort to purgatives; falls, blows, or other injuries; extension of inflammation from other organs. Pancreatitis also occurs sympathetically of inflammation of the salivary glands. In one case the parotids were greatly enlarged, but they diminished rapidly in size, and this was followed by symptoms of disease of the pancreas; on *its* subsidence, there was inflammation of the testicle; which was again superceded by inflammation of the parotid, ending in suppuration.

Treatment.—In seeking for remedies capable of affecting the pancreas specifically, we must endeavor to meet the symptoms of the individual case with some of the medicines known to be applicable to analogous diseases in other organs of the digestive system. When there is evident inflammation, we can only rely upon Acon., Mercur., Bry., Arsenicum, Tartar-emetic, Iodine, Kali-hydriodicum.

When the case is protracted, we can find remedies among those described under dyspepsia and chronic diseases of the liver, jaundice, &c. When chronic pancreatitis is evidently connected with a cancerous or scrofulous dyscrasia, it will be cured by the treatment given under those diseases. See pages 284 to 296.

26. LEUCOTHYÆMIA SPLENICA.

In this disease, first described by Dr. Hughes Bennett, of Edinburgh, the blood displays an excess of the white corpuscles; but there is not the extreme anæmia seen in anæmia lymphatica. Dr. Wilks regards the last-named as a destructive process in the lymphatic glands affected. The present disease is characterized also by epistaxis, purpura, and other hæmorrhagic tendencies, with wasting of the body; and the patient needs to keep the bed. The invasion has been gradual in the cases observed.

Causes.—Ague has in all cases preceded the full formation of this disease. In one case, examined after death, the spleen was very much enlarged; but there was no distinct circumscribed deposit as in anæmia lymphatica.

27. LEUCOSIS.

This is a condition of the system which is essentially *anæmic*, though associated with nervous exhaustion. It is closely related to chlorosis. It may appear in men, women, and children as well as in old age. Symptoms:

The tongue is pale, like a piece of raw veal; often coated, moist; deeply-marked with impressions from the teeth, flaccid, often tremulous, almost bloodless; muscular system powerless; countenance pale, as from effects of lead; lips blanched, often red; when red, it is only for a short period; in the highest form of this affection the tongue is slightly swollen; when the lips are red, there is nervous irritability with less apparent exhaustion.

In this disease, as well as in phthisis, and some other dyscrasias connected with deficiency of some of the normal elements of the blood, it is now believed that the secretions and excretions abound in an excessive amount of phosphates; and, in proportion to this excessive loss of materials essential to healthy blood, the consequent debility and symptomatic fever continually progress. Hence, in surgical cases of wounds, abscesses, or sloughing, occurring in such patients, it is perpetually necessary to assist the digestive organs in the assimilation of food duly supplied with all the elements essential to healthy nutrition; and a positive necessity exists for producing a normal phosphatized blood to furnish healthy exudations for uniting wounds and fractures. "The idea," "says Lehmann, "that the plasticity of an exudation is dependent on the quantity of fibrin it contains is erroneous." Some plastic exudations are without fibrin, and some non-plastic contain it. But the plasticity of the exudations is constantly associated with the presence of soluble phosphates. The integrity of the textures, therefore, depends upon their supply just as much as in their first organization, wherein special providential design is exercised. In the example of *incubation*, the egg phosphates are placed in the *yolk* of the egg for the early nutrition of the embryo chick, and glycero-phosphate is provided in the *shell* for the double purpose of affording protection during gestation, and nutritious support during the latter period of embryo development, by endesmosis through the albumen, and the consequent thinning of the shell preparatory to the young animal's escape at maturity from its imprisonment. Chossat produced rickets artificially in animals by restricting them to food which contained no phosphate of lime.

During the period of human gestation, if there be a deficiency of phosphatic salts taken in the food and assimilated, supplementary demands are made upon the mother's own tissues to furnish the necessary supply of these ingredients for the growth and development of the

child. The parent soon manifests the loss by complaining of defective secretions; dyspepsia, stitches, neuralgic pains; absorption of fat and muscle; pinched features; and the long train of symptoms usually ascribed to the irritation of uterine expansion and reflex excitement.

This disease has been cured by *small doses* of Hypophosphite of Potash three or four times a day, taken in diluted form. This salt is readily dissolved by animal fluids, and is speedily converted into a phosphate. The ground of preference of the hypophosphites over the phosphates as remedies, consists in the fact that the latter require for their solution weak acids which are not invariably present in the alimentary canal; then bread and animal food cease to nourish through the failure of the mucous secretions; and we see how the Hypophosphites of Potash or Soda may reach the lacteals and be taken into the blood when the phosphites might not be absorbed. (*Bischoff.*) Phosphorus, says Corewinder, "is the element which accompanies nitrogenous matter in all its phases." We are therefore justifiable in imitating nature in "accompanying nitrogenous food with the most soluble and absorbable salt of phosphorus" in all the forms of disease in which a deficiency of the phosphates is known to exist. The following are a few of these troublesome and often serious affections: 1. *Consequences of lactation too long continued; dentition* in feeble, pale, and scrofulous children; *leucothyæmia;* (See page 924.) general *anæmia* (see p. 712). Mercurial cachexia (p. 404); profuse *catarrhal* and *leucorrhœal* discharges; all *inordinate suppurations; myalgia*, or neuralgic muscular pains often mistaken for inflammation; some forms of *dyspepsia.*

Other remedies for leucosis and kindred affections; *Calcarea-carb.* (see pages 351, 448, 507, 614, 228). *China; Ferrum;* (page 507); Ignatia (p. 507).

28. MESENTERITIS.—See Marasmus.—INDEX.

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