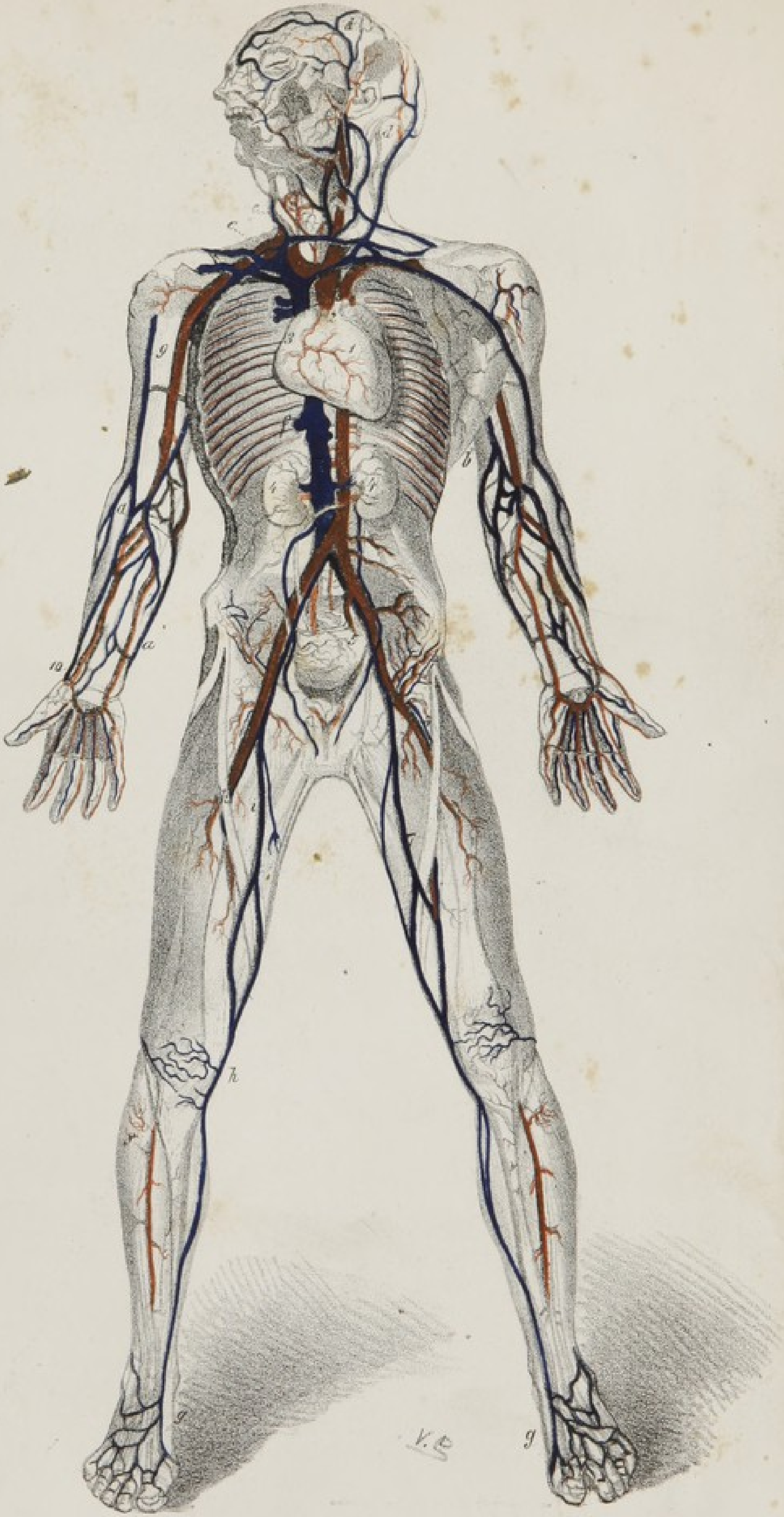

A

POPULAR CYCLOPEDIA

OF

MODERN DOMESTIC MEDICINE,

COMPRISING

EVERY RECENT IMPROVEMENT IN MEDICAL KNOWLEDGE;

WITH A PLAIN ACCOUNT OF

THE MEDICINES IN COMMON USE.

BY

KEITH IMRAY, M. D.,

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, AND LICENTIATE OF THE ROYAL COLLEGE OF SURGEONS IN EDINBURGH.

FIRST AMERICAN EDITION.

TO WHICH ARE PREFIXED BY THE EDITOR,

POPULAR TREATISES UPON ANATOMY, PHYSIOLOGY, SURGERY, DIETETICS,

AND THE

MANAGEMENT OF THE SICK.

COMPILED FROM THE WORKS OF DISTINGUISHED PHYSICIANS AND SURGEONS.

DESIGNED FOR GENERAL USE.

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PREFATORY NOTE TO THE AMERICAN EDITION.

THE volume which we here present to the American Public is one which we unhesitatingly believe will command the respect and confidence of all who may choose to avail themselves of the valuable information which it contains; and will also be approved by our Medical Faculty.

The chief part of the volume is derived from a work by the celebrated KEITH IMRAY, M. D.; which work has elicited flattering praise both in Great Britain and in this country.

We have thought, however, that something more was desirable for general readers; and have therefore prefixed valuable articles upon Anatomy and Physiology, upon Popular Surgery, Dietetics, and the Management of Sick Rooms, in a form which we believe adapted to those not familiar with medical phrases and terms. This part of the volume is compiled from the works of eminent medical writers; and some articles in this same part, for the sake of consecutive order, have been *transferred* from Dr. IMRAY's work.

It has been our special object, to adapt this volume to *popular use* in this country; we have, therefore, stricken from the original works from which the compilation is made all words, phrases, and allusions appropriate to England alone. Much matter which seemed unnecessary for the general reader has been omitted; original matter, however, has been introduced more appropriate to this country. In very many instances the structure of the language has been changed; sometimes because, in the original works, it was decidedly incorrect, and sometimes merely for the sake of brevity and perspicuity.

These statements are made in justice to the authors from whose works we have compiled this volume.

All paragraphs included in brackets have been furnished by medical gentlemen in New-York.

Every one should have a *general* knowledge of Anatomy, Physiology, Surgery, and Medicine; a knowledge easily acquired, by the attentive examination of such a work as we now offer. Many have lost their lives, or have been rendered permanently wretched, and many have been crippled, for lack of the knowledge to which we refer. Thousands of lives have been annually sacrificed by the heedless treatment of men calling themselves Physicians and Surgeons, who have known almost nothing of the modern researches and discoveries in the science of medicine, or of the structure of the human frame, or of the means of definitely ascertaining and correctly treating diseases.

We are confident that the following volume, if carefully studied, will enable the reader to avoid the impostures of such men.

We make the following extract from Dr. Imray's preface to his work. "The object of the Cyclopedia of Popular Medicine is indicated on its title page, to describe, in plain and simple terms, the causes, symptoms, and treatment of disease. The whole science of medicine rests on these three points; *we ascertain causes* for the purpose of avoiding, *symptoms* for the purpose of distinguishing, and *treatment* for the purpose of curing disease. In a great many affections, and particularly in disorders which depend on derangement of the functions of a part, common sense, aided by the rules which are to be found in the present pages, will enable the reader to recognize the symptoms, and select the proper treatment. Still I cannot sufficiently impress on his mind *the necessity of having at once recourse to medical assistance* whenever it can be obtained, in all serious cases of disease. The Cyclopedia of Popular Medicine *is not intended to supersede the practice of medicine, by making every man his own doctor*, but to afford simple rules for the alleviation of disease and the preservation of health, which may be had recourse to whenever circumstances render it expedient or necessary. It is hoped that the rules herein laid down are expressed in a manner to be intelligible to all persons who have received any education. This has been the main object of the author, and in this, he trusts, he has succeeded. In recommending any particular line of treatment, the author has availed himself of the best medical authorities, confirmed by his own experience, and the results of a long practice both in the West Indies and different parts of Europe."

With these few remarks, we submit this volume to the judgment of the community.

New-York, *March*, 1849.

DOSES OF MEDICINES.

The Doses of Medicines directed in this work, unless otherwise particularly mentioned, are intended for grown-up persons of moderate strength. The following table shows the proportions in which the doses should be diminished during the earlier periods of life.

Suppose the dose for a person of middle age to be	one, or one drachm, (60 grains.)
For one from 14 to 21 years, it will be	two-thirds, or two scruples, (40 grains.)
For one from 7 to 14 years ..	one-half, or half a drachm, (30 grains.)
" 4 to 7 " ..	one-third, or one scruple, (20 grains.)
" of 4 years of age .	one-fourth, or fifteen grains.
" of 3 " .	one-sixth, or half a scruple, (10 grains.)
" of 2 " .	one-eighth, or eight grains.
" of 1 " .	one-twelfth, or five grains.

A tea-spoonful (sixty drops) is considered equal to a drachm, and a table-spoonful to half an ounce; but the propriety of accurately weighing or measuring the doses of medicines must be obvious to every one; every medicine chest should be furnished with a set of apothecaries' weights, a graduated measure for drops, (*minims*,) for drachms, and for ounces.

The proportions of *some* medicines for children vary from those mentioned above. For example, castor oil and calomel; of which the doses for a child two or three years old are about half those for an adult.

One drop of laudanum is a full dose for an infant less than a month old.—Ed.

A

POPULAR CYCLOPEDIA

OF

MODERN DOMESTIC MEDICINE.

ANATOMY AND PHYSIOLOGY.

BRIEF VIEW OF THE HUMAN BODY.

THAT we may understand for what purpose the human body is made to consist of such a variety of parts; why it possesses such a complication of nice and tender machinery; and why there was not a more simple, less delicate, and less expensive frame, it is necessary that we, in our imagination, make a man; in other words, let us suppose that the mind or immaterial part is to be placed in a corporeal fabric, in order to hold intercourse with other material beings by the intervention of the body; and then consider what will be wanted for its accommodation. In this inquiry we shall plainly see the necessity, advantage and wonderful adaptation of most of the parts which we actually find in the human body. And if we consider that in order to answer some of the requisites, human wit and invention would be very insufficient; we need not be surprised if we meet with some parts of the body whose use we cannot yet perceive, and with some operations and functions which we cannot explain. We can see that the whole bears the most striking tokens of excelling wisdom and ingenuity; but the imperfect senses and capacity of man cannot reach every part of a machine, which nothing less than the intelligence and power of the Supreme Being could contrive and execute.

First, then, the mind, the thinking, immaterial agent, must be provided with a place of immediate residence, which shall have all the requisites for the union of spirit and body; accordingly it is provided with the brain, and is governor and superintendent of the whole fabric.

In the next place, as it is to hold a correspondence with all material external beings, it must be supplied with organs fitted to receive the different kinds of impressions which they will make. In fact, we see that it is provided with the organs of sense, as we call them; the eye is adapted to light; the ear, to sound; the nose, to smell; the mouth, to taste; and the skin, to touch.

Further, it must be furnished with organs of communication between itself in the brain, and those organs of sense, to receive information of all the impressions that are made upon them; and it must also have organs between itself in the brain, and every other part of the body, fitted to convey its commands, and to influence the whole. For these purposes the nerves are actually given. They are soft white cords which rise from the brain, the immediate residence of the mind, and disperse themselves in branches through all parts of the body. They convey all the different kinds of sensations to the mind in the brain; and likewise carry out thence all its commands to the other parts of the body. They are intended to be occasional monitors against all such impressions as might endanger the well-being of the whole, or of any particular part; which vindicates the Creator of all things, in having actually subjected us to those many disagreeable and painful sensations to which we are exposed from a thousand accidents in life.

Moreover, the mind, in this corporeal system, must be endowed with the power of moving from place to place; for the sake of intercourse with a variety of objects; of escape, from such as are disagreeable, dangerous, or hurtful; and for the pursuit of such as are pleasant or useful. Accordingly it is furnished with limbs, muscles, and tendons, the instruments of motion, which are found in every part of the fabric where motion is necessary.

But to support; to give firmness and shape to the fabric; to keep the softer parts in their proper places; to give fixed points for, and the proper directions to, its motions, as well as to protect some of the more important and tender organs from external injuries, there must be some firm prop-work interwoven through the whole. And in fact, for such work the bones are given.

This prop-work is not made with one rigid fabric, for that would prevent motion. Therefore there are a *number* of bones.

These pieces must all be firmly bound together, to prevent their dislocation. And this end is perfectly answered by the ligaments.

The extremities of these bony pieces, where they move and rub upon one another, must have smooth and slippery surfaces for easy motion. This is most happily provided for, by the cartilages and mucus of the joints.

The spaces between these different organs must be filled up with some soft and ductile matter, which shall keep them in their places, unite them, and at the same time allow them to move a little upon one another. These purposes are answered by the cellular membrane or adipose (i. e. fatty) substance.

There must be an outward covering over the whole apparatus, both to give it compactness, and to defend it from a thousand injuries; which in fact, are the very purposes of the skin and other integuments.

Lastly, the mind being formed for society and intercourse with beings of its own kind, must be endued with powers of expressing and communicating its thoughts by some sensible marks or signs, which shall be both easy to itself, and admit of great variety. Accordingly it is provided with the organs and faculty of speech, by which it can throw out signs with amazing facility, and vary them without end.

Thus we have built up an animal body which would seem to be pretty complete; but as it is the nature of matter to be altered and worked upon by matter, so in a very little time such a living creature must be destroyed, if there is no provision for repairing the injuries which it must commit upon itself, and those to which it must be exposed from without. Therefore a treasure of blood is actually provided in the heart and vascular system, full of nutritious and healing particles, fluid enough to penetrate into the minutest parts of the animal, impelled by the heart, and conveyed by the arteries. It washes every part, builds up what was broken down, and sweeps away the old and useless materials. Hence the necessity or advantage of the heart and arterial system.

What more there is of the blood than enough to repair the present damages of the machine, must not be lost, but should be returned again to the heart; and for this purpose the venous system is provided. These requisites in the animal explain the circulation of the blood.

The old materials which were become useless, and are swept off by the current of blood, must be separated and thrown out of the system. Therefore glands, the organs of secretion, are given for straining whatever is redundant, vapid, or noxious, from the mass of blood; and when strained, they are thrown out by emunctories, called organs of excretion.

But as the machine is constantly in action, the reparation must be carried on without intermission, and the strainers must always be employed. Therefore there is actually a perpetual circulation of the blood, and the secretions are always going on.

All this provision, however, would not be sufficient ; for that store of blood would soon be consumed, and the fabric would break down, if there was not a provision made for fresh supplies. These, we observe, are profusely scattered around her in the animal and vegetable kingdoms ; and hands, the fittest instruments that could be contrived, are furnished for gathering them, and for preparing them in a variety of ways for the mouth.

But these supplies, which we call food, must be considerably changed; they must be converted into blood. Therefore are provided teeth for cutting and bruising the food, and a stomach for melting it down ; in short, all the organs subservient to digestion. The finer parts of the aliments only can be useful in the constitution. These must be taken up and conveyed into the blood, and the dregs must be thrown off. With this view the intestinal canal is provided. It separates the nutritious part, which we call chyle, to be conveyed into the blood by the system of absorbent vessels; and the coarser parts pass downwards to be ejected.

We have now got our animal not only furnished with what is wanting for its immediate existence, but also with powers of protracting that existence to an indefinite length of time. But its duration, we may presume, must necessarily be limited ; for as it is nourished, grows, and is raised up to its full strength and perfection ; so it must in time, in common with all material beings, begin to decay, and then hurry on to final ruin. Hence we see the necessity of a scheme for its renovation. Accordingly wise Providence, to perpetuate, as well as to preserve his work, besides giving a strong appetite for life and self-preservation, has made animals male and female, to continue the propagation of the species to the end of time.

Thus we see, that by the very imperfect survey which human reason is able to take of this subject, the animal man must necessarily be complex in his corporeal system, and in its operations.

He must have one great and general system, the vascular, branching through the whole for circulation ; the nervous, with its appendages the organs of sense, for every kind of feeling ; and a third, for the union and connection of all these parts.

Besides these primary and general systems, he requires others which may be more local or confined ; one for strength, support, and protection, the bony structure ; another for the requisite motions of the parts among themselves, as well as for moving from place to place, the muscular system ; another to prepare nourishment for the daily recruit of the body, the digestive organs ; and one for the continuance of the species.

In taking this general survey of what would appear originally to be necessary for adapting an animal to the situations of life, we observe, with great satisfaction, that man is accordingly made of such systems, and for such purposes. He has them all; and he has nothing more, except the organs of respiration. Breathing it would seem at first difficult to account for; we only know it from observation to be essential to life. Notwithstanding this, when we see all the other parts of the body, and their functions, so well accommodated for, and so wisely adapted to their several purposes, there can be no doubt that respiration is so likewise; accordingly the discoveries of Dr. Priestly, and of later inquirers, have thrown light upon this function also, as will be shown in its proper place.

Of all the different systems in the human body, the use and necessity are not more apparent than the wisdom and contrivance which have been exerted in putting them all into the most compact and convenient form; in disposing them so, that they shall receive, helps from one another; and that all or many of the parts shall not only answer their principal end or purpose, but operate successfully and usefully in a variety of secondary ways.

If we consider the whole animal structure in this light, and compare it with any machine in which human art has exerted its utmost skill; (suppose the best contrived ship that ever was built;) we shall be convinced beyond the possibility of doubt, that intelligence and power have been exerted in its formation far surpassing anything of which men can boast.

One superiority in the animal economy is peculiarly striking. In machines of human contrivance there is no internal power, no principle in the machine itself, by which it can alter and accommodate itself to any injury which it may suffer, or remedy any mischief which admits of repair. But in the animal body this is most wonderfully provided for by the internal powers of the system; many of which are not more certain and obvious in their effects than they are above all human comprehension as to the manner and means of their operation. Thus a wound heals by a natural process; a broken bone is made firm again by a deposit of new bony matter; a dead part is separated and thrown off; noxious juices are driven out by some of the emunctories; a redundancy is removed by some spontaneous bleeding; a bleeding naturally stops of itself; a great loss of blood from any cause, is in some measure compensated by a contracting power in the vascular system, which accommodates the capacity of the vessels, to the quantity contained. The stomach gives information when the supplies have been exhausted; gives intimations, with great exactness, of the quantity and quality of what is wanted in the present state of the machine; and in proportion as it meets with neglect rises in its demands, and urges its petition in a louder tone, and with more forcible arguments.

For the protection of the animal amidst the fluctuations in the heat of external bodies, a power of generating warmth has been provided; and to prevent its undue accumulation in a heated atmosphere, or its excessive loss in a cold one, the quantity carried away is regulated with wonderful nicety to its wants; so that an equal temperature is preserved in all the range of climates, from the extreme point of habitable existence near the poles, to the intense heat of the equatorial regions.

A farther excellence in the natural machine, and if possible still more astonishing and more beyond all human comprehension than that of which we have been speaking, is the capability individuals possess of reproducing beings like themselves, which are again endued with similar powers for producing others, and so of multiplying the species without end.

These are powers which mock all human invention or imitation. They are characteristics of the Divine Architect.

OF THE BONES.

BONE AN ORGANIZED SUBSTANCE.

The bones, constituting, as was before observed, the basis and support of the body, are necessarily its most hard and solid parts; appearing to superficial observation to be merely inorganic compounds; resisting for ages the test of time; and remaining impressive memorials of the decay of past generations. Hence, some have been led to think they were without organization, and consequently not liable, like the soft parts of the body, to disease and death. But this erroneous opinion is refuted by minute dissection, which discovers the internal structure of bones, traces their numerous vessels, and shows them to be supplied with blood like the softer parts; and also, that, like these parts, they have their periods of growth and decay, and are liable equally with them to internal diseases, and to derangement from external injuries.

If, for instance, the vessels of adult bone be injected with red colored wax, and the earthy particles be dissolved by a mineral acid, the bone will be reduced to a membraneous state, but a jelly-like substance, full of vessels, will remain; and these vessels will now appear as numerous as in the fleshy parts, a proof that they were before concealed only by the earthy portion of the bone.

Before *birth* all the bones of the fœtus are of a cartilaginous character. This cartilage is not, as was erroneously supposed, hardened into bone; but is absorbed and carried away by one set of vessels, while another set is employed in depositing, in its room, matter for forming the new bones. This process is effected in the following manner.

The transparent vessels of the cartilage first begin to dilate to receive the red blood; at this time an artery can be observed penetrating towards the middle of the bone; this artery is soon accompanied by others, all forming a sort of net-work, and conveying red blood; and now ossification may be said to have commenced. Gradually the cartilage grows opaque and brittle, and will no longer bend. The bony centre spreads according to the dimensions of the bone; and may be known by its hard feel, when examined by a sharp instrument; similar points of ossification are now found and in a like manner, in other parts of the bone, till its whole body becomes opaque; and now the vessels, stretching from the centre towards the extremities, having penetrated the cartilages which separate the heads from the body of the bone, enter these heads, when ossification commences here also. From this mode of process it will be seen, that the heads and body are at first distinct bones, formed separately and connected only by cartilage, and they are not united till the age of eighteen or twenty years.

Thus the formation of bone is effected by the action of its blood vessels, which may be seen entering in one great trunk into the body of each bone, and spreading thence towards both extremities. It is by this action all the parts of the body are evolved; it forms the blood as is seen in the case of the chick, which has no other way of receiving this fluid but by forming it within its own body; and from the blood are all the solids constructed by the same action of the vessels. All animals have the power of assimilating their food, and with the assistance of air, of converting it into blood; and as by the action of their larger vessels they can thus elaborate fresh supplies of red blood, so the action of particular vessels is intended to prepare particular parts. Thus some add to the solids to assist growth, others for supplying the continual waste; while more are employed in effecting the different secretions within the body, one of which is the formation of bone. In this manner then is ossification accomplished; the arteries of the transparent cartilage of the fœtus, beginning at length to receive the red blood, commence their deposition of earthy matter. This at first appears in numerous specks, which spreading, afterwards meet, and at last constitute perfect bone. But, while these arteries are thus employed in depositing bone, there are other vessels, (called absorbents, from the nature of their function) busily engaged in removing the cartilage, modelling the new bone into its proper form, shaping out its cavities, and also hardening it into due consistence.

This organization of arteries to deposit bone, and of absorbents to convey away the cartilage, which was necessary to its formation and growth, is also essential to the life and health of the full formed bone. Indeed, the latter depends on the regular deposition and reabsorption of the parts; for by varying the degree of action in either of these operations, bone may be made to inflame and ulcerate like the softer parts, or to become too brittle by an over secretion of earth, or too soft from its excessive absorption. It is this earth which constitutes the hardness, and, indeed, all the serviceable properties of bone. It lies dead in the inorganic interstices of the membrane, and is united with animal mucilage to give it consistence and strength.

That the bones, in common with the rest of our frames, undergo a constant renovation of parts, is proved by the following experiment. If madder be given to animals, then withheld for some time, and afterward given again, in twenty-four hours after it had been first given, all their bones will become tinged; and in two or three days the color becomes very deep. In a few days after the madder has been discontinued, the red color disappears; but on its being again given to the animals, their bones become a second time tinged. Further, the absorption of bones, is also proved by the disappearance of a carious or dead bone, even before the skin is opened; and by the destruction of a bone, merely from the pressure of a tumor against it; in which cases the bone must have been taken up by the absorbing vessels and conveyed away; and lastly, this absorptionis placed beyond all controversy, by the fatal disease called "mollities ossium;" (softening of the bones;) which in a short time dissolves and carries off, by an excessive action of the absorbents, the bony system; discharging the earthy matter by the kidneys, and gradually rendering the bones soft, till they bend under the weight of the body and may be cut with a knife.

But this vascular nature of bones not only sustains their health by constantly removing and carrying off their wasted and unsound particles, and furnishing them with new ones; but also, by extending to them the circulation in common with the other parts of the body, it enables those useful organs to repair their injuries by uniting such as may be broken. And here we cannot help admiring the beneficence as well as wisdom of the Creator, who thus kindly interweaves, not only with the soft parts of the human machine, but also, with its most hard and solid substances, the means of supplying their waste and of repairing their injuries.

If, for instance, a bone be fractured, its broken ends will unite in the following manner; first, the arteries discharge a thin mucus, which afterwards thickens into a transparent jelly and becomes vascular, by the elongation of vessels from the neighboring parts; these vessels soon begin to secrete the osseous matter, till the whole jelly becomes one bony mass, and thus the fractured ends are completely united. That this desirable result may be the more certain, the formation of new bony matter is not confined to any one part or to particular vessels in the bone; but is generously bestowed upon its entire system; for not only will the vessels of the periosteum, (the membrane covering and lining the bones) produce fresh osseous matter; but so also will those of the bone itself; as will likewise the vessels of the marrow, which is contained within the cavity of the bones. Thus, if by puncturing the bone of an animal we destroy the marrow, the old bone decays, and a new one will be formed from the periosteum; and, should the creature soon afterwards die, and the bone be inspected, it will be found to be a secretion from the inner surface of the periosteum, bearing all the characteristics of true bone, and containing within it the old bone, dead and black. But if this experiment be reversed, and the periosteum only is destroyed, preserving the nutritious vessels of the bone; in this case the new bony matter is formed by the medullary vessels, and the old bone surrounding it, will become black and dead. Lastly, when the knee-pan, where there are no medullary vessels, is fractured, the broken parts are united by the intervention of a callus, secreted from the vessels of the bone itself.

Again, if a bone is injured by blows or other accidents, which derange its economy and damage its structure, the circulation soon repairs the mischief in the following manner. First, inflammation takes place, as in the soft parts of the body; next, a swelling and spongy looseness with a fulness of blood ensue; suppuration and ulceration soon follow; and finally, the diseased bone becomes completely dead, and is discharged from the system.

Bones, besides arteries, veins, and absorbing vessels, have also, like the soft parts, their nerves. These may be discovered entering like small threads into the body of the bone, in company with its nutritious vessels; and yet, notwithstanding we can trace the course of some of these nerves, a bone appears to possess no sensibility. Thus, rasping the periosteum, and even scraping it from the bone, produces no pain. In amputation bones are cut without exciting particular feeling. Even the application of the actual cautery formerly in use, was known to produce only a kind of heat along the course of the bone, not unpleasant to the patient. But it must not be supposed from these facts that bones are wholly insensible, they are in reality otherwise; but their sensibility being fitted to their functions, is so regulated as not to appear under the generality of those circumstances, which produce it in the soft parts of the body. Hence the shocks from running, leaping, and other violent exercises, cause no sensation in the bones; and which, if otherwise ordered, must have subjected them to almost continued pain, from the nu-erous blows and other accidents they encounter. The same wise provision is extended to the cartilages, ligaments, and other parts composing the joints, and for the same reason; namely, to prevent the occurrence of pain on every uneasy motion or concussion which these parts are liable to endure.

But though bones exhibit this inaptitude to sensibility, in their healthy state, and on ordinary occasions; this is far from being the case when they are diseased. Injuries will produce inflammation in the bones as well as in the soft parts, and now their hidden sensibility becomes roused, and even surpasses that of the latter, though excited from a like condition. This is also the case with the cartilages, ligaments, and all the other parts in which sensibility appears dull during health. Thus the wound of a joint is certainly less painful at first, but inflammation coming on, the sensibility of the injured parts rises to an excruciating degree; and no pains are felt to equal those arising from bones and joints.

Thus it will be seen that ossification is a process of a truly animal nature; and that bone is a regularly organized substance, whose form subsists from the first. Bone partakes by its vessels of the general changes with all the other parts of the body; the absorbents removing the old wasted parts, while the arteries are constantly depositing new ones; and thus it lives, grows, and is enabled to repair its injuries. Ossification is at first rapid; advances slowly after birth; but is not completed in the human body till the twentieth year; it is forwarded by health and strength of constitution; and is retarded by weakness and disease. In scrofula it is imperfect; and so children become rickety, the bones softening and swelling at their heads, and bending under the weight of the body.

The structure of bones, as may be seen by breaking those old and decayed ones which are found in church-yards, consists of plates made up of fibres, and those plates connected by other fibres; by which formation a great number of interstices or cells are to be met with in the heads of the long bones, while their sides have a more dense, and firm construction.

THE PERIOSTEUM.

The bones are covered with a membrane, called on that account periosteum. It adheres closely to their surface, by small points, which dive into the outward substance of the bones, so that it may bear the pulling of the great tendons, which are fixed rather into the periosteum than into the bone. It is also connected with the bones by innumerable vessels, which are transmitted to them through the medium of this membrane. The periosteum is not itself vascular, and appears to be merely condensed cellular membrane. If, however, it be hurt by injuries, the outer layers of the bone die, because the vessels which nourished and sustained their health, are now destroyed or prevented from continuing their function, by the injury of the membrane through which they passed into the bone. But the internal layers will now set about repairing the mischief. These, being fully nourished by the internal arteries, inflame, swell, become porous and spongy, and form granulations. These granulations, push off the mortified plate, and form themselves into new bone, which supplies its place.

The uses of the periosteum appear to be, to nourish, by the vessels which pass through it, the external layers of the bone; to afford a convenient origin and insertion to several muscles and tendons which are fixed into this membrane; and to prevent, by the looseness of the external surface, friction, in the sliding of the muscles over the bones.

THE MARROW.

The marrow is an oily secretion from the blood, and is lodged in membraneous vesicles or cells, which fill up the larger and smaller cavities within the bones. These minute bags are formed from the membrane which lines the cells within the bones.

The precise use of the marrow is not yet ascertained; but its consistence varies in different periods of life. In infancy it is thin and tinged with blood. It thickens as we advance in life.

The destruction of the marrow, as we before observed, produces the death of the bone in which it is contained; and from the same cause, that injuries of the periosteum will be the means of destroying the external plates, namely the destruction of the vessels; for as the periosteum is the medium by which the external vessels are conveyed to the bone, so the internal ones are conducted to its substance by the membrane containing the marrow, and lining the inside of the bone; whence the marrow being destroyed, the channels for conveying nourishment are cut off, and the bone dies.

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LIGAMENTS.

The bones are connected to each other by ligaments, which are strong, white, flexible substances, and but little elastic. They are of two kinds, the round or cord-like ligament, which grows from the head of one bone, and is inserted into that of the other, tying the two bones together; and the capsular ligament, which encloses the whole joint as in a purse or bag, and has numerous arteries opening upon its internal surface, for the purpose of keeping it moist, and of diminishing friction.

CARTILAGES.

But the more effectually to preclude friction and concussion, all the bones forming moveable joints, have their ends covered with plates of cartilage, which being of a solid, smooth, elastic nature, renders all the motions of the joints easy and free from shocks in running, jumping, &c.; and to increase this effect, there are also moveable cartilages interposed between the ends of the bones, in some of the joints.

THE SYNOVIA.

Besides the fluid which the capsular ligament throws out, there are small fringe-like bodies placed within the joints, for securing a constant and copious supply of moisture. They secrete a singularly glairy and slippery liquor called synovia, for lubricating the different surfaces of the joint, and preventing friction in the various motions of the body. After the synovia has performed its office, it is re-absorbed by the absorbent vessels, which arise by open extremities from all the cavities of the body.

OF THE SKELETON OF THE HUMAN BODY.

The bones of an animal connected together, after the soft parts have been removed, is called a skeleton; and is said to be a natural one when they are kept together, as in the living state, by their own ligaments; but artificial if they are joined with wire, or any other substance, foreign to the animal.

The human skeleton we shall divide, for the purposes of description, into the head, the trunk, the superior and inferior extremities.

OF THE HEAD.

By the head is meant all that part which is placed above the first bone of the neck. It therefore comprehends the bones of the skull and those of the face.

THE SKULL.

The skull or brain-case consists of eight bones, which form a vaulted cavity for lodging and defending the brain; this great cavity is proportioned to its contents, which is the cause of such variations in its size in different persons; while its roundish figure is chiefly owing to the equal pressure of the contained parts, as they grow and increase, before the skull is entirely ossified; and to the management of the head during this period is to be attributed the difference of shape observable in different nations. Hence from the use of the turban, the head of a Turk assumes a round figure, greatly different from that oblong shape, which characterizes those nations, with whom the turban is not in use.

A more striking instance of the degree in which the human head may be modelled by national customs, is found among the Caribbee Indians, who by flattening the forehead in early infancy, produce a hideous deformity of aspect.

Some of the Faquirs of India are well known for the cone-like shape to which they mould their heads.

The bones of the skull are composed of two tables, and an intermediate lattice-work, nearly of the same structure and use, as that of the other bones. The outer table or plate is the thicker and stronger of the two, being more immediately concerned in warding off injuries of the head.

The eight bones of the skull are the *frontal-bone*, which forms the whole fore-part of the skull; the two *parietal-bones* forming its upper and middle part; the two *temporal-bones* composing the lower part of the sides; the *occipital-bone* making the whole hinder part, and some of the base; the *ethmoid-bone*, placed in the fore-part of the base of the skull; and the *sphenoid-bone* in its middle.

SUTURES.

These bones are joined to each other by what anatomists call sutures, which are indented or dovetailed seams; their uses are not well understood. Some have supposed that they were intended to limit the extent of fractures in the skull; others, that they enable the dura mater, or membrane lining the inside of the head, to suspend itself more firmly, by insinuating its fibres through those sutures, and communicating with the membrane on the outside. But these opinions, with many others, are contested and admit of doubt; and, perhaps, it is more reasonable to believe that sutures are merely a consequence of the mode in which the ossification of the skull takes place, rather than a formation, designed for certain uses. We see the bones of the skull ossify from the centre towards their circumference, their fibres spreading and extending on every side, till at last those different bones meet, and shooting in between each other, form the suture or serrated line of union. Nature, in the formation of all bones, hastens their ossification, by beginning the process in many points, and she observes this law in healing a broken bone, as well as in forming the skull. Had the process of ossification in the head been confined to one point, it must necessarily have been slow and imperfect, and the brain would have continued a long time exposed to injuries from without. Instead of this, we find a distinct system of ossification going forward at the same time in each of the bones composing the skull, all spreading from their centres, and approaching each other to make one whole, perfect, bony case for lodging the brain. But it should be observed here, that this ossification is not complete for a long time after birth; the bones not having yet sufficiently grown for their edges to meet. The imperfectly ossified state of the skull appears to be better suited to the growing and increasing condition of the brain during this period, than if its ossification had been quite complete; as in this case the flexibility of the skull must be less, and its capacity not so easily enlarged by the increasing bulk of the brain. One beneficial consequence results from the imperfect ossification of the skull at birth, which is too important to omit, and which, perhaps, was the principal aim nature had in view, in adopting this peculiar structure; namely, the opportunity it affords of contracting the size of the head in child-birth. It is almost constantly found that the bones overlap one another very considerably, and lessen the head in both its diameters to a surprising degree.

BONES OF THE FACE.

The face is the irregular pile of bones composing the fore and under part of the head. It constitutes the bony portion of some of the organs of sense, affording sockets or orbits to the eyes, an arch to the nose, and a support to the palate; it also forms the basis of the human physiognomy, and enters into the composition of the mouth. Anatomists, in their description, commonly divide the face into the upper and lower jaws.

It consists of six bones on each side; of a thirteenth placed in the middle, and having no fellow; and of sixteen teeth. The thirteen bones are, viz. the two nasal; two ungular; two cheek-bones; two maxillary bones; two palate bones; two spongy bones of the nose; and the single bone, called the vomer, and which divides the nose.

The two *nasal bones* form the root and arch of the nose.

The two *ungular bones,* so called from their resembling the nail of one's finger, constitute the inner angle of each orbit. Each of these bones has a deep perpendicular canal for lodging a part of the lachrymal sac and duct, by which the tears are conveyed into the nose ; and it is this bone which is operated upon in the disease called fistula lachrymalis, which is an obstruction of the duct, by which the tears, instead of flowing off by the nose, trickle over the face. The operation is performed by piercing the bone with an instrument, which opens an artificial communication with the nose, and the tears are conducted through that channel.

The two *cheek bones* are the prominent square bones, which form the upper part of the cheeks. They constitute a distinguishing feature in the human countenance, as may be seen by comparing the high cheek-bones of the Tartars, and other northern nations, with the more regularly formed countenances of the people of southern climates.

The two *maxillary bones* are the largest, and constitute the far greater part of the upper jaw. They form the most part of the nose, a great portion of the roof of the mouth, and also a considerable share of each orbit ; at their lower edge they afford a base and sockets for containing the sixteen upper teeth. Each of these bones has a large hollow in its body, which is lined with a continuation of the membrane of the nose. It is called the maxillary sinus, has a small opening into the nostrils, and is supposed to be intended for raising and making the voice more perfect, by creating a reverberation of the sounds. Sometimes collections of matter form in this sinus, attended with great pain, inflammation, and swelling of the cheek, and even distortion of the face ; in this case the matter is discharged by pulling out the second or third of the grinding teeth, and introducing a sharp stillet by the socket of the drawn tooth, then perforating the bony partition, which is here generally very thin, into the sinus.

The *palate-bones* are placed at the back part of the palate or roof of the mouth, and are continued up the back part of the nostrils, to the orbits ; forming part of the palate, nostrils and orbits.

The spongy bones are four in number, two in each nostril ; they are so named from their porous texture, being rolled into scrolls, and their thin laminæ of bone are pierced by many holes, which renders them very light. They are covered with the membrane of the nose, which lines universally all the cavities of this organ. The points of the lower of these bones form those projections which may be felt by the finger, and from the improper practice of picking the nose, very often serious consequences arise ; for in many instances polypi of the spongy bones which are fleshy excrescences, and which can be traced to injuries of this kind, grow so as to extend down the throat, and cause suffocation and death.

The *vomer*, so called from its supposed resemblance to a ploughshare, is a thin flat bone; constituting the thirteenth and last bone of the upper face. It forms the lower and back parts of the division of the nose. Its upper edge is united to the base of the sphenoid-bone, and to the nasal-plate of the ethmoid. Its anterior edge has a long furrow for receiving the middle cartilage of the nose; and its lower edge is joined to the maxillary and palate bones. This bone divides the nostrils from each other, and like the spongy bones enlarges the organ of smelling by affording greater space for the expansion of the membrane of the nose.

THE LOWER JAW.

The lower jaw consists of only one moveable bone and sixteen teeth. It is nearly of the form of a crescent, or half moon, terminating the outline of the lower part of the face, forming the under part of the mouth, and serving as a frame for holding and working the lower teeth. The fore-part of this bone is termed the chin, from this its sides extend back to what are called the angles of the lower-jaw. Here its base ends, and the bone bends upwards at right angles, to be articulated with the head. From these rising branches shoot out two processes or bony projections on each side; the first is called the coronoid, or horn-like process, and is intended for the convenient insertion of the temporal muscle, the lower end of this muscle being fixed into the whole of that process; and being placed at a distance before the articulation of the jaw, gives the muscle great power in moving it. The other is the articulating process; it lies behind the former, is of an oblong shape, and set across the branch of the jaw. These articulating extremities are received into two large cavities, hollowed out in each temporal bone near the ear, and are connected to these bones, by means of capsular ligaments, which extend from one bone to the other, and enclose the joint as in a bag. Not only the surfaces of the bones composing these joints are covered with cartilage, to prevent friction, but, to render their large and numerous motions more secure and easy, a moveable plate of cartilage is interposed, which plays between the articulating surfaces, and thus facilitates their motions. It is thin in its centre and thickens towards its circumference, by which contrivance the hollow of the joint is deepened, and the hazard of dislocation is lessened. Such moveable cartilages are generally placed in joints where frequent and rapid motion is required.

The sockets of the teeth in the lower-jaw are similar to those of the upper, but their number and size in both are various, because of the different numbers, as well of the teeth themselves, as of their roots. As the body grows, the jaw-bone slowly increases in length, and teeth are added in proportion, till the jaws acquire their full size, when the sockets are completely filled, the lips are extended, and the mouth is said to be formed. But, in the decline of life, when the teeth fall out, the sockets are reabsorbed and carried away, as if they had never been; then the chin projects, the cheeks become hollow, and the lips fall in, the sure marks of old age.

Fractures of the lower-jaw are more or less transverse, and are known by the falling down of one part of the bone. They happen from blows or falls, but never by pulling teeth, the sockets of the teeth which alone are broken in their extraction, bearing but a small proportion to the rest of the jaw; and even in children this cannot happen, for in them the teeth have no roots, nor any hold or dangerous power over the jaw.

OF THE TEETH.

The teeth of an adult are generally in number sixteen above, and as many below, though some people have more; others, fewer. The part appearing without the socket, is called the base or body, and those parts within, the roots or fangs. These roots become generally smaller towards the end farthest from the base; and are nearly conical, by which the surface of their sides lessens the pressure made by their bases, and prevents the soft parts, at the small points of the sockets, being hurt by such pressure. Each tooth is composed of its enamel, (an extremely hard substance covering the outer surface of the tooth) and an internal bony substance. The enamel has no cavity or place for marrow, and is so extremely hard, that saws or files can with difficulty make an impression upon it. It is thickest upon the base, and becomes thinner towards the extremities of the roots. Its fibres are all perpendicular to the internal substance, and are straight on the base, but at the sides are arched with a convex part towards the roots, which enables the teeth to resist the compression of any hard body between the jaws, with less danger of breaking these fibres, than if they had been situated transversely. The spongy sockets in which the teeth are placed, likewise serve better to prevent such an injury, than a more solid base would have done. The internal bony part of the teeth is of the nature of other bones; like them it is supplied with blood-vessels and nerves, and like them it is subject to the disorders of other vascular parts. Hence, when the enamel breaks or falls off, and the internal part becomes exposed to the air, it soon corrupts, and a carious tooth is produced, perfectly hollow within, and having only a small hole externally. The vessels and nerves enter by a small opening placed a little to the side of each root, and thence descend to be lodged in canals formed in the middle of the teeth; here they are employed in replacing the waste constantly made by the friction they undergo in mastication.

The teeth are commonly divided into three classes, viz: the incisores, canini, and grinders or molares. The incisores, so called from their use in cutting the food, are the four teeth in the fore-part of each jaw. The canini derive their name from their resemblance to a dog's tusks. They are the longest of all the teeth, are placed one on each side of the incisores, so that there are two canini in each jaw, which seem to be intended principally, not for dividing or grinding like the other teeth, but for laying hold of substances. The grinders, of which there are ten in each jaw, are so named, because from their shape and size they are fitted for grinding the food. Each of the incisores and canini is furnished only with one fang; but in the molares of the under jaw, we constantly find two fangs, and in those of the upper jaw, three fangs.

This structure and arrangement of all the teeth displays a wonderful degree of art. To understand it properly, it will be necessary to consider the under jaw as a kind of lever, with its fixed points at its articulations with the skull; that this lever is worked by its muscles; and that the aliment constitutes the object of resistance to its elevation. Thus it will be seen, that the grinders, from being placed nearest the centre of motion, and from their uneven surfaces, are fitted for the purpose of grinding food; while the canini and incisores, being placed farther from this point, from the sharpness of their edges, which overlap each other as the blades of scissors do, are particularly adapted to cut and tear the food.

There are examples of children who have come into the world with two, three, and even four teeth; but these examples are very rare; and it is seldom before the seventh, eighth, or ninth month after birth, that the incisores, which are the first formed, begin to pass through the gum. The symptoms of dentition, however, in consequence of irritation from the teeth, frequently take place in the fourth or fifth month. About the twentieth or twenty-fourth month the canini and two grinders make their appearance. The symptoms are more or less alarming, in proportion to the resistance which the gum affords to the teeth, and according to the number of teeth, which may chance to seek a passage at the same time. Were they all to appear at once, children would fall victims to the pain and excessive irritation; but nature has so very wisely disposed them, that they usually appear one after the other, with some distance of time between each. The first incisor that appears is generally in the *lower jaw*, and is followed by one in the upper jaw. Sometimes the canini, but more commonly one of the grinders, begin to pass through the gum first. These twenty teeth, viz. eight incisores, four canini, and eight grinders, are called temporary or milk teeth, because they are all shed between the age of seven and fourteen, and are succeeded by what are called the permanent or adult teeth ; and which are of a firmer texture, and have longer fangs. These adult teeth being placed in a distinct set of sockets, and the upper sockets being gradually removed as the under ones increase in size, at length the temporary, or upper teeth, having no longer any support, fall out. To these twenty teeth, which succeed the temporary ones, twelve others are afterwards added, viz. three grinders in each side, in both jaws ; and in order to make room for this addition, we find that the jaws gradually lengthen in proportion to the growth of the teeth; so that with twenty teeth they seem to be as completely filled, as they are afterwards with thirty-two. This is the reason why the face is rounder and flatter in children than in adults. In extreme age the teeth drop out, their sockets are removed also, and the face again shortens.

With regard to the formation of the teeth, we may observe, that in a fœtus of four months the alveolar process appears only as a shallow longitudinal groove, divided by minute ridges into a number of intermediate depressions ; in each of which we find a small pulpy substance, surrounded by a vascular membrane. This pulp gradually ossifies, and its lower part is lengthened out to constitute the fang. When the bony part of the tooth is formed, its surface begins to be incrusted with the enamel. The rudiments of some of the adult teeth begin to be formed at a very early period, for the pulp of one of the incisores may generally be perceived in a fœtus of eight months, and the ossification commences soon after birth.

THE BONE OF THE TONGUE.

There is a small bone, nearly of the figure of the lower-jaw bone, and which though not classed with those of the head or trunk, yet as being situated near to the head, we shall describe before we come to those of the trunk. This bone corresponds in place with the chin, below which, about an inch, it may be felt, the uppermost of the hard points in the fore part of the throat ; where being placed horizontally, it lies immediately between the root of the tongue and the upper part of the wind-pipe, and carries upon it a valvular cartilage, for shutting the passage and preventing any thing getting down this tube ; while its legs extend along the sides of the throat, keeping the openings of the wind-pipe and gullet extended, as we would keep a bag extended by two fingers. This bone is the centre of the motions of the tongue, for it is the origin of those muscles which compose chiefly the bulk of the tongue; of the motions of the wind-pipe, for it forms at once the top of the wind-pipe and the root of the tongue, and joins them both together; of the motions of the gullet, for its legs surround the upper part of the gullet, and join it to the wind-pipe; and it also forms the centre for all the motions of the throat in general; for muscles come down from the chin to this bone, to move the whole throat upwards; others ascend from the breast, to move it downwards; while different muscles come from the sides to move the throat backwards. This bone is called the os hyoides.

OF THE TRUNK OF THE HUMAN BODY.

The Trunk of the Human Body Comprises the Spine, the Pelvis, and the Thorax, or Chest.

THE SPINE.

The spine or back-bone is that long chain of bones which extends from the skull to the end of the loins. It consists of twenty-four distinct bones named vertebræ, from the Latin word *vertere* to turn; because they perform at certain points the chief turnings and bendings of the body. They also form a tube or canal along the whole length of the spine, for lodging and defending from harm the spinal marrow; and they support the whole weight of the trunk, head, and arms, without suffering under the longest fatigue, or the greatest load which the limbs can bear. Hardly any thing can be more beautiful or surprising than this mechanism of the spine, where nature has established the most opposite and inconsistent functions in one set of bones; for their motions are so free as to turn continually, yet so strong as to support the whole weight of the body; and so flexible as to bend quickly in all directions, yet so steady within as to contain and defend a material and very delicate part of the nervous system.

The vertebræ are divided into those of the neck, back, and loins, and the number of pieces corresponds with the length of these divisions. The vertebræ of the neck are seven in number; their form is simple, they being almost like rings, their processes scarcely project; they are very loose and free; and their motions are the widest and easiest of all the spine. The twelve immediately below these are the vertebræ of the back; they are larger and stronger than the former, and their processes project obliquely downwards, so as to be laid over each other; hence one bone is fastened to the other, which, together with their connection with the ribs, renders this the steadiest part of the spine, and allows it only a very limited motion. The vertebræ of the loins are the next and the last; they are five in number; they bear the whole weight of the body, and perform the chief motions of the trunk, and with this view, nature has made them the largest and strongest of the entire vertebræ, and given them a wide and free arrangement of their processes.

The form of each vertebra is particularly calculated for producing the different uses of the spine, and displays at once the astonishing designs and execution of the Supreme Architect. The spine is intended as a support to the trunk, head, and arms; for this purpose each vertebra is composed of a main part, called its body, which is a thick, spongy, and therefore light bony substance, convex before, concave at the back part, and almost horizontal upon its upper and under sides, when it is joined to similar bodies of the other vertebræ. All these bodies are connected together, like the sections of a large cane, and constitute a bony pillar for sustaining the upper parts of the body. But, besides support, these parts require motion; hence, this pillar is furnished with all the means of producing it. First, then we see it divided into many pieces; having a perfectly elastic substance interposed between every two bodies, and which by easily yielding to whatever side we bend, and afterwards, by a powerful rebounding returning to its place in a moment, takes off pressure from the delicate nervous column, and thus preserves it from injury in the violent and sudden motions of the body. During the day this elastic substance is continually yielding to the pressure, so that we are an inch taller in the morning than at night; we are shorter in old age than youth; and the aged spine is bent forwards, owing to the yielding of this part.

Next, we observe projections standing out from the back-part of the spine for different purposes. The first are the articulating processes, of which the body of each vertebra furnishes four. They grow out obliquely, two from the upper and two more from the under part of each body, and incline towards those of the other vertebræ, till they meet to be articulated; when they serve the double purpose of fastening together, and securing, in conjunction with the interverte-bral substances, the different pieces of the spine; and also, by affording so many moveable joints, of assisting in its motions.

From between these superior and inferior articulating processes, the body of each vertebra sends out two arms, which meeting behind form an arch or canal for the spinal marrow; and from the middle of that arch, and opposite to the body, another process, called the spinous projects. These processes have their direction backwards, and from the sharpness of their points, which form the ridge of the back, give the name of spine to the whole column. They are intended to serve as so many handles and levers for moving the spine; their size enabling the muscles to take a firm hold, while their length gives those muscles a powerful force in extending and raising the spine. But, beside these, there are other processes, which, from their direction, are called transverse processes, because they stand out at right angles, or transversely, from the body of the bone. They grow out from the sides of the arms or branches which form the arch for the spinal marrow, and are two in number to each vertebra. They also serve as levers, and long and powerful ones, in moving and turning the spine.

Thus we see that each vertebra consists of a body and seven processes; but it must be understood, that this is not the case with all the vertebræ. As we observed before, the vertebræ of the neck are very indistinctly marked, and the first two materially differ from the general character, for the purpose of adopting a most beautiful piece of mechanism.

The first vertebra of the neck is named atlas, from the globe of the head being immediately placed upon it. Its processes are scarcely distinguishable; it has no body; and is simply a ring, through which the spinal marrow passes from the great hole of the skull into the rest of the tube, formed for its reception. The atlas is articulated at two points, one on each side, with the occipital bone of the skull, and these joints being strictly hinge-like, enable the head to move backwards and forwards, but allow it no motion to either side. This motion, called the rotatory, is performed by means of a tooth-like process, which rises from the upper part of the body of the second vertebra of the neck, and which forms the chief characteristic of that bone. This process is about an inch in height, resembling in some degree the little finger; stands perpendicularly upwards, passing through the ring of the atlas, and serves as an axis, on which this bone, and with it the head may perform all the rotatory motions. It is confined by ligaments, one of which connects its front with the edge of the occipital hole, and the other, extending from one side of the atlas to the other, embraces the tooth-like process, and prevents its injuring the spinal marrow. When this ligament is burst by violence (as has happened) the tooth-like process breaks loose, and pressing upon the spinal marrow, the person dies.

All the vertebræ conjoined, make a large canal of a triangular or roundish form, for lodging the spinal marrow, and which, as it descends, gives off its nerves to the neck, arms, and legs; and the whole course of this canal is rendered safe and smooth by living membranes, which serve the double purpose of connecting the different bones together, and of affording a soft and easy sheath to the marrow.

Thus we see that a vertebra consists of different parts, all admirably suited to produce their various purposes. Its body helps to form the pillar for sustaining the upper parts of the frame. The intervertebral cartilages, which are placed between the different bodies, being of a highly elastic nature, admit motion and prevent concussion; while the numerous processes, which grow out from the bone behind, act as so many handles and levers, by which the muscles move and work the spine; and also serve to form the tube or canal for containing the spinal marrow.

OF THE PELVIS.

To give a steady bearing to the trunk, and to connect it with the lower extremities, by a sure and firm joining, the pelvis is interposed. It is a circle of large and firm bones, standing as an arch betwixt the lower extremities and the trunk. Its arch is wide and strong, so as to give a firm bearing to the body. Its individual bones are large, so as to give a deep and sure socket for the implantation of the thigh-bone. Its motions are free and large, bearing the trunk above, and rolling upon the thigh-bones below; and it is so truly the centre of all the great motions of the body, that when we believe the motion to be in the higher parts of the spine, it is either the last vertebra of the loins bending upon the top of the pelvis, or the pelvis itself rolling upon the heads of the thigh-bones.

The pelvis, is constructed, in the adult, of four large bones, viz. of the os sacrum behind, the ossa innominata on either side and before, and the os coccygis below.

The os sacrum or hinder bone is the base, on which the spine, and consequently the whole body, rests, its upper surface being articulated with the under one of the last vertebra of the loins. It is of an irregular triangular shape, broad above for supporting the trunk; narrow below; convex behind; and concave before; it guards the nerves proceeding from the end of the spinal marrow, and also forms the back part of the pelvis. Within this bone, there is a triangular cavity, which is a continuation of the canal of the spine. Here the spinal marrow ends, and branching into a great many thread-like nerves, has the form of a horse-tail, and is therefore named cauda equina. These nerves afterwards go out by five great holes, which are on the fore-part of the bone, to be distributed to different parts.

The *os coccygis* is a continuation of, or rather an appendage to, the sacrum; it consists of four bones in the middle age, each bone becoming smaller, as it descends, till the last ends almost in a point, and by bending inwards serves to contract the lower opening of the pelvis, so as to support effectually the viscera within. These two bones, the sacrum and coccygis, are described by most anatomists as parts of the spine, and certainly not without reason. They are a continuation of that chain of bones, and perform some of their functions; supporting, like them, the weight of the body, lodging the spinal marrow, and transmitting some of its nerves; but as they are precluded motion, and are closely locked in between the other bones of the pelvis, so as to constitute a principal share of this basin, at its hinder part, we think it adviseable to class them as bones of the pelvis in the description.

The sides and fore-part of the pelvis, as we before observed, are composed of two bones, which correspond in size and figure with each other, but, being of a most irregular shape, are called the ossa innominata, or nameless bones. In children each of these bones consists of three separate pieces, which afterwards, when greater strength is acquired, and ossification is become more perfect, are so firmly united as to form but one bone; still these bones continue to be described as though each consisted of three pieces.

The os ilium, or haunch-bone, is the highest, constituting each upper side of the pelvis, and has its posterior edge firmly and immoveably articulated to that of the os sacrum. It forms the flank, and is the largest division of the os innominatum.

The os ischium, or hip-bone, lies perpendicularly under the former, and is the lowest point of the pelvis, upon which we sit.

The os pubis, or share-bone, is the last and smallest piece of the three, forming the fore-part of the pelvis, and completing its brim.

Each os innominatum has a cup-like hollow for the head of the thigh-bone to move in. It is formed at that part where the three original pieces, which we have described, meet, to form one bone, and is called the acetabulum, from its resemblance to a measure which the ancients used for vinegar.

The pelvis is intended for many great purposes in the human frame; first, it is the base for supporting the superior parts of the body; next, it is so constructed as to receive into its sockets, and to roll upon the heads of the thigh bones, by which means it connects the lower extremities with the upper parts of the frame, without precluding motion; and, lastly, by forming a kind of basin at the lower end of the trunk of the body, it helps to sustain its viscera; while its outside surfaces, its ridges, and projecting points, serve as so many convenient places for the origin and insertion of numerous muscles, which, having one of their extremities fixed into the pelvis, as into a kind of circular basis, perform, by means of it, with the advantage of a lever, some of the motions of the trunk, and many of those of the lower limbs. The male pelvis differs from the female, in being much thicker, and more rough, and its cavity being less.

OF THE THORAX.

The thorax or chest is that large cavity reaching from the neck to the lower end of the breast-bone before, but extending further downwards at the back, and including all that space which lies between the opposite ribs. It is intended to afford a secure and commodious residence for the heart, lungs, &c., and is formed, behind, by the twelve dorsal vertebræ of the spine; at the sides, by the ribs; and by the breast-bone, before.

THE RIBS.

The ribs form the sides of the chest, covering and defending the heart and lungs. They also assist in breathing, being joined to the spine by regular hinges which allow of short motions, and to the breast-bone by cartilages, which yield to the motion of the ribs, and return again by means of their elastic nature, when the muscles cease to act. They are generally twelve in number on each side, though frequently eleven or thirteen have been found. Those whose cartilages are separately inserted into the breast-bone are called the true ribs, and are seven in number, while the five lower ones, whose cartilages do not reach that bone, but run into each other, and are joined to it by a common cartilage, are designated by the name of false ribs. The lower edge of each rib is furrowed along its internal side for the safe passage of the vessels and nerves between the ribs; and, to the ridge, at each side of this canal, are fixed the double rows of muscles, which lie between the ribs.

THE STERNUM.

The sternum, or breast-bone, is commonly composed of three bones, joined together by cartilages. It extends from the upper to the lower part of the breast anteriorily, and has the ends of the ribs and collar bones articulated with it, by which the cavity of the chest is completed, as far at least as the bones are concerned.

This bone, the ribs, and indeed all the chest, stand so much exposed, that did we not guard them with the hands, fractures must be very frequent; but, when they are broken and beaten in, they hurt the heart or lungs, and not unfrequently the most dreadful consequences ensue. Often, by a wheel passing over the body, the breast-bone is broken; its pieces press inward upon the heart, which is sometimes burst; but more commonly the patient dies a slow and painful death; for the inflammation, which begins in the place of the wound is extended to the lungs, and propagated still onwards to the heart; which, being once inflamed, brings on anxiety, oppression, faintings and palpitations; then anxious breathing, quick and interrupted pulse, still more frequent faintings, and lastly death. But the ribs, covering more properly the lungs, do not always produce death by their fractures, for the wound by the point of a rib is no deeper than just to puncture the lungs; yet through this small wound on their surface, the lungs breathe out their air into the cavity of the chest, and at last it escapes under the cellular substance of the skin, when the man becomes exceedingly inflated, his breathing more and more interrupted, and, if not assisted, he must die.

Having now described the bones which form the trunk of the body, we next come to those of the the limbs, and first to the bones composing the upper limbs.

THE SUPERIOR EXTREMITIES.

Each Superior Extremity consists of the Shoulder, Arm, Fore-arm, and Hand.

THE SHOULDER.

The shoulder includes two bones, the clavicle and scapula. The clavicle or collar-bone is placed at the root of the neck, and at the upper part of the breast. It lies almost horizontally, and extends across from the tip of the shoulder to the upper part of the breast-bone. Its figure is long, round, and curved like an italic *S*, and serves the shoulder as a kind of arch, supporting and preventing it from falling in and forwards upon the breast, by which the motions of the arms would be confined, and the chest made narrow, which must be the case, were these bones wanting. The collar-bones also make the hands strong antagonists to each other, which otherwise they could not be.

The scapula, or shoulder-blade, is the other bone of the shoulder. It is a broad, flat, triangular bone placed upon the outside of the ribs, and serving as a base to the whole superior limb. Its under side is somewhat concave, to match the convexity of ribs, yet it is not in immediate contact with them, but is separated from them by several layers of muscular flesh; so that this bone may glide upon the trunk, and increase the motion of the limb which is suspended from it. For this reason the scapula is not jointed with any bone of the trunk, or connected to it by ligament, as such connections must impede the freedom of its motions; but it is securely held to the trunk by those very muscles which perform its movements. The arm-bone is jointed with the scapula, at one of its angles; this angle terminates in a flat surface, not more than an inch in diameter, for receiving the head of that bone; and, as it is very shallow, dislocations of the shoulder are more frequent than of any other joint. A high ridge called the spine, rises from the back or external surface of the scapula, and traversing its whole length, runs forward to terminate in that high point or promontory which forms the tip of the shoulder and overhangs and defends the joint. This projecting point of the scapula is called the acromion process; it almost makes a part of the shoulder joint, preventing dislocation upwards; and is the part which is jointed with the collar-bone. There is also another process which stands out from this angle of the scapula, and is intended to secure the joint, and prevent dislocation likewise. It is a thick, short, but crooked process, and is adapted to defend the joint at its inner side. But the principal strength of this union of the joints arises from the muscles, which, passing from the shoulder-blade over the joint, are inserted into the arm-bone close to its head. These muscles in their passage, closely embrace the head of the arm-bone, adhere to the capsular ligament which encloses the joint; and, by spreading themselves over it, thicken and increase its strength. They also by their contraction hold the arm-bone in its place.

The shoulder-blade, as we before observed, is not fixed, but moves upon the trunk; it therefore serves as a moveable intermediate base to the whole arm which hangs from it. For this purpose it is firmly held to the trunk by numerous and strong muscles, which can move it in various directions, and, by a quick succession of these movements, can carry its whole body in a circle, by which greater scope is given to the motions of the arm. This bone also serves to cover and defend the back-part of the chest.

THE ARM.

The arm is commonly divided, in the description, into two parts, which are joined with each other at the elbow. The upper part, or os humeri, retains the name of arm, properly so called, and the lower part is usually termed the fore-arm.

The arm, then, is that division extending from the shoulder to the elbow. It has only one bone, which is long, round, and nearly straight, and which is united at the shoulder by its round head being received into the hollow of the shoulder-blade, and connected thereto by ligaments, which enclose the whole joint as in a bag. But that this joint may have the freest motion, the hollow for receiving the arm-bone is extremely shallow, so that its round head might easily turn in all directions; and the connecting ligaments, for the same reason, are longer than in other joints. Then, as in all other moveable unions of the joints, not only is the head of the arm-bone tipped with cartilage, but the surface of the cavity into which it is received is also lined with the same substance, for the purpose of preventing concussion and friction; and the more effectually to preclude the latter, an oily fluid is constantly moistening the whole internal surfaces of the joint, and is supplied from the inner side of the capsular ligament, and also from soft, spongy substances, which are placed within the joint. The lower end of the arm-bone is connected with those of the fore-arm, at the elbow, carrying them with it in all its motions, and serving as a base on which they perform their peculiar movements.

THE FORE-ARM.

The fore-arm is composed of two bones, viz. the ulna and the radius. The ulna is the longer of the two bones, and is extended from the wrist on the side of the little finger to the point of the elbow, where it assumes a hook-like form; the concave side of which being fitted to the pulley-like surface of the lower end of the arm-bone, produces the motions of flexion and extension, so that the fore-arm may be bent to a very acute angle, or extended to almost a straight line with the arm.

The radius is the second bone of the fore-arm. It is but partially articulated (i. e. jointed, or joined) with the end of the arm-bone, and has its position reversed with that of the ulna; for the ulna, belonging principally to the elbow, has its greater end upwards; the radius, principally belonging to the wrist, has its greater end downwards; and while the ulna only bends the arm, the radius carries the wrist with a rotatory motion, and for this purpose it is so articulated with the ulna at the ends, (the only points where these bones meet) that it turns upon it in half circles. The two bones are connected together along their whole length by a strong ligament, which extends from one to the other, filling up the vacant space between them, and rendering their position the more secure. The radius is hollowed at its lower end for receiving the bones of the wrist in articulation, but the ulna does not reach quite so far as to come in contact with those bones.

THE HAND.

The hand comprehends all from the joint of the wrist to the ends of the fingers. Its back-part is convex for greater firmness and strength; and it is concave before for containing more conveniently such bodies as we take hold of.

Anatomists generally divide the hand into the carpus, or wrist-bones; the metacarpus, or bones that stand upon the wrist, and serve as a basis to the fingers; and the fingers, consisting, each one, of its three joints.

The carpus, or wrist, is composed of eight small bones, disposed in two rows. Those of the upper row form an oblong head, to be articulated with the cavity of the radius of the fore-arm, so as to allow motion on all sides; and, by a quick succession of these motions, the hand may be moved in a circle. The lower row is articulated with the bones of the metacarpus, to which they serve as a solid foundation or centre. These small bones are firmly tied to each other by strong ligaments. There are two in particular which deserve notice; one is situated on the external, and the other on the internal, side of the wrist, and both not only help to strengthen the parts on which they lie; but also confine, and serve as smooth lubricated sheaths to the tendons which pass under them.

The metacarpus consists of four long round bones for sustaining the fingers. They are founded upon the wrist bones; but, departing from them as from a centre, in somewhat of a radiated form, they allow the fingers a freer play. These bones are connected to each other by plain surfaces, and are tied at their lower ends by ligaments, which prevent their being drawn asunder. Consequently they have not a large motion.

THE THUMBS AND FINGERS.

The thumb and four fingers are each composed of three bones. The thumb is placed obliquely with respect to the fingers, and its bones are thicker and stronger than those of the former; which is necessary, as the thumb is intended to counteract all the fingers. All the bones of the fingers are placed in three rows, called phalanges. The first phalanx is articulated with the bones of the metacarpus, and consists of the largest bones; the second stands out from the first; and the last grows out from the second and completes the fingers. These different bones composing the fingers are all regularly jointed with each other, and in such manner as to allow not only a hingelike but also a rotatory motion.

THE INFERIOR EXTREMITIES.

Each of the Lower Extremities comprises the Thigh, the Leg, and the Foot, and has a great analogy in the structure and distribution of its parts with the Upper Extremities.

THE THIGH.

The thigh, like the arm, has only one bone, which is the longest in the whole body, and the largest and strongest of all the round bones. Its upper end inclines inwards, and swells into a large, smooth, round head, to be articulated with the cavity, which is afforded by the side bones of the pelvis. Just below this head the bone becomes small, whence this part is called its neck. The articulation of the thigh-bone with the trunk is secured by strong ligaments; the first is almost peculiar to this point, and is called, from its shape, the round ligament. It grows out of the articulating cavity, and is inserted directly into the head of the bone. The other is the capsular ligament, which, arising from the rim of the articulating cavity of the pelvis, passes over the whole joint, embraces the head of the thigh-bone as in a purse, and is inserted into this bone at its neck. The body of the thigh-bone continues thick and strong down to its lower end, where it spreads with two great protuberances, called condyles, to be articulated with the bones of the leg. This bone not only serves as a fixed point for performing several motions of the trunk, which it sustains like a pillar, but it also affords a base for the leg to carry on its own motions, and is principally concerned in walking, running, &c.

THE LEG.

The leg is composed of three bones; two long ones, called tibia and fibula; and a small one placed at the knee.

The tibia is the long triangular bone at the inside of the leg; it runs nearly in a straight line from the thigh-bone to the ankle, supporting the whole weight of the body, and has its upper end expanded into a large surface for receiving the lower end of the thigh-bone, and forming the knee-joint. This articulation admits flexion and extension, and is secured by very strong ligaments; to compensate for the weakness of its bony structure, arising from the flatness of the articulating surfaces; the joint not being protected as in other cases by a ball and socket, by a large head imbedded in a deep cavity, by over-hanging bones, or by hook-like projections, all which were contrivances ill adapted to its motions. In this instance the strength and complexity of the ligaments are the resources which have been elected. At the sides of the joint the capsular ligament is peculiarly strong. The contrivance of a ligament within the cavity of the joint, and directly connecting the two bones, is improved upon by a striking adaptation to the necessities of the case. Instead of one, there are two such ligaments which cross each other, and hence are named "crucial (or cross) ligaments;" and by a varied tension of each in different positions of the joint, they check its motions and secure its safety.

This, however, is not all that is admirable in the mechanism of this curious joint. On the top of the tibia are placed two moveable cartilages of a crescent-like form. Their outward edges are thick, while their inward borders are extremely thin, and they thus form a hollow, in which the protuberances of the thigh-bone play with security, and with a facility that is much increased by their loose connections.

Hence, although this joint be the most oppressed by great loads, and the most exercised in continual motions, yet it is less frequently displaced than any other. The lower end of the tibia is articulated with the foot and forms the inner ankle.

The fibula is a long slender bone placed at the outside of the tibia. Its head is connected to that bone by ligaments, but does not reach high enough to enter into the composition of the knee-joint; it lies along-side the tibia, somewhat like a splint, increasing the strength of the leg, and like the double bone of the fore-arm, also completing its form. This bone descends to the foot, where it forms the external ankle, and is connected to the tibia, along its whole length, by a broad thin ligament, similar to that which is found between the bones of the fore-arm.

The knee pan is the third and last bone of the leg. It is a small thick bone, of an oval, or rather triangular form. The base of this triangle is turned upwards to receive the tendons of the great muscles which extend the leg, the pointed part of this triangle is turned downwards, and is tied by a very strong ligament to the upper part of the tibia, just under the knee. The patella, or knee-pan, is intended as a lever; for by removing the direction of the muscles of the leg farther from the centre of motion, it enables them to act more powerfully in extending the limb. To facilitate its motions, its internal surface is smooth, covered with cartilage, and fitted to the pully of the thigh-bone, upon which it moves.

THE FOOT.

The foot, like the hand, is divided into three parts, viz. the *tarsus* or instep, the *metatarsus*, and the toes.

The tarsus or instep is composed of seven bones, firmly bound together by strong ligaments; and forming a sure and elastic arch for supporting the body. The uppermost of these bones, called the *astragalus*, is articulated at its superior surface with the bones of the leg in such manner, as to afford the motions of flexion and extension in the ankle joint; while the sides of this bone are overlapped by the two processes which descend from the tibia and the fibula, to form the internal and external ankles so completely, as to secure the joint from dislocations. The astragalus is joined below to the os calcis, and serves as the immediate base for supporting the bones of the leg. The *os calcis* or heel-bone is the largest of the seven bones. Behind, it projects, forming a large knob, called the heel, for receiving the insertion of the tendon of Achilles.* It is situated under the astragalus, with which it is so firmly connected as scarcely to admit motion, but which renders this principal part of our base, which rests on the ground, secure and firm. Its lower surface is pressed flat at the back-part, by the weight of our bodies, this bone being the basis of the whole frame.

The tarsus or instep is convex above, but leaves a concavity below for lodging safely the several muscles, tendons, vessels, and nerves, that lie on the sole of the foot; and being composed of several bones, all having slight movements with each other, and firmly tied together by ligaments, so as to prevent dislocation, is well adapted to afford sufficient elasticity for precluding shocks in walking, running, or the other motions of the body; and also for security against fractures, to which it would have been liable had the tarsus been composed of only one bone.

The *metatarsus* is composed of five bones, which correspond in their general character with the metacarpal bones of the hand; but are longer, thicker, and stronger than the latter. The bases of these bones rest upon the instep; while their extremities support the toes, in like manner as the metacarpal bones sustain the fingers. When we stand, the fore-ends of these bones and the heel-bone are our only supporters.

THE TOES.

Each of the toes, like the fingers, consists of three bones, except the great toe, which has only two bones. Those of the other four are

* Ancient fable says that Achilles, when an infant, was dipped in the river Styx by his mother, to render him invulnerable. She held him by the cord of the heel, and this was the only point which was not plunged. On this very point he received his death-wound in battle. Hence the name of this tendon among anatomists.—Ed.

distinguished into phalanges. In walking the toes bring the centre of gravity perpendicular to the advanced foot.

THE SESAMOID BONES.

There are small bones found in different parts of the human body, and which, from their resemblance to the seed of the sesamum, obtain their name. They are nothing more than portions of the ligaments of joints, or of the tendons of muscles become bony by pressure; and are uncertain both in their number and situation.

RETROSPECT OF THE SKELETON.

When the bones of an animal are connected together, after the soft parts have been removed, the whole is called a skeleton. Upon its dimensions depend the height, and, in a great measure, the breadth, and strength of the human body. Had this frame been constructed of fewer bones, our actions must necessarily have been rendered constrained, and less convenient. It is therefore wisely divided into numerous pieces, for enlarging the sphere of motion; while all its divisions are peculiarly and admirably fitted to the various uses for which they have been designed.

The head, as we have seen, forms a spheroidal case for lodging and defending the brain within its cavity. In the head, and contiguous to the emporium of sense, we also find organs of sight, hearing, smelling, tasting, and speech; the more rapidly to transmit information to the brain, and also to obey its commands.

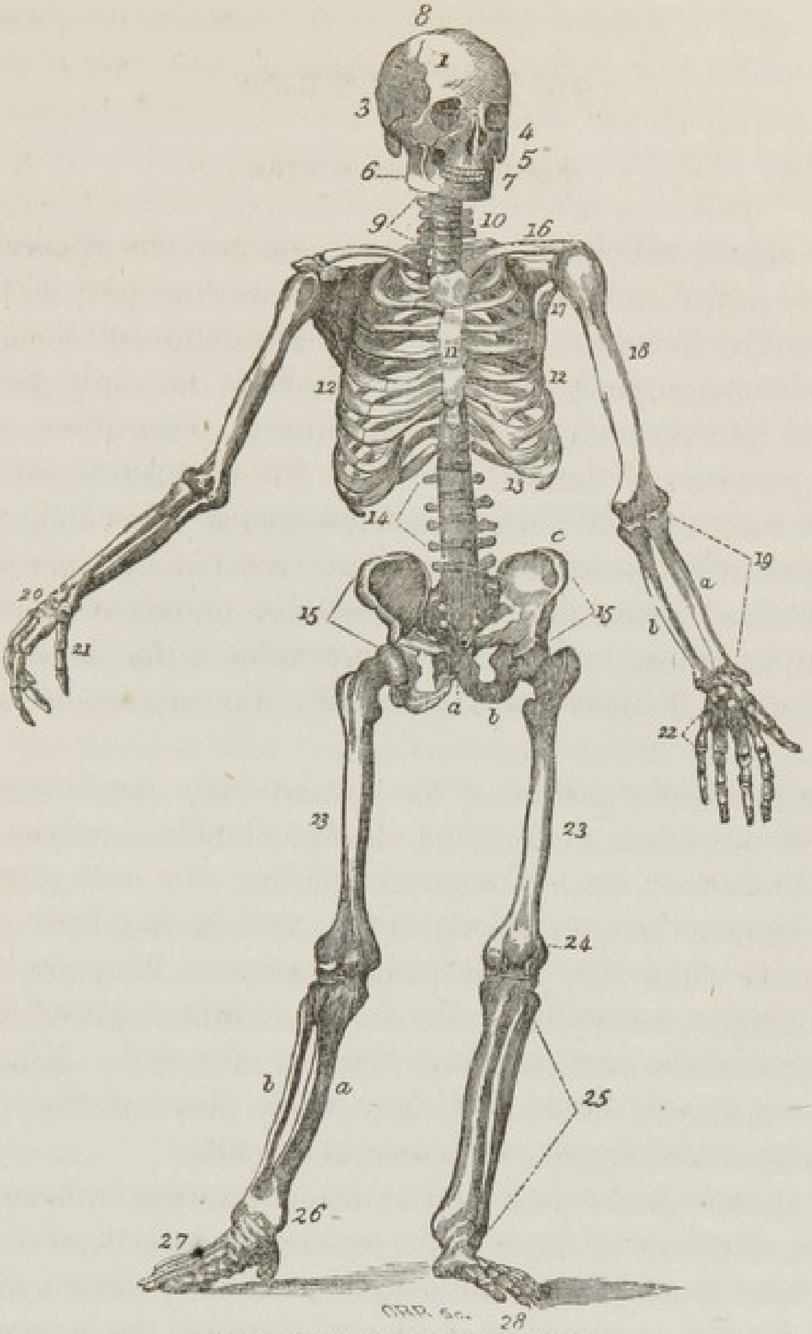
From the head, we see descending a large chain of bones, called the spine, or back-bone, and reaching down to the extremity of the pelvis. This bony pillar not only supports the head, and superior parts of the body, but also affords a canal along its descent for safely lodging that continuation of the brain called the spinal marrow; and being divided into several small bones, connected together by elastic substances, and having a great number of processes projecting like so many small handles, for the muscles to take hold of and work by, it allows the neck, back, and loins, a sufficient motion.

From the upper part of the spine, the ribs extend out on each side, and meeting at the breast-bone before, they form the cavity of the chest for lodging and defending the heart, and the organs of respiration.

The lower part of the spine, supporting all the parts of the body which are superior to it, is itself received in a wedge-like form, and supported by the bones of the pelvis. These bones are so constructed as to serve at the extremity of the trunk not only as a kind of basin, for sustaining some of its viscera, as the intestines, &c. but also, as a medium of connection between the body and the lower extremities, affording a firm and safe support to the former, and producing the necessary motion at the hip-joints, by rolling upon the round heads of the thigh-bones.

In viewing the superior extremities, we observe that the base of each is placed in a situation, the best calculated for the limb to perform all its motions, and at the same time to defend from injuries the head and chest; while the muscles which are necessary to work the limb, serve as a defence and covering to the vital parts within the ribs. The division of each extremity into several bones, and their peculiar connection, are intended to produce large motion; that, at the shoulder, is sufficiently free for describing a circle; at the elbow the arm may be bent to an acute angle, whilst the wrist is capable of much motion; as are the thumb and fingers; the whole limb producing a collective motion sufficiently great for all the purposes of necessity and convenience.

The inferior extremities we also see divided into several bones, and for the purposes of motion; but, serving as two moving columns for the support and carriage of the rest of the body, they are necessarily stronger, and their joints firmer and more confined. Hence the thigh-bone has less motion than that of the arm; the joint of the knee is stronger than that of the elbow; and the motion of the ankle and toes is slower, but more firm than that of the wrist and fingers.



EXPLANATION OF FIGURE I.

HEAD AND NECK.

1. The Frontal-bone.
2. Parietal-bone.
3. Temporal-bone.
4. Cheek-bone.
5. Upper Jaw.
6. Lower Jaw.
7. Teeth, imbedded in their bony cavities formed by the alveolar processes.
8. One of the Sutures separating the Bones of the Head; the Coronal.
9. Vertebræ of the Neck.
10. The Transverse Projections from the Vertebræ for the attachment of Muscles.

THE TRUNK.

11. The Sternum or Breast-bone.
12. The Ribs, 7 true and 5 false Ribs.
13. Their Cartilages, connecting them with the Sternum, and which replace the Ribs, by their elasticity, when they are elevated by inspiration.
14. The Vertebræ of the Loins with their transverse Processes.
15. The Bones of the Pelvis; the Sacrum is a broad base to the central pillar of the body; the Ossa Innominata, are seated at the sides and the fore-part of the Pelvis; they are divided into *a.* The Pubis.—*b.* The Ischium.—*c.* The Ilium.

UPPER EXTREMITY.

16. The Clavicle or Collar-bone.
17. The Scapula or Blade-bone.
18. The Humerus or Arm-bone.
19. The Bones of the Fore-arm.
    a. The Radius, on which the Arm turns.—*b.* The Ulna.
20. The 8 Bones of the Carpus or Wrist.
21. The Bones of the Thumb.
22. The Metacarpus, forming the Palm, the back of the Hand, and the Finger-bones.

LOWER EXTREMITY.

23. The Thigh-bone.
24. The Patella or Knee-pan.
25. The Bones of the Leg.
    a. The Tibia.—*b.* The Fibula.
26. The Inner Ankle formed by a projection of the Tibia.
27. The Metatarsus.
28. The Toes.

OF THE MUSCLES.

GENERAL DESCRIPTION.

Those organs which move the bones, and put the whole frame into motion, are called muscles, and constitute all that part of the human body known by the name of flesh. Each large muscle consists of two distinct portions, namely, its belly, which is the only part that is active, and its thin cordy fibrous and shining extremities, or tendons. The only purposes of the last are to fix the muscles to the moveable parts in a concentrated form; in consequence of which, a greater power is permitted to act, as laborers are assisted by ropes in moving weighty bodies; hence they are principally employed in implanting muscles upon bones, and are not discoverable in the heart, stomach, or intestines. Muscles are universally the organs of motions in animals.

The whole fleshy portion of the human body consists of a great number of muscles, or distinct fleshy bundles, whose surfaces, although in contact, are still separate, sliding over each other, in their alternate contractions and elongations; and having both ends fixed into the parts which they are intended to move. They are of different sizes and shapes, according to the degree of force required from them, and the form of the part on which they are situated. Hence those on the body are mostly broad and flat, while those of the extremities are of a long, round figure, with tendinous ends.

Each muscle performs its action by contracting both ends towards the centre, when one of these ends, serving as a fixed point, the other, with the bone to which it is affixed, is necessarily drawn towards it; and thus, by the co-operation of several muscles, the movement of the limb, and even of the whole body, is effected. As soon as the motion is accomplished, the muscles, which performed it, relax, and allow their ends to elongate to their former position.

The structure of a muscle appears to consist of a number of long soft fleshy fibres, lying parallel with each other; and these fibres being enveloped in a thin cellular membrane, are fastened by it into little bundles, which are again tied by some of the same membrane into larger bundles, until the whole muscle is produced; but, though this is the apparent structure of the muscle, its ultimate division is unknown; that which appears to the eye to be an elementary fibre, being discovered, by the help of glasses, to consist of a bundle of fibres.

In this very general description of muscles the form and appearance of those larger ones which cover our bones have been kept more particularly in view. But it would convey a very imperfect idea of their extent and importance to confine our observations to them. Muscular fibres, in fact, enter into the structure of almost every organ where motion is necessary, and are adapted in their form and size to that of the parts to which they are attached. The heart and blood-vessels; the stomach and intestines; the bladder, &c; are composed, in a great measure, of very minute muscular fibres, stretching longitudinally, transversely, or obliquely, and sometimes in all directions; often so small are they that we can only discover their structure by our glasses, and not unfrequently they escape our detection altogether.

We shall now take a rapid view of the different muscles which move the human body; first, however, observing, that excepting a few, the whole of the muscles on the one side of the frame have corresponding muscles on the other. If an exact section of the whole human body were made, from the top of the head to the lower end of the trunk, the divided sides would be found similar in structure and parts to each other, the contents of the breast and abdomen only excepted, and which from their nature and situation do not admit of equal division.

We also observe, that the end of the muscle, which forms its more fixed point, is called its origin; while the other end, which is fastened to the bone to be moved, is termed its insertion; and likewise, that the shape and turn of the part, particularly of the limbs, depend principally upon the size and proportions of the muscles which are situated thereon. Thus we see many of them taper into long slender tendons, where a decrease of size is necessary and beautiful, as at the small part of the fore arm and leg; while others swell out in symmetrical proportion, and give the appearance of fulness and strength to other parts of the frame.

MUSCLES OF THE HEAD.

The fore-head is wrinkled and drawn upwards, as are also the eye-brows, by a broad thin muscle, which rises at the back-part of the skull, and covering the head runs down the forehead, to be inserted into the skin of the eye-brows.

The eye-brows are drawn towards each other, and the skin of the fore-head pulled down and made to wrinkle, as in frowning, by a pair of small muscles, which rise from the root of the nose, and are inserted into the inside of the eye-brows.

The ear is moved by eleven small muscles. The first three are called common, because they move the whole ear. The next five are termed proper, and only move the parts to which they are connected;

while the other three are internal, to move the small bones situated within the ear.

The eye-lids are closed by a muscle, which, rising from the inner angle of the orbit or cavity in which the eye is embedded, covers the under eye-lid, then surrounds the outer angle, and passing over the upper eye-lid, descends to be inserted, by a short, round tendon, near to its origin.

The eye is opened by a muscle, which (rising from the inner and upper part of the socket) is inserted into the upper eye-lid, to draw it upwards.

The eye-balls are carried through all their motions by six small slender muscles to each. They arise from the bottom of the socket, and are inserted into the outer coat of each eye-ball at different points. Four of these move the eye upwards or downwards, to the right and to the left; while the two remaining muscles give oblique directions to the eyes, at the same time protruding it; and all, acting in quick succession, enable the ball of the eye to describe a complete circle.

The nose is affected by several small muscles of the face, but only one muscle on each side is proper to it. This muscle straightens the nostrils, and wrinkles the skin of the nose.

The mouth and lips are moved by nine pair of muscles, which arising from the contiguous bones of the face, are inserted into the lips and angles of the mouth; and from the termination of these muscles a tenth is formed, which surrounds the mouth like a sphincter,* and closes it, by drawing the lips together. It is from the actions of these muscles on the mouth, particularly at its corners, that the emotions of the mind are expressed, and the predominance of particular feelings in individuals is indelibly stamped; save in those whom nature has gifted with an unimpressible dulness of character, or in whom the more delicate lines are filled up by too great fatness. Perhaps it may be worth while to notice the cause of that distortion of features which is produced by palsy. The muscles on one side then cease to act, while those of the other, contracting with their usual force, the mouth is drawn on one side.

The lower-jaw has four pair of muscles for pulling it upwards, as in chewing, viz. two pair which are seen upon the outside of the face, and two pair that are concealed by the angles of the jaw. The first pair arise from the sides of the skull, above the temples, whence they are called temporal muscles; and then descending under the bony bridges of the cheek-bone, are inserted into the lower-jaw near its ends. The second pair arise, at each side, from the under edge of the bony bridge, and descending along the cheek, are inserted into

* A muscle which contracts or shuts an orifice round which it is placed.—Ed.

the angle of the lower-jaw. These four muscles act powerfully in pulling the jaw upwards, and when we bite, may be felt swelling out in the flat part of the temple, and upon the back-part of the cheek. The other two pair of muscles arise from the base of the skull, and are inserted into the lower-jaw internally for enabling this bone to move from side to side, the more effectually to grind the food. The lower-jaw is pulled downwards by muscles, which extend between it and the bone of the tongue, and which also serve to raise the throat upwards.

MUSCLES OF THE NECK.

The neck is covered with numerous and complicated muscles. Those on the fore-part or throat extend some between the head and upper part of the trunk; others between the lower-jaw and the tongue-bone; more between this bone and the cartilages of the throat; while numerous other small muscles are situated between these cartilages and the trunk; and also about the root of the tongue and the back-part of the mouth.

Their uses are, viz. to bend the head forwards; to open the mouth by pulling the lower-jaw downwards; and to move the parts concerned in deglutition and speaking.

The muscles on the back-part of the neck are rather portions of the great muscles, which cover the back, than distinct bundles of fibres; but, having some of their extremities fixed to the back-part of the skull, and also to the hinder portion of the spine of the neck, are intended to move those parts, drawing them backwards and sideways.

MUSCLES OF THE TRUNK.

These are principally the muscles which cover the breast; those which constitute the fore-part and sides of the abdomen; and the great muscles that are spread over the back.

The muscles of the back are numerous and large. They arise from the whole length of the spine or back-bone, having their originating fibres firmly fixed to the numerous processes or handles of that bone; from the upper and posterior edge of the pelvis; and also some portions from the back part of the skull; and from these different organs, they spread over and cover the back of the trunk, and run to be inserted, some into the base of the arm, others into the spine at a distance from their origin, and the remainder into the ribs and back-part of the skull. They consequently not only cover and protect the whole back-part of the body, but also serve to pull the head backwards, move the whole arm, assist respiration by acting on the ribs, and to give us an erect posture by extending the spine. These are the muscles which suffer in the barbarous practice of whipping; and instances have occurred, where from the too great weight of the whip, or the excessive number of lashes inflicted, the structure of these muscles has been so cruelly torn and destroyed, as to put it out of the power of nature to restore it; mortification has followed, and the unfortunate sufferer expired a victim to inhumanity or ignorance.

The cavity of the abdomen is completed at its fore-part and sides by a few broad and thin muscles, which extend from one bone to the other, having their ends firmly fixed to the edges of these bones; and passing over each other, constitute walls for covering in and containing the bowels. These muscles also assist respiration by helping to expel the air from the lungs; and they contribute to the movement of the body, by bending it forward as in bowing, and by raising the pelvis.

The breast is covered by a few broad and strong muscles, which arise from the whole length of the breast-bone, and form the fore-part of the ribs, and running from each other over the chest, are inserted into the shoulder for moving the limb forward.

The ribs are raised, and the cavity of the chest enlarged, during inspiration, by eleven double rows of small muscles on each side. They grow out from the lower edge of one rib, and are inserted into the upper rim of the next.

MUSCLES WITHIN THE BODY.

The principal one is called the diaphragm; it is a broad thin muscle, occupying partly a horizontal position, when the body is erect; but inclining downwards towards the back, and dividing the trunk of the body into the two great cavities, the thorax and the abdomen. It arises from the lower end of the breast-bone; from the cartilages of the seventh, and of all the inferior ribs on both sides; and from the second, third and fourth vertebræ, belonging to the loins, called *lumbar* vertebræ; and from these origins its fibres run, like radii, from the circumference to the centre of a circle, to be inserted into a broad flat tendon, which is situated in the middle of this muscle. The diaphragm is the principal agent in respiration, as shall be more fully described under that head.

The other muscles within the body arise from the sides of the lower end of the back-bone, and from the inner surface of the pelvis, and passing down to be inserted into the thigh-bone, a little below its head, they help to turn the toes outwards, and to bend the thigh; or when the limb is fixed, they assist in bending the body.

MUSCLES OF THE SUPERIOR EXTREMITIES.

These, anatomists divide into the muscles that are situated on the shoulder-blade, on the arm, on the fore-arm, and on the hand.

The muscles situated on the shoulder-blade are called muscles of the arm, because, though they arise from the former bone, which serves to them as a base, yet they are inserted into the bone of the arm, to effect its movements. The same observation holds with respect to the other divisions of these muscles.

The arm, then, is moved by seven muscles, which arise from the shoulder-blade, and passing over the joint are inserted into the arm-bone at its upper and middle parts. These, together with the muscles coming from the back and breast, which are already described, complete the motions of this part of the limb.

The fore-arm is moved in flexion and extension by four muscles, which arise from the upper part of the arm-bone; run down its whole length, and constitute its fullness and figure; they then pass over the elbow joint to be inserted into the upper ends of the two bones of the fore-arm.

The hand is moved at the wrist by six muscles; three of these arise from the upper part of the fore-arm, and descending along its whole length, are continued over the wrist, and are inserted into the hand close to this joint; they *bend* the hand, and are consequently called its *flexors*. The three *extensors*, so called because they *extend* the hand and bring it backwards, arise from the lower end of the arm-bone, and passing down the fore-arm also, run to be inserted into the back of the hand just beyond the wrist. All these muscles, before they reach to the wrist, become slender tendons, which is the cause of the tapering of the fore-arm from about its middle to the hand.

Besides flexion and extension, the hand has a circular kind of motion, called pronation and supination. The former takes place when we turn the palm down, as upon a table; the latter when we turn the palm upwards; and both motions are produced by four short muscles which extend obliquely across from one bone of the fore-arm to the other, and roll the radius upon the ulna, carrying the wrist round in circles.

The fingers are principally moved by two flexors and one extensor. The former muscles arise from the upper part of the fore-arm near the bend, and running down towards the wrist, send off four round tendons each; which passing over the palm of the hand, are inserted the one set of tendons into the upper part of the second bone, and the other into the last bone of each of the four fingers. The latter set of tendons pass through slits in the former, which help to bind them down, when the fingers are bent. The extensor muscle arises above the elbow, passes down the fore-arm, and also splits into four round tendons, which can be plainly felt on the back of the hand, and are inserted into all the bones of the four fingers for extending them.

The other movements of the fingers, and those of the thumb, are performed by muscles, chiefly situated upon the hand; and which, together with those we have described, complete the motions of these parts.

MUSCLES OF THE INFERIOR EXTREMITIES.

The great muscles which move the thigh all arise from the pelvis, or the lower part of the trunk, covering, and also giving plumpness and shape to the external surface of these parts, they descend over the hip-joint, to be inserted into the thigh-bone below its articulating head. By the action of these powerful muscles, the thigh is carried through all its motions.

The leg is moved by eleven muscles, which arise partly from the pelvis, and partly from the upper end of the thigh-bone. They descend along this bone, giving fullness and shape to the thigh, and passing over the knee-joint, are inserted into the bones of the leg; the extensors, into the upper edge of the knee-pan, for extending the leg; and the flexors, into the posterior sides of the long bones of the leg, a little below their heads. The tendons of these muscles form the inner and outer hamstrings. They bend the leg.

The foot is moved by three extensors, and by four flexors. The extensors arise, the two first by double heads from the lower end of the thigh-bone, near the bend of the knee. These heads soon after unite into the great fleshy bellies, which, swelling out, form the calf of the leg; but decreasing where the leg begins to grow small, they each give off a broad thin tendon, which also uniting, form the tendon of Achilles, to be inserted into the extremity of the heel. These powerful muscles extend the foot by bringing it backwards, and are principally engaged in running, walking, leaping, &c. The third extensor of the foot arises also from the lower-end of the thigh bone, and descending by a long, slender tendon, is inserted into the heel, to assist the former; but this muscle is sometimes not to be found in the human subject.

The four flexors arise, the two first from the upper part of the tibia, or principal bone of the leg, and continuing fleshy about half way down that limb, send off two round tendons, which pass under the inner ankle, and are inserted into the bones of the foot. The other two flexors of the foot arise from the superior part of the fibula or smaller bone of the leg, and sending off two round tendons, which pass under the outer ankle also, are inserted into the bones of the foot. These assist the former in bending the foot by drawing it upwards.

The toes have two extensors and three flexors. The first extensor arises from the upper part of the leg, and descending to the ankle, splits into four round tendons, which run forward upon the upper part of the foot, where they can be plainly felt; and are inserted into the four small toes to extend them. The other extensor arises from the heel, and running forward upon the foot, also splits into four tendons, to be inserted into the toes likewise, and to assist in extending them.

The flexors of the toes arise, the first from the under and back part of the heel, and running forward along the sole of the foot, sends off four tendons to be inserted into the second row of bones of the four smaller toes. The second flexor arises from the back part of the tibia below its head, and descending the leg, passes at the inner ankle to run along the sole of the foot, on the middle of which it splits into four slender tendons, which perforate the former, in the manner of those which bend the fingers; and extending beyond them are inserted into the extremities of the last joint of the four small toes. The third flexor assists the two former in bending the toes, and also draws them inwards. Besides these there are other small muscles which are situated upon the foot, and which with those coming from the leg to be inserted into the great toe, complete the movements of these parts.

Thus we see that the muscles or flesh cover and spread over the whole frame of bones; connecting and securing its different divisions and parts; and not only producing all its movements, but also giving to it fullness, shape, and beauty. We shall now speak of the motionary powers of those muscles.

OF MUSCULAR MOTION.

Muscular motions are of three kinds; namely, voluntary, involuntary, and mixed. The voluntary motions of muscles are such as proceed from an immediate exertion of the will; thus the mind directs the arm to be raised or depressed, the knee to be bent, the tongue to move, &c. The involuntary motions of muscles are those which are performed by organs, seemingly of their own accord, (but really by their proper stimuli,) without any attention of the mind or consciousness of its active power; as the contraction and dilatation of the heart, arteries, veins, absorbents, stomach, &c. The mixed motions are those which are in fact under the control of the will, but which ordinarily act without our being conscious that they do so; as in the muscles of respiration, the intercostals,* the abdominal muscles, and the diaphragm.

Motion, as we before observed, is produced by the muscle contracting both its ends towards the centre, when one end being fixed, the other is drawn towards the centre of motion, and with it the bone or any other part to which it is affixed; and thus by the co-operation of several muscles, not only a limb, but even the whole body is put into action. This is the case with all the muscles of voluntary motion; their fibres contract on the application of the nervous influence, and the whole muscle shortens itself; and on the same principle the other muscles perform involuntary motion. The heart, for instance, contracts from the stimulating properties of the blood, the arteries do the same, as do the absorbent vessels, by a similar action of their contents, and all those organs and parts which have the power of acting independent of the mind.

We may define all motion in animals then to be the contraction of the muscular fibre from the presence of some stimulating influence. But whence the muscular fibre derives this contractile power, and what is its nature, remains still a phenomenon that baffles inquiry.

EFFECTS OF NERVOUS INFLUENCE.

The nervous influence is a stimulus to the voluntary muscles, as blood is to the heart and arteries; food to the stomach; or bile to the intestines. It loses its influence over the system sooner than the irritable principle in the fibre fails; for the irritable state of the muscle continues long after the voluntary motion, or power of excitement from the nerves, is gone. If, while in perfect health, we are killed by a sudden blow, the irritable power of the muscles survives the nervous system many hours. It is this remainder of the contractile power which fixes the dead body in whatever posture it is placed, and preserves freshness in the animal which seemed dead, but which is really dying still; for the moment this lingering portion of life is gone, the body dissolves and falls down; and so we judge of freshness by the rigidity of the flesh, and foresee approaching putrefaction by its becoming soft. There is no speedy putrefaction in creatures suddenly killed; in these the body continues fresh and susceptible of stimuli long after death. But if their contractile principle, this irritable nature of the muscular fibre, be exhausted before death, or in the moment of death, then does the body fall quickly into the condition of dead matter, running through those changes which are the

* *The intercostals* are those which lie between the ribs.—Ed.

only true marks of death. The fish which is allowed to struggle till it be dead, and is not instantly killed, as in crimping; the ox over-driven before it be brought to the slaughter-house; the animal killed by lightning, which suddenly destroys all powers of life; in these the contractile power is effectually exhausted; no mark of irritability remains; and putrefaction comes quickly on. So in those who die of the plague, of poison, of some fevers, or of any sudden and violent disease, which at once extinguishes life, in the common sense, and robs the system of that remnant of life which the physiologist could produce to view. In all these cases the body becomes putrid in a few hours. That a body becomes putrid so early in warm climates is not merely because putrefaction is favored by heat; but because heat extracts the vital power, and often a part of the body has lost its organized power, and is almost putrid, before the whole be dead. We find that we often err in this, that when a body has lost all feeling and motion, we pronounce it dead; the nerves indeed, have ceased to act and perform their office; all feeling and consciousness is gone; but the mere animal power survives the nerves, and through it the whole system may be recalled into perfect life; as after suffocation or drowning, we can by operating upon these poor remains of life, restore the circulation, reanimate the nervous system, and recover that life which seemed to have left the body.

The powers of the nervous system ought, however, to be justly estimated. The perfect animal feels and moves by means of the nerves, which at the same time convey the determinations of the will to the voluntary muscles, and unite every part into a perfect whole. But the muscles themselves are actuated by laws of their own. The heart of the chick begins to move before we dare presume that there is any organ for distributing this nervous power. The punctum saliens* is the heart of the chick; it is seen beating while the body of the chick is but a rude, unformed, and gelatinous mass; daily the active centre increases in strength and power; and it has a delicate feeling of stimuli, so that it quickly reacts, when they are applied to it. Its motions are excited by increased heat and languish when cold, till at last it dies. Then it ceases to act, but still heat restores it to life; and again, when we cut out the heart of a grown animal, so as to separate it from the nervous influence, it will for some time act on the application of stimuli, then appearing to have its power exhausted, it will lie dead for some time, till recovering that power, it will again act.

Sensibility, therefore, depends upon the nerves; but *motion*, upon

* The point at which animal life is first discovered.—Ed.

the muscles. Both are equally admirable and inscrutable; the one conduces to all the enjoyments, and all the sufferings of life; and to the intellectual faculties of man; the other is the chief support of animal life, and the source of all the bodily powers. And here we cannot refrain from contemplating this living power. The genius of man has invented pulleys and levers to accelerate motion; and has enabled him even to anticipate all the mechanical helps which he has found in the mechanism of the human body. But, compared to the lowest creature, animated with the living principle, the proudest works of his hands are but as dead matter. In the most perfect machines no new power is acquired; if there is any acquisition of force, there is a proportionate loss of time; while in muscular contraction, which is the immediate source of power in animals, there is a real increase of power without any loss of time.

THE BRAIN AND NERVES.

1. THE BRAIN.

We now come to those organs which endow the human body with feeling; cause all the voluntary motions; and afford a fit residence for the soul. We shall first describe them anatomically, and afterwards speak of their nature and properties.

The brain is a soft pulpy mass of a whitish color on the inside, but greyish exteriorily. It occupies all that cavity which is formed by the bones of the skull; and is surrounded by two membranes; the first or outermost is called the dura mater, which lines the inside of the skull, and prevents its eminences from giving injury to the delicate structure of the brain. This membrane also serves another useful purpose; it helps to prevent concussions of this organ; for, sending off large folds which enter between the divisions of the brain, it separates the whole mass into portions, which by its partitions it supports and protects from pressure, in the different motions and positions of the head. Three of those partitions are considerable. The first commences at the inside of the fore-head, and running along the roof of the skull, descends to about the centre of the back-part of the head. It divides the upper part of the brain into two great portions, called hemispheres. The second partition runs nearly at right angles with the first or horizontally, whose termination it receives at its middle; but, extending itself towards each ear, it divides the brain into the upper and under parts, thus forming a floor for sustaining the former. The third fold runs down from the middle of the second, opposite to where the first ends, and separates the posterior part of the brain also into two divisions. This membrane is strong and of a tendinous nature. Like all other membranes of the body, which are only intended to perform subservient offices for the living parts, it is insensible; being like them composed of cellular membrane; and it may be cut, rasped, or torn, without giving pain. It adheres closely to the inside of the skull, by a great number of filaments, and small vessels, which enter the bones every where, and communicate with the membrane covering the skull.

The second membrane of the brain, called pia mater, is a soft, thin, transparent substance, and full of vessels. It is connected to the former only by the veins which pass between them, and lies in immediate contact with the surface of the brain, not only covering this delicate organ on the outside, but also insinuating itself into all its windings and fissures for the conveyance of vessels, and nourishment; to supply the wastings of this active intellectual machine. Between these two membranes there is spread a third, which is extremely delicate, resembling a cob-web; but it does not dip into the convolutions of the brain.

Because the folds of the outer membrane of the brain dip deeply into its substance, anatomists pursue this division in their description. Hence, although all the parts of the brain unite at the centre of its base, they describe it as consisting of three great portions.

The first, called cerebrum, is the largest of the three divisions. It occupies all the space above the horizontal floor of the dura mater, and is separated into two great parts, called, as we before observed, hemispheres. Each hemisphere is again divided into three parts called lobes, and has several winding furrows on its surface. The substance of the cerebrum is greyish on the outside, but is white and firmer in texture within.

The cerebellum, or second division of the brain, lies under the former floor at the under and back part of the skull, and is also divided into two portions by the third or descending fold of the dura mater. It consists, like the first division, of a greyish and white substance; and has each portion or half, again divided into three bodies, but lacks the furrows on its surface.

The third division is called the medulla oblangata. It lies at the base of the skull, and is a continuation or union of the white substances of the other two divisions; being like these of a white color, and its consistence more firm than that of the greyish portion of the brain.

2. SPINAL CORD.

The spinal marrow, as it is called, is a continuation of this third division of the brain; it passes out of the head by the great opening of the skull, and running down the canal of the back-bone, where it is safely lodged, gives off nerves, till it reaches the pelvis, where (as was before said, when describing those parts,) it splits into numerous thread-like nerves, resembling a horse's tail. The spinal marrow, like the brain, consists of a whitish and a greyish substance, and is covered and protected by a continuation of the membranes, belonging to that organ.

3. NERVES.

The nerves arise from the brain and spinal marrow. They come out in pairs, and are distributed over the whole body. Forty pairs are counted in all. Of those, nine pairs arise from the base of the brain within the skull; a tenth from the brain, as it passes through the great hole of the skull into the spine; and the remaining thirty from the spinal marrow. Those arising from the brain pass through holes in the base of the skull, and are distributed chiefly to the organs situated in the head, and to those contained in the chest and belly; while the nerves which arise from the spinal marrow go, partly among the internal organs of the trunk, to be distributed principally to the exterior parts of the body, and to the extremities or limbs. All the nerves arise, first by medullary (or marrow-like) fibres, which afterwards meet, and form soft, white, pulpy cords. These cords run out in pairs from their origin; but soon afterwards separate, and spread themselves over the whole body, by splitting into innumerable branches.

STRUCTURE AND FUNCTIONS OF THE BRAIN AND NERVES.

The structure of the brain and nerves, has been a matter of unsuccessful investigation. Their substance appears to be a mere soft, pulpy, mass; and this simplicity of texture baffles the eye and researches of the anatomist. We see their form, and can trace different appearances which it would be here needless to describe; but we are scarcely able to discover any system of organization.

Resigning, therefore, all inquiry after that link which connects the mind with the matter of the brain, and which, perhaps, is reserved for future anatomists to discover; we now advert to those known properties of the brain and nerves, which experiment enables us to state as facts.

1. SENSIBLITY.

The brain and nerves are sensible, constituting the organs of feeling in the animal machine.

That the brain and nerves are sensible is proved by the following facts.

Upon touching the brain with a knife or any other instrument, or upon applying a caustic, the animal will be seized with violent convulsions. Its body will be contorted on one side or the other in the form of a bow; and most violent anguish will ensue.

If a probe be thrust into the spinal marrow, (the continuation of the substance of the brain) all the muscles of the limbs will be violently convulsed, and those of the back will be so much affected, as to bend the animal backwards.

By touching, irritating, or tying a nerve, the muscles to which its branches are distributed, will be violently convulsed, and the animal thrown into acute pain.

2. THE SOURCE OF SENSIBILITY TO OTHER PARTS.

Again, all the other parts of the body derive their power of sensation from the brain, the spinal marrow, and the nerves, being in themselves wholly insensible, and made capable of feeling only in proportion as they have the nervous branches distributed to them.

That this is the case, is proved as follows.

Tie a nerve going to any part, that part becomes immediately paralytic, and insensible below the ligature, but will recover its powers on freeing the nerve.

The same thing is also proved by the degrees of sensibility of the different parts of the body, bearing proportion to the quantity of nervous branches, which can be discovered to belong to the part. Thus, while in some places, we find a conflux of nerves forming the most delicate and perfect sense, and endowing that part with full life; there are other parts of the body, as the bones, cartilages, ligaments, and tendons, which while they are almost destitute of nerves, are so insensible, as to be cut, torn, or even totally destroyed without exciting pain.

3. SOURCE OF VOLUNTARY MOTION.

The excitement to all voluntary motion, flows from the brain or spinal marrow, through the medium of the nerves, to those parts of the body which we wish to move.

That the immediate cause of all voluntary motion depends upon the brain and spinal marrow, is seen by the loss of this motion taking place on the injury of these organs.

If, for instance, the brain be compressed either from a rush of blood, or water, or from other mechanical causes, the whole body will become paralyzed, and the power of motion suspended; but, on removing the compressing cause, this paralysis will cease, and the whole frame will recover its power of sense and motion.

Compression of the spinal marrow will also cause loss of motion and sense, but only in those parts which receive their nerves from it, as the external flesh of the trunk of the body, and muscles of the limbs.

And if a nerve which conveys the immediate cause of motion from the brain, or spinal marrow, to the parts to be moved, be either cut or tied, or otherwise compressed, the part to which this nerve is distributed, will immediately become insensible, and lose its power of motion. Thus injuries of particular nerves produce palsies of the parts to which those nerves are sent; as loss of voice, hearing, and speech; but on removing the cause, the disabled parts will recover their functions.

4. SEAT OF SENSATIONS.

The nerves are the *organs* and the brain the *receptacle* of all our sensations.

That sensation arises from an impression made on a nerve and conveyed by it to the brain, to be followed by some action or change in that organ, which change is so far permanent as to produce ideas, is proved by the following facts.

If a nerve be in any way irritated, a sharp sense of pain is immediately produced. The mind in the brain, becomes instantly informed of the suffering, and efforts are made to relieve the part. But if that nerve be compressed above the seat of its irritation, so as to cut off the channel of communication between it and the brain; the mind is then no longer conscious of any irritation that is made below the point of compression; and the affected parts are reduced to a state of insensibility similar to that of parts which are destitute of nerves, and may be cut or destroyed without exciting pain. But by removing the compression from the nerve, the parts below will recover their sensibility; the irritation will be felt anew; and the sensation of pain again propagated along the nerve to the brain, to inform the mind of the presence of an injury.*

* The reader should be here informed that each nerve issuing from the spinal marrow is divided into two distinct parts, or branches; each of which has its own special office. The anterior branch imparts motion; the posterior branch, sensation. Thus the cutting, or compressing by ligature, of the one, will paralyze the power of motion at that point in the system which it is designed to serve. The other, treated in the same manner, will fail of its office of sensation.

While the power of sensation is destroyed by the one operation, that of motion remains. So, while the power of motion is destroyed by the other operation, that of sensation remains.—Ed.

Now, pain is only the result of an impression made to excess; that is, a set of disagreeable sensations, produced by the too forcible contact of bodies with the organs of sense. It is wisely implanted in the human system to guard it against injury; for without it, the delicate structure of our frames would be almost continually liable to destruction from various bodies in nature around us. But as pain is the salutary consequence of excessive, so sensations without pain are the results of a due impression on our sensitive organs, from the objects which are calculated to influence us; and as long as the body remains in health in all its parts, these impressions will continue to cause sensations in the nerves; which on their part, will forward them to the brain, where ideas of the nature and properties of the impressing objects will be instantly formed for the instruction of the mind. Thus the skin and other parts possessed of what is generally called feeling, will be susceptible of touch, and communicate to the mind in the brain, the sensations of the hardness or softness, the roughness or smoothness, &c., of such bodies as may be brought in contact with it; while the organs of the other senses, as the eye, ear, nose and palate, being differently and more highly organized than the skin; (though deriving their sentient powers from the same source as the latter, namely, the nerves;) are enabled, by their regular structure, to receive different kinds of impressions, each according to its properties and conformation. The eye will be impressed from light, the ear from sound, the nose from smell, and the palate from taste; and by those various impressions, an extensive and varied knowledge will be transmitted to the mind, in the brain, of the nature of the objects in correspondence without.

That the brain not only collects, but also preserves the sensations to an indefinite length of time, is seen in the astonishing strength of the memory of some individuals.

That the brain is the seat of ideas any one may convince himself, by shutting his eyes for a moment to exclude the influence of present objects, when he may figure in his mind the exact likeness of some dead or absent friend, of a favorite horse or dog, or of any other familiar object.

5. SEAT OF THE SOUL.

The brain is the seat of the soul.

This is proved by the constancy and powers of the mind remaining the same, even after the spinal marrow is obstructed, by compression, or any other injury; while compression of the substance of the brain itself, instantaneously, and until removed, suspends the mental powers.

6. DIFFERENT PARTS POSSESS DIFFERENT DEGREES OF SENSIBILITY.

Thus we see that the brain, spinal marrow, and nerves, alone constitute the sensitive or feeling part of the human system, and that all its other parts, being composed of matter, totally insensible in itself, are possessed of the capability of feeling only in proportion as they receive the branches of nerves. Hence, there is a gradation of feeling throughout the whole body, each of its organs and parts being endowed with that precise degree of sense, which will be sufficient for the performance of its function in the living machine. The cellular membrane, for instance, whose office it is to unite into one whole, all the moving parts of the system, is without feeling, being insensible to stimuli. This also is the case with the coverings of the brain; the coats of the nerves; the sheaths of muscles; of tendons; ligaments; and all the apparatus of joints; together with the substance of the tendons and ligaments themselves; for these parts performing only subservient offices to the living organs, would derange the whole system, by being possessed of a sensibility, which would leave them no longer capable of bearing the friction, straining, shocks, and blows, which they now endure without injury in the different movements of the frame. The feeling of bones is dubious. If they possess any, they certainly do not send the sensation to the brain, but in their diseases, as in wounds of joints, &c., the great pain, which the patient suffers, evidently shows them to be then not insensible. The muscles are all endowed with the sense of feeling, by a distribution of the nervous fibre every where throughout their substance. This is necessary to their office. As agents of voluntary motion, they must be capable of receiving and obeying the commands of the will, and they are so. Hence the mind no sooner wills an act, than the command flies along the nerve to the part to be moved, and the action is instantly performed. This dispatch is illustrated in the rapid movements of an opera dancer, every one of which were resolved upon in the mind, before they could have been executed by the feet; and at least as strikingly in the organs of speech, by which two thousand letters can be pronounced in a minute, each requiring a distinct and successive contraction of many muscles. The skin possesses a finer degree of sense than the flesh, being fuller of nervous branches; and, rising in the scale of sensibility, may be said to form the lowest of the organs of the senses. Feeling is the property and use of the skin of the human body, which enjoys it over its whole surface, but more exquisitely in some parts than in others. Thus while the greater part of the skin possesses it in a degree sufficient only to guard the body from danger, by warning it of the contact of substances, which might be injurious; there are other parts, as the palm of the hands, and sole of the foot, which are endowed with a greater sensibility; so much as, on a slight friction, to create a tickling kind of pleasure; and in some persons involuntary laughter. But this sense exists in a higher degree at the points of the fingers, which, from their convexity, are particularly adapted to be the organs of touch. The tongue, the organ of taste, possesses this sensibility in a higher degree still; for though it judges of the substances which constitute our food, by the same process as that used by the fingers, namely, contact; yet the latter with their finest feeling would be inadequate to discover bodies by their flavor. A step higher may be ranked the organ of smelling; the nose is so acute in its sense, as to be impressed by the light and volatile effluvia rising from bodies, and floating in the air, and can consequently distinguish substances at a considerable distance. Higher again stands the sensitive faculty of the ear. This organ is qualified to be acted upon by the mere vibrations of the air, which striking against this delicate part of our mechanism, produce sounds, and affords us information of things occurring at a great distance. But the most acute sense, and ranking, perhaps, next to the more simple operations of the mind, is that of sight. The eye, the beautiful organ of this power, is a type of its functions. In transparency, delicacy, and brilliancy, it surpasses all other parts of the body, appearing to lose the grosser characteristics of animal matter, and to approach the nature of the mind, to which it serves as the most useful, rapid, and extensive messenger, for procuring knowledge of the various objects around us.

Such is the varied distribution of sense which we see the brain and nerve bestowing upon the other parts of the frame. We are familiar with its uses. We know the kinds of bodies which are calculated to impress the different organs; and even the manner in which those bodies effect their impressions. And farther, we can define and trace the limits of the senses themselves. For instance, we can determine the extent of vision, hearing, &c.; but, when we ascend one step higher in our researches, and inquire into the nature of the brain and its operations, our reasoning becomes but conjecture, and the further we advance, the more are we lost in wonder and admiration of this astonishing part of our system.

THE SENSES AND THEIR ORGANS.

Next in order to the Brain and Nerves, come the Organs of the Senses.

We commence with the description of the eye.

DESCRIPTION OF THE EYE.

The eye is lodged, for its safety, in a socket formed partly by the bones of the skull, and partly by those of the face; and for the greater security of this delicate organ, it is defended on the outside by the eye-lids, which serve as an occasional covering against external bodies; while a fine, limpid fluid, secreted from a small gland, situated near the outer angle of the eye-lids, is constantly spread over the surface of the eye, to keep it moist and transparent; and to wash away those particles, which, floating in the air, might have attached themselves to this surface, and produced injury. This fluid, called the tears, afterwards passes off by two small openings at the opposite or inner angle of the eye; and thence descends by means of a canal, into the nose. The eye-lashes serve not only to protect the eye from insects and minute bodies; but also to moderate the action of the rays of light in their passage to the eye.

Each eye-ball is partly transparent and partly opaque. The former portion transmits the rays of light to the nerve spread at the back part of the eye; while the latter serves as a covering to this organ, and is intended also to confine the waters of the eye, and limit the passage of light. The opaque part consists; first, of the white outside coat which covers all the back part of the globe of the eye; and, running forward, joins its anterior edge to that of the transparent coat, called cornea, which is placed at the fore part of the eye. These two coats form the outside covering or case for containing the other parts of the eye, and from their difference of structure and use, are not inaptly compared to the outside case of a watch; the transparent coat answering to the glass, and the opaque one to the case into which it is fixed. It is the external part of this opaque coat which forms the white of the eye. Immediately upon the inner surface of this coat is spread the second coat, the choroid, which is also opaque; but being of a more delicate structure than the former, serves as a soft, easy bed for the optic nerve to expand upon. This coat also runs forward towards the circular edge of the transparent part of the eye, and here its edges appear to be thrown off, to form a kind of curtain with an opening in the middle, the pupil, for the passage of the rays of light. This curtain is called the iris, and together with the choroid coat, of which it seems to be a continuation, owes its dark color to a black mucus, not dissimilar to that which is found under the scarf-skin of the negro; and which is spread more or less on the surfaces of these parts of the eye for the purposes of accurate and distinct vision by absorbing the superfluous rays. The optic nerve, descending directly from the brain, passes through an opening into the orbit, to enter the posterior side of the eye in a trunk, about the size of a goosequill. Having penetrated the coats which we have described, it then expands into a very delicate membrane, lining the ball of the eye, for receiving the rays of light, which the transparent parts of the eye transmit to it. We will now describe those parts.

The lucid, or transparent portion of the eye, constitutes the principal share of this organ, and is composed of extremely fine membranes, and humors of a greater or less density. The first and principal membrane is that which we have compared to the glass of a watch, serving at the fore part of the eye as a covering to the parts within, and adapted also to transmit the rays of light. Immediately before the retina or expansion of the optic nerve, and occupying the posterior part of the eye, lies the vitreous humor, so called from its resemblance to fused glass. This humor consists of a fine clear liquid, contained within the very minute cells of a delicate membrane; and is a little hollowed at its fore part for lodging another humor, the crystalline, which is of a firmer texture, and of a lenticular (or double convex) shape. All the remaining space of the eye is filled with what is named the aqueous humor, because it is a thin, clear water, not contained within any cells, but lying immediately in contact with the coats and other parts of the eye. This fluid supports the convexity of the eye before, and will escape on puncturing the transparent cornea, which lies on its outside.

VISION.

Vision is effected by the eye, through the medium of light, for the rays passing directly from the objects which we behold, to this organ, penetrate its transparent parts, till they fall upon and impress the retina or expanded nerve at the bottom of the eye. Now, the scope of vision being great, while the retina or seat of impression is but limited in size, it follows that objects can be painted only in miniature on this part, and that for this purpose its apparatus is necessary to converge the rays of light, so that they should convey a diminished figure of the object to the nerve of the eye. This is really and principally the use of the transparent humors of this organ. They refract and converge the rays of light, in the manner of a camera obscura; which represents an artificial eye; so that a distinct image of the object we look at, is formed at the bottom of the eye; and this point of convergence of the rays, is called its focus. As in a camera obscura, so also on the retina, objects are painted in an inverted position. This happens from the necessary crossing of the rays in their passage to the nerve, and may be seen by cutting away the back part of the opaque coat of the eye, and placing a piece of paper to receive the object. Habit alone enables us to judge of the true situation, and likewise of the distance and magnitude of objects. To a young man who was born blind, and who was couched by Mr. Cheselden, every object (as he expressed himself) seemed to touch his eyes as what he felt did his skin; and he thought no objects so agreeable to him as those which were smooth and regular, although for some time he could form no judgment of their shape, or guess what it was in any of them that was pleasing.

To paint objects distinctly on the retina, the cornea or transparent fore-part of the eye should have such a degree of convexity, that the rays of light may be collected at a certain point, so as to terminate exactly on the nerve. If the cornea be too prominent, the rays, by converging too soon, will be united before they reach the retina, as is the case with near-sighted people. On the contrary, if it be not sufficiently convex, the rays will not be perfectly united when they reach the back-part of the eye, which happens to long-sighted persons, and which is found constantly to take place as we approach to old age, when the eye gradually flattens. These defects are to be supplied by means of glasses. He who has too prominent an eye, will find his vision improved by means of a concave glass, and a convex glass will be found useful to a person whose eye is too flat.

HEARING.

The internal ear, the immediate organ of hearing, is seated within the temporal bone of the skull, and consists of certain cavities, labyrinths, and passages, hollowed out of its substance; together with their fine lining membranes, some very minute bones, and the auditory nerve. The first passage is a canal of considerable length, which leads from the external to the internal ear. It is lined with a fine membrane, and is furnished with several small hairs for guarding the parts within from the entrance of insects. The inner extremity of this canal is closed by a thin transparent membrane, set in a bony circle like a drum-head. Under this membrane runs a branch of a nerve; and immediately beyond it lies a small cavity, called the drum of the ear. This cavity contains a chain formed by four small bones, which are furnished with muscles, cartilages, and regular articulations. It is of a hemispherical shape, and has four openings from it; the first is a small canal communicating with the back-part of the mouth; the other three are holes which open into different recesses of the ear, and are covered with a very fine membrane. One of these openings directly leads through a bony partition, into what is called the labyrinth of the ear. This part of the organ of hearing consists, first, of an irregular cavity much smaller than the drum of the ear; next, of three semicircular canals, each of about a line, (the twelfth part of an inch) in diameter, which open by both their extremities into this cavity; and lastly, of a spiral canal, not unlike the shell of a snail, making two turns and a half from its base to its apex, and opening also into the former cavity. All these parts of the labyrinth are lined with a very fine membrane, and are filled with a watery fluid, which transmits to the nervous pulp in contact with it, the vibrations it receives from the membrane separating the labyrinth from the drum of the ear.

Owing to the situation, the variety, and the minuteness of the parts composing the ear, we do not know exactly the mode of action of this intricate but admirable organ. It is certain however, that the auditory nerve, which is distributed over the whole of the labyrinth, is the seat of the sense of hearing; and that a certain modulation of the air, collected by the funnel-like shape of the external ear, and conveyed through the first canal which we have described to the membrane, and thence communicating its vibrations to the nerve, is the cause of hearing. That sound is propagated to the ear by means of the air, is proved by ringing a bell under the receiver of an air-pump; the sound it affords being found to diminish gradually as the air becomes exhausted, till at length it ceases. We now describe the manner in which it is supposed that hearing is effected.

The stroke of some body against another, causes an undulating action in the surrounding air, not unlike to the circles which take place on throwing a stone into smooth water; and these waves of the air, travelling at the rate of about thirteen miles in a minute, beat against the external ear. Here they are collected and conveyed through the canal to the membrane closing the drum of the ear. This membrane they force into vibration, which is propagated onwards by the small bones in the drum of the ear, till it reaches the labyrinth, where communicating its impulse to the watery fluid contained in its cavities, the auditory nerve at length becomes affected by the tremor of the water, and the sense of sound is produced.

SMELLING.

The nose externally is constructed of bones, cartilages, small muscles, and the skin. Its internal part, which is the seat of smelling, has an extensive surface formed by the convolutions of four small bones; two in each nostril. A soft pulpy membrane covers them through all their windings, and upon this the branches of the olfactory or smelling nerve are copiously distributed.

Many cavities and recesses, formed in the bones of the skull, communicate with the nose, perhaps to increase the power of the organ, as well as to give distinctness and volume to the voice.

The sense of smelling is effected by the membrane before described. The subtile and invisible effluvia of bodies, being carried with the air in which they float, through the nose in inspiration, strike against the almost naked and soft olfactory nerves which are every where spread throughout this membrane, and are kept moist by a constant secretion of mucus, and produce in them a feeling, which we call smelling. This sense, besides adding to our pleasurable feelings, seems intended to direct us to a proper choice of aliments, warning us to avoid those which may be putrid or otherwise dangerous; and also for admonishing us to avoid exhalations and vapors which render the air unhealthy. When we wish to take in much of the effluvia of any thing, we naturally close the mouth, that all the air we inspire may pass through the nostrils, and at the same time, by means of the muscles of the nose, the nostrils are dilated, and a greater quantity of air is drawn into them.

THE TASTE.

Another sense which the all-wise Creator has given to assist us in the proper choice of food, and also for combining pleasure with the reception of nourishment, is that of taste. This property resides in the nervous extremities or papillæ, (minute terminations of the nerves) which lie upon the extremity and sides of the tongue. It is excited by the contact of those bodies, whose properties are fitted to act upon these nerves. Thus by making different kinds of impressions, owing to their various qualities, (some substances being mild, others acrid and pungent,) the different tastes of sour, sweet, austere, &c. are produced; but the particular state of these nervous papillæ, of the tongue, with respect to their moisture, their figure, and their covering, will produce a considerable difference in the exercise of this sense. Hence it varies in different people, and suffers great changes even in the same person, by sickness, and various other causes.

The ability of the tongue to distinguish tastes, has been providently implanted, that we may discern what food is most salutary. In general that which is so, is pleasant, and that which is ill-tasted is rarely fit for our nourishment. In this manner nature has invited us to take necessary food, as well by the pain called hunger, as by the pleasure arising from the sense of taste. Brute animals, governed by instinct merely, have the faculty of distinguishing flavors more accurately, by means of which they abstain cautiously from poisonous or unhealthy food. Thus herbiverous animals, to which many noxious plants are offered, are furnished with long and large papillæ in the tongue; which are not so necessary to man, whose reason and means of information serve, in part, instead of mere animal instinct.

TOUCH.

The sense of touch is that faculty by which we distinguish certain properties of bodies by the feel; and in a general acceptation, may, perhaps, be said to exist in all the parts of the body possessed of sensibility. But the term is commonly confined to the nervous extremities or papillæ of the skin, which being more numerous, or covered with thicker or thinner cuticle in some places than in others, give, as we before observed, a grosser or finer degree of feeling to the different parts. These papillæ are capable of being impressed by the exterior properties of bodies, whence the mind is enabled to form ideas of their solidity, moisture, inequality, smoothness, dryness, measure, fluidity, and heat. But the part of the skin which most possesses this sense for the examination of substances, is that covering the points of the fingers; which from the peculiar disposition of its nervous papillæ, and also from the convex shape of the part on which they lie, is admirably adapted for inquiring into the nature of bodies by the feel.

We have now rapidly described the senses and their organs. In each of the latter we have seen the nerve to be the seat of impression; and the organ itself to be an apparatus for conveying to the nerve a particular influence from the impressing object. Thus the transparent parts of the eye transmit the rays of light to the nerve which is spread behind them. The ear is adapted to collect, concentrate, and propagate the vibrations of sound, till they strike against the nerves distributed in the labyrinth. The nose, tongue, and fingers, are so constructed that the nerves, spread upon those parts, receive different kinds of impressions from contact, owing partly to the difference of the medium through which the nerves are acted upon; the membrane which covers them, being in some organs of a different structure, and in some of greater density than in others. Thus there is a common seat for impression in all the organs. The difference of sense is created by the organ itself, whose peculiar construction is fitted to receive only a particular influence from the impressing body. What admirable simplicity! and yet how astonishing are the operations of these beautiful parts of our mechanism.

THE FACE.

The features of the face viewed collectively present a striking and beautiful characteristic of the superior nature of man. Perhaps nothing in creation enjoys and expresses so many, various, and elevated influences as does the human countenance. It is the image of the soul, the place where its ideas, motions, &c. are chiefly set to view, and the seat of the principal organs of sense. To the countenance we naturally look in conversation for the full meaning of the words expressed. By it we are enabled to anticipate the emotions and feelings of others, before they yet reach the tongue. It speaks a language peculiar to itself, anticipating and outstripping all others in rapidity; which is general to all nations, and intelligible to every individual of the whole human race. Even brutes, whom man has domesticated and made his occasional companions, are not ignorant of this kind of expression. When the dog would know the commands of his master, unable to understand them in the complicated sounds of speech, he looks intently upon his face, and endeavors to collect thence his wishes and the disposition with which he regards him. Nor does this expression entirely forsake the face of man even in death. All the affections of the mind are more or less portrayed in turn in this limited but expressive field; love, pity, courage, fear, calmness, anger, and every other strong characteristic of the man.

To the size and proportion of the bones underneath, which constitute the base of the face, the difference of features is to be principally attributed. Youth, age, sickness, health, and even the stronger affections of the mind, have an effect in changing the countenance; but that diversity of feature consisting of the difference of length, breadth, or projection, depends chiefly upon the bony frame that lies below it.

From this difference of features, is that great diversity produced, which varies the countenances not only of nations, but of individuals; so that no two, perhaps, of the whole family of mankind, could be found exactly alike. But, notwithstanding this surprising diversity, we are not to suppose that the individual features composing each face are different from those of all other faces. We are rather led to believe, that each is capable of an indefinite number of combinations with other features; and that from a very few kinds of features, the astonishing and beautiful variety of faces we see round us are, by transposition, produced.

This supposition is supported by the simplicity of means which nature selects for effecting her purposes; and in a great degree by the likeness which often exists between two faces, sometimes so exact that one shall be mistaken for the other.

THE COMPLEXION.

It was not till lately that the true seat of the color of the skin became known. Previously anatomists supposed that color depended on the outer or scarf-skin. Malpighi, an eminent Italian physician, at length led the knowledge of its true seat. He found that the skin of the human body consists of three parts, separable one from the other; namely, the scarf-skin which is external, the thicker or true skin beneath it, and a coagulated substance which lies between both. On future investigation it was discovered that this coagulated substance is exclusively the seat of color in the skin, and is what causes the various shades of complexion in the different inhabitants of the globe. This discovery has been since fully confirmed. If the scarf-skin be separated from the coagulated substance beneath, it will be found to be semi-transparent. This is invariably the case with the scarf-skin of the blackest negro, and with that of the purest white. Whence it follows that the outer skin of both being similar in transparency and color, (and the inner or thicker skin being known not to differ in persons of the most opposite complexions,) the intermediate coagulated substance must be the seat of color; and this substance varying in its tint, and appearing through the transparent scarf-skin, produces the different complexions of the human race.

Whatever causes co-operate in creating these appearances, produce them by acting upon the coagulated substance; which, from the almost incredible manner in which the scarf-skin is perforated, is as accessible as this skin itself. These causes are probably those various qualities of things, which, combined with the influence of the sun, contribute to form what we call climate. For the coagulated substance is found to vary in its color from the equator to the poles.

SPEECH.

We shall first examine the organs of speech, and afterwards take a view of this superior and distinctive faculty of man.

The organs of speech are the mouth, the windpipe, and the lungs. The first of these is known to every one, as also the parts which it contains. The windpipe is a passage commencing at the back part of the mouth, and thence descends along the neck to open into the lungs. At its upper part it is constructed of five thin cartilages, connected together by ligaments, and put into motion by small muscles. These cartilages form a chamber at the head of the tube, which is situated at the root of the tongue, and may be felt to project in the upper and fore-part of the throat. The opening of this chamber into the throat is a very narrow chink, which is dilated and contracted to produce every change in the modulation of the voice, by the muscles attached to the cartilages. To defend this opening, a beautiful contrivance is adopted of an elastic valve, which falls flat upon it whenever we swallow, like the key of a wind instrument; and which at other times rises up and leaves the aperture uncovered for the uninterrupted ingress and egress of the air into the lungs.

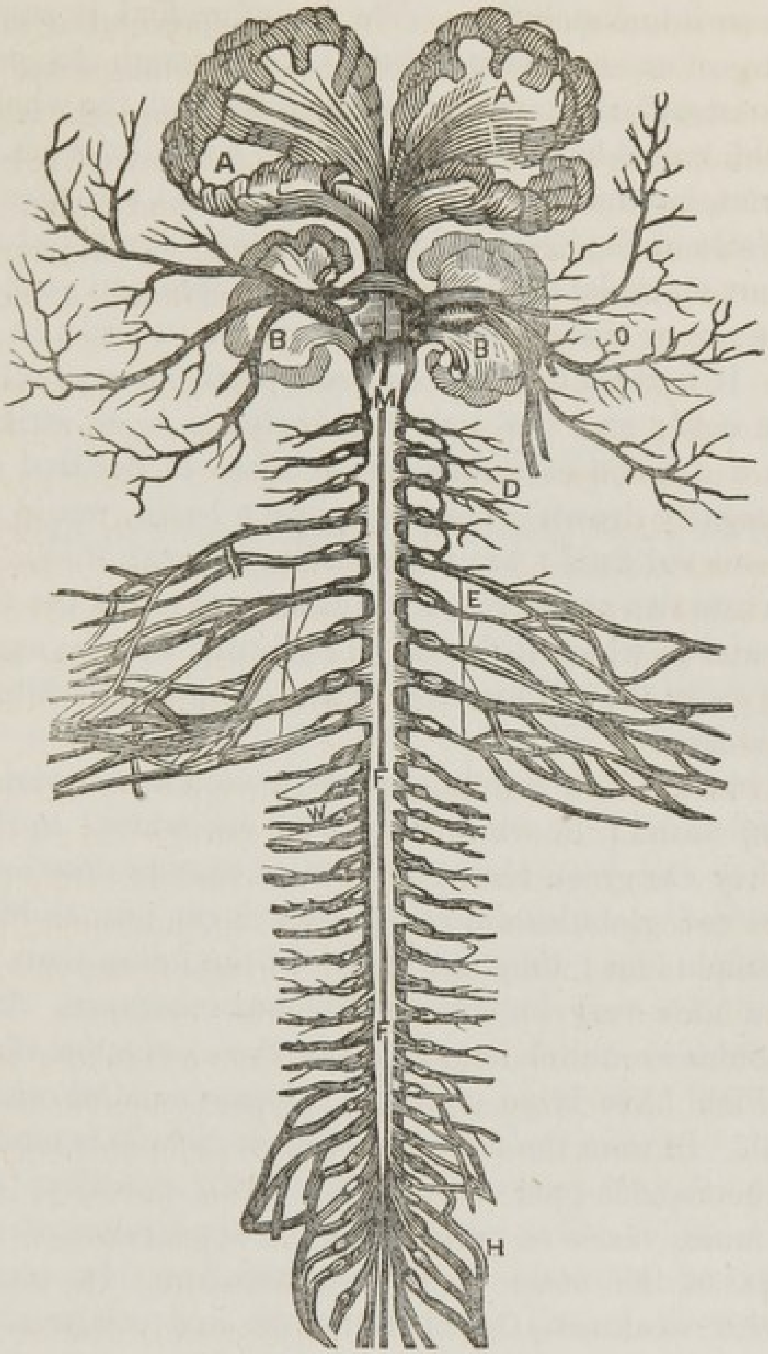
The tube leading to the lungs is formed by numerous semicircular cartilages, connected by muscular fibres and membranes. They are elastic and firm, to keep the canal of the windpipe always open, and to resist compression. At the same time it is nearly as flexible as though it was wholly membranous, and gives way to all the bendings of the neck. Had it not been so, we should have been in perpetual hazard of strangulation. The passage to the stomach, on the contrary, being intended only for occasional use, has its sides always collapsed, unless when distended by the passing food. The lungs are two cellular bags for containing air; they are situated in the chest, and both open into the bottom of the windpipe.

In *inspiration* the air dilates the lungs. These, like bellows, force it back in *expiration* into the windpipe. Here the air is straightened in its passage, and made to rush with force along the tube towards its upper end, where striking against the elastic cartilages of this part, it is variously modulated, and the sound of the voice produced. But these cartilages do not articulate the sounds; to effect this the voice is required to pass through the mouth, where it is differently modified by the action of the tongue, which is either pushed against the teeth, or upwards towards the palate, detaining it in its passage, or permitting it to flow freely, by contracting or dilating the mouth. It has been humorously and truly remarked of the tongue, that it is the only muscle under the control of the will which is not wearied by incessant use.

THE BLOOD.

Having now described those parts of the human body on which its figure, support, strength, motion, sensibility, &c., immediately depend; we next come to those which are intended to replace the waste of the machine, and to supply it with new energies.

Like all other animal matter, the human body suffers a constant change. Life itself is an action inducing change, which ultimately leads to death. This change is continually taking place, a removal of



EXPLANATION OF FIGURE II.

This Plate shows the Nervous System; consisting of the Brain, Spinal Cord, and Nerves. The brain gives origin to nine pairs of nerves; and the spinal cord, connected with the brain, gives off thirty-one pairs. There are, properly, two brains; the large brain, occupying the upper and front part of the skull, and the small brain which occupies the posterior and base of the skull.

A. A. The two halves of the Large Brain.

B. B. The two halves of the Small Brain.

F. F. Spinal Cord, joined to the Large Brain.

O. Branches of the Fifth Nerve going to the face, teeth, and eye.

E. Five nerves forming the Brachial Flexus, and going to supply the arms and hands.

W. Branches of the Dorsal, or Nerves of the Back. Those near the lower F. are the Nerves of the Loins.

H. Sacral Nerves, going to the thighs, legs, and feet.

the old, worn out particles, and an incessant deposition of new ones. To effect the latter purpose, nutritious matter must be lodged in the animal machine, otherwise it will speedily wear down and run into dissolution. We therefore find it supplied with a rich store of a nutritious fluid, fine enough to penetrate its minutest parts, and constantly circulating through the whole machine.

This fluid, called blood, is of a rich and beautiful color, vermillion in the arteries, but modena red in the veins, and black, or almost so, at the right side of the heart. In various individuals, but much more so in different animals, it varies with their function and manner of life. It is more or less perfect in quadrupeds, in birds, in fishes, and in insects. It is thick or thin, has gross particles or small, is red or pale, hot or cold; and the last circumstance is so striking, as to have led to a division of animals into those of hot and cold blood.

Blood recently drawn from a vein into a basin, would seem to be a homogeneous red fluid; but when suffered to rest, it soon coagulates and divides into two parts, viz., a red clot or cake, and the transparent serum or water in which it floats. The former may be again divided by washing away the red particles, when a pure and white coagulum only will remain.

In the blood of all animals, even in colorless insects, globular particles are found; in white ones they are white; in those which are green they are green also, but in most insects they are transparent. These red globules are easily seen in the human blood by the help of a simple lens; they are larger in the fœtus than in a grown animal, and also vary in size in different creatures. In the skate the red globules are much larger, but in the ox smaller than they are in man. Fish have large globules, serpents smaller ones, and man smaller still. In man the diameter of each globule is much less than the three thousandth part of an inch. Their quantity, in regard to the whole mass, varies so much, that the appearance of the blood is a real index to the state of the constitution. In some diseases attended with weakness, the blood is poor and colorless. In health and strength it is rich and florid. By labor the red particles may be increased in a wonderful degree; in hard working men they abound. They may be accumulated by exercise into particular parts, as in the wings of moor-fowl or pigeons, and in the legs of common hens. The wings of the latter being rarely used, the muscles which move them contain but few red globules, and are of a paler tint. The color of the flesh of animals is altogether derived from these particles, and if they are removed by repeated bleedings, it becomes unnaturally white. This effect of bleeding is well known to the feeders of calves. The uses of the red particles are not ascertained; but their color depends upon the action of the air in respiration. They are found to contain some iron in their composition.

The blood contains various saline particles, and the earth which assists in forming bones; but of its other properties, and more particularly those which are derived from the air in respiration, we defer speaking till we shall have occasion to view the nature of this fluid, and its influences on the animal body. We shall now describe those parts which throw the blood into motion, sustain its constant circulation throughout all the parts of the body, and which separate various fluids of different properties from the blood.

THE ORGANS OF CIRCULATION.

These are the Heart, the Arteries, the Veins, the absorbing Vessels, and their Glands.

THE HEART.*

This organ is situated nearly in the centre of the human body, occupying a place in the chest rather to the left of the centre of this cavity, and lying immediately upon the diaphragm or muscle dividing the chest from the cavity below, with its apex or point inclining towards the bony extremity of the sixth rib of the left side, and against which it may sometimes be felt to strike. In this situation the heart is sustained by the large blood-vessels which originate from its base; but its point is entirely free, and it is surrounded by a strong membranous bag or purse, which is firmly fastened to these vessels, and to the diaphragm. It serves to preserve the moisture of its surface, by constantly exuding a fine thin lubricating fluid, and thus lessens its friction with the parts in contact with it; at the same time that it supports the heart itself when under violent action.

The heart consists of four cavities or chambers for receiving the blood, and for giving it a fresh impulse. Two of these cavities are on each side, and communicate with each other by an opening through the partition which divides them; but they are totally distinct from the cavities on the other side, although they correspond with them in shape, structure, and use. The heart may be said, therefore, to consist of two distinct organs; one on the right heart for sustaining the circulation through the lungs, and the other on the left for impelling it through the rest of the body. The first cavity on the right side of the heart is called its auricle, and receives the terminations of two large veins which reconvey the blood returning

* See the frontispiece with explanations.

from all parts of the body to the heart. This cavity may be viewed as a reservoir for the returning blood, which it discharges into the other cavity of the same side, called the right ventricle. The opening into the ventricle is closed by a valve, which is so contrived as to admit the blood, but to prevent its return. The ventricle has another opening leading from it into an artery, and the right ventricle, when filled with blood from the auricle, contracts and forces it into the artery of the lungs; and (that it may be able to propel the blood with sufficient force into this tube) it is constructed of greater strength than the auricle, having its walls firmly supported by fleshy columns, which extend across the cavity of the ventricle, and connect its opposite sides together. There are valves also situated at the commencement of the artery of the lungs, and for the same use as in the auricle, viz., to prevent the blood from returning into the cavity, whence it had just been expelled.

This description of the right side of the heart will suffice for that of the left; both being constructed nearly in the same manner, having corresponding cavities or chambers, and for similar purposes. But it ought to be observed, that as the right auricle receives the blood returned to the heart from all the parts of the body; and the ventricle of the same side propels it into the vessels of the lungs; so the auricle on the left side of the heart receives this blood from the lungs, by four veins which open into it, while it is the office of the left ventricle to force it into a new circulation along the extent of the whole body. The left ventricle is stronger than the right, because it has a greater resistance to overcome.

The substance of the heart is muscular, being composed of red and elastic fibres, similar to those which constitute the other muscles of the body; but so arranged as to admit of contraction in all directions, and with such a peculiar modification of the excitable principle as to be contracted and dilated alternately through the whole of life; so that the circulation never ceases. The heart, in fact, possesses the contractile power in a higher degree than any other muscle. It is called into action partly by the mechanical distension of the blood, although principally, no doubt, by its peculiar qualities as a stimulus. The auricles of each side are filled at the same instant, while the ventricles are at the same time emptying themselves. The right auricle, when filled, contracts, and urges the blood onward into the now relaxed ventricle; the last, when distended, contracts in its turn; the flaps of the valves are thrown back, and close the opening into the auricle, and the blood has no other outlet but into the pulmonary artery, which leads to the lungs; where it is to be changed in its color and other properties. The artery is now dilated, its valves are instantly closed, and prevent the return of the blood into the ventricle. Then the artery contracts, and impels its contents onward, to make way for a new wave of blood. During this time corresponding motions take place in the left side of the heart, with this difference only, that the left ventricle forces the blood into the aorta, or great artery of the body, after it has undergone its due changes in the lungs, through which it was circulated by the force of the right ventricle.

It is observable, that this motion of the heart not only survives that of the organs of voluntary motion, but continues a considerable time even after it is separated from the body. Nay, after it has ceased to palpitate, yet its contraction and dilatation may, by the application of stimuli, be alternately renewed and continued some time longer. Hence in drowning and suffocation, though the pulse be imperceptible, and life apparently extinguished, the heart still preserves this latent power, or susceptibility of motion; for though unable to propel the blood through the vessels of the body, it needs only to be excited by suitable stimuli to renew its action. In the first rudiments of life, even before the brain is formed, a pulsating point or spot shews the embryo heart in miniature, and marks its primeval irritability, as a sure pledge of vitality. The heart of the chick begins to move before we can presume that there is any organ for distributing the nervous power. The palpitating point is the heart of the chick, and it is seen beating while its body is but a rude, unformed, and gelatinous mass.

As this singular organ exhibits irritability the first, so it never relinquishes it till the last, and may therefore be considered as the first part of the animal which lives, and the last which dies.

In animals with cold blood, this irritability is very great, and continues a long while. The heart of a viper will palpitate when taken from the body, twenty-four hours; and that of a turtle, thirty, or longer. In the warm blooded animals, it moves till the fat is rendered stiff by the cold, when the motions of the heart and all the other muscles commonly cease.

THE ARTERIES.

From the ventricles of the heart arise two large elastic tubes, called arteries, which afterwards divide like the trunk of a tree, into innumerable branches. The one commencing at the right side of the heart, conveys the blood to the lungs, while that which is continued from the left ventricle, carries it to all the other parts of the body. The arteries are composed of three membranes called coats, an external coat, a middle coat, which is muscular, and an inner one, which is smooth. They partake of the nature and action of the heart, for being dilated and irritated by the blood impelled into them from the heart, they contract, by means of their muscular coat, upon this blood, and thus propel it to all parts of the body, for their nutrition, and the various secretions. This dilitation and contraction is called the pulse, and is perceptible in the trunks and branches of the arteries, but not in their minute ramifications, except when inflammation is going on.

THE VEINS.

The blood, having been conveyed by the arteries, even to the extreme parts of the body, for its nourishment and repair, the surplus is carefully returned to the heart and lungs, to be prepared for a new circulation; and for this purpose are the veins provided. They commence from, or rather are continuous with the minute arteries, and as they approach the heart, they run into larger but fewer tubes, till at last they terminate in it by six great trunks. Two of them empty their contents into the right auricle; the one collecting the blood from the vessels of the head and the upper extremities, while the other ascends with it from the lower parts of the frame. These are loaded with venous blood; but the remaining four veins pour the blood from the lungs into the left auricle; it is now changed into a bright red color, and is called arterial blood, because it has the appearance with which it is always found in arteries; so that in the lungs the office of the arteries and veins is transposed; the former conveying venous blood, while the latter are filled with arterial blood.

The continuation of the extreme branches of the arteries to those of the veins, resembles two trees united to each other at their tops, while their trunks are so disposed as to terminate in a common point, the heart; and if we suppose that both these trunks and their ramifications are hollow, and that a fluid is incessantly circulating through them, by entering into one of these trunks, and returning through the other, we can conceive how the blood is circulated through the human body.

The veins do not pulsate, like the arteries. The blood which they receive from those vessels flows through them very slowly, and is conveyed back to the heart by the current of blood from the arteries, and the contraction of the muscles, among which they ramify. It is prevented from flowing backwards in the veins by valves, which constitute one of the great distinctions between these vessels and the arteries. The valves are formed by the innermost membrane of the vein rising up in a fold into the cavity of the vessel, like a curtain, and stretching itself along the vein so as to form a kind of crescent, which permits the blood to flow on towards the heart, but immediately stops it if attempting to flow back.

The absorbents are thin and pellucid vessels arising from the various surfaces of the body, and running to a common trunk or tube, called the thoracic duct, because it lies principally in the thorax or chest, which empties itself into a vein a little before it comes to the heart. They are distinguished into two kinds, the lacteals and the lymphatics; the former absorb the nutriment from the intestines, and convey it by the thoracic duct into the circulation, while the latter vessels take up the colorless fluid, called lymph, (whence they receive their name) and convey it from all the parts of the body to the same point. Thus the parts of the blood which either from their thin, oily, or nutritive qualities, had been separated from the red, circulating mass, and thrown out by the secreting or exhaling arteries, are absorbed, after having performed their various uses, and are again conducted by the lymphatic vessels back into the circulation to mix with the blood; and the lacteals, or absorbing vessels of the intestines, drink up the milky fluid formed from our food, and carry it to the heart and lungs to be changed into blood.

Hence we see that absorption is a function necessary to the circulation, and highly essential to life. It completes the circle in which our fluids move, and supplies the constantly decreasing blood with new parts. But there are other purposes, which this curious and beautiful operation of our frame accomplishes. The skin is full of small pores which are the mouths of lymphatic vessels. Through these are absorbed properties from the surrounding bodies, as from the air, water, or such substances as may be in contact with the skin, and are thence conveyed into the system for its refreshment, or cure; for instance, medicines rubbed on the skin enter the body, and affect the frame.

But a grand, constant, and universal agency of our lymphatic system, is the removal of old, useless, and worn out parts, and the making room for new ones. This astonishing power of our frame to change its withered, for sound, healthy particles, is not confined to any one part or organ of the body, but is possessed by all. Delicate membranes, and strong tendons, the soft moving muscle, and the hard, solid, inactive bone, are all acted upon by these modellers of our frame, throw off the old exhausted particles of which they were composed, and acquire fresh ones. By this constant and general renovation of all its parts, which endures through life, are the health and vigor of the whole body preserved.

Absorption also helps to remove those injuries which happen to the frame by accidents. If a tumor arises from a blow, the absorbents will soon begin to act, and eventually remove the swelling. A fluid poured from its ruptured vessel will be absorbed by the lymphatics, and carried again into the circulation. Even parts of the body which are diseased, or have their organization destroyed, and are consequently unable to perform their functions, will have their dead particles carried off by absorption, and room made for fresh, healthy depositions. The black or greenish spot which is left by a bruise, is owing to blood having exuded from a ruptured blood-vessel. Its disappearance is the effect of the action of the absorbents, which is at all times, and in a similar degree, operating in every part of our body, but not equally obviously. According to the proportion which the action of the absorbing vessels bears to that of the arteries, by which fresh supplies of nourishment are brought to all parts, will the size of the body depend. Hence in youth the absorbents depositing more nutritious matter than the arteries convey away, the frame grows and expands. In middle age there being a balance between the actions of the two systems of vessels, no change can take place; but the absorption being greater in old age than the nutritious action of the arteries, (now declining agreeable to the course of nature) the body shrinks from its usual dimensions, the limbs become wasted and shriveled, and the whole frame totters towards the grave.

The absorbents are full of valves like the veins, for preventing the flowing back of the lymph; and the power by which they drink up this fluid, and with it the decayed and dissolved solids of the body, is supposed to depend principally on their muscular structure; the mouths of these vessels being filled with the particles of the fluid, their coats contract, and their contents being pressed upon at the sides, and prevented from returning by the valves, are necessarily propelled towards the termination of the absorbents in the veins, there to be mixed with the blood.

THE GLANDS.

These organs are designed to separate various substances from the blood, and are situated in different parts of the body. They differ in size, shape, and construction, according to the peculiar kind and quantity of fluid which is meant to be separated from the mass of blood. Thus while some are of a small and roundish figure, others are much larger and variously formed. Each of the small glands consists, first of an artery for supplying the gland with blood, and also for separating, by the peculiar disposition of its extremity, a particular kind of fluid from this blood; next of an excretory duct or canal which goes out of the gland, and conveys thence the secreted fluid, by the contractility of its coats; and lastly, of a vein for returning to the circulation, the blood remaining after the secretion has been accomplished.

Of this simple kind are most of those little glands, which are found in different parts of the body, as under the skin, in the mouth, nose, eye, &c. and which, by secreting an oily or mucilaginous fluid from the blood, keep the parts on which they lie constantly moist, prevent friction, defend them from the air, and from the floating particles which it may contain. That the vessels necessary to effect secretion may not be extended into long and inconvenient lines, they are skilfully coiled into a small space, and connected together by cellular substance, and assume the roundish and even appearance, which those little glands exhibit.

The large glands consist principally of an aggregation of the small ones, but have the following peculiarities of general structure; 1st, all the arterial branches which bring the blood to the gland, and afterwards become the organs of secretion, arise from one great trunk, which does not divide till it has reached the body of the gland; 2nd, the excretory ducts of the various small glands, composing the great one, all run to unite into one large, common tube or canal for conveying away the collected secretions of the little glands; and 3rd, the branches of the veins, corresponding with those of the artery, all pour their blood into one great trunk, by which it is returned into the circulation.

This process of separating various bodies from the mass of blood is termed secretion, and it is a most important function; for every animal production is a secretion, whether there be a complicated apparatus for forming it or not. Thus bone, flesh, fat, skin, &c. are as strictly secretitious as the urine, the bile, or the tears; only that in the latter case, for the sake of compactness, or because the secretion was wanted in one spot for a specific purpose, the apparatus for producing it is limited; while in the other instances, the substances are formed in many parts of the body.

The term gland has been confined to the congeries of vessels, &c. above described; but as we have seen parts the least peculiar in their structure perform the functions of a gland.

In general the substances they secrete are of immediate use in the animal system, and are so either constantly or occasionally. In the latter case, a reservoir is attached to the gland in which the secretion is accumulated till it is wanted.

There are other secretions which separate useless or noxious bodies from the blood; these are termed excretions; such are the urine, the perspirable matter, and some others. They are the vehicles by which worn out particles are removed, as well as noxious ones.

The manner in which the glands effect secretion is wholly unknown. They are composed of similar vessels, have a common fluid to secrete from, and still they separate substances wholly differing from each other and from the blood.

Their mechanism is too minute for our inspection; and it never will be in our power to examine the machine when at work; all our observations must, therefore, be confined to the dead body. Hence we have little hope of penetrating this mysterious process, although we may conceive in general, that vessels of different sizes, lengths, convolutions, and angles of separation from their trunks, will be fitted to deposite different compounds. In truth the body is a complicated laboratory, where changes are incessantly taking place, partly chemical, and partly otherwise.

REVIEW OF THE CIRCULATION.

The celebrated Harvey was the discoverer of the circulation of the blood. "Seeing," says he, "that the blood passed from the arteries in abundance into the veins, unless these were to empty themselves, and the others to be refilled, that ruptures of vessels every where would take place, which does not happen, I began to conjecture there must be a circular motion of the blood; but this doctrine was so new and unheard of, that I feared much detriment might arise from the envy of some, and that a number would take part against me, so much does custom and doctrine once received, and deeply rooted, pervert the judgment. However, my resolution was bent to set this doctrine forth, trusting in the candor of those who love and search after truth."

No sooner had he published his discovery of the blood's circulation, than prejudice assailed him. Few physicians, and none passed the age of forty, believed his doctrine, which they stigmatised as an heretical innovation in philosophy and physic. Even his practice began to decline. But he had the happiness to outlive the clamors of ignorance, envy, and prejudice. Professional men were at last ashamed to own that they had ever disbelieved his doctrine, which was essentially the same as that which we have previously described.

The circulation of the blood can be easily seen, by the help of a microscope, in the bodies of different creatures, which are either wholly, or in part transparent; and the observations made by this means are preferable to any others we can make, since, in dissections, the animal is in a state of pain, or dying; whereas in animals viewed in the other mode, all is left in its usual course, and we see what nature does in her own undisturbed method. The tail of the newt, or water-lizard, affords a very entertaining prospect of the circulation of the blood, through almost numberless small vessels. But no object shows it so well as one of those animals while so young as not to be above an inch long; for then the whole body is so very transparent, that the circulation may be seen in every part of it, as well as in the tail; and in these subjects nothing is more beautiful than the course of the blood to and from the toes, where it may be traced all the way with great ease. Near the head there are also found three small fins, which afford a very clear view of the circulating blood. These are all divided like the leaves of the polypody;* and, in every one of their branches, the blood may be very accurately traced, running to the end through the artery, and then returning back again by a vein of the same size. As the vessels are very numerous and large in this part, when the third or fourth magnifier is used, there are sometimes seen thirty or forty channels at once. The large size of the globules of blood in the newt, and their fewness in proportion to the quantity of serum, renders them particularly distinct; and we remark that their figure, as they are protruded through the vessels, changes in a very surprising manner.

The impetus, occasioning the circulation, is great enough in some animals to raise the blood six, seven, or eight feet high from the orifice of a divided artery; and that the force of the heart must be very great, appears also from its expelling about eight pounds and twelve ounces every minute, with a velocity equal to one hundred and fifty-nine feet in that time, besides overcoming a great resistance in distending the arteries. The space of time wherein the whole mass may ordinarily circulate, is not ascertained. Some of the latest writers however, state it thus. Supposing the heart to make two thousand pulses in an hour, and that at every pulse there is expelled an ounce of blood, as the whole mass is not ordinarily computed to exceed twenty-four pounds, it must be circulated seven or eight times in the space of an hour.

Such is the circulation of the blood, and the astonishing arrangement and powers of its organs. Whether we consider the force which they exert, their never wearying action, or the admirable wisdom with which they are disposed, the subject forcibly impresses the mind. Here we find one of the most noticeable and peculiar animal

* The common fern.—Ed.

functions. Far less magnificent in their plans, and less skillful in their execution, hydraulics offer us but faint analogies with it, in those machines, by means of which water is distributed into every quarter of a great city. Upon the whole contrivance of the circulation we may truly say that the Creator has impressed distinctly his own signet.

ORGANS OF RESPIRATION.

We will now consider one of the most beautiful and important functions of the animal body; upon which life itself immediately depends, and which is constantly replenishing all its springs. Breathing, like the circulation of the blood, is essential to the preservation of the animal. The one supplies it with fresh nutriment, and thus prevents decay. The other animates the whole of the machine, and invigorates all its movements. To comprehend this function, it will be necessary to extend our views to the nature and properties of the air engaged in respiration, and to those influences which it has upon the animal body. We first describe the organs of respiration, and the manner in which it is performed in man, and in other creatures.

THE TRACHEA OR AIR-TUBE.

The trachea, or windpipe, by which the air is conveyed from the mouth and nostrils into the lungs, has nearly the same construction in quadrupeds as in man. It is formed of cartilaginous rings, and an elastic ligamentous membrane. The rings are intended to keep the area of the tube constantly open, but do not describe a circle; the back part of the windpipe, or that side of it which lies next to the canal leading from the mouth into the stomach, being composed almost wholly of the elastic membrane, for the greater convenience in the act of swallowing. This membrane also connects the cartilaginous rings together, and completes the sides of the tube. The upper part of the trachea, as we have before observed, is peculiarly formed for producing the voice, and has a small thin cartilage placed over the mouth of the tube, which occasionally shuts down, and closes the passage to the lungs, as in swallowing. From this part the air-pipe descends along the fore-part of the throat, till it passes into the cavity of the chest, to enter the lungs. Its internal surface is constantly kept moist, and defended from the air when passing, by a mucus which is poured out from small glands every where strewed on the membrane lining this tube. A similar mucus lines all the passages which lead to the internal cavities from without.

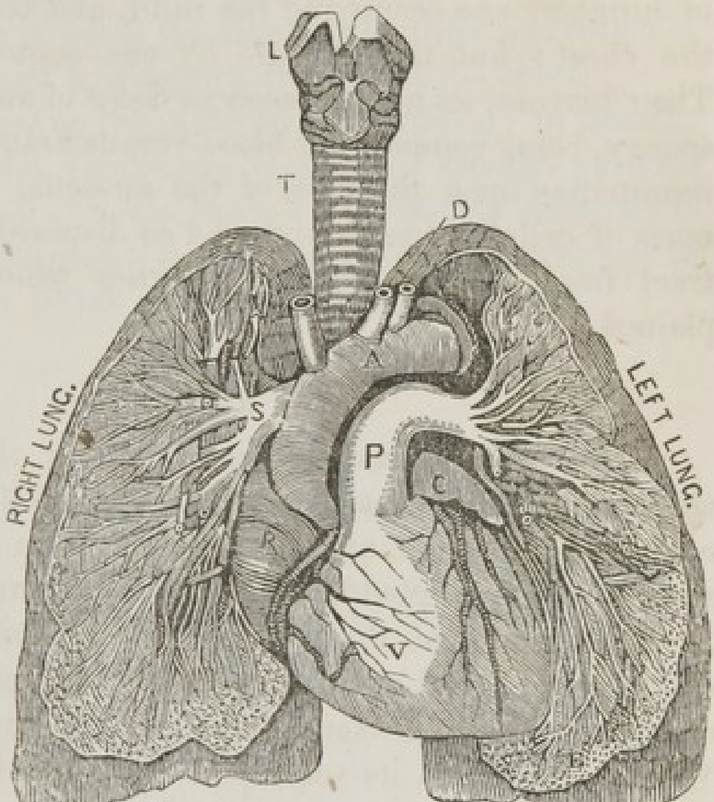
When the air-pipe has nearly reached the lungs, it divides into two great branches. One of these goes to each lung, and is distributed through the whole of its substance, in an infinite number of ramifications, all constructed in a manner similar to the original tube, till they become very minute; when instead of having cartilaginous rings, they are found to be wholly membranous. These small branches terminate in innumerable cells, which communicate with each other, and give the lungs the appearance of a honey-comb when its substance is cut into, particularly in some animals where the cells are large; as in the turtle.

EXPLANATION OF FIGURE III.

HEART AND LUNGS.

This Plate shows the Larynx, Windpipe, Heart, and Lungs, and the large vessels by which they are connected.

L. Larynx, or Vocal-box; the organ in which the voice is formed.
T. The Trachea, or Windpipe; connecting the Larynx to the Lungs.
A. The Aorta, or Large Artery of the Heart; arising from the Left Ventricle.
P. Pulmonary Artery, or Artery of the Lungs; this Artery arises from the Left Ventricle of the Heart, and divides into two branches, one going to each Lung.
C. Left Auricle of the Heart.
R. Right Auricle.
E. Air Cells of the Lungs.
V. Right Ventricle of the Heart.
D. The cut ends of Arteries going to the Heart.
S. Small branches of the Right Pulmonary Artery; a portion of each Lung having been cut away to show these branches and the Air Cells.



THE LUNGS.

We have already observed that the trunk of the body is divided into two great cavities by the diaphragm, which is a horizontal fleshy partition, and that the superior cavity is called the thorax or chest, and contains the heart and organs of respiration. This cavity is is again divided into two lesser ones, by a strong membranous partition, which runs in a direction perpendicular to the diaphragm, and extends from the back-bone to the fore-part of the chest. It is composed of the membranes lining the two cavities, which being applied to each other laterally, like two bags, form a partition for separating and sustaining the lungs, and for preventing them from pressing upon each other, in the different positions of the body. The laminæ composing this partition do not every where adhere together. At the lower part of the chest they recede from each other, to make room for lodging the heart, and at the upper part of the cavity they receive between them a gland called the thymus, the use of which in the animal economy is not yet ascertained. The internal surface of the chest, like all other cavities, is kept constantly moist and smooth, for the greater safety of the delicate organs of respiration, by means of this lining membrane, which is called the pleura, and which exudes a fine watery fluid, preventing friction and adhesion of the lungs to the sides of the chest.

The lungs are the principal organs of respiration. They are two in number, one occupying the right, and the other the left cavity of the chest; but they respire by one common tube, the windpipe. Their texture, as may be seen in those of any quadruped, is soft and spongy, being composed of blood-vessels branching out with exquisite minuteness upon the sides of the air-cells. They are united into a mass of cellular membrane, and so disposed, that the blood can extract from the air certain properties which shall be hereafter explained.

RESPIRATION.

Respiration consists of inspiration, or the ingress of the air into the lungs, and expiration, or the egress of the air from the lungs; it commences at birth, and continues through life. In man and quadrupeds it is performed in the following manner.

The diaphragm, dividing the chest from the abdomen, is strong and muscular, and can act with great power in enlarging the cavity of the chest. It is convex towards the lungs, and concave below. When it contracts, its surface becomes nearly flat, and of course the chest is deepened. At the same instant the intercostal muscles contract, and raise the lower ribs which are moveable towards the upper one which is more fixed. When the ribs are raised, they are so contrived as to be drawn outwards, and the cavity of the chest is dilated laterally.

Thus we see that when we inspire the chest is enlarged in all directions. The lungs are suspended in the cavity, and follow all the motions of the parts which enclose them, for when the pressure of the ribs is removed, the air they contain expands by its elasticity, and the external air rushes in to restore the balance. The lungs are now in a state of inspiration, and they are emptied by the following process.

When the diaphragm contracts, it would lessen the abdominal cavity as much as it enlarges that of the chest, if its loose enclosure did not give way by protruding.

This protrusion of the belly excites the abdominal muscles to react. Their contraction pushes up the now relaxed diaphragm into the chest, and as they are attached to the lower edges of the ribs, they pull them down with great power, and thus lessen the cavity of the chest. The lungs are compressed, and the air which they had just received is now expelled. This is expiration.

It is pleasing and instructive to observe this admirable alternation of motion by which the mechanism of respiration is effected. The diaphragm and intercostal muscles co-operate in enlarging the chest; they contract and are relaxed in the same instant; while the abdominal muscles seize, as it were, the moment of their relaxation to counteract their motion, and to diminish the size of the chest.

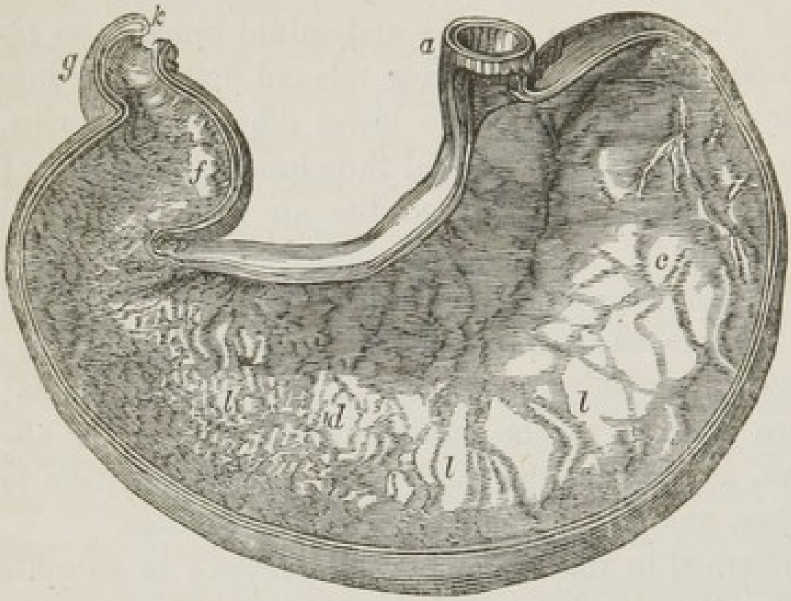
Respiration is performed in the mode above described; in animals which have a muscle, the diaphragm is for this specific purpose. Breathing is essential to all animals, though it is effected variously in different creatures, in correspondence with that indefinite diversity of forms, and of habits, with which animal existence is endued.

ORGANS OF DIGESTION.

These occupy, for the most part, the great cavity of the abdomen, and are, principally, the Stomach, the Intestines, Liver, Spleen, and Pancreas, or Sweet Bread.

THE STOMACH.

The stomach is a large bag or pouch for receiving the food. It is situated a little below the diaphragm, and has two muscular tubes or pipes opening into it. One of these, leading from the back part of the mouth down through the chest into the stomach, opens into this organ at the left side. This tube is called the esophagus. It runs between the air-tube and the spine, and conveys the food from the mouth into the stomach. From the right orifice of the stomach arises the other tube, intended to convey away the food after a certain time. This tube constitutes the intestinal canal, and will be more fully explained. The stomach is a highly irritable and sensible organ, having numerous muscular fibres entering into its composition, and being plentifully supplied with nerves. On its outside it is covered by a membrane called peritoneum, because it lines the abdomen, and contains the different digestive organs within its fold. This membrane not only sustains those organs in their proper situations, but also affords a fine mucous fluid for keeping their surfaces constantly moist, thus to prevent injuries which would otherwise arise from friction. From the internal surface of the stomach there is a fluid constantly secreting, called the gastric juice, which has the peculiar properties of dissolving and attenuating the food before it passes into the intestines.



EXPLANATION OF FIGURE IV.

a End of gullet.
c Large end of stomach.
d Cavity of the stomach.
fg Lower or pyloric end of stomach.
k Muscular band round pyloric end.
l l Folds of mucous membrane of stomach.

THE INTESTINES.

The intestines are a long membranous and muscular canal, which arises from the right orifice of the stomach, and is generally five or six times the length of the body, forming many circumvolutions in the cavity of the abdomen, which it traverses from right to left, and again from left to right. Their structure is not unlike that of the stomach, being composed partly of muscular and nervous fibres, and possessing a high degree of irritability, as may be seen by their worm-like motions, even out of the body after death, when pricked with a needle, or otherwise stimulated. Soon after the intestinal canal goes out from the stomach, an oblique opening may be perceived by which the fluids from the pancreas and liver are poured into the intestine for the purpose of mixing with the food as it passes downwards. That the descent of the aliment may not be too rapid, by which the body would be deprived of a supply of nutrition sufficient for life and health, the inner coat of the intestines is thrown into a number of plaits, admirably fitted to retard the progress of food, till its nourishing properties are absorbed by the proper vessels. The whole internal surface of the intestines is kept constantly moist by the discharge of a mucous fluid, which favors the proper descent of the alimentary pulp, and helps to secure these organs from injury. The intestines and stomach have a structure very similar to each other;

so that the description of one applies to the other with sufficient accuracy for our purposes.

They have three coats. The internal one has been described as secreting a defending mucus. Here open into the cavity of the intestines those small absorbing vessels which take up the nutritive particles; they are called lacteals. They arise from the upper intestines principally. Next to this is the muscular coat, the fibres of which run in two directions. The one set embraces the intestines as small circular bands, or nearly so; and their purpose is obviously to shorten, by their contractions, the diameter of the intestines. Other fibres take a longitudinal course and lessen its length. The combined action of these fibres produces the vermicular or worm-like motions, and propels the contents of the intestines downwards; as the parts are stimulated by the distention of the food. The last coat is the peritonial, or investing one; it is a common covering to all the contents of the abdomen; which it at the same time lines. To cover the intestines it rises double from the spine, to which it is attached. It passes some distance before it reaches the intestines. These it embraces and slings in its fold, as an injured arm is slung from the shoulder. Between the spine and the intestines, it is seen like a thin and transparent membrane, allowing a sufficient motion to their different convolutions, without permitting them to become confused and entangled.

This is the mesentery, which is thus found to be a double membrane, including between its laminæ arteries and veins, nerves and lacteals, branching with exquisite minuteness and delicacy.

THE LIVER.

This is the largest gland in the body, of a dusky red color, immediately situated under the vaulted cavity of the diaphragm, chiefly at the right side, but having the thin edge of its left lobe laid over the right side of the stomach. Anteriorly it is convex. Posteriorly it is concave. It is very thick in its superior part, and thin in its inferior. The upper side adheres to the diaphragm, and is fixed to this and to the breast-bone, by a broad suspending ligament. It is also tied to the navel by a ligament, formerly the vein by which the fœtus received nourishment from the mother.

The liver secretes a dark-colored fluid called bile. For this purpose it is supplied with a large quantity of blood. Most of the veins of the other viscera of the abdomen, instead of returning their blood to the heart, agreeably to the general laws of circulation, by the great returning veins, run forward towards the liver, where they unite in one large trunk, called vena porta, and which soon after enters this gland, and is ramified throughout its substance. Here this great vein performs the office both of an artery and a vein; for like the latter it returns the blood from the extremities of arteries, while like the former, (and by a singular exception,) it accomplishes secretion. Besides this vena porta, which furnishes the materials for the secretion of bile, the liver has an artery of large size, for the purposes of nutrition to the organ itself; which, it would seem, could not be effected by the venous blood of the vena porta.

The bile, after being separated from the mass of blood in the liver, is conveyed by very minute excretory ducts into larger ones, which also convey it into one great duct or channel, and which, as we before observed, opens into the intestines not far from the stomach. There is attached to the lower part of the liver, a little membranous bag, shaped like a pear, and which as a small reservoir, contains a portion of the bile secreted in the liver. Its neck is continued in the form of a canal, running to unite with that of the liver, when both enter the intestine, and pour in their contents by a common opening. With respect to the precise use of the bile physiologists are not determined. It seems to perform some important part in the economy, and especially in the conversion of food into chyle, since that fluid is not separated until the pulpy contents of the stomach have been mixed with bile and the pancreatic juice. It certainly stimulates the intestines to act; for when the entrance of bile into the intestines is prevented by gall stones or any other obstructing cause, the bowels are costive. We know, too, that many of our diseases, particularly those which we experience in hot climates, arise from derangements of this organ.

THE PANCREAS.

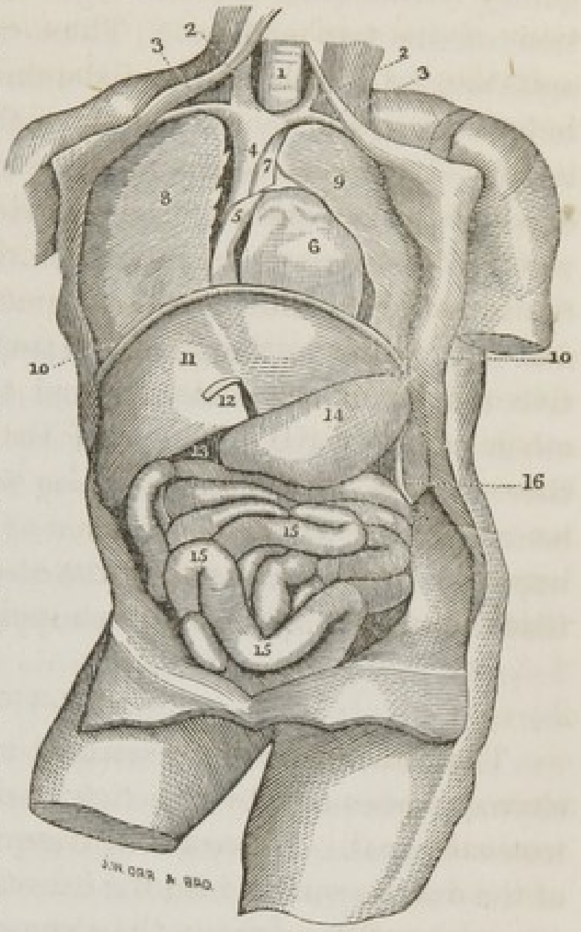
This is a gland, in structure similar to the salivary glands. It is placed behind the bottom of the stomach, towards the first vertebra of the loins, with one end pointing towards the spleen, and its other extremity extending forwards. It is about eight inches in length, two or three broad, and one in thickness; has a yellowish color, inclining to red, and secretes a fluid resembling the saliva, by a duct which enters the intestine, together with the biliary canal.

THE SPLEEN.

The spleen is situated immediately under the diaphragm, above the left kidney, and between the stomach and ribs. Its use is unknown. So unimportant, however, is its function in the animal economy, that Cheselden asserts it may be taken from dogs without any marked inconvenience.

THE OMENTUM OR CAWL.

There is a broad, thin, and transparent membrane arising from the inferior border of the stomach, and reaching down as far as the navel; it is every where double, consisting of two thin membranes, joined by cellular texture, in the cells of which great quantities of fat are sometimes deposited. The secretion of this fat is performed in the most simple manner. The fat is distributed very unequally in this membrane, it being in some places quite thin and transparent, and in other places above an inch thick. The cawl of calves gives a beautiful representation of this fact.



The use of the cawl is principally to interpose itself between the peritoneum, the intestines, and the stomach, to keep all these parts moist, warm, slippery, and to prevent their adhesion.

EXPLANATION OF FIGURE V.

REPRESENTING THE VISCERA OF THE CHEST AND ABDOMEN.

1. The Trachea or Windpipe, before it divides to plunge into the substance of the Lungs.

2. The internal Jugular Vein returning the Blood from the inside of the head. It joins the

3. Subclavian Vein, conveying the Blood which has circulated through the Arm; both form a common trunk, the

4. Descending Cava, which pours its contents into the

5. Right Auricle of the Heart, which receives also the Blood from the rest of the body by a large Venous Trunk, the Ascending Cava, not to be seen in this view.

6. The Right Ventricle. The Left Ventricle cannot be seen, as it is situated behind the parts now in view.

7. The Aorta, or Great Artery of the Body.

8. The Right Lobe of the Lungs, part of which is cut off to show the great Blood-vessels; as is the Mediastinum, a Membranous Partition between the two Lobes of the Lungs, and dividing the Chest into two distinct cavities. The Pericardium also is removed to show the Heart more distinctly.

9. The Left Lobe of the Lungs.

10. The Diaphragm, or great Muscle of Respiration, separating the Chest from the Abdomen, and upon which the Heart is seen to rest in its natural position. The Diaphragm is observed to be convex towards the Chest, and when we inspire this convexity is lessened, so that the Cavity of the Chest is lengthened; the Intestines are pushed down, and are protruded at the same time, because the Abdominal Muscles are then relaxed.

11. The Liver, which is suspended to the Diaphragm by a Ligament.

12. The Round Ligament, or what was the Umbilical Cord before birth; now rendered solid.

13. The Gall Bladder.

14. The Stomach pressed to the left side by the Liver.

15. The Small Intestines.

16. The Spleen.

DIGESTION.

The food having been sufficiently divided, by the action of the teeth and saliva, passes in the form of a pulp through the esophagus into the stomach. Still retaining its peculiar properties, the food gently irritates the inner coat of this organ, and occasions a contraction of its two orifices. Thus confined, it undergoes a constant agitation by means of the abdominal muscles, and of the diaphragm in breathing, and by the motion of the muscular fibres of the stomach itself. By these continual movements every part of the food is exposed to the action of the gastric juice, which has the power (as water dissolves sugar) of farther dissolving it, before it passes into the intestines. During this operation, mild and pleasing sensations are felt, owing to the gentle stimulus of the food against the sensitive nerves of the stomach, and the increased action produced in other parts by the presence of the new chyle. To the irritation of these nerves, by the gastric juice when the stomach is empty, are to be attributed those sensations of hunger, which are providently implanted to warn us that the stock of aliment is exhausted, and that the system needs a fresh supply.

CHYLIFICATION.

The aliment having remained until converted into a pulp, called chyme, passes out by the right orifice of the stomach into the intestinal canal. Here, as the digested food passes along the mouths of the ducts opening into the intestine from the liver and pancreas, it stimulates those ducts; the chyme receives a full supply of bile and saliva, and is further animalized by a mucus which mingles with it from innumerable exhalent arteries.

Thus diluted and mixed with juices, the chyme is in part changed in the small intestines into a milk-like fluid, called chyle, which is separated from the general mass, as it passes slowly along the intestinal tube, where this milky fluid is absorbed by numerous small vessels called lacteals, and the excrementitious remains are carried down the canal, to be discharged.

COURSE OF THE CHYLE TO BE MIXED WITH THE BLOOD.

The intestines, as we have observed, are generally five or six times the length of the body, and their internal surface is increased by the plaiting of its internal coat. From a large proportion of this great surface the new formed chyle is constantly absorbed by the lacteals, which are minute, transparent vessels, arising in infinite number from the inner surface of the intestines.

These vessels imbibe their chyle by absorption; for this nutritious fluid being pressed against their mouths, in the various motions of the intestine, acts as a stimulus, when these delicate and highly sensitive organs contract, and propel the fluid forwards beyond the first set of valves, which prevent its return. It would seem, however, that those orifices of the lacteals act by some other power besides capillary attraction, inasmuch as they select the chyle from the rest of the chyme, and do not take up some fluids that have been introduced into the intestines for the purpose of experiment. Thus the lacteals perform absorption in the same manner as do the lymphatics; nor is there any difference in the construction or functions of these vessels. There is however a difference in the color of the fluids which they convey.

From the intestines the lacteal vessels convey the chyle along the membrane called mesentery, which extends from the intestine to the spine, to sustain the former in its proper place. Here they may be easily seen in an animal killed two or three hours after feeding, for then they are distended with the new, white chyle, which is going forwards into the circulation. Passing through this membrane, the lacteals run onwards to the thoracic duct. Into this duct the lacteals empty their contents. Soon after, mixing with the lymph, conveyed to this tube from the various parts of the body, both fluids are carried along the thoracic duct to its opening into the vein, and there are poured together into the circulation. Before it reaches the thoracic duct, the chyle enters one or more glands, where it undergoes some unknown change. These glands are attached to every part of the absorbent system; more especially to the lacteals. They are very numerous at the root of the mesentery.

The chyle now mixing with the blood becomes soon assimilated. From the vein where it enters, it is carried directly to the right side of the heart, whence it is propelled into the lungs, to imbibe the oxygen or vital portion of the atmospheric air, and to part with some of its carbon; returning to the heart again, now formed into perfect blood, it is forced by the left side of this organ along the arterial tubes, to distribute life and health to every part.

THE KIDNEYS.

There are two glandular bodies, situated in the loins, contiguous to the two last short ribs, and lying close to the spine; the right under the liver, and the left under the spleen. They are enveloped in the lining membrane of the abdomen, as are the other contents of this great cavity, and are retained in their position partly by this, and partly by the blood vessels which run between them and the great artery and vein of the body.

In each kidney three kinds of substance may be distinguished.

The outer part is glandular, beyond this is tubular, and the inner part is papillary or membranous.

The kidneys drain the system of its redundant water. For this purpose a considerable portion of the blood is constantly passing into each kidney by an arterial branch, which runs directly from the aorta or main artery of the body into this organ. Here, in the glandular part of the kidney, the blood undergoes a change, having its superfluous water, together with some saline bodies, separated, and is itself again returned to the circulation by means of a vein which goes to the great ascending vein of the body. The water being now strained from the blood is conveyed by an infinite number of small tubes, constituting the second substance of the kidney, out of its glandular part. These tubes, as they approach the inner substance of the kidney, gradually unite together; and thus forming larger canals terminate at length in ten or twelve little protuberances, called papillæ, the orifices of which may be seen with the eye. These papillæ open into a small reservoir, called the pelvis of the kidney, and formed by a distinct membranous bag which embraces the papillæ. The water being conveyed by the different tubes into the reservoirs of the kidneys is farther conducted by two large membranous canals, each about the size of a common writing-pen, and which go out from the hollow sides of the kidneys. These canals open into the back and under part of the bladder, whither they convey the redundant water of the system, and where, as in a great reservoir, it remains till a quantity is collected sufficient to induce a contraction of this organ, by which the contained fluid is necessarily expelled.

The bladder is a hollow, membranous, and muscular organ, situated at the bottom of the abdomen, immediately above the ossa pubis, or share-bones.

It is lined by a membrane which is defended by a mucus secreted from its inner surface. Next to this is its muscular coat, formed of fibres running in various directions, to contract it when filled, and to empty it completely. The outlet of the bladder is called its neck. Here the muscular structure is more obvious, and by the action of its fibres, which embrace the organ, the passage is closed until the bladder is so distended, that the muscles of its upper part by their contraction overcome those at the neck of the bladder, and expel the urine.

The canals conveying the urine from the kidneys, are called ureters. By a very simple but effectual mechanism, they convey their contents without a possibility of their being returned, merely by passing obliquely about half an inch between the muscular and inner coats; which oblique entrance answers the purpose of a valve.

Part of the bladder is covered by the lining membrane of the abdomen; which having descended to the lower and fore-part of that cavity, is reflected upwards over the top of the bladder. The neck of the bladder leads to the uretha or canal, which guides the urine altogether out of the body.

The kidneys and bladder are the seats of a most distressing disease, when calculi or stones are deposited from the urine, either by a constitutional tendency, or from the presence of a nucleus, on which the matter is incrusted. Any part of the urinary system may contain them. They are most more commonly found in the bladder. They may be removed by an operation, the most formidable, and the most painful one in surgery. It consists in making an artificial opening near the neck of the bladder, and extracting the irritating substance.

Happily, much talent and skill have combined to render this one of the most successful and beneficial operations practiced by the surgeon.*

THE UTERUS AND ITS APPENDAGES.

The uterus is an organ not unlike, in form and bulk, a middle-sized pear. The broader part is called its fundus, the narrower extremity is its neck, which is its lower part, and is closed by a chink leading to the vagina, or canal communicating with the outside of the body.

The uterus is placed immediately behind the bladder, and is formed of coats very similar to it, excepting that they are thicker; being like those partly muscular, and partly membranous.

Besides its lower orifice there are two smaller ones leading from its fundus, on each side, to corresponding tubes, which are called the uterine tubes, and which terminate at a short distance in open mouths. The extremities of these tubes have several small finger-like projections, which are loose, and allow of their grasping any body to which they may become attached. These tubes are bent towards, (without, however, being attached to,) two small bodies of an egg-like form, placed on each side the uterus, called ovaries. These are firm,

* The propriety of the following section may, by some, be doubted. We think it, however, essential, to illustrate the beautiful mechanism of the human frame. We do it in a mode which we are confident wiil not offend the most chaste mind.—Ed.

and without any cavity, but they have several small vesicles imbedded in their substance.

The uterus, its ducts, and the ovaries, are connected together, and covered by an enveloping fold of the peritoneal membrane, which after having covered the top of the bladder, descends in order to reascend over the uterus, and to be continued over its whole surface and its appendages.

PREGNANCY.

When an intercourse takes place between the sexes, the whole uterine system experiences a peculiar excitement. The fibrous extremities of the uterine tubes grasp the ovaries, and squeeze out of them one of the small bodies we have described. This is the origin of the fœtus, and is conveyed into the uterus along the channel, probably by a muscular power. Then the female constitution experiences striking changes. The monthly indisposition is stopped. The uterus gradually enlarges to a prodigious size, and a far greater quantity of blood circulates through its vessels. Its internal surface pours out lymph, which is the bond of union between it and the vesicle, previously detached from the ovaries; for blood-vessels shoot into it from the uterus, and enlarge its dimensions. It is now called the ovum. When it is large enough to enable us to distinguish its parts, we find it consists of membranes containing a fluid, in the midst of which floats the fœtus; at first gelatinous and shapeless. Gradually its parts are developed, and we find that one extremity of the ovum is attached to the uterus by a thick and spongy mass. This is the placenta, the organ through which the future infant receives its nutrition in the womb. From the centre of the placenta a cord is continued to the navel of the fœtus, along which run the trunks of the vessels of which the placenta is made up.

Usually, when nine months have elapsed, the muscular fibres of the uterus contract upon their contents, and labor commences. The lower orifice of the womb, (during pregnancy sealed by lymph,) now gradually opens. The cone-like form which the membranes of the ovum assume, acts as a wedge, when their fluid contents are pushed against the orifice, by the contraction of the uterus. While the opening dilates, the membranes burst, the fluid runs off and lubricates the passage.

The dimensions of the head are nearly proportioned to those of the outlet, and it can escape with facility only in one direction.

The structure of the head, being made up of many pieces, enables it to be moulded to the outlet. The bones overlap each other, and the size of the head is much lessened. When the head is released, the great difficulty of labor is accomplished, and the infant is quickly born. The placenta and membranes usually follow the child in a few minutes. The uterus contracts, and is soon reduced to its former size.

THE FŒTUS, AND ITS CHANGES.

The entrance of the infant into the world is accompanied with great changes in its mode of existence, and with curious alterations in its internal structure to fit it for its new situation.

In one word, it is now a breathing animal instead of floating in a fluid.

Part of its organization is rendered superfluous, and gradually disappears; while other parts, which, in its original state, were inactive and useless, are now called into immediate use.

The more striking changes we have hinted at, are connected with the circulation of the blood, and the state of the lungs. These it will be interesting to point out.

The placenta, before mentioned, the organ by which the fœtus receives from the maternal blood what is necessary for its growth, is composed of blood-vessels, yet these, it is to be noted, do not communicate directly with those of the mother; and the mode of communication is still a mystery. The cord which connects the placenta to the navel of the fœtus, is called the umbilical cord. It has generally three blood-vessels twining around it, namely, two arteries, and one vein. If this cord is by accident torn asunder after birth, and the dividing end towards the fœtus is not bound up, the infant bleeds to death;* but the mother does not lose blood, although the placenta should be still attached to the uterus, and that end of the cord untied. The vein conveys the blood from the mother to the fœtus, after it has gone through a process in the placenta, analogous to that which the lungs perform after birth; and, probably, it is by the same means supplied with new materials for the nutrition of the fœtus. The arteries bring the blood from the navel to the placenta, where they branch out very minutely, and are exposed to the influence of the maternal blood in cells contained in the substance of the placenta, from which the small ramifications of the umbilical vein arise.

The vein enters the fœtus at the navel, conveys its blood by a peculiar passage, termed the "venous canal," to the great vein, the vena cava, near to the heart. It enters the right auricle, and part of it passes by an oval hole into the left auricle. This hole, (like the

* In some instances, notwithstanding the utmost care of the surgeon, the blood cannot, by the usual ligature, be prevented from flowing; in which case death ensues.—Ed.

before-mentioned canal,) is peculiar to the fœtal state. It is intended to avoid the circuitous course through the lungs; these being now dense, compact, and impermeable to so much blood; for they are not yet inflated by respiration. Still, however, part of the blood enters the right ventricle; too much it would seem to find a passage through the lungs. On this account there is another canal provided, (termed in contradistinction to the former, the arterial,) connecting the pulmonary artery with the aorta. Therefore when the right ventricle forces its blood into the pulmonary artery, which leads to the lungs, part of it passes directly into the aorta without entering these organs, while a very small portion circulates through them.

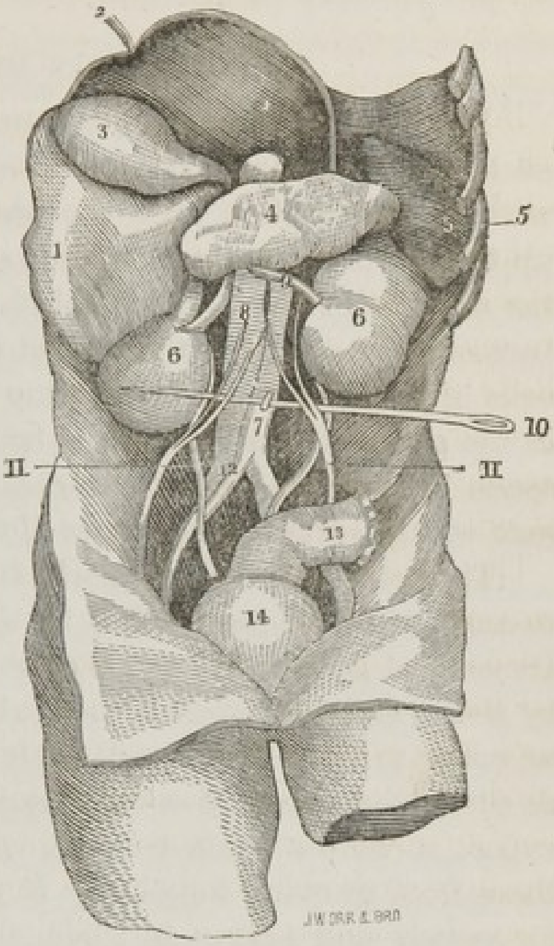
In one of these two ways, all the blood gets to the left side of the heart, to circulate through the fœtal system. It enters the aorta, and just below the branching of that vessel in the pelvis two arteries originate (the umbilical) which pass out at the navel to carry the blood to the placenta.

Having traced the circuit which the blood takes, we find this peculiarity; (which the fœtus has, in common with many animals, particularly the amphibious;) that it is not furnished with pure arterial blood in its arteries; for the umbilical vein mixes its pure blood with that of the vena cava before it gets to the left side of the heart, which dilutes it with venous blood.

Yet it is partly arterial blood which is conveyed by the umbilical arteries to the placenta, for it has not all circulated through the system, and thus become venous. This state of the blood always exists in frogs. These animals have (strictly speaking) but one heart; viz: an auricle and a ventricle. An artery rises from the ventricle, and branches into two; one goes to the lungs, the other is distributed through the body of the animal. The pulmonary artery brings back its now altered blood from the lungs towards the auricle, where it is mixed with the venous blood returning from all parts of the system; so that here also, as in the human fœtus, the blood is never purely arterial, nor purely venous.

In man and quadrupeds *after* birth the blood is carried to the lungs, and is purely venous blood, and circulates through their bodies when wholly arterialized. The reason for this remarkable difference is not ascertained; excepting, indeed, that there seems to be a pretty uniform connection between imperfect arterialization of the blood and languid exertion of the powers of life, as well as the converse of the proposition.

The fœtus also may be considered as having one heart, while the infant, when born, may be said to have two; one belonging to the lungs, and one to the general system. The communication by the oval hole in the fœtus, renders the heart in effect single, and its closure perfects the two circulations. In fact the right auricle and ventricle are of no use to the fœtal system; they are provided for the future wants of the child, and particularly for its breathing state; being wholly connected with the lungs, which are quiescent. When the connection with the placenta is cut off, the lungs come into play; breathing takes place, and the blood rushes through them. The venous and arterial canals, together with the oval hole, are superseded by new channels; the latter is closed up, and the former are gradually changed to solid ligaments, instead of being hollow tubes.



New supplies of food are now requisite, a bland, nutritious, and animalized fluid, is secreted in the mother's breasts; and nature, uniformly benevolent, has rendered the duties of a mother a source of exquisite gratification.

EXPLANATION OF FIGURE VI.

EXHIBITING THE DEEPER VISCERA OF THE ABDOMEN, BY THE REMOVAL OF THOSE FIRST IN VIEW.

1. The under Surface of the Liver.
2. The round Ligament by which the Liver is raised.
3. The Gall Bladder.
4. The Pancreas, lying upon and across the Spine.
5. The Spleen.
6. The Kidneys.
7. The Descending Aorta.
8. The Ascending Cava.
9. The Vein which returns the blood from the Kidney.
10. A Probe.
11. The Ureters, which carry the Urine from the Kidneys to the Bladder.
12. The Great Artery and Vein dividing into smaller vessels to go to the Lower Limbs.
13. The Lower Intestine, the Rectum.
14. The Bladder.

INTEGUMENTS OF THE BODY,

AND THEIR APPENDAGES.

The human body is protected and ornamented by a strong, pliable, and sensitive covering, which not only defends the parts underneath from external injuries, but also gives symmetry and beauty to the figure. This covering consists of several parts, each having its peculiar use and structure.

We begin with that which lies immediately above the muscles, or flesh, and which presents itself to view on removing the skin.

THE CELLULAR MEMBRANE AND FAT.

Between the skin and the muscles, (or flesh,) and the fibres of each muscle, is interposed a loose, oily substance. It is continued without interruption over the whole exterior of the muscles, filling up their depressions, and affording a smooth and regular surface for the skin to lie upon. This substance is composed of a cellular texture and fat. The latter is fluid in the body, and is deposited in the cells of the former, for facilitating muscular motion. Though found in the greatest quantity in the cells of the membrane, filling up the space between the most external muscles and the skin, it may be met within several other parts of the body.

The cellular membrane, which contains this fat, is not confined to any particular part, but is to be found at every point of the body. Its use and importance are very great. It serves as a bond of union, by tieing and fastening all the parts together; (yet in such a manner as not to prevent or obstruct their necessary motions;) to contain fat, as under the skin and other places, or, marrow, or serum, or a thin vapor, to render parts smooth, moist, and flexible; and to hinder them from growing together. It yields a commodious way, or road, for vessels and nerves to glide long. It furnishes a considerable part of the linings of the great cavities of the body, and immediately covers and envelops each particular viscus of the body.

Fat is deposited very unequally throughout the body. Among the viscera it is sometimes in great abundance, particularly where a constant and equable motion is required. Hence the heart is imbedded in a cushion of fat, and well defended from agitation or interruption. The intestines slide over one another with great facility, owing to the masses of this substance which are interspersed among them. On the outward surface of the body, between the flesh and the skin, it is more uniformly diffused; although even here it is in in some parts more abundant than in others; as on the soles of our feet, where it serves as a cushion on which the frame rests. It fills up the chinks and crevices of the muscles, and gives that gently undulating outline to our bodies, on which the beauty of the human form depends. The artist finds extreme difficulty in endeavoring to trace its flowing curves even when we are at rest, and still more to seize its flitting forms in the rapid succession of our motions, or in the greatest efforts of the muscular power. The fat undoubtedly answers other purposes. It defends the parts of more delicate organization from external impressions that would injure or destroy them. It protects them from heat and from cold.

In health and middle age it is accumulated, perhaps, for the supply of the system, when other sources fail. Hence it is absorbed in disease, and taken into the circulation. In old age its quantity lessens, when the appetite and the other functions give way.

THE SKIN.

The skin covering the human body is found to consist of three separate parts or layers, which lie in close contact with each other, and adhere by means of numerous small vessels, and fibres which pass from one to the other.

The first layer is called the cutis, or true skin, to distinguish it from the scarf-skin, which is external to it. The cutis is spread immediately upon the adipose (fatty) membrane which we have described, and is always white whatever may be the complexion. This skin is exceedingly vascular, and is endowed with exquisite sensitiveness, being supplied with numerous nerves, whose papillæ stand out, and are the seat of feeling, as we have observed. It is extremely elastic, stretching, as in dropsy, many feet. After tapping, it returns nearly to its natural dimensions. It is thickest in those parts intended by nature to bear weight or pressure, as on the back, the soles of the feet, and the palms of the hands. It is thinner on the fore-part of the body, on the inside of the arms and legs, and where its surfaces touch opposite surfaces. On the lips it is extremely thin, so as to allow the color of the blood to shine through them. Under the inferior surface of this skin, are situated numerous small glands. They secrete an oily fluid, which they pour out upon the external surface of the skin, by means of excretory tubes, to keep it soft and flexible.

It is this skin in animals, which being prepared by tanning, constitutes what is called leather.

Immediately on the surface of the true skin, between it and the scarf-skin, is interposed a mucous substance, on which, as we have said, depends the color of the body. It is black in the Negro, of a copper-color in the Mulatto, brown in the Egyptian, white in the Albino, and in the inhabitants of cold climates. With us it becomes brown in those exposed to the beams of the sun, and particularly so when reflected from the surface of the water, as in a sea voyage, or from the white sands, as in Africa. The color of this mucus is transmitted from parents to their children, but is capable of great modifications. The offspring of a black man by repeated intermarriages with white women, will in the fourth generation become perfectly white, and the converse of this is equally true.

Externally to this mucous membrane lies the cuticle or scarf-skin. It is a fine transparent, but insensible membrane, every where investing the body, and is the part of the skin which is raised in the form of bladders, by the operation of a blister. The use of this last covering of the body is to protect the delicate nervous fibres, which stand out from the true skin, from the external air; and also to modify their too great sensibility, by interposing itself between them and the body in contact. The cuticle is perforated by innumerable pores for the passage of the perspirable matter, as will be shown in the next article.

PERSPIRATION.

An important office of the skin, on the due accomplishment of which health very much depends, is to exhale from the body a part of the watery fluid it contains. For this purpose it has innumerable excretory vessels opening upon its surface.

That this exhalation, though frequently insensible, is perpetually going on, appears evident from a variety of phenomena. Hold a polished, dry, clean, rubbed, piece of metal, close (without touching) to any bare part of the body, in warm weather, and it will be quickly sullied. Wipe it clean and dry, and hold it again to the part, and the same effect will be constantly renewed. Put your naked arm into a wide-mouthed chemical glass vessel, very dry, and you will soon see the internal surface of the glass dimmed with the exhalation from the limb; and if it be kept long enough within the glass, there will be seen streaks of moisture trickling down its sides.

From this experiment it is evident that the matter of perspiration has water for its basis, and that this water is constantly flying off in subtle vapor; or when the action of the perspirable vessels becomes increased either by exercise or heat, the perspiration becomes more sensible, and is seen to exude from the skin in large quantities.

The uses of perspiration are to free the blood from its redundant water; to expel from the body those particles, which by repeated circulation, have become acrimonious; and to cool, and regulate the heat of the system, by keeping up a constant evaporation.

Besides these exhaling vessels, the skin, (as we before observed,) is full of the mouths of lymphatic vessels. They constantly inhale their vapors from the surrounding air, when it is not very cold; but more especially when the air is damp, the body unexercised, and the mind oppressed with grief. This absorption of the skin is proved by the operation of medicine pervading the air, or applied to the skin;

such as the vapors of mercury, turpentine, &c., by the fatal effects of contagious or other poisons entering through the skin, and by other facts.

The quantity of this inhaled matter in animals it is difficult to ascertain, because it is not known how far the lungs are concerned in this process of inhalation and exhalation. Indeed some philosophers have denied the inhaling powers of the skin.

It is a matter of greater certainty that the skin acts upon the air, as the lungs do, in depriving it of its oxygen, and in loading it with fixed air; so that it would seem to co-operate with them in changing venous into arterial blood.

THE NAILS.

Their origin is a subject of dispute; yet they seem to possess many properties in common with the scarf-skin; like it they are neither vascular nor sensible, and when the scarf-skin is separated from the true skin by any means, the nails come away with it. They appear to be composed of different layers, of unequal size, applied one over the other. Each layer seems to be composed of longitudinal fibres.

In each nail we distinguish three parts, viz.: the root, the body or middle, and the extremity. The root is a soft, thin, and white substance, terminating in the form of a crescent; the scarf-skin adheres very strongly to this part; the body of the nail is broader, redder, and thicker, and the extremity is of still greater firmness. The nails increase from their roots, and not from their upper extremity. Their principal use is to cover and defend the ends of the fingers and toes from external injury; they also strengthen those parts; and prevent their bending backwards when applied with force against any hard resisting body.

THE HAIR.

It arises from distinct capsules or bulbs seated in the cellular membrane under the skin. Some of these bulbs inclose several hairs, but more generally each hair has its own particular bulb. The hairs, like the nails, grow only from below by a regular propulsion from the root, where they receive their nourishment. Their bulbs, when viewed with a microscope, are found to be of various shapes. In the head they are roundish, and in the eye-brows oval. Each bulb seems to consist of two membranes, between which there is a certain quantity of moisture. Within the bulb the hair separates into three or four fibrillæ (small fibres.) The bodies of the hairs, which are the parts without the skin, vary in softness and color according to the difference of climate, age, or temperament of body. They afford a light and ornamental covering to the head; serve as a defence to the delicate organs of vision, as in the case of the eye-lids and brows; and also greatly adorn the figure by the richness of their color, and by the beautiful tresses which they form.

EXPLANATION OF FRONTISPIECE.

This Plate represents the principal Blood-vessels. The Veins are represented by the blue tracing; the Arteries, by the red.

The fore part of the Trunk is removed, and the principal contents of the Chest, and the Abdomen, also the Skin and the Cellular Substance from the Extremities.

General Description of the Arteries of the Trunk.—The Heart is observed in its natural oblique position, with its Base towards the right, and its Apex towards the left side. The right Ventricle is seen in front, with the Pulmonary Artery rising from it, which is cut off above its origin. The right Auricle is perceived on the right of the Pulmonary Artery, and its division from the Ventricle, is marked by an irregular line nearly parallel with the Base.

A small part only of the left Auricle is now brought into view on the left of the Pulmonary Artery, and the left Ventricle is immediately behind the right. The Aorta is seen (colored red) sending off three large branches at that part where it forms a bend. These branches are the common trunk of the right Carotid, and the right Subclavian Arteries;

The left Carotid; and

The left Subclavian.

The Carotids supply the Head and Neck; each divides into an internal and an external branch. A few only of the external branches are here seen, for those vessels which are spread upon the Face and Neck, are chiefly Veins, which are in all parts of the Body more numerous than the Arteries. The Aorta, after forming the arch, descends on the left side the Spine, giving off Arteries to the Diaphragm, the Liver, the Stomach, Intestines, Kidneys. Just below the Kidneys it is seen to divide into two large vessels, the Iliac Arteries, which again branch into two other vessels, the internal Iliac Arteries supplying the parts within the Pelvis, as the Bladder, &c. The remaining branch on each side comes out at the Groin, where it can be felt beating strongly. Then it divides into two branches, the external one dips deeply into the flesh of the Thigh, to supply its upper part. The continuation of the inner branch is seen at (7).

Arteries of the Thigh and Leg.—Just above the middle of the Thigh it passes from the fore to the back part, to be lodged securely in the Ham, in order to descend to the Leg. It afterwards separates into two branches, one of which only is seen in this view (8). Both of them supply the lower part of the Limb.

Arteries of the Arm and Hand.—The Subclavian Artery is seen on the right side just below the Arm-pit, forming the Humeral Artery (9), which divides at the Elbow into two other branches, not distinctly traced in this view. These are the Arteries which supply the Fore-arm and Hand. One of them is felt pulsating at the Wrist (10).

General Description of the Veins.—The Veins of the Fore-arm are seen in numerous branches, and collect into fewer trunks at the bend of the Arm, where the operation of bleeding is performed (*a*). Then their course is principally on the inside of the Arm. A principal trunk (*b*) is seen on the left side the figure, forming the Axillary Vein. Having received many smaller Veins it becomes the Subclavian (*c*), on the right side. This receives the Veins from the Head (*d*, *d*) by two large trunks, the internal and the external Jugular Veins. The external Jugular of the right side, (*e*,) which is often seen to swell out when breathing is interrupted by coughing, &c. These carry the Blood from the outside of the Head; the internal Jugulars carry back the greater part of the Blood which has circulated in the Brain. The Subclavians of each side having united with the Jugulars, (and just at that point the Chyle is poured into the Veins by the Thoracic Duct,) themselves join their currents, and form the descending Vena Cava, run immediately above the number 3 upon the right Auricle, behind which it meets the ascending Vena Cava (*f*), to pour their contents into that Auricle.

The Veins of the Leg and Thigh are principally seen in the inside of the Knee (*h*), being collected from the net-work of Veins upon the Foot (*g*). The continuations of the principal trunks are seen at (*i*), and (*k*) in the inside the femoral Artery. These unite at the Groin, and form the Iliac Veins. The Iliac Veins of each side join immediately below the division of the Aorta, and form the great Vein of the Body, the ascending Vena Cava. This is seen to receive Veins from the Kidneys.

The ascending Cava passes upwards behind the Heart, receiving in its course at (*f*), several large Veins from the Liver, and pours its contents, in common with the descending Vena Cava, into the right Auricle.

1. The Heart.
2. The Pulmonary Artery.
3. The right Auricle.
4. The Kidneys.
5. The Bladder.
6. One of the large Arteries of the Thigh.
k. The Femoral Artery.
8. A principal Artery of the Leg.
9. The Humeral Artery.
10. The Artery at the Wrist.

a. The Veins of the Fore-arm.
b. The Axillary Vein of the left side.
c. The right Subclavian Vein.
d. Veins of the Head.
e. The right Internal Jugular.
f. The ascending Vena Cava.
g. A Plexus of Veins on the Foot which unite to form a principal Vein of the Leg, (*h*).
i. Principal Vein of the Thigh continued.

HYGIENE,

OR THE

ART OF PRESERVING HEALTH.

FOOD AND DRINK.

Most diseases arise from errors in Diet. Attention to our food, with temperance in other respects, is not only of great importance in preserving health, but is essentially necessary in the cure of the numerous disorders to which we are liable. Many, indeed, may be cured by an appropriate Diet alone.

From the formation of the teeth, as well as the structure of the stomach and intestinal canal, we have reason to infer that man is neither exclusively a herbivorous or carniverous animal. His digestive apparatus appears evidently ordained for various and widely different kinds of food, that he may be able to accommodate his diet to climate, habits, and situation. We proceed, then, to a short examination of the properties of the principal alimentary substances, and their action on the digestive organs.

The great object of digestion is the formation of chyle; hence, whatever substances yield this fluid in the largest quantity, and of the best quality, will necessarily afford the most nourishment. But the various substances used for food differ greatly in their nutritious and digestive qualities. Some are highly nutritious, and are, nevertheless, difficult of digestion; other, again, pass quickly out of the stomach without supplying much nourishment to the body. Food is introduced into the stomach with the object of being converted into a fluid fitted to become a constituent part of the living body. It might, therefore, naturally be presumed that substances, already of an animal nature, and similar to the structure which they are intended to supply, would be better adapted for this purpose than either herbaceous or farinaceous food; and this is the case, for animal food contains a greater quantity of nutriment in a given bulk than any kind of vegetable aliment. But it is not alone sufficient that substances used for food are capable of being assimilated; their consistence ought to be soft and loose enough to allow them to be easily acted upon by the digestive organs; because, the more tender the aliment, and the easier it is divided, the more readily will it be dissolved by the gastric juice, and converted into chyle. On the other hand, hard and close-grained substances are proportionably slow and difficult of digestion. We also see that persons who eat quickly, without properly chewing their food, are often troubled with indigestion, and frequently void fragments of various alimentary substances, which have passed through the intestinal canal in a half digested state. Old people, who have lost their teeth, being unable to chew their food sufficiently, suffer in the same manner. The digestibility of food, then, is owing, in a great measure, to the tenderness of its texture and minuteness of division by the teeth. It has been shown, by direct experiments on the living body, that the different kinds of animal food, whether of flesh, fish, fowl, or game, are more or less easily digested, according as their texture and tenderness of fibre render them easy of mastication and solution; these properties in butcher meat depend greatly on the time that has elapsed since the animal was killed, on its age, sex, food, mode of killing, and of cooking.

The kind of food which the animal consumes in its natural state, or on which it is fed artificially for the purpose of fitting it for the table, will considerably modify the character of its flesh.* Animals which feed on corn are firmer in their flesh than those eating the herbs; and animals using mountain herbs are firmer and more savory than those feeding on the succulent and watery herbage of plains. Animals which feed on flesh are coarse and heating; and few of them can be used as food without proving injurious to the system. Castration renders all animals fatter, and causes the fat to be better mixed through the fibrous parts, while it improves the quality of the flesh, and makes it more tender. The flesh of the female is also much more delicate than that of the entire male; and it appears to be generally understood, that depriving females of the ovaries (*spaying*) improves the flavor of the flesh. The texture of the muscular fibre is likewise improved by violent exercise; bull-baiting, hunting, and the old German custom of whipping a pig to death, render the flesh more easy of digestion. A teaspoonful of vinegar given to a fowl sometime before killing it, renders the flesh more tender when intended for immediate use. Wild animals, when young, are easier of digestion than the same species in the domestic state; and the

* It should be known to all, that cows fed at a distillery give, in consequence, very impure and unhealthy milk. So swine, fed from the offal of the slaughter-house, furnish inferior (perhaps, deleterious) food for the table.—Ed.

parts principally exercised, as the wings of birds, and the legs of swift animals, are harder and of stronger texture than the rest of the body. The effect of decomposition or incipient putrefaction on fibrous animal food, is to render the muscular fibre less hard, and consequently more easy of digestion. Game, after hanging a sufficient length of time, acquires another quality, which no doubt tends to render it more digestible. A pheasant, for example, if used too soon, is comparatively insipid, but if kept a proper length of time acquires a much finer flavor, and this, by gratifying the palate, increases the flow of saliva, while, by sympathy, the stomach is excited, the secretion of gastric juice is augmented, and digestion is consequently promoted. But tainted meat, though easier of digestion, is more heating, and the former quality appears only to apply to a sound stomach ; high flavored game would be too exciting for an invalid, and too strong for his stomach. Decayed cheese, like tainted game, is stimulating. A little of it, taken after a full meal, excites the stomach, and would be highly improper for an invalid. But of all the means by which the texture of our food is acted upon, and its digestibility modified, cookery is certainly the most important. A few remarks, therefore, upon the principles which render the ordinary culinary processes serviceable in the preparation of our food, may be useful.

DIFFERENT MODES OF PREPARING FOOD.

Roasting. Flesh, when roasted, and neither too much nor too little done, contains nearly all the juicy parts, and more of the nutritious principles, than boiled meat. Roasting softens the tendinous parts better than boiling, while the crust retains the juice, and gives the gravy a brown color and an agreeable taste ; but during the process it is computed that the meat loses about a third of its weight by the melting out of the fat and the evaporation of the water. By roasting, the fibre is not rendered so soft and pulpy as by boiling, and the meat is consequently not so easy of digestion ; for the digestibility of food depends in a great measure upon the softness of its texture ; but roasted meat is much more nutritive. One pound contains as much nourishment as two of boiled meat. The gelatinous and viscid meats, however, of the younger animals, veal and chicken for example, are more wholesome and easier of digestion when roasted ; for, by boiling, the gelatin acquires properties which render it very oppressive to the digestive organs. Many people suppose that underdressed meat is easier of digestion, but this is a mistake, for when not sufficiently done, its texture is more dense.

Boiling. If boiled too long, or too fast, the albuminous part of meat becomes coagulated, and the flesh is rendered hard. The water should not be brought quite to the boiling point, but should be kept long at a temperature a little under it. By this plan of cooking, the meat will be found more wholesome and easier of digestion. Mutton in boiling generally loses about one-fifth, and beef about one-fourth of its original weight. The quality of the water is also of importance; beef, or mutton, boiled in hard water, is more tender and juicy than when soft water is used. Water of this description, or with a considerable quantity of salt in solution, is also best suited for the boiling of fish. Vegetables, on the contrary, require soft or rain water, and care should be taken to have them boiled sufficiently. By neglecting this precaution their digestibility is greatly diminished, and they are rendered injurious. Vegetables, if not well boiled, pass through the alimentary canal without undergoing much alteration; and in some stomachs they ferment and run into acid, causing heartburn and disorders of the bowels.

Broiling. If the portion of meat is not too thick, and its fibre cut across, the heat quickly penetrates and loosens the texture. From the suddenness of the operation the juices are retained, and it is thus rendered peculiarly tender. There is no kind of cooking more wholesome than this. A well broiled rump-steak or mutton-chop is juicy, and rich, and is by far the most nourishing and the best suited for the stomach. From the nutritive and digestible qualities of meat dressed in this way, broiling is considered the best mode of cooking where it is thought proper to give animal food to restore the strength of invalids.

Frying. This is the most unwholesome kind of cooking; it should be carefully shunned by invalids.

Baking. By this operation, (inferior to roasting,) the meat is equally done and tender, but the retention of the oil or fat, prevents the easy digestion of baked meat. Baking, however, may be safely employed in the preparation of light puddings for convalescents; but butter should not be used for the purpose of browning the surface of the pudding.

Writers on dietetics have adopted several ways of classifying the substances used as food; but since chemistry has shown that they all derive their nutritive qualities from a few proximate principles, and that the various articles of Diet differ chiefly in the proportions in which they contain these principles, it has been usual to arrange them according to the one which is most abundant; for, though two or more are mixed up together in the state in which nature presents them to us, yet one generally predominates.

We make a few observations on some of the principal articles of

Diet under the following heads:—I, Fibrinous; II, Gelatinous; III, Albuminous; IV, Fatty and Oily; V, Caseous; VI, Farinaceous; VII, Mucilaginous; VIII, Saccharine or Sweet; IX, Acidulous Food.

FIBRINOUS FOOD.

Under this head are ranged butcher meat, and all the fleshy or muscular substances used as food. These are chiefly composed of *fibrin*, which sustains the same relation to the muscular parts of animals, that fecula, (or starch,) does to farinaceous substances. But fibrin is more quickly digested than fecula, and more nutritious. In general the nutritive qualities of the different kinds of animal food are proportioned to the quantity of fibrin which they contain. The elements of chyle are more abundant in animal than in vegetable food. Azote or nitrogen is the principal element in the animal fabric, and forms a part of all the tissues of the body. It is therefore contained abundantly in fibrin, gelatin, and albumen, the chief component parts of flesh; while it enters very sparingly into the composition of vegetable substances, and often is altogether absent. Hence the principal constituents of flesh are more nearly allied to the nature of chyle than starch and sugar, the principal constituents of vegetables. The vegetable substances which contain the greatest quantity of gluten furnish the most nutriment.*

The red meats, more especially those which are dark colored, are imbued with a principle called osmazome. This substance is contained in the fibrin, to which it gives a stimulating action, and tends greatly to aid in its assimilation; although of itself it does not appear to possess any nutritive quality. It is to osmazome that the stimulating effects of animal food are attributed; and to this also, beef, mutton, and the colored flesh of all animals owe their grateful odor when dressed. It enters sparingly into the composition of young and white meats, which are consequently deficient in savor. Osmazome does not exist to so great an extent in red colored flesh, as in that which is dark; and the color of the latter is ascribed to the increased quantity of this principle. These two classes, however,

* A few technical terms, which here occur, it seems desirable to define, as they are not familiar to most readers.

Azote. A species of gas, called *azote*, from its destructive effects on animal life; and *nitrogen*, from its forming *nitric* acid when combined with oxygen, which is the vital part of the atmosphere.

Fibrin. A peculiar organic compound substance, found both in animals and vegetables. It constitutes the muscular *fibre*—whence its name.

Gelatin. A transparent, jelly-like, animal substance, soluble in water.

Albumen. A substance like that of the white of an egg.—Ed.

cannot be distinctly separated; they gradually merge into each other.

In arranging the different kinds of animal food according to their nutritive qualities, the flesh of quadrupeds, generally speaking, takes the first rank; next that of birds; then fish; and lastly oysters and other shell-fish.

BEEF. Beef affords much nourishment, but being of a firmer texture, is not considered so easy of digestion as mutton, though equally nutritious. The flesh of a bullock about the middle age is much superior to that of one which has been worn out with labor, because in all old animals, (besides the disadvantage of the greater density of the muscular fibre,) the fat is chiefly connected in layers on the outside of the muscles; whereas in young animals it is mixed with the flesh, giving it that marbled appearance which is always expected in good butcher meat. Cow beef is considered inferior in every respect to ox beef.

Beef-tea is much employed for the sick, when the state of the patient admits of animal diet; and, taken with bread, is one of the best restoratives during convalescence, but should be used sparingly, on account of its stimulating properties. Dr. Kitchener, the best authority in such matters, has given the following receipt for making it:—"Cut a pound of lean gravy meat into thin slices, put it into a quart and half a pint of cold water, set it over a gentle fire, where it will become gradually warm; when the scum rises, let it continue simmering gently for about an hour, then strain through a fine sieve, or a napkin, let it stand ten minutes, and then pour off the clear tea."

MUTTON. Mutton in good condition has the proper tendency of fibre to render it easy of digestion. It is not so savory, nor so stimulating, as beef, but is well known to be very nourishing. The flesh of the *Wether* is by far the most digestible, and is considered best about five years old. Ewe mutton is generally preferred about two years old, but is not so savory or sweet.

PORK. Pork is highly nutritive, and is less stimulating than beef; but being the meat most mixed with fat, it remains long upon the stomach. Hence laborers prefer pork and bacon, because, with this food, they are able to remain longer at work without being hungry. Pork, in its fresh state, and without much fat, if taken only occasionally, and in moderation, is sufficiently salutary to persons in health; and those of delicate habits may sometimes use it sparingly, but to invalids it must be entirely interdicted. Pork, unless used very sparingly, is considered unwholesome in warm climates. If made a principal part of the daily diet, it is said to produce leprosy, (in those climates in which leprosy prevails,) and other diseases of the skin, and was probably prohibited on this account by the Mosaic law.* The Mahometans regard this flesh as an abomination, and in Spain it is not allowed to be sold during the summer months. The Chinese, on the contrary, prefer pork to every other kind of animal food; and among the ancient Greeks it was much esteemed. Galen says, that of all food, pork is the best and most nourishing to people of robust constitutions who use much exercise, and in proof of this he adduces the experience of the athletæ, or champions trained up for the Olympic games. "Suppose two champions," he says, "of the same strength, to use the same exercise, and feed on pork; if either of them shall change his diet, and live on an equal quantity of any other sort of meat for but one day, he will immediately find himself weaken; and if several days, he will not only grow feeble, but meager also, for want of his proper sustenance."

Hare. The flesh of the hare, like dark-colored flesh in general, is stimulating, and, when young and fat, is delicate, and not difficult of digestion. Hares, however, differ much in quality, according to the places where they live. Those that are bred in mountainous countries, from feeding on aromatic herbs, are richer in flavor, and much superior to those inhabiting moist and marshy places. Hare, in whatever manner cooked, especially if made into soup with the blood, is rich and stimulating; and therefore improper for invalids, unless in certain cases, where it may be deemed necessary to administer food of this description.

Rabbit. The flesh of the rabbit is more tender and juicy than that of the hare; but remains longer on the stomach, and is not so nourishing. Wild rabbits are in every respect better than such as are domesticated. The rabbit, like the hare, is in better condition for the table in winter than in summer.

Venison. The flesh of the *stag*, well known under the name of venison, is not so close grained as that of beef or mutton; and when not too fat is, to a stomach in full vigor, perhaps the most digestible of all meat; but, like other kinds of game, though very nutritious, is more stimulating than mutton. The fat is esteemed a great delicacy, and highly valued by gluttons.

Birds. All kinds of wild birds have their flesh of a looser texture than those that are domesticated, and are therefore easier of digestion, though they are for the most part more stimulating.

The common or *domestic fowl*, although rather slow of digestion,

* Many of the Mosaic laws, especially those concerning food, were owing to local circumstances, and were enacted purely with a *sanatory* design. Hence while it was truly benevolent to prohibit the use of swine's flesh in Palestine, and its adjacent countries, it is nevertheless a proper food for persons residing in other climates.—Ed.

is very mild, and well suited for invalids. *Chicken* is generally the first kind of animal food allowed to the convalescent from fever, and other acute diseases, because it is less stimulating than the flesh of other animals. All white meats, though not so nutritious, are less stimulating than red or dark-colored flesh; and this should never be forgotten in regulating the diet of invalids. For example, a patient recovering from inflammatory disease, though his appetite and the state of his stomach might allow him to digest a beef-steak in shorter time than the wing of a fowl, yet, from the highly nutritive and exciting nature of the former, it could not be indulged in without a great risk of bringing back the inflammation, and endangering the life of the patient.

Turkey yields a similar but stronger nourishment than the barn-yard fowl or capon, but partridge and most kinds of game are more digestible.

Geese and *ducks*, from the fat and oily nature of their flesh, are difficult of digestion, and are the most oppressive kinds of poultry. Wild ducks, though very savory, are equally indigestible.

All kinds of animal food cured or prepared with salt, vinegar, or spices, are much more indigestible and heating than in their fresh state, and not so nutritious or wholesome. Both fish and flesh, when dried or smoked, having lost their juices by evaporation, become hard and compact. Their digestion requires much greater labor from the stomach than any other kind of food. With many people, however, a small portion of *ham*, *tongue*, or *bacon* at breakfast, by stimulating the stomach, promotes digestion; with others, again, food of this description remains long on the stomach, and invariably produces irritation.

GELATINOUS FOOD.

Gelatin exists in the flesh of all the domestic quadrupeds used as food, and constitutes the greater part of young animals; the younger they are the more of this substance they contain, and the less digestible and nutritious is their flesh. Gelatinous substances are not so nutritious nor so easy of digestion, as those in which fibrin and albumen predominate. The gelatin contained in the flesh of the sucking pig, in that of birds before they begin to fly, and in all very young animals, presents a glairy or jelly-like appearance. In this state it is neither nutritious nor easy of digestion, and should therefore be avoided by the invalid. The flesh of the calf, of the lamb, and the pig, or that of other young animals, if fed for some time, is firmer, less viscid, and contains more perfect gelatin; hence, it is better adapted for food, but is still far from being so nutritious or easy of digestion as the flesh of the same animals in a state of maturity.

The dimunition of fibrin, and the increase of gelatin in the younger animals, are not the only circumstances that distinguish them from those which have attained their full growth. The flesh of the former does not appear to contain (or at least is only provided with a very small proportion of) the stimulating principle, osmazome, which gives the rich flavor to red and dark-colored meats; and which renders them so much more heating than veal, lamb, poultry, and the various kinds of white meat.

Veal contains a greater proportion of gelatin, and is much more difficult of digestion, than lamb. In order to have good veal, the calf should be fed on the mother's milk until it is six weeks old. The practice of feeding calves on milk adulterated with chalk, or repeatedly bleeding them with the intention of making the meat appear white, cannot be too strongly reprobated. The flesh is deprived of its due proportion of fibrin, and its alimentary properties are greatly depraved.

Lamb. Although it is customary to eat this meat when very young, yet it is not so wholesome as when the lamb has been allowed to suck until it is six months old. The flesh is then of a firmer consistence, fatter, more nutritive, and in every respect superior to that of the lamb killed at two months old.

Chicken, the young rabbit, pheasant, and nearly all the young animals used at table, in which the flesh is soft and tender, without being viscid, or glairy, are the most digestible and wholesome of gelatinous food.

ALBUMINOUS FOOD.

Albumen is more or less easy of digestion, according to the state in which it is used. When slightly coagulated, it is *easily* digested; not coagulated, it is *less* so; and if taken in a solid state, it is *very* indigestible. But, although the digestibility of the albuminous substances commonly employed as aliment is greatly modified by the degree of heat and mode of cooking, yet they are considered very nutritious. The articles of food in which albumen predominates, are eggs, oysters, mussels, cockles, the brain, liver, and sweetbread of various animals which give suck to their young.

Eggs. Eggs are composed almost entirely of albumen. The yolk, besides this substance, contains gelatin, oil, and water, in combination with yellow coloring matter. There is also a little sulphur mixed with the albumen. Hence silver spoons used in eating eggs are stained. Raw eggs pass quickly out of the stomach, and produce a gently laxative effect. When taken in this state they are said to be serviceable in jaundice and obstructions of the liver. When boiled in the usual manner they afford a mild strengthening aliment, not difficult of digestion. Hard boiled eggs remain long on the stomach, and are apt to constipate the bowels. They are rendered easier of digestion when used with vinegar as a condiment. The eggs of the granivorous fowls are considered the best; those of the common hen and the guinea hen are most esteemed. The eggs of ducks, geese, and of all the water fowls, contain a greater proportion of oil, and are more strongly flavored; they are only suited for vigorous stomachs.

An egg, boiled until the greater part of the white is slightly thickened, without depriving the yolk of its fluidity, and taken with a due proportion of bread, is excellent for a child, or a person in a state of convalescence; but when the stomach is deranged, eggs, in whatever state, are apt to increase the disorder.

OYSTERS are very nutritive, easily digested, and agree with the stomachs of most people. They are well adapted for convalescents, and may be taken even by those affected with chronic disorders, unless where it is necessary to reduce the patient. They are often resorted to by persons affected with indigestion, being found less distressing to the stomach than any other kind of food. Boiling coagulates the albumen of which oysters are chiefly composed, thus rendering them harder and less easy of digestion; not nearly so many should be eaten when boiled as in a raw state. Oysters cast their spawn in the month of May, after which they are sickly and unfit for food; but in July they recover, and are brought to market in August, when they are considered in perfection.

MUSSELS are of a more solid texture than oysters, and are not so easily digested. The eruption on the skin called nettlerash, is said to occur more frequently after eating mussels than any other kind of shell fish. COCKLES, PRAWNS, and SHRIMPS are more wholesome, but should only be slightly boiled. LOBSTERS and CRABS are certainly nutritive, but they remain long, even on the strongest stomachs; their digestion, however, is greatly aided by the use of vinegar.

The BRAIN of the sheep, and the SWEETBREAD of the calf, although they contain a large proportion of albumen, combined with fatty or oily matter, yet preserve their softness; when cooked, are easily digested, and very nourishing. The LIVER is also a strengthening food; but is much harder, and more difficult of digestion.

FISH.

Fish are less nutritive than land animals, but afford more nourishment than vegetables. From their great variety they present every degree of digestibility. Fish may be divided into two classes, the fat or oily, and those without fat; but these classes cannot be distinctly separated.

In the *first class* may be placed the herring, mackerel, salmon, eel, the trout, and carp in certain seasons, and to these we may add the turtle; all of which, and indeed every kind of oily or fat fish are nutritive, but more or less difficult of digestion, and consequently improper for valetudinarians. To the *second class* belong the whiting, haddock, cod, ling, turbot, sole, flounder, and the trout and carp when not fat. All fish of this description, if plainly cooked, and taken without much butter, are more congenial to the stomach, and more easily converted into wholesome nourishment than the former.

WHITING. The whiting is very tender and delicate. It is not very nutritive, but produces no stimulating action on the system. Not being oily or viscid it is easily digested, and therefore well suited to delicate stomachs, and to patients laboring under various complaints, in which the daily use of even the least exciting meat might prove injurious. Physicians know the advantage of varying the diet of invalids, and of those convalescent from acute diseases; and hence, when the use of the mildest animal food is admissible, they frequently order whiting and chicken to be taken at dinner on alternate days, followed by a little sago pudding, or some other mild article of farinaceous aliment.

HADDOCK. In respect to its nutritive qualities, haddock compares with the full grown barn yard fowl; and is, perhaps, equally digestible, though not so nutritious.

COD. Cod contains more gelatinous matter, and is rather richer and heavier than haddock; but is an excellent and wholesome fish. The glutinous parts about the head of the cod should be avoided by invalids.

SALMON. Salmon is a more nutritive fish than any of those mentioned before; but being rich and oily, it is by no means easily digested, and requires condiments, the best of which is salt and vinegar. The thinnest part of the fish is the fattest. Salmon is cleaned and boiled as soon as caught, and served up cold, and thus is comparatively easy of digestion, when taken with vinegar and pepper. Salmon is less oppressive to the stomach, and more wholesome, when used in its freshest state; and, as in the greater part of fish when in perfection, there is a deposition of a curdy-looking substance between its layers or flakes.

SALMON TROUT. This fish is not so heating as salmon, and, being less rich and oily, is not so nutritious, but is more under the command of the stomach. All the varieties of trout, though they contain more or less oil, are easier of digestion than salmon; but, like the latter, they uniformly disagree with some persons whose stomachs are not particularly feeble.

The great proportion of fat or oil contained in the HERRING, the MACKEREL, and more especially in the EEL, imparts a degree of richness that renders them very palatable, but with which few stomachs, unless in perfect vigor, are able to contend. The oily matter contained in fish, is much more difficult of digestion than the fat of meat. The green fat of the turtle, however, when properly prepared, and not scorched in cooking, is for the most part congenial even to the most delicate stomach; is very nutritious, and easy of digestion. In the West Indies, turtle soup, moderately seasoned, agrees better with patients laboring under chronic dysentery, than other kinds of food.

Perch and many of the fresh water fish are more digestible than the generality of sea fish; and those caught in rivers and brooks, than others found in stagnant waters. Eels which inhabit ponds and stagnant pools are tough, and not nearly so digestible and wholesome as the silver eel of rapid streams; and the latter soon becomes inferior in every respect, if placed in marshes or dark muddy waters.

The above remarks are sufficient to enable the invalid to judge of the qualities of fish appropriate to the delicate stomach, and to show him the necessity of abstaining from the more oily varieties, and such as are not quite fresh. Rigidity and firmness of texture are the best indications that fish has not begun to spoil.

Fish are not adapted to scrofulous cases, and would be improper when we are desirous of giving tone and vigor to the system.

The best mode of cooking fish for invalids is simply boiling them, or, if perfectly fresh, they may be broiled; but frying is the worst method for a stomach out of order.

FAT AND OILY FOOD.

This is the least digestible of all the classes of aliment. If used in considerable quantity for any length of time, it is deposited in the cellular structure which binds the muscles together, and consequently augments the bulk of the body without enlarging or increasing the strength of the muscular fibres. Oil or fat, if taken in moderate quantity, and well mixed with other food, is not generally indigestible. Oil, for example, is commonly understood to render salad easier of digestion, and appears to prevent raw vegetable substances from fermenting in the stomach, and causing flatulence.

Young people usually have a natural dislike to fat food, and it almost invariably disagrees with them. The antipathy which the stomach, both of the young and the aged have to fatty substances, demonstrates the impropriety of using them in their diet. A very distinguished American physician, Dr. Beaumont, ascertained that meat containing much fat, and all oily substances, caused a flow of bile into the stomach; and it is well known that persons of a bilious habit are for the most part unable to digest pork, ducks, goose, and other fat meats; when in a liquid state, as in fat broths or gravy, it is still more objectionable. Oily and fat substances, if taken while hot, are less digestible and more apt to disorder the stomach than if eaten when cold.

Olive Oil. The finest olive oil seldom offends the stomach. Before reaching the United States it always becomes more or less rancid, and never has the delicious flavor of the pure oil used at table in the countries which yield the olive. This oil, when in perfection, is tolerated by the delicate stomach even when unaccustomed to it, where the mischievous effects of melted butter would not fail to be experienced.

Butter, in the operation of melting, acquires properties which almost invariably render it injurious to persons subject to disorders of the digestive organs.

Almonds, walnuts, filberts, &c., chiefly composed of fecula and oil, are proverbially indigestible.

MILK.

The nutritive properties of milk hold a middle rank between vegetable and animal food. It is strengthening, nutritive, and easily assimilated. It is mild, soothing, and instead of exciting the system and quickening the pulse, (like beef-tea or other preparations of animal food,) has a tendency to produce languor and disinclination for exercise. The milk of different animals differs in its composition and nourishing qualities, and it varies according to the food on which the animal has been fed.

Cow's Milk. Cow's milk, being the most plentifully furnished, is one of the greatest importance as an article of diet. In its pure state, it is only adapted for strong stomachs; but in cases where we wish to supply the system quickly with much nutritive matter in small bulk, it is one of the best aliments. It should not be taken by persons laboring under indigestion, nor by those with weak stomachs. Under such circumstances it is very apt to turn acid on the stomach. To prevent this effect a small quantity of *lime water* often proves a useful addition. In all acute diseases milk should be prohibited, and, if taken undiluted, it is not well suited for the convalescent. In certain chronic diseases, such as spitting of blood, the early stages of consumption, the scrofulous affections of children, certain disorders of the urinary organs, chronic dysentery, and various spasmodic and nervous diseases, the most appropriate diet, in the majority of cases, is milk prepared with bread, rice, arrow-root, and other farinaceous substances.

The albuminous part of milk is not coagulated into a mass by boiling like the white of an egg ; this is owing to the greater quantity of water with which it is united. By the action of heat a thin film rises to the surface. By skimming this from time to time, the whole of the albumen may be removed. By this process milk is rendered less nutritive but more digestible, and is, therefore, better adapted to weak stomachs than if taken in a pure state.

Asses' Milk is not so rich in cream and cheesy matter as that of the cow or goat, but contains more sugar, and is much easier of digestion, being eminently adapted to patients whose digestive organs are in a debilitated condition. In many instances it proves gently laxative, and in this respect differs from that of the cow, which, in most cases, has rather an opposite tendency. To persons threatened with consumption, and in the early stages of that disease, more especially when associated with a deranged state of the stomach and bowels, the milk of asses, when it can be procured in sufficient quantity is of the greatest service.

Goat's Milk. The milk of the goat is richer and stronger than that of the cow, but does not contain so much sugar. It is easier of digestion to many stomachs than the milk of the cow.

Curd. The curd or albuminous part of milk is separated from the whey by acid, alcohol, and other substances, but the best coagulating agent is the gastric juice. "The infusion of a piece of calf's stomach (*rennet*) not larger than a half-dollar, will coagulate a quantity of milk sufficient for making a cheese of sixty pounds' weight, although the quantity of coagulating matter cannot in this case exceed a few grains."

Milk coagulates upon all stomachs, and the curd thus formed is soft and loose ; but when prepared out of the body, it often disagrees with the digestive organs, and often oppresses the stomach.

Whey. When milk is coagulated by the addition of a small piece of rennet, the whey, when separated from the curd, contains some butter and curd in solution. It also holds in solution nearly all the sugar of the milk, and is, therefore, more liable than milk to ferment in weak stomachs, and produce flatulence. The whey from mare's milk contains a greater quantity of sugar than that from any other animal. Whey is not so nutritious as milk, but affords an excellent demulcent drink in consumption, coughs, jaundice, dysentery, and other diseases.

Cream. Cream is more easily digested than butter, and when mixed with tea or coffee not only render these beverages more palatable, but corrects their stimulating principle.

Butter. Butter, like other animal oils, unless very sparingly employed, is not congenial to weak or delicate stomachs, or to persons of bilious temperament; but taken in moderation, when fresh and good, it agrees with any age or constitution. When slightly affected by heat it is very oppressive to the stomach, and often produces heartburn. Persons of delicate constitution, or those affected with indigestion, should, therefore, avoid eating any food fried with butter.

Cheese. It is a strong and nourishing food to those who can digest it, but is only adapted to robust constitutions and to those who take much exercise. It is almost invariably hurtful to persons whose digestive organs are weak.

Toasted cheese is particularly injurious to the delicate stomach.

FARINACEOUS FOOD.

The base of all the substances of this class is a distinct principle, possessed of peculiar properties, named *fecula*, or starch. This is the most widely diffused principle of the vegetable kingdom, and is met with in various parts of plants, in the seeds, roots, pith, or leaves; and appears intended by nature to be the chief food of mankind. Fecula, however, is never used in its pure state; it is always associated with different substances, such as gluten, sugar, albumen, mucilage, &c.

The elementary principles of fecula and gum are the same, yet they differ widely in their chemical properties and nutritive qualities. Fecula exists in the various farinaceous substances in the form of numerous globules or grains, more or less round or elongated, each formed of a succession of concentric layers, one within another like the coats of an onion, having the same elementary composition, but varying in their physical qualities; the external coats being endowed with a much greater power of resisting the action of the agents capable of modifying the fecula. Hence, the stomach has very little influence in changing the formation of fecula in its organised condition, and it cannot be considered as actually nutritive until submitted to the action of heat. Whatever mode of cookery is adopted, the heat produces the effect of bursting all the grains, and thus renders fecula one of the most easily digested substances, although completely useless as an article of diet until this physical change be effected.

SWEET POTATO. It is very nutritious, and when simply roasted or boiled, forms a very palatable and wholesome food. As it does not appear to be so easy of digestion as the common potato, it should be eaten more sparingly by those who have weak stomachs.—ED.

Yam. This root very much resembles the sweet potato in its properties. It forms a very extensive article of food in the West Indies, and is very nutritious. It is sometimes ground into flour and made into bread.—ED.

WHEAT. The most important of all farinaceous substances is wheat, which, besides fecula, contains a large quantity of gluten; and hence of all the grains wheat is the best adapted for making bread. Animals do not live for any length of time when fed on gelatin, fibrin, or albumen singly; in general, they cause such disgust that the animals prefer dying rather than taking them. Gluten, or the adhesive part of wheat, will, on the contrary, nourish an animal well and for a long time. The flour or meal of other farinaceous seeds does not contain a sufficient quantity of gluten to allow it to undergo what has been called the *panary fermentation*,* and cannot, therefore, be made into loaves like the flour of wheat.

INDIAN CORN. The meal made from Indian corn furnishes a most wholesome and nourishing food, well adapted for the support of the active and laborious class. Indian bread, when properly prepared, were it not for habit and fashion, would be preferred to bread made from wheat, both on account of its agreeable flavor and delicious taste. In the Southern States it is prepared in a great variety of ways, and is a most excellent article of food.—ED.

BREAD. Bread differs widely from the flour of which it is composed, and may be considered as a new substance. It is easier of digestion than any other preparation of flour, and mixes more readily with water, but is considered less nutritive. Newly baked bread, however, swells in the stomach, and is not easily digested. Indeed, the process of fermentation does not appear to be completed until the bread is cold; for new bread differs from old not only in its effects, but in smell and taste. "The best bread," says Dr. Coghan, "is made of pure flour of good wheat, sufficiently leavened, somewhat salted, well moulded, well baked, and at least a day and a night old, and not past four or five days old, except the loaves be very great." Besides the nutritive qualities of bread, it prevents the bad effects which would result from the use of too much animal diet, rich soup, and other concentrated food. It also serves to divide and give our aliment a proper bulk and consistence. It may be allowed to the

* The fermentation pertaining to *bread*.—Ed.

stomach of the weakest patient. It neither stimulates nor relaxes the system, and is justly called the staff of life.*

There are three sorts of bread, the white, the wheaten, and the household. Fine white bread is made of flour only; wheaten bread of flour, mixed with the finer bran; and household bread of the whole substance of the grain, including the coarser bran. Fine white bread is the best; and to most people, is more agreeable to the palate than any other kind of bread, being entirely deprived of the bran; but it is not so nourishing. The common coarse bread, which contains a considerable quantity of bran, is much more nutritious than white bread, so much so that dogs fed on the former have remained in health, whereas those fed on white bread have gradually wasted away and died. This difference, it appears, arises entirely from the absence of the bran. From the mechanical action of the particles of bran upon the lining membrane of the bowels, the household bread acts on many persons as a gentle laxative. The white bread, on the contrary, has a tendency to constipate the bowels, because the astringent action of the starch which it contains is not counteracted by the bran.

Various articles are used in the adulteration of bread; the most innocent of them is the potato. Alum is much employed to give whiteness to bread, and to prevent the loaves from sticking to each other in the oven. The daily introduction of small quantities of alum into the stomach must interfere in some degree with the exercise of its functions, and to those troubled with indigestion it must prove highly injurious. Persons affected with stomach complaints should, therefore, be careful to get their bread made without alum. The carbonate of ammonia (sal volatile) is extensively used instead of barm in making the finer kinds of bread; but it does no harm, and is rather advantageous than otherwise.

Many preparations of flour, though more nutritive than bread, are not so wholesome. All kinds of puddings, dumplings, pan-cakes, are highly indigestible, and pastry, Dr. Paris declares, is an abomination. "I verily believe," says this author, "that one-half, at least, of the cases of indigestion which occur after dinner parties, may be traced to this cause."† The most easily digested pudding is

* If well raised and well baked, bread may be safely used as stated by the author. Let all persons, sick or well, see to it that their wives, children and servants *know how to cook properly.*—Ed.

† Some allowance should be made for professional or personal antipathy or prejudice, when such broad statements are made by any medical man. Perhaps, (in such cases as are referred to in the text,) pastry might do the mischief; perhaps wine, brandy or punch; perhaps tobacco, in some form; perhaps fruits.—Ed.

made with bread, or biscuit, and boiled flour; batter-pudding is more difficult of digestion, and suet-pudding is still worse.

Oats. Oatmeal, prepared in various ways, constitutes one of the principal articles of diet in Scotland, and in some parts of England, where it is found both wholesome and nutritious. It is, however, inferior to wheaten flour in nutritive qualities. Oats contain a considerable proportion of sugar, and on this account cakes and other preparations of oatmeal are apt to run into fermentation in the stomach; they are also more heating to the system than either wheat or barley.

Rice. Rice contains about eighty-five parts of starch in the hundred, and having no stimulating matter in it to quicken digestion, remains longer on the stomachs of some persons than other farinaceous substances. In India, and other eastern countries, where it constitutes the principal food of the inhabitants, it is usually taken with curry* powder, peppers, and other stimulating condiments, in order to assist digestion. Mixed with other food it is wholesome and well adapted for delicate stomachs. Rice water is an excellent demulcent drink when there is irritation of the bowels, dysentery, or diarrhœa. Ground rice and milk, flavored with orange peel and sweetened, is a valuable article of diet during convalescence. Some of the French authors strongly recommend rice diet for those affected with red gravel.

Barley. Barley contains a large proportion of starch, and much saccharine matter. The latter renders it well adapted for distillation. Dr. Coghan quaintly remarks, that "Though barly, as Galen saith, is of a cooling nature, yet it maketh such hot drinke that it setteth men oftentimes in a furie."

Rye. Rye flour contains a greater quantity of gluten than any other kind of flour except that of wheat, and also a considerable proportion of mucilage; when well kneaded it ferments, and partially rises; the bread is of a brown color and not disagreeable to the taste, but is rather slow of digestion; it is also apt to turn acid on the stomach, and to relax the bowels of those unaccustomed to its use. Hence bread made of wheaten and rye flour is found very serviceable to persons who are subject to constipation of the bowels.

This grain yields a black, morbid excrescence, curved like the spur of a fowl, called *ergot of rye*,† which is often of the greatest service in the hands of the skilful accoucheur.

* Curry is a sauce much used in India, containing red pepper and other strong spices. It is poured upon food, which is hence called *curried* rice, fowl, &c., as the dish may be.—Ed.

† See a subsequent article, in its alphabetic order, in the Cyclopedia, under the title Ergot.—Ed.

Potatoes. Potatoes contain a large proportion of starch, but no gluten; they improve in quality, becoming more farinaceous or mealy from the time they are taken out of the earth until they become waxy, when their nutritive qualities diminish, and they are less easy of digestion. The soluble nutritive matter contained in the potato is not nearly so great in the same bulk as in any of the grains. It has been computed that 2 lbs. of wheat contain as much nourishment as 7 lbs. of potatoes. But though this root is in every respect inferior to wheat, it cannot be called unwholesome food, for where is there a stronger or more hardy people than the Irish peasantry, who derive their principal sustenance from the potato.*

Potatoes are easy of digestion only when mealy. Many persons use potatoes with animal food, in preference to bread, and, when not new or waxy, they constitute a very wholesome substitute. They are not considered a suitable article of Diet for invalids, particularly for those affected with indigestion. The form of cookery best adapted for potatoes is, boiling in water containing a considerable quantity of salt in solution. When saturated with the fat of roast meat they are suited only for the strongest stomachs. When mashed they are swallowed without being sufficiently mixed with the saliva, and are, consequently, less easy of digestion. When roasted they sometimes agree best with persons whose digestive organs are weak; but this is not generally the case; and when overdone they are insipid, and deprived, in a great measure, of their nutritious qualities. But, whatever mode of cookery is employed, they should be used as soon as possible after being removed from the fire. The starch of the potato closely resembles arrow root powder, for which it is very frequently sold. This fraud, however, does no harm, for the one starch is little inferior to the other, and their properties are the same. Potatoes are also extensively employed to adulterate bread, and it would be well if nothing worse were used for this purpose.

Peas. Peas, when green and young, are watery, and contain little nourishment; but, when properly dressed, are light and wholesome. When ripe, and dried, they are used in the form of pudding

* The most common kind of food used by any people affects their mental as well as their physical energies. Certain elements, of which the most important is albumen, are necessary to repair the daily waste of the body; as has been previously stated in this work. If now, we resort to potatoes to supply us with the amount of albumen necessary for the body, we must consume an amount of vegetable matter which will injure the system. Potatoes alone will support life—but not an elastic, healthful life. The amount of necessary substance of a potato diet crowds the abdomen, and disturbs the nerves, whose immediate connection is with the brain. Thus, he who lives chiefly upon potatoes can neither be intellectually, nor physically elastic. He gets too much in bulk. He gets too little of nourishment. The mass of the Irish peasantry, although (as our author says) "*hardy*," are a proof of this.—Ed.

and in soup. In both ways they are very nutritious, but the former is difficult of digestion, and only suited for the strong laboring classes. The soup, though less objectionable, should be avoided by those troubled with stomach complaints. Peas, when full grown and dry, in whatever manner they may be cooked, are remarkable for their production of flatulence.

Beans. Beans, when young, possess nearly the same properties as peas. The pod of the kidney bean is a succulent, tender, and much esteemed vegetable, though not very nutritive. The bean itself, when ripe and still tender, is more nutritious, but not so easy of digestion. The dried kidney beans contain eighty-four per cent. of nutritive matter, of which fifty are pure farina, and the rest gluten and mucilage. Hence they are more nutritive than wheat or any other kind of pulse. They are much more wholesome than peas, and are well suited to correct the effects of fat animal food. They agree well with the laboring classes who are accustomed to their use, and they are very fond of them. "In certain parts of Scotland," says Dr. Cullen, "the farm servants would not engage unless their masters stipulated that they were to receive so much meal of this bean by the day or the week."

Chesnuts. Chesnuts are composed almost entirely of fecula and sugar, and form one of the principal articles of Diet in many countries. If kept for some time after they are gathered, they become sweeter, more mealy, and easier of digestion; but, notwithstanding, they are unsuited to weak stomachs.

Arrow Root. This well known powder, which consists of pure starch, is obtained from the root of a plant which is a native of the West Indies. Boiled in water it forms a mild nutritious jelly, much used as food for children and invalids. It is prepared in the following manner. A portion of the powder, mixed with a little cold water, is to be made into a paste by rubbing it in a basin with a spoon; over this boiling water is to be poured. It should be stirred briskly at the same time; then boiled five minutes and sweetened with sugar. A little milk and nutmeg may be added, or a small quantity of Sherry or Madeira wine, according to the state of the patient. Port wine does not answer so well because it precipitates the starch. Half an ounce is sufficient to make half a pint of the jelly.

Sago. Sago is composed of starch, with a little salt and coloring matter. It is derived from the pith of several species of palms. The best is called *pearl sago*. It soon becomes sour if allowed to remain in the form of powder, and is, therefore, made into grains by pressing it through a strong coarse sieve when half baked. Potato starch is easily formed into grains in the same manner, and is often fraudulently sold as sago. The usual way of preparing sago is to put a tablespoonful of the grains into a pint of hot water, and allow it to remain at the side of the fire for two hours; then to boil it for a quarter of an hour, stirring it diligently during the boiling. Sugar and milk, or wine, may be added to it in the same manner as with the arrow root.

Tapioca. Tapioca is the produce of the roots of a plant which grows in great abundance in Brazil and in the West Indies. The roots in their raw state are called *cassada*, and are strong poison, yet the starch extracted from them is similar in its nutritive qualities to sago, which it resembles in appearance, but is not so high colored, and is formed into larger grains. It is prepared in the same manner, only that it does not require to be macerated, or boiled more than half the time.

Salep, which is obtained from different kinds of the *orchis*, the species of arrow root called *Tous les Mois*, and the vegetable extracts above noticed, are all merely varieties of starch, and do not differ in their properties. They are very generally prescribed as diet for the sick, and it is not of the slightest consequence which of them is preferred, unless as a matter of taste. They may be either taken simply boiled in water, or with the addition of milk or wine, according to circumstances.

MUCILAGINOUS FOOD.

Mucilage is a distinct principle abounding in different parts of vegetables, but is never found *alone* in the mucilaginous substances used as food. It is always associated with sugar, or some bitter, acrid, or acid principle, without which it would be indigestible, and almost devoid of nutritive properties. Several of the vegetable substances, usually classed under this head, contain more sugar than mucilage, and in all there is a large quantity of fibrous and coloring matters, which are entirely indigestible. Hence the evacuations from the bowels are more copious after this than from any other kind of aliment. The numerous herbs and roots which belong to this class are more valuable in correcting the effects of stimulating animal food than from their own nutritive properties.

Cabbage. Red and white cabbage are much relished by many people, but they have a great tendency to ferment in weak stomachs, and are only suited to persons of robust constitutions who take plenty of exercise.

Brocoli and Cauliflower. These are much superior to cabbage, being more tender, easier of digestion, and less apt to produce flatulency.

Spinage yields very little nutriment, and is, perhaps, the least nutritious of all the vegetable substances used at table; it passes quickly out of the stomach without being digested, and imparts its green color to the fœces.

Lettuce. The lettuce is generally used as salad, and is the most tender and delicate of all the vegetables eaten in a raw state. It is cooling, and has a tendency to induce sleep; but, when employed with this intention, it should not be very young, and must be eaten without vinegar. This, as well as all kinds of salad and raw vegetables, is rendered more wholesome by an ample accompaniment of the usual condiments; but, in whatever manner taken, they rarely agree with weak stomachs.

Asparagus. Asparagus is a very wholesome vegetable and is easily digested. It does not create flatulency or acidity, but with some people acts as a diuretic.

Artichoke. Artichokes afford a light and tender food, and are similar in their properties to asparagus.

Esculent Roots. The principal mucilaginous roots used as food are the carrot, turnip, Jerusalem artichoke, and the large Spanish or Portuguese onion. All the roots of this description are chiefly composed of mucilage, sugar, indigestible fibrous substance, and essential oil.

Carrot. In its wild state it is hot and acrid; but by cultivation it has been greatly changed, and is now a nutritious and wholesome vegetable. It contains a considerable proportion of sugar, and a much larger quantity of fibrous matter. It is not considered quite so easy of digestion as turnip, and in general acts gently as a laxative. Carrots and turnips should be well boiled and eaten when young. The carrot forms an excellent poultice for foul and ill-conditioned sores.

Turnip. Turnip is considered one of the best vegetables used at table; but is rather flatulent, and requires seasoning.

Beet Root. The red beet is more nutritive than any other root except the potato; but it extricates so much gas in the stomach and bowels as to prevent it from being much used as an article of Diet. Beet root contains a large proportion of sugar; 14lbs. yields 1lb. of sugar.

Jerusalem Artichoke. This is the root of a species of sun flower, which has obtained the name of artichoke from its similarity in flavor to that vegetable. It is considered a very delicate vegetable; but requires the addition of pepper, salt, or other condiments, to prevent flatulency.

Onion. Onions afford a considerable proportion of nourishment.

When boiled they are mild, succulent, and seldom disagree with the stomach. The French introduced the use of onion soup, as a restorative after dancing, sitting up late, or any unusual fatigue; and this practice is now very generally followed in other countries. Sir John Sinclair was of opinion that onions possess more nourishment than perhaps any other vegetable. "It is a well-known fact," says he, "that a Highlander with a few raw onions in his pocket, and a crust of bread or bit of cake, can work or travel to an almost incredible extent for two or three days together, without any other food."

The LEEK, GARLICK, and SHALLOT, are similar in their qualities to the onion.

CUCUMBERS are difficult of digestion, and are the most unwholesome of all raw vegetables. "The digestibility of *celery* is greatly increased by maceration in vinegar."

The *stimulating* vegetable substances are *horse-radish*, *mustard*, *parsley*, *sauer kraut*, *pickles*, *spices*, &c. These, and all vegetable productions of this description, employed as condiments to aid digestion, should be taken sparingly by invalids. *Horse-radish* is considered the best condiment for the prevention of flatulency.

SACCHARINE OR SWEET FOOD.

The starchy principle is a necessary article of food, and is indispensable to our existence; but sugar is not so, and of itself is incapable of supporting life for any considerable time. It is highly nutritive, however, when sufficiently mixed with a quantity of substantial food. "Sugar," says Dr. Prout, "is the only crystallisable product employed in considerable quantity as an aliment; and by the perfectly healthy stomach seems to be readily assimilated. There are, however, certain states of disease in which this organ appears to lose, in a great measure, the power of assimilating this principle; and in such states of disease, sugar consequently, is ill-adapted as an aliment." Sugar is most abundant in the sugar-cane, in the grape, and fruits in general. The roots which possess the most are the beet, carrot, and parsnip.

FIGS, RAISINS, PRUNES, DATES, and other dried fruits, contain a large quantity of sugar and mucilage. To many people they are salutary and easy of digestion. To some they prove gently laxative, and are very serviceable in this respect; but, from the quantity of sugar contained in them, they are very liable to undergo fermentation in the stomach, and to most people are more or less oppressive.

HONEY is very little used as an article of food. It ought never to be taken by the sick and delicate, because it is detained long on the stomach, and frequently causes flatulence and acidity.

ACIDULOUS FOOD.

Under this head are placed the different species of fruit used at table. These are, in general, composed of mucilage, vegetable jelly, sugar, water, malic, acetic, and other acids, and some of them contain a portion of farinaceous matter. They afford less nourishment than any other class of aliment, and are considered more as a luxury than as articles of food. When taken as a dessert, unless used very sparingly, they are particularly injurious to invalids, because they interfere with the full meal which has just preceded them. When ripe, and taken at proper times, they are light, refreshing, and very wholesome. In intertropical countries there is always an abundant supply of various delicious and fragrant fruits, which are both cooling and refreshing, and many of them, containing farinaceous matter with a considerable proportion of sugar, afford nourishment well adapted to the indolent inhabitants of warm climates. In fever and inflammatory disorders, (with the exception of dysentery, diarrhœa, and other affections of the alimentary canal,) the juicy and watery fruits, such as grapes, oranges, &c., tend to alleviate thirst, are cooling, and very grateful to the patient. In spitting of blood, and other similar complaints, they serve as a valuable auxiliary to more powerful means in lessening the activity of the circulation, and thus moderating or preventing the return of these discharges. The acid fruits, such as lemons and limes, are well known to be specific in scurvy; and the infusion of tamarinds is a useful remedy in vomiting of blood from the stomach; but, in chronic diseases, attended with much debility, no kind of acidulous food should be taken.

Owing to certain peculiarities, which we are unable to explain, the stomach is more capricious with respect to fruits than any other article of diet; and, perhaps, the best guide is to make choice of those for which we have the greatest inclination. The stone fruits are considered the least digestible, and the most disposed to fermentation in the stomach. They differ considerably, however, in these respects. Of those in common use, the various kinds of plums, probably, most disagree with the stomach and bowels.

The PEACH, APRICOT, and NECTARINE are the best of the stone fruits; and, when perfectly ripe, seldom disorder the digestive organs. The peach is the most esteemed, and is the easiest of digestion. CHERRIES, even in large quantities, are not so unwholesome as is generally imagined. In various parts of Italy, this fruit, with bread, constitutes the principal food of the lower orders, and agrees well with them, being much better suited to the system, when heated and excited by the warmth of summer, than much animal food.

The STRAWBERRY, RASPBERRY, and GOOSEBERRY are wholesome fruits. APPLES and PEARS are the most nutritious, but, as their texture is firmer, they require more labor from the stomach, and are generally speaking, improper for invalids. Pears, being the softest, are more easily digested. The great English physician, Sydenham, allowed no other aliment to his patients, in the febrile stages of small-pox, erysipelas, and quinsy, than *boiled apples.*

The MELON contains more farinaceous matter than any of the fruits previously mentioned. It should never be eaten after dinner without a plenty of pepper and salt; and is altogether improper for persons with weak stomachs.

Of the smaller berries, the *cranberry*, *bilberry*, &c., when baked, are very wholesome, and seldom disagree with the stomach. Indeed, many fruits, otherwise unwholesome, are rendered salutary by cooking, and all fruit pies are excellent articles of diet, if the pastry, which is very indigestible, be rejected. *Currants*, *mulberries*, and the more ascescent fruits, cannot be tolerated by many stomachs.

CONDIMENTS.

SALT is not only indispensable to man, but appears to be necessary to other animals, many of which, in a wild state, seek for it with the greatest avidity. Abstinence from salt soon occasions disorder of the digestive organs, paleness of the countenance, and emaciation; and unsalted diet almost invariably has the effect of generating worms in the intestines. Bread is rendered more grateful to the palate and easier of digestion by the addition of salt, about twelve to sixteen ounces of which are generally mixed with each bushel of flour.

VINEGAR, is very serviceable in aiding the digestion of celery, lettuce, beet root, and other raw vegetables, and in preventing them from inducing flatulence. It is equally useful in promoting the digestion of rich and oily substances, such as salmon. Lemon-juice has a similar effect when used with goose and wild fowl; upon the same principle apple-sauce is, probably from the malic acid which it contains, eaten with pork.

SPICES AND AROMATICS. The various spices and stimulating vegetable condiments should be used sparingly by invalids. They are only wholesome for persons in health, when the stomach has to contend with food known to be difficult of digestion. The habit of using them daily injures the tone of the stomach and impairs the digestive functions. In warm climates, the stimulating action on the stomach of the different species of pepper and aromatics, is more particularly requisite; and these, when not used in excess, are in general decidedly beneficial.

DRINKS.

The fluids of the body are constantly diminishing, by means of the secretions and excretions; and their restoration is indicated by the calls of thirst, a sensation analogous to that of hunger; both being intended by nature to express the wants of the system. But it is not always with the intention of allaying thirst, and repairing the waste which the body sustains in performing its functions, that we introduce liquid into the system. If we made use of drink only to assuage thirst, pure water, which is the proper fluid for this purpose, would alone be employed. But many fluids are drank which have an additional action on the body, according to the different substances with which they are imbued. These either contain some of the alimentary principles already noticed, united with water; or they possess a stimulating or nourishing property, derived from these principles by certain chemical changes which have taken place. Their effects upon the system will, of course, depend upon the substance mixed or dissolved in the water.

A certain quantity of fluid is required by the stomach, in order to complete the process of digestion; and various circumstances increase the demand for drink, such as excessive perspiration, much or violent exercise, eating dry or salted food, &c. When the sensation of thirst is experienced, a small quantity of fluid will be required if we drink slowly, and allow it to spread over all the mouth and back part of the throat. A person in robust health may drink freely of any simple diluent, without suffering inconvenience; but the invalid must be sparing in the use of drink; for much fluid, by diluting the gastric juices, impairs digestion. Drinking freely during meals, particularly the habit of sipping, or moistening the food, prevents the proper admixture of saliva, which, next to the gastric juice, is the most powerful agent in softening the food and converting it into chyle. This error has likewise the effect of allowing the substance to enter the stomach without being sufficiently masticated. We rarely have any desire for drink when the stomach requires food; and when thirst is urgent, there is a strong repugnance to solid aliment; hence, hunger and thirst appear to be naturally incompatible with each other.

WATER. Water enters abundantly into the solids of the body, and is the basis and largest portion of the fluids. It is an essential constituent of all living bodies; and, as it is incessantly expended during life, the waste must necessarily be supplied, to preserve the proper proportion of fluid and solid matter requisite for the due performance of the various functions, and the preservation of health.

Water, of all simple drinks, is certainly the best adapted to quench thirst, and impart a due degree of solubility to the food in the stomach.

Saunders, in his book on Mineral Waters, remarks that "Water drinkers are, in general, long livers, are less subject to decay of the faculties, have better teeth, more regular appetites, and less acrid evacuations than those who indulge in a more stimulating diluent for their common drink." But man lives and thrives when habitually using different kinds of drink, which the tastes and customs of civilised life have rendered congenial to him; and there is no necessity for restricting ourselves exclusively to water, unless other beverages are found injurious.

Water should contain as few foreign matters as possible; the difference of its varieties in this respect, according to the sources from which it is obtained, are worthy of some attention.

Rain water is very pure when collected in an open country; but in large towns it is more or less contaminated by the smoky atmosphere through which it falls, and by the impurities lodged on the roofs of the houses from which it drops. When collected from houses it is generally found impregnated with calcareous matter; and should therefore be boiled and strained before it is used.

Spring water is the best adapted for drink when *soft;* it is often oppressive to weak stomachs. It even proves injurious to some of the domestic animals when confined to its use; and is particularly disliked by horses.

River Water. River water frequently contains earthy matter in solution, which renders it unwholesome, and in the vicinity of large cities it is more or less contaminated with animal and vegetable substances, which tend still more to impair its salubrity; rest and filtration are therefore requisite before it can be used with safety.

Wherever there is suspicion that water possesses any pernicious qualities, it should be boiled, and afterwards filtered, if circumstances permit.

TEA. The Chinese, from time immemorial, have been in the habit of drinking the infusion of the leaves of the tea plant, the cultivation of which is still almost entirely in their hands; and, indeed, they appear to be the only people acquainted with the proper methods of preparing the leaves for use. The Portuguese, after discovering the route to India by the Cape of Good Hope, were the first to carry tea into Europe; from Portugal the practice of drinking tea was introduced into England, where it became a fashionable beverage at the court of Charles the Second; and, since that time, unimpeded by the conflicting opinions of medical men with regard to its properties, has been perpetually extending throughout Europe, and is now considered as an indispensable article of diet among all classes of society.

The more simple the fluid which we take as ordinary drink, the more easily will it be digested, and converted into the component parts of the body; and, of all beverages in common use, the infusion of tea is the most innocent. It may not agree with some persons; but, in general, it is salutary, and never mischievous, unless taken in excess, or unreasonably strong. Many medical men have been very liberal in their censures of this foreign leaf, attributing to its habitual use the increased frequency of indigestion, of low fevers, hysterical, hypochondriacal, paralytic, and other nervous disorders, and also affirming, that it has tended to impair the general health and diminish the strength of those addicted to its use. But nothing that has yet been written can persuade the public that tea, taken in moderation, is prejudicial to the system, or that it acts otherwise than as a wholesome and refreshing diluent. Sufficient time has now elapsed to establish the correctness of the prevailing opinion respecting the salubrity of this beverage; and, certainly, no foreign custom has come into general use among us which has tended more to promote temperance than drinking tea.

Green tea is more apt to produce wakefulness than black, and should not, therefore, be taken near the time of retiring to rest; but this tendency of tea, even when made strong, is far from being universal. Tea, if used too warm, or in too great quantity, may, like other warm fluids, if taken in excess, tend to debilitate the stomach, and produce indigestion, and various nervous symptoms. To these circumstances may be attributed many of the injurious consequences for which the tea itself has been blamed.

Tea should not be taken too soon after dinner, because it would then have the effect of distending the stomach, and impeding digestion; and in general, it should be drunk with cream or milk, which, to a certain extent, counteract its astringent quality.

Coffee. Coffee, like tea, is a narcotic stimulant, but, when used strong, is much more exciting; and, if taken late, it likewise with some people prevents sleep. The custom so universally adopted in France, of taking a cup of strong coffee, without milk, immediately after dinner, appears to promote digestion, because the French use the lighter wines, and generally dilute them with water; but where Port wine, Sherry, and Madeira, are preferred, this practice is rather injurious than otherwise, and in many persons it causes unnatural vigilance, and some degree of feverish excitement, followed by a disagreeable feeling of exhaustion.

Coffee, when properly prepared, and used in moderation, is an exhilarating, grateful beverage, and the unerring test of experience has confirmed its utility, in every country where it has been introduced into general use. It is well known to be the best corrective of opium, and of the disorders produced by that substance; it is also very serviceable to many asthmatic people.*

Chocolate. Chocolate is made from a nut about the size of a large bean, which grows on the cocoa plant in the tropical regions of America. When prepared with milk, or eggs and sugar, it constitutes a very nourishing drink for breakfast; but because of the quantity of vegetable oil with which it is always combined, it does not agree with persons whose digestive organs are weak, nor can it be taken for a continuance, like tea or coffee, even by the robust, without deranging the stomach, and at last exciting a degree of disgust. The best chocolate is prepared in America and the West Indies; and generally contains some finely powdered cinnamon and vanilla.

Cocoa is prepared from the same seed as the chocolate; it contains less oil, and is therefore lighter, and often more congenial to the weak stomach.†

Wine. Wine, taken in moderation, and at proper times, imparts vigor both to the body and mind, and gives to life an additional charm. In a medical point of view it is one of the most valuable gifts which Providence has bestowed upon man. But, when immoderately used, wine acts as a slow poison; it excites the stomach and nervous system, and this effect is followed by a proportionate debility; a morbid craving for a repetition of the indulgence is created, the faculties of the mind are gradually impaired, and the habit, if persisted in, becomes utterly incompatible with personal comfort, or

* Coffee as a beverage is either incomparably excellent or incomparably vile. Its quality depends upon the method of its preparation. Roast the berry to a dark *brown*. Never allow it to become black. During the process of roasting, let it be constantly attended to, and constantly stirred; so that the whole mass shall be *equally* roasted. After this process its flavor diminishes. A small quantity, therefore, should only be roasted, for family use, at any one time; not more than enough for two or three days. The berry should be ground rather coarsely. Then by the application of *boiling* water in the ordinary way, its properties will be extracted in a few minutes. The *coffee grec*, or biggin, is the best article in use for this purpose. The water filters through the grounds of the coffee quickly, and a pure, strong, and delicious drink is thus obtained. The better preparation of coffee is that which is made very strong, and then reduced by the addition of an equal quantity of new milk of the cow. The milk should be added when hot.—Ed.

† "*Baker's Cocoa Paste*" is decidedly the preparation of cocoa best suited to invalids. The nutritious part of the tree is retained and its oil extracted. It is highly recommended by eminent physicians. If it is counterfeited, the counterfeit is doubtless inferior; but the genuine "Baker's Paste," certainly affords a delicious and salutary drink for the sick. —Ed.

the enjoyments of life, while a long train of bodily and mental sufferings is insidiously, though surely induced.

In early life wine imparts a stimulus to the stomach, which is altogether unnecessary, and has, for the most part, an injurious tendency; but there are those who, from delicacy of constitution, especially when associated with a scrofulous habit of body, to whom the support of wine is of essential service. When sparingly and judiciously used, its restorative effects are very beneficial during convalescence from various disorders; and when from bodily or mental depression, the appetite is impaired, and the digestive powers enfeebled, the exhilarating and stomachic properties of wine are invaluable.

The comparative value, and the effects which the different wines produce on the system and the stomach, can only be ascertained by trial; there is no rule of general application, and therefore the experience of every individual must determine, not only the particular kind of wine, but also the quantity, which he ought to take.

The acid qualities of wine are injurious to many people; hence Sherry, from its dryness, and the comparatively small quantity of acid which it contains, when of a certain age, and of good quality, will generally be found to agree better with the stomach of the invalid than any other kind of wine; but to persons affected with indigestion, who, from long continued habit, cannot altogether dispense with the use of some kind of fermented liquor, port wine, if it do not constipate the bowels, will often be found the most beneficial, on account of its astringent and tonic properties. But the principal effects of wine depend upon the quantity of spirits which it contains, and it has been well ascertained that the wines in common use in this country—Port, Sherry, and Maderia—contain from a fourth to a fifth of their bulk of alcohol, or considerably more than half a pint of pure brandy to each bottle.*

* Wine, without doubt, is good. "It maketh glad the heart of man," says the Bible. But what is wine? The juice of the grape. But how much juice of the grape do we find in the United States in those various compounds which pass under the name of wine? Very little indeed. Even the true wines sold here are compounded with alcohol, which is necessary for their preservation. But very much which is sold as wine is nothing but an artificial liquor chemically prepared, the ingredients of which are decidedly poisonous. George the Fourth of England, an epicure and wine-bibber, was deceived by a mixture prepared by a wine manufacturer only a few hours before; and supposed it to be the choicest wine of his own cellar. A London wine merchant, upon his death bed, stated that for years he had seen his best customers dropping into their graves, while he *knew* that they were victims to the drugs which he had prepared and sold to them as *wine*. A farmer arrived at one of the cities of the United States with a barrel of cider-brandy of his own manufacture, which he wished to exchange for good Holland Gin, paying the difference between the market value of the two. The very next morning he was on his

ARDENT SPIRITS. If the intemperate use of wine be injurious, the abuse of ardent spirits is infinitely more so. The habitual use of every kind of distilled spirit, besides its pernicious influence on the system generally, causes a slow inflammation of the stomach and liver, which proceeds gradually, but steadily, and often advances beyond the reach of medical aid before it is discovered; but any observations which we might offer on the symptoms and fatal effects of spirit drinking, would be altogether out of place.

Spirits are seldom employed medicinally. A little brandy with water during dinner is sometimes found to assist digestion better than wine; and in some diseases associated with great sinking of the powers of life, brandy or some other spirit may be found necessary to rouse the vital energies; but medical men rarely prescribe ardent spirits, and never without the greatest caution.

MALT LIQUOR. Malt liquor contains less spirit than wine, and affords a much greater proportion of nourishment, while the bitter principle derived from the hop imparts tonic properties to it, which are serviceable in assisting digestion. It constitutes a valuable article of diet to some delicate persons, and is a salutary and strengthening beverage to those who are actively employed.

Malt liquor, if indulged in to any extent, is improper for full-blooded, asthmatic, and bilious persons, and for those of sedentary habits. It is well known to produce corpulency. The habitual use of ale and porter, without a corresponding degree of exercise, no doubt tends to induce the various diseases which result from a full-blooded or plethoric condition of the system; but they are in every respect more wholesome than ardent spirits.

CIDER and PERRY are grateful and refreshing beverages in warm weather, but they seldom agree with persons subject to indigestion, more particularly the latter.

SODA WATER is a cooling and agreeable drink during the summer months, but should not be taken during, or immediately after dinner, as the fixed air which it contains is disengaged, and by distending the stomach, interferes with the process of digestion.

GENERAL REGULATIONS FOR DIET.

Having briefly noticed the chief articles of food in common use, we shall now proceed to point out a few precautions to be attended to in regulating the Diet of the invalid, with some observations on the

return; but the choice Holland Gin which he had bought, was his own cider-brandy *converted* by drugs during the night.

With these and like facts in mind, we must receive with considerable qualification such remarks as our author makes respecting wine.—ED.

quantity and quality of his food, the regulation of the periods at which the different meals should be taken, and the bodily and mental exercise which ought to follow them.

MEALS. According to the often repeated saying of Diogenes, the best time for eating is, "for a rich man when he can get an appetite, and for a poor man when he can get food." But we know that habit exercises the greatest influence in regulating the appetite. Persons who are accustomed to breakfasting and dining at certain hours of the day, will always, if in health, feel inclined to eat at those hours, and in many people the desire for food, if not relieved at the usual period, goes off for a time, and indigestion is frequently the consequence. The practice of eating at certain fixed periods is strongly advocated by physicians, as essential to the maintenance of health; and regularity in this respect, besides being in accordance with the proper regulation of domestic economy, allows the food to be entirely digested and the stomach prepared for a fresh supply, before it is charged with another meal. But the number of meals, and the times at which they should be taken, must depend upon the circumstances connected with each particular case, and must vary according to the age and digestive powers of the individual, the quality of the food, and the amount of exercise taken.

The habit of eating little and often is very properly condemned by all writers on dietetics. By eating frequently we disturb the healthy action of the stomach, and interfere with the natural process of digestion. The stomach follows the general law of the animal economy in requiring rest after labor, and therefore the proper quantity of food should be taken at once, in order that it may be digested, and a few hours of rest allowed before another meal. But this applies only as a general rule; for in many cases of chronic disease, and during convalescence from fever or inflammatory disorders, it would be improper to introduce much food into the stomach at one time. Under such circumstances nature requires that we should administer aliment at short intervals, in order to supply the system with sufficient nourishment without oppressing or irritating the digestive organs.

Some individuals complain of a distressing sensation of depression and languor between meals, and consequently seek relief from frequent refreshment; but this habit is always more or less hurtful, and, like many other artificial wants, requires only a little resolution to be overcome. If perseveringly discontinued for some time, the symptoms in which it originated cease, and the languid and capricious stomach is restored to its healthy tone.

The intervals between meals should not exceed six hours; although such is the power that the system has in accommodating itself to our habits, that many individuals are able to transgress this rule with impunity during many years. The majority of people engaged in business fast daily for nine hours or longer, and then load the stomach with a full meal. This custom, although it may be followed by many without effecting any immediate mischief, tends, in general, to produce indigestion, with the numerous evils which follow in its train, and often paves the way to apoplexy.

Many persons, with weak digestive organs, are so circumstanced that they are under the necessity of taking *luncheon;* but this custom, for the reasons above stated, should, if possible, be avoided, unless by women, who, in consequence of their digestive powers being weaker, eat less at a time, and therefore require to take food oftener than men.

Three meals are generally considered sufficient, and invalids should never indulge in more. Food should never be taken immediately before going to bed.

Breakfast. From the length of time that intervenes between breakfast and the previous meal, it might be presumed that a person in the morning would have a greater appetite for food, and would be able to eat more than at any other period of the day. "This, however," says Dr. Paris, "is not always the fact; the gastric juice may not be secreted in any quantity during sleep, while the muscular energies of the stomach, although invigorated by repose, are not immediately called into action; it is, therefore, advisable to allow an interval to pass before we commence the meal of breakfast." But many persons from a weakened condition of the system, experience an uneasy sensation of languor, accompanied with a feeling of debility and depression, which unfit them for the ordinary duties of life until they have taken some food.

Breakfast being the meal which is to support the body during the most active part of the day, should be sufficiently substantial, but no fixed rule can be given with regard to its quantity or quality. These must depend on the constitution and habits of the person, the exercise to be taken, and the time that is to elapse before dinner. When the dinner hour is late, the morning meal of a person in health should be sufficiently solid to prevent the necessity of having recourse to luncheon, and therefore a moderate quantity of animal food may be indulged in. Liquids are instinctively desired at breakfast to supply the waste by perspiration; for it has been ascertained that a healthy person, in a given space of time, perspires insensibly twice as much during the night as when awake.

Tea and coffee are the morning beverages generally used, and the choice of these must depend on the experience of each individual of what agrees best with him. Persons affected with indigestion, and those with weak stomachs, are frequently troubled with heartburn, and other uneasy sensations, every time they take much warm fluid with bread and butter, toast, muffins, or meat, especially if fat. In such cases dry toast should be used, and an egg or two if found to agree with the stomach, should be substituted for meat. Sometimes it is advisable to take a glass of cold water, or a cup of weak tea, on rising in the morning, and only a small cup of tea at breakfast, in order to avoid mixing much liquid with solid food, a combination which rarely agrees well with the enfeebled or delicate stomach.

Where this weakened condition of the digestive powers exists, new bread, spongy rolls, butter, and the fat of meat, should be carefully avoided. The lean of cold mutton, or eggs with bread a day old, or plain toast, will probably better agree with the stomach. The adopting of these and similar dietetic measures, according to circumstances, for the purpose of aiding digestion, and restoring the healthy tone of the stomach, is certainly more rational and more likely to prove successful, than constantly resorting to the use of medicine when the digestive organs are in a deranged condition.

Dinner. Dinner should generally be taken by invalids from four to six hours after breakfast. There can be no doubt that the stomach more easily digests a mass composed of several ingredients than an equal bulk of any one substance. This fact likewise applies to the elementary principles of which the different articles of Diet are composed. If only one be taken, in whatever quantity, it affords little nourishment, and is incapable of supporting life for any length of time; whereas, when two or three are combined, the compound substance yields ample nourishment. This fact should not be lost sight of when the stomach is weak. In such cases the meals should consist of several articles; but the principle is only applicable within certain limits. A variety of complicated dishes, highly seasoned, pampers the appetite, leads to excess, and, by urging the digestive powers to the utmost extent, repletion, with its many evils, is sure to ensue.

The working classes, especially in large towns, suffer neither from a variety of dishes, nor from dining at late hours; but their digestion is frequently rendered laborious *by eating a full meal hastily*, and returning to their work when the process of digestion is hardly commenced. Among the less robust inhabitants of towns repose is necessary after meals; and eating slowly, in order to allow the food to be properly blended with the saliva, is another observance of no less importance.

Tea. To those who dine late tea or coffee do not constitute a meal, and should soon follow dinner, as they are intended merely to quicken the action of the stomach, so that the food, already converted into a soft pulpy fluid (chyle) may be diluted, and thereby aided in passing into the blood, in order to be assimilated into the substance of the body.

SUPPER. For persons accustomed to dine early, and work on task exercise after dinner, a light supper, if taken at least an hour before bed-time, is a necessary meal when the digestive organs are in healthy condition; but to the dyspeptic, or to one whose digestive powers are feeble, this repast is a fruitful source of night-mare, and of the numerous unpleasant sensations which a stomach, still oppressed with half-digested food, must necessarily occasion in the morning.

To literary men, and those whose avocations keep them up to a late hour at night, a piece of dry toast, a biscuit with a soft boiled egg, and a little white wine negus, are generally necessary; and many people are unable to sleep without a light repast before retiring to rest.

QUALITY AND CONSISTENCE OF FOOD. The best food is that which is simple, nourishing, and easily digested. Strength is not derived from the frequent use of strong, concentrated, or stimulating diet; for, though exhilarating and nourishing for a short time, it is soon followed by exhaustion, and, if persisted in, proves injurious to the body. Concentrated aliment is quickly digested without sufficiently exercising the stomach, and this, like over working the digestive organs, seldom fails to derange the whole system. Hence the necessity of using plenty of bread with rich soups, ragouts, and other made dishes.

The digestibility of food is greatly modified by its texture and consistency. The exact degree of density and firmness necessary to render it easy of digestion to different individuals varies; but we know that certain substances, such as hard boiled eggs, ham, &c., from their mechanical condition, impose much more labor upon the stomach than others, and are therefore hurtful to persons with weak digestive organs. Some kinds of food are slower of digestion than others. Vegetables remain longer on the stomach than animal food; fat and oily articles longer than those that are not so.

QUANTITY OF FOOD. This must depend in a great measure upon habit, constitution, difference of sex, age, and manner of life. Dr. Cheyne was of opinion that eight ounces of animal food and twelve ounces of vegetable, constitute a sufficient daily allowance for a studious man. Full diet in the military hospitals is composed of thirty-six ounces of solid food, and sixty-four of liquid, comprising gruel and beer. Dr. Gregory considers two pounds of bread with three of milk sufficient for a working man; while the Venetian nobleman, Lewis Cornaro, of whom mention is made by all writers on this subject, found twelve ounces of food sufficient for the support of his body; but father Feyjoo, in his rules for preserving health, very significantly asks, did God create Lewis Cornaro to be a rule to all mankind in what they are to eat and drink? To confine an individual to an exact weight of food is not consistent with reason; the quantity must be accommodated to the exercise taken in the open air, to the particular state of the digestive organs, the climate and season of the year, as well as the quality of the food. The call of appetite is even a fallacious guide, for the stomach, from being so frequently over excited by condiments and stimulating drinks, is often kept in an artificial state, which prevents its cravings from being correct indications of the wants of the general system. But no one possessed of common powers of observation, who chooses to direct his attention to the matter, need be at a loss in knowing the quantity of aliment which he individually requires. Dr. Wilson Philip's observation on this point is worthy of attention. "To eat moderately and slowly," says this judicious physician, "is often of greater consequence than any rule of Diet. The dyspeptic should carefully attend to the first feelings of satiety. There is a moment when the relish given by the appetite ceases. A single mouthful taken after this oppresses the stomach. If he eats slowly, and carefully attends to this feeling, he will never overload the stomach."

Exercise before and after taking Food. We are naturally inclined to rest after eating. Active bodily exercise immediately after a meal disturbs the process of digestion. Not only do our own feelings convince us of this, but the fact has been made still more apparent by experiments performed on the lower animals. Sir Busick Harwood, having fed two hungry pointers, allowed one of them to rest in his kennel, the other he kept for two hours in constant exercise. On his return both were killed after the same lapse of time. On opening the dog which had remained quiet, the digestion was found nearly completed, but in the other the digestive process had scarcely commenced. This, however, applies only to active exertion; healthy persons may take gentle exercise after meals without suffering inconvenience; their digestion may be slightly impeded, but will certainly not be prevented. But if the stomach be weak and easily disordered, or a very full meal has been taken, repose is essential to the due performance of the digestive functions. Invalids should, therefore, amuse themselves with light reading or conversation, for an hour or two after dinner. When the digestion is completed, and the chyle has entered into the circulation, we feel invigorated and inclined to bodily exertion. This is the proper time for active exercise, which is then of as much service as at an earlier period; when the food is still on the stomach, it would be injurious. But though the benefit to be derived from exercise, either on foot or on horseback, in promoting the appetite and assisting digestion, cannot be called in question; yet the invalid should never forget that if it be carried to excess, or if he dine without having rested, the functions of digestion are very liable to be deranged.

Eating a full meal in a state of bodily fatigue, tends strongly to check the digestive operations. The exhaustion of the nervous energy from long continued *mental* exertion will also produce the same effects, nor will the stomach be capable of performing its duty, if the mind be severely exercised immediately after eating. Most literary men, and persons intently devoted to business, are the greatest sufferers from indigestion; and we should always bear in mind that, when this disorder is kept up by thus deviating from the rules which nature clearly points out as essential to the maintenance of the general health, it frequently gives rise to consumption, or at least, is the first symptom of that fatal malady, as well as of many other formidable disorders.

We would remind those who indulge in the pleasures of the table, that slight excesses constantly repeated will, sooner or later, induce a condition of the digestive organs which must diminish the enjoyments of life, and will ultimately be found utterly incompatible with health and comfort. The sensible part of the community know well that irregularity and intemperance are very prejudicial, and that, on the contrary, a temperate use of food and drink, conjoined with suitable exercise, is not only highly advantageous, but essentially necessary to the maintenance of health. We shall now conclude these remarks with the excellent advice which the great physician, Galen, gave his readers, nearly seventeen centuries ago:—"I beseech all persons (he says) who shall read this treatise, not to degrade themselves to a level with the brutes, or the rabble, by gratifying their sloth; or by eating and drinking promiscuously whatever pleases their palates; or by indulging their appetites of every kind. But, whether they understand physic or not, let them consult their reason, and observe what agrees, and what disagrees, with them, that, like wise men, they may adhere to the use of such things as conduce to their health, and forbear every thing which, by their own experience, they find to do them hurt; and let them be assured, that by a diligent observation and practice of this rule, they may enjoy a good share of health, and seldom stand in need of physic or physicians."

AIR.

Animal life can be sustained but for a very limited time without air, (commonly called the atmosphere,) as is very evident by placing an animal in the exhausted receiver of an air-pump. Air, in its common state, is not a simple elementary substance, as was formerly supposed.

The atmosphere consists of three different species of air, viz. pure respirable vital air, or oxygen; azotic air; and the fixed aërial, or carbonic acid air. The first consists of about 21 in a hundred parts; the second, of 79 in a hundred; and the third, of about one part only in a hundred.

Vital air, or oxygen, is best adapted for the purposes of respiration and animal life, and is more congenial to both than atmospheric air. Azote air is perfectly irrespirable. It is produced by the change which atmospheric air undergoes in the process of combustion, putrefaction, or respiration, whether these changes be effected by nature or art. The carbonic acid air, or hydrogen, in its pure state, is equally inimical to respiration as the azote, and is often very copiously supplied from mines, where its suffocating qualities are not only found very injurious to those who labor in them, but sometimes of so noxious a nature as to occasion instant death.

Atmospheric air may become corrupted, or rendered unfit for respiration, by various means. Whatever greatly alters its degrees of heat, cold, moisture, &c., in a great measure deprives it of its salubrious properties. When it is too hot, it dissipates the watery parts of the blood, excites the bile, renders its secretion superabundant, or acrid, or perhaps both, and gives rise to inflammatory, bilious, and putrid fevers, as well as to cholera morbus, &c. Very cold air gives a check to perspiration, constringes the solids, and condenses the fluids, occasioning coughs, catarrhs, inflammatory affections of the throat and chest, and not unfrequently the rheumatism. Air that is too moist destroys the elasticity of the solids, induces a lax fibre and phlegmatic constitution, and disposes the body to intermitting fevers, dropsies, hypochondriac and hysterical affections.

If many people are confined in one apartment, with fires, and a great number of lighted candles or lamps, without due ventilation, the air soon becomes unwholesome and unfit for respiration; hence delicate persons are very apt to faint or become sick in crowded assemblies of any kind, or in any place where the air is injured, not only by the breath of many persons, but by fires, candles, &c.

The air of cities and large towns, where a great variety of manufactures are carried on, with a crowded population, is not only breathed over and over again, but is also loaded with exhalations, besides the effluvia constantly arising from slaughter-houses, privies, dung-hills, and common sewers. To prevent the air from being thus injured, police officers should take due care that the streets be *daily* cleared of all filth and rubbish; that the offals from slaughtering-houses be not suffered to accumulate; and that the common drains and sewers be frequently opened and kept clear from obstructions.

Having burial grounds in the middle of populous cities is a pernicious custom.

Air is sure to become corrupted and unwholesome wherever it stagnates long; hence the low, dirty, and close habitations of the poor, as well as jails, prisons, work-houses, and hospitals, where the strictest attention is not paid to ventilation and cleanliness, and a number of persons are crowded together, may be considered as lurking-places in which typhus and other malignant fevers are likely to be generated, and are frequently communicated to those who visit them, or are within the sphere of their influence.

No house can be wholesome where the air has not a free passage through it. Houses ought to be daily ventilated by admitting a current of fresh air into every apartment. Instead of making up the beds as soon almost as people rise from them, the different coverings ought to be turned down, or be wholly taken off, exposing them for some time to the fresh air.

In jails, hospitals, ships, &c., where this process cannot be gone through, the foul air may be expelled, and fresh air introduced by means of ventilators. In all places where numbers of people are crowded together, a strict attention ought to be paid to cleanliness and a free ventilation.

If fresh air is necessary for those in health, it is still more so for the sick. To them it is the most reviving of all cordials, if admitted into their chamber gradually. Where the sick are laboring under fevers of the typhus and malignant kind, dysenteries, or other diseases of an infectious nature, we cannot pay too great attention to a free ventilation, both for the benefit of the sick and their attendants.

The air of large cities or great towns should be avoided as much as possible by persons in a delicate state; particularly by the consumptive, asthmatic, hypochondriac, and nervous. When unavoidably obliged to remain in the like situations, such persons should go as often as they can into the open air, and keep their houses properly ventilated.

Houses surrounded with plantations or thick woods, and those situated in low marshy soils, or near large ponds or lakes of stagnated water, are always unhealthy.

When the weather becomes warm, the muscular fibres are relaxed. When it is cold, they are rigid and contracted, and the power of cohesion is increased, so as to affect even the hardest metals.

The weight of air which our bodies sustain at different seasons is very great. That which presses on the body when the mercury is highest in the barometer, is said to be equal to 39,900 pounds troy weight, and even under the least degree of pressure from the air, is thought to be equal to 3,982 pounds troy. As the body must sustain so immense and variable a weight, we cannot be surprised that our health should become affected by the changes of the weather, and that frequently in a sudden manner. Air is so closely connected with health and life, that it is impossible for the animal functions to be properly carried on even by the most vigorous and athletic constitutions, where a due attention to it is treated with indifference or neglect.

Although a man in savage life is capable of bearing the vicissitudes of weather and climate; although his stomach is capable of digesting most kinds of food, if its action has not been impaired by intemperance, and although he is capable of sustaining the severest bodily exercise and labor, when he has been inured to it from early life, yet it must be evident that he who has been brought up from his earliest infancy with care and tenderness, will more readily feel the effects of the most trivial hardships, or be liable to take cold at every sudden change of the air, and that the least deviation from his accustomed rule of temperance, may tend peculiarly to induce indisposition.

It will be best for every person to study his own peculiar constitution, by which only he will be enabled to discover those particular and positive effects which the different states of the atmosphere produce upon himself, and thus learn to preserve and improve his health.

The tender and infirm very materially feel the oppressive influence of hot, sultry weather. Thus people of a nervous temperament are very liable to those diseases which arise from relaxation and a preternatural degree of heat, such as sudden faintings, convulsions, and hysterical and hypochondriac complaints. If with heat there is a combination of moisture, a disposition to fever, as well as to malignant and putrid disorders, may be generated. When the heat is excessive the perspiration is apt to be very copious, and the cold following in the evening after a hot day, the perspiration is suddenly checked, and thrown inwards, and thereby gives rise to fevers, pleurisy, and other diseases.

On the approach of bad or wet weather the air becomes heavy, and is found considerably to affect the animal spirits of many. As it loses its elastic force without, it loses it also within us; hence the strength is somewhat diminished; the body dull and somewhat oppressed; the spirits sink; the circulation is languid; headache, sickness, and a variety of other disagreeable and gloomy sensations are produced, particularly among persons of a nervous temperament.

By cold air the body is considerably contracted and rendered more compact. In proportion therefore as the external heat is diminished, the internal heat should be increased by clothing. In winter the blood is much disposed to inflammation, and being, in some measure, obstructed in its passage through the lungs, produces coughs, pleurisy, inflammation of the organs of respiration, rheumatism, and inflammatory sore throat. By paying attention, however, to a proper degree of clothing, and taking particular care that a due proportion of exercise be taken, cold may be rendered less hurtful to the body, and the risk of incurring these dangerous complaints in a great measure be obviated.

The effects of extreme cold are sometimes destructive. In northern countries persons have been known to drop down suddenly, and be deprived of life without any previous symptoms of disease. The loss of various parts of the body, in persons of the most healthy constitution, by the effect of extreme cold, is well known.*

There is no change throughout nature more pernicious either to animal or vegetable bodies than from extreme heat to intense cold, or from freezing to sudden thawing. Hence irritating coughs are never so prevalent as when there are sudden alterations in the weather, and when the air, after having been very cold, suddenly becomes warm and damp, and after that assumes a considerable degree of coldness again. These transitions occasion a smaller quantity of matter to be thrown off by perspiration, and the lodgement of a greater proportion of fluids upon the internal parts, which become loaded and obstructed; hence catarrhs, diarrhœa, and many other diseases.

When any ordinary change of external temperature is made gradually, such is the constitution of the healthy human frame, that it bears it with impunity, but when it happens more rapidly, danger arises proportioned to the suddenness of the event. Even the slow annual change of season, produces some diseases that are chiefly observable

* When any one finds that any part of his person has been frozen, let him be sure to avoid exposure to fire, or to a warm room. Let him immediately apply to the part or parts affected, either snow, ice, or cold water. By this means the effects of frost upon the flesh will be arrested with comparatively little suffering.—Ed.

in the spring and autumn. The quicker daily change causes many more from the chills of night alternating with the heat of noon-day.

The most dangerous, however, of all, are those rapid and violent fluctations which arise from the artificial modes of influencing temperature by close rooms and fires, as also by the clothing. There are many thoughtless persons who will rush out into the freezing air from a room heated to the temperature of India, or after having been warmly clad throughout the day, will go out into the cold damp air of night in the flimsy dress of a ball room, with their bosoms uncovered, and their necks and shoulders perfectly bare; for such is the prevailing fashion among women nearly of all ages. By such imprudences, and by the changes of temperature to which they become liable, thousands are annually cut off, particularly by pulmonary consumption.

But we are so accustomed to hear of colds, coughs, consumptions, rheumatism, and a long train of similar diseases, that we have nearly been brought to consider them as unavoidable scourges, yet most of our winter maladies truly derive their origin from sudden and considerable vicissitudes of temperature, and may be avoided by paying due attention to the following rule, viz. To keep the temperature of the atmosphere around us as uniform as possible, and when a change is unavoidable, to make it gradually, and not suddenly. A due attention should, therefore, be paid to our clothing and management, in other respects, on quitting our houses, or coming out of any crowded place of public resort in cold weather. Persons of a delicate constitution should pay attention to the changing of their clothes according to the vicissitudes of the seasons, or even, indeed, to those of the same day, proportioning not only the quality, but quantity thereto.

As our bodies are readily acted upon by every sudden change of weather, every precaution should be taken to prevent any sudden check to perspiration. It should be a fixed rule, to avoid sudden transitions from one extreme to another, and never to remove from a room highly heated, to a cold air, or fresh breeze, while the body remains warm, or till the necessary change, by additional clothing, has been previously made. Should the body be greatly heated, it will be sure to suffer by going into a cellar, ice-house, or cold bath, or even by sitting on cold stones, or damp ground. Colds, pulmonary consumption, rheumatism, and many other severe maladies have been induced by such imprudence, and even speedy death.

Whatever may be the temperature of the climate, the air, generally, may be considered healthy, if pure and clear, and occasionally visited with the agitating and renovating power of the wind. On the other hand, an air that is gross, or strongly saturated with animal, vegetable, or mineral substances, is highly injurious to all.

In the selection of a residence with a view to health, preference should always be given to an elevated situation, which is neither exposed to extreme heat in summer, nor to piercing cold in winter. The rooms should be lofty, and of suitable dimensions. Low confined ones are injurious.

The air of any place is salubrious where the water is good, and where this is pure and tasteless, the air, in general, is free from any offensive smell. Where sugar readily enters into a dissolved state spontaneously, the walls of the house are stained and changed in color, the papering loose and detached, and metals acquire rust or verdigris on their surface ; these are presumptive evidences that the situation is damp, and therefore unwholesome.

The higher parts of a house are generally the most healthy. All the rooms in a house should be daily ventilated by the seasonable admission of air for a sufficient length of time. During the sultry heat of the summer months, it will not be safe to leave the windows of the bed-room which is slept in, open all night, as this practice can never be resorted to without some hazard, unless the person has long accustomed himself to it, and even then, the air coming in a current* upon him, is to be carefully guarded against.

By immoderate warmth, either in sitting-rooms, or sleeping apartments, with doors and windows made what is called air tight, the body will become enervated. To avoid indisposition from this cause, it may be stated as a general maxim, that the temperature of a sitting-room should not exceed 60 degrees of Fahrenheit's thermometer, nor that of the bed-room 50.

As the warmer weather is progressively succeeded by a state of greater cold, we should inure ourselves to the effects of these changes. By these means, if we use moderate exercise, and are properly clothed, we shall neither feel the cold unpleasant, nor will it cause any obstruction of the necessary perspiration.

EXERCISE.

The laborer often murmurs that he must earn his bread by the sweat of his brow. When he observes the rich he often repines at his own condition and situation, considering that as hard and afflicting which Infinite Wisdom has destined to be the absolute, if not the only

* A *current* of air under *all* circumstances is dangerous.—Ed.

method by which he can be put in possession of the chief of all earthly blessings, a sound body and a quiet mind; for those who labor most for their daily bread, are not only the most healthy, but, all things considered, generally the most happy of mankind.

The industrious laborer, under the necessity of earning his daily sustenance by personal exertion, commonly enjoys good health; he eats with a good appetite his meal, which his active and athletic body, by proper exercise, is soon enabled to digest, and at the return of evening he retires to undisturbed repose. Health makes his bed easy, and his wearied limbs, recruited by sound repose, fit him for the labor of the ensuing day. His wants are few. He is nearly a stranger to care and solicitude; and his children are partakers with him in the same inheritance. On the other hand, indolence and inactivity are the sources of much immorality, and lay the foundation of many painful diseases, and at length reduce the mind, as well as the body, to a state of torpor.

Let us be ever so attentive to our regimen and other circumstances, yet it is impossible to keep ourselves in a healthy state, if unaccompanied by due exercise. Nothing so effectually prevents indigestion and strengthens the solids, as exercise; but unless it be duly and properly persevered in, and our bodies daily habituated to it, we cannot experience its full benefit. Our love of motion is a strong proof of its utility, and nature implants no disposition in vain. It seems, moreover, to be a law of nature, that *no* creature, without exercise, should enjoy health, or be able to find subsistence.

Were men to live in a habitual course of exercise and temperance, there would be but little occasion for using medicines. Those are the most healthy who subsist by the chase. Men lived longest when their lives were employed in hunting, and when they had little food besides what they caught.

By exercise, the tone and vigor of the body are very much increased; the nervous energy, and the circulation of the blood, are materially accelerated; and this increased impetus of the blood through the whole system, produces an effectual determination to the surface of the skin, and a free perspiration is the consequence; the body is disposed to sleep; the appetite is increased; the tone of the stomach, and other organs concerned in the process of digestion is preserved; and the blood is determined from the interior parts; thereby preventing, as well as removing obstructions, and powerfully obviating any tendency to over-fulness in the system.

Moreover, by exercise, the spirits are enlivened, as well as the body refreshed. When it is neglected, the strength and energy of the whole machine gradually fall to decay, and a morbid irritability is induced, with a long train of those unpleasant symptoms which usually accompany chronic weakness. The natural powers of the stomach and intestines sustain particular injury, the appetite is vitiated, and the bile and other fluids, employed by nature in the process of digestion, are very imperfectly secreted, or perhaps considerably obstructed; the muscular fibres of the body become relaxed and debilitated, the whole animal economy is disordered, and a train of nervous and hypochondriacal symptoms, together with gout, apoplexy, palsy, glandular obstructions, and many other complaints incident to inactive, indolent, and sedentary persons, follow.

Nothing but regular and sufficient exercise in the open air can brace and strengthen the nerves, or prevent the endless train of diseases which proceed from a relaxed state of these organs. The active and laborious are seldom the subjects of nervous diseases. These are the portions of the sons of affluence and ease. Riches, indeed, supply many indulgences; but they are accompanied by many evils, and thus are the good and bad things of this life pretty equally balanced.

Those who wish to enjoy health should use exercise in some form and in the open air, as regularly as they take their food. Students and men of letters, more particularly, should attend to these points; for if study be united with a want of exercise, it infallibly proves injurious to health, and never fails to destroy the appetite and impair digestion; then costiveness, flatulency, crudities, headache, apoplexy, and palsy, ensue.

To render exercise as beneficial as possible, it must not be too violent, and moderation in eating and drinking, should accompany it. Violent exercise, which either heats the body, fatigues it, or exhausts the spirits and muscular strength, is sure to be hurtful. Active exercise, soon after eating a full meal, is likely also to be injurious; a state of quietude, therefore, for some time after dinner in particular, as being the principal meal with most persons, will be advisable; but, nevertheless, *we should not indulge in sleep* soon after eating. This custom some people practice, but it is an improper one, particularly for those of a full habit.

Exercise certainly gives strength and energy to the body, but carried too far, or continued too long, it is productive of mischief. It should be gentle and moderate, and when practicable, be taken in the open air. Another rule necessary to be attended to for rendering exercise advantageous is, that due care be taken that the body, when heated, be not suddenly exposed to cold, either by subjecting it to currents of air, or fresh breezes, or by drinking cold liquors of any kind.

We may consider exercise of the body as of three kinds. *First*, that of simple muscular motion, consisting in walking, or such employments as call forth the exertion of the limbs, as gardening, digging, hunting, shooting, cricket, playing at bowls, and the like. *Secondly*, that which is obtained by riding on horseback, or in any kind of carriage; and *thirdly*, that which may be given to the body by outward applications, such as frictions, either with the hand, a flesh-brush, a piece of flannel, or the hair-mitten.

Exercises of the first kind are highly beneficial when the bodily powers will admit of them, as the mind being occupied therein, adds very materially to the advantages resulting from them; yet, on account of their being more fatiguing and laborious, there are many instances where they are scarcely admissible, in which case, riding must be substituted in their stead. Of all the different species of exercise not taken on foot, that of riding on horseback is certainly entitled to the preference, if the person is capable of using it. In nervous affections of all kinds, but more particularly the hypocondriac, as well as obstructions in any of the internal organs, it is more likely to be beneficial than any other, because the parts of the body are universally shaken by it, and such persons ought to pass two or three hours every day on horseback, when the weather is suitable.

Next to riding on horseback, a preference should be given to an *open* carriage, as a person has the advantage of continually changing the air and breathing it pure.

Sometimes the motion of either a horse or carriage is too much for the delicate frames of some invalids. In such cases, easy exercise may be obtained by sailing in a small vessel or boat, at proper times of the day, when the weather is fine; but when it is not so, swinging in a cot or hammock may be substituted.

A person prevented from taking exercise in the open air should, by no means, remain in a continued state of inactivity. He should engage in some employment or active amusement within doors. Where the taste and inclination extend to any mechanical pursuit, such as that of turning, &c., it ought to be indulged; but where they do not, what are called dumb bells may be substituted for a considerable space of time each day, or the person may play at billiards, or even at shuttle-cock,* rather than take no exercise at all.

The third species of exercise which has been mentioned is that of frictions. Where the circulation is languid, and the motion of the other fluids sluggish, or there is an inability of muscular motion from any paralytic affection, these may be employed with much advantage;

* Or jumping a rope, or blind-man's-buff. *Anything* is surely better than *nothing*.—Ed.

and, in the latter instance, still more so, if conjoined either with electricity or galvanism. Frictions may be made either with a piece of flannel, the flesh-brush, or simply with the hand. The best time for employing them is in the morning at the time of rising from bed; for then the superfluous matter which is prepared for perspiration is more readily brought to the surface of the body. In the application of this species of exercise, if we commence the friction from the extremities upwards to the body, we shall thereby accelerate the circulation, and propel the blood into the finer branches of the minute vessels.

In every stage and state of life, exercise is necessary for our welfare and health; and it is equally requisite for the female as for the male. By food our bodies may be nourished; but if not assisted, by due exercise, to carry on digestion with advantage, and to help in throwing off the superfluous humors by perspiration, we must unavoidably feel all the inconveniencies of repletion and fulness in the blood vessels, while, at the same time, the body will be afflicted with many painful diseases.

Indolence, moreover, not only occasions diseases, and renders men useless to society, but promotes all manner of vice. Indolence, when indulged, gains ground, and at length becomes agreeable. Hence, many who were fond of exercise in the early part of life, become somewhat averse to it when more advanced in years. Idleness may well be said to be the root of many evils. On the contrary, a life of activity and industry is not only the greatest promoter, as well as preservative of health, but likewise the best guardian of virtue.

CLOTHING.

A NECESSARY rule to be attended to, for preserving the body in a proper state of health, is to protect it from such effects as have a tendency to obstruct the perspiratory matter. In the sultry days of summer, every precaution should be taken that the body be not suddenly exposed to cold, when overheated by exercise, by throwing off a portion of our clothing, as some persons are apt to do. Another rule to be attended to, is to adapt our clothing to the climate, the different seasons of the year, and the period of life.

In warm climates, what is worn next to the skin should be made of cotton in preference to linen, which, when moistened with perspiration, is very apt to convey a sense of chilliness when the body becomes cool again. A proper attention ought to be paid, at the same time, to the situation of the person's residence; to the frequency and violence of storms, and to the different periods of the day; avoiding, if possible, an exposure to the moist and damp air of the nights; but, where this is unavoidable, clothing the body accordingly.

Our summer clothes ought not to be worn too long, nor our winter ones put on too soon. In making the change, it will be best to do it *gradually*, which precaution is more particularly necessary for those who have passed the meridian of life.

Another material rule to be attended to, with respect to clothing, is to adapt it not only to the seasons, but to the vicissitudes of the weather at different periods of the same day. An attention to this point is particularly necessary where the weather is variable, and the transitions from heat to cold very sudden at different times of the same day.

In early life it is not so necessary to cover the body with a quantity of clothes, because the blood circulates with due energy, and the perspiration is free; but in advanced life, when the circulation is more languid, and the skin more rigid, the clothing ought to be increased. A defect of due perspiration is probably the cause of many of the diseases to which the latter period of life is subject; but this may, in some measure, be prevented by wearing, next to the body, those articles of clothing which are best calculated for promoting a due discharge from the skin by perspiration, such as those made of cotton, flannel, or fleecy hosiery.*

The precise quantity of apparel which may be necessary for any person, cannot be prescribed. It must be entirely a matter of experience, and every person is the best judge what quantity of clothes is necessary to keep him sufficiently warm and comfortable.

Every person should be careful that his linen is properly dried previous to its being put on. Many lives are annually sacrificed by persons putting on damp linen, as well as by sleeping in sheets not properly dried.

Due care should be taken to change the stockings, and other clothing, as speedily as possible after their becoming wet by an exposure to inclement weather. Many persons are so imprudent as to neglect this very necessary change, and to suffer their clothes, after such an exposure, to dry on them, assisted probably by going near a fire for some time; but such a practice is always attended with risk, and not unfrequently gives rise either to rheumatism, fever, pleurisy, cough, consumption, or some other disease of a dangerous, or even fatal nature.

* Drawers of cotton or flannel, (according to the season,) should always be worn by both sexes unless in very hot weather. So also, should be worn a waistcoat of flannel of a thinner or thicker fabric adapted to the temperature of the climate.—Ed.

In warm climates, most persons are in the habit of changing their dress twice a day, particularly their body linen. Indeed where such articles of dress are once soiled by copious perspiration, their speedy renewal and change is not only necessary for the sake of comfort, but also for the preservation of health.

No part of our dress should occasion pressure. Cravats, stocks, necklaces, &c. should not be tight about the neck, as in this way they obstruct the blood in its course from the brain, and thereby give rise to headache, giddiness, fainting fits, or apoplexy. Neither should our garters be worn too tight, as they thereby not only prevent the free motion and use of the parts about which they are bound, but likewise obstruct their equal growth and nourishment, and give rise to varicose distention of the veins, aneurism of the crural artery, &c. But the most destructive way of applying tightness is, that of squeezing the stomach and bowels into as narrow a compass as possible, by the close lacing of stays, for the purpose of moulding the figure into what is called a fine shape. Many women are sacrificed by this injurious practice, and a few coxcombs of the other sex have of late rendered themselves ridiculous by wearing corsets, and aping females in this respect. Tight lacing is attended with very injurious consequences, as the action of the stomach and intestines, the motion of the heart and lungs, and all the vital functions are impeded; hence arise fainting fits, indigestion, costiveness, obstructed menstruation, coughs, consumptions, and many other complaints.

BATHING.

Personal cleanliness is chiefly effected by a frequent change of dress, but is much increased by ablutions of different parts of the body daily with water. The teeth ought to be cleansed after every meal, as the refuse of the food settles about them, rapidly becomes putrid, and proves injurious to them as well as to the gums. Every morning the tongue should be cleansed, and the throat be well gargled, and washed out with water.

The teeth are apt to become incrusted with tartar, which, in time very much injures the enamel with which they are coated externally; it should not, therefore, be suffered to collect, but be removed from time to time. They should be washed every morning with a small piece of sponge, or very soft brush, dipped in cold water, joining occasionally the powder of charcoal. If any of the teeth have a tendency to caries or rottenness, or the gums are spongy and bleed, the mouth may be washed with equal parts of the tincture of myrrh and bark, somewhat diluted with water.

Attention to the feet is also very necessary, particularly in warm weather, and with those who, from a peculiarity of constitution, have them very moist. The perspiration proceeding from them in hot weather, and after much walking, emits a very disagreeable smell. They ought, therefore, to be frequently washed; but no means for stopping the discharge should be resorted to, as serious diseases might thus be induced. Great cleanliness, by daily ablutions of the feet, and a change of stockings, are not only the most convenient, but the most salutary means of preventing all discomforts.

Ablutions with water should also be extended to other parts of the body. When a habit of cleanliness is once established, no rules will be requisite, as the feelings of the individual will sufficiently indicate what is proper in this respect.

Frequent ablutions, or immersions in water, are very beneficial, and are the most effectual preventives of many distressing maladies. Cleansing the skin by rubbing, washing, and bathing, is a very salutary operation. Indeed, it is nearly impossible for any person to be perfectly healthy who lives in the constant and habitual neglect of these means.

Where the person labors under no disease which is contradictory to the employment of a cold bath, this may be substituted in the summer and autumnal periods of the year for minor ablutions of the body; and bathing in the sea is entitled to a preference among the young and middle aged. Cold bathing does not, however, produce any considerable tonic effect upon old persons; and besides, any sudden chilling of the skin repels the circulation from the surface of the body, and determines the blood upon the inward parts, which is always attended with some risk, to persons advanced in life.

To ascertain whether or not cold bathing is likely to be serviceable to the person who employs it, he has only to attend to the following circumstance. If, after bathing, he feels a genial glow of warmth pervade the body, with an increased degree of vigor, he may be assured that it is likely to prove beneficial; but, on the contrary, if he feels a cold or chilly sensation remaining some time after, it should not be persisted in.

The best time of the day for cold bathing is before breakfast, but it may be used at any period of the forenoon, taking due care not to resort to it when the body is heated by exercise, nor immediately after a meal, on a full stomach.

Inuring children to cold bathing is generally productive of much advantage to them, particularly those who are perceived to be of a weak constitution, provided they labor under no organic disease. In conjunction with proper exercise, it is of all means the best calculated to make them strong and healthy, and may be considered as a powerful antidote against the rickets, scrofula, and many other disorders.

For elderly people tepid bathing will be more appropriate than the use of a cold bath, and will be found no less salutary than pleasant. A warm bath is a remedy of high utility where any check has been suddenly given to the perspiration by an exposure to cold or wet, and it proves very serviceable in many disorders, such as inflammatory affections of the stomach and bowels, rheumatism, and various other diseases.

The *topical* as likewise the *general* use of hot water in the form of vapor is likewise a remedy of great utility in various complaints. Whenever the joints become rigid, and the pain upon motion exquisitely severe, or where the muscles are contracted, (and, indeed, in all protracted cases of any disease of the hip-joint, lumbago, or sciatica,) the vapor of hot water, properly applied, will seldom fail, in conjunction with other suitable applications, to prove a safe and successful remedy. The mode of applying it *topically* must be regulated according to circumstances. A large boiler, with a long pipe or tube affixed to it forms a simple apparatus. By means of this the parts affected may be steamed for about half an hour at a time, repeating the process twice or thrice a day.

When a *general* vapor bath is required, one constructed agreeable to the plan advised by the Honorable Basil Cochrane, will best answer the purpose. The Russians are much in the habit of using the vapor bath, and their manner of doing it is simple. The apparatus consists of a wooden house, situated, whenever it is possible, by the side of a running stream. In the bath-room there is a vaulted oven, which when heated, makes the paving stones on the top of it red-hot; and adjoining to the room, there is a large kettle fixed in masonry, for the purpose of containing boiling water. Round about the sides of the room are a row of benches. Light is admitted, but there are apertures here and there for permitting the vapor to escape, the cold water which is wanted being let in by small channels.

The heat of the bath-room is usually from about 114 to 132 of Fahrenheit's thermometer. Warm water is thrown from time to time upon the hot stones of the oven, by which means the heat is somewhat increased, especially in the upper parts of the building. The bathers recline on the benches in a state of nature, and they perspire more or less in proportion to the heat of the humid atmosphere in which they are enveloped. To promote perspiration the better, and completely to open the pores, they are at first well rubbed with the hands, and then gently flagellated with leafy branches of birch. The Eastern nations, with the same view, adopt what is called champooing, or kneading of flesh, now and then interposing frictions. The Russians, after remaining awhile, quit the sweating bench, and wash the body with warm or cold water.

Cleanliness ought to be attended to in our houses, as well as in our persons and dress. Fevers of a malignant and contagious nature often originate among the inhabitants of close dirty houses, who breathe an unwholesome air, wear their clothes until they become very dirty, and take but little exercise out of doors. Where a number of persons are collected together under one roof, cleanliness is a point of the very highest importance, as it is a well established fact that contagious diseases are communicated by air which has become tainted, and which soon takes place by its being breathed over and over again, and by its being further deteriorated by a want of due ventilation, and proper cleanliness.

Those who are obliged to earn their daily bread by pursuing a dirty and unwholesome employment, might probably avert some part of the danger connected with it, by keeping their skin clean by frequent ablutions of their bodies with water, and changing their linen sufficiently often, taking care at the same time to keep their abode clean, and purified by a free admission of fresh air into it daily.

SLEEP AND WATCHING.

For the purpose of recruiting the waste daily produced in the human body, and enabling it to perform every function properly, nature has wisely and beneficially determined that an adequate renovation should succeed this exhaustion, by alternate periods of sleep and watching.

An insufficient quantity of sleep exhausts the spirits and produces headache, anxiety of mind, and moroseness of temper. It also debilitates the nervous system. Too great indulgence in sleep is also injurious, as the muscular motions are thereby debilitated, the nerves and other fibres become relaxed or torpid, and a state of indolent stupidity supervenes, which is not thrown off the whole day.

Six hours sleep is sufficient for any adult person during the summer, who is in health, and in winter about seven, or, at the most, eight. Those who indulge for nine or ten hours in bed, are commonly wakeful or restless during the fore-part of the night, and when they ought to rise, sink to rest, and slumber on till noon, by which imprudent conduct even the strongest constitution will eventually be injured, and become enervated.

Nothing, however, more certainly destroys the constitution than the habit of sitting up a great part of the night, and lying in bed the pleasantest and most healthy part of the day. This is sure to injure the health and to shorten the natural period of life, and will undermine the strongest constitution, even if accompanied with habits of regularity in other respects; but how much more destructive must its effects be, when conjoined with intoxication, gambling, sensuality, and other midnight excesses. Persons of athletic bodies may probably bear up for a time under late hours and intemperance, but the delicate and weakly must unavoidably fall very soon victims to such indiscretions.

A due proportion of sleep, taken at proper hours, is absolutely necessary for the welfare of our bodies, which, during this period, receive a considerable degree of nourishment and renovation. If, however, it be too short, interrupted, or taken at unseasonable hours, debility ensues, and the vital powers, sustaining a deprivation of nourishment, are exposed to injury. A person from this cause will be likely to feel a great degree of languor and weariness, when he rises, instead of proper refreshment. It must be evident to every person, that a considerable portion of human happiness is founded on the alternate vicissitudes of motion and rest. Those, therefore, who neglect the latter, will rarely be gratified by the relish resulting from the former.

Sleeping in the day-time, particularly after eating a hearty dinner, should be avoided. If, however, it is at all admissible, it can only be for persons of a weak, debilitated habit, or those who do not enjoy sufficient repose during the night.

Children may always be allowed to take as much sleep as they please, but it is a very different case with adults. Quietude and repose, however, best comport with the constitutions of those far advanced in years, since the springs of life in them are rather weakened than invigorated by excessive action, and by want of sufficient sleep.

The best way of making sleep refreshing is to take proper exercise through the day; to avoid strong tea or coffee in the evening; to make a very light supper, at least an hour or two before retiring to rest, where such a meal is indispensably necessary; to lie down with a mind as serene and cheerful as possible, and to rise at an early hour in the morning; for it has been observed, that the most of those who have attained a great age have been early risers. Yet it must be understood, that although early rising and activity are conducive to health, they should, nevertheless, be regulated by the state of bodily strength, the season of the year, and the habitual exertions of the mind.

Too much exercise will prevent sleep, as well as too little. We very seldom hear, however, of the active and laborious complaining of restless nights. The indolent and slothful only are generally incommoded with these complaints. The laborer enjoys more real luxury in sound sleep and plain food than he who fares sumptuously, and reposes on downy pillows, where due exercise is wanting.

Light suppers are also necessary to sound sleep. Many experience uneasy and restless nights, if they commit the least excess at that meal; and, when they do fall asleep, the load and oppression on their stomach occasion frightful dreams, the night-mare, broken and disturbed rest. Some people cannot sleep, however, unless they have taken solid food at night, and this, perhaps, merely from habit or custom; but, in such cases, the very lightest should be chosen, and only a very moderate quantity be eaten, taking care, at the same time, that an hour or two shall always elapse prior to getting into bed. Indeed, it would always be advisable, after eating such a supper, to take a little gentle exercise before the person retires to rest.

Anxiety of mind, intense thinking, and too close attention to study, are certain to prevent sound sleep, and, therefore, we should endeavor to preserve tranquillity of mind, and banish anxious thoughts, as much as possible, when we retire to rest.

He who goes to bed early at night will, in general, be desirous of rising betimes in the morning. He who accustoms himself to an early hour for retiring to rest can rarely join in Bacchanalian revels, or in the fashionable dissipations of high life. His sleep is not disturbed by the effects of unseasonable luxury; his slumbers are sound and refreshing; and he rises with cheerfulness and fresh vigor to breathe the morning air, and commence the duties of the day.

THE EVACUATIONS.

A proper attention to these is necessary to keep the body in a due state of health. Under the head of excretions and retentions are to be included the saliva, bile, evacuation by stool, urine, perspiration, menstruation, lochial* discharge, and secretion of milk; but we here notice only the five former.

* Evacuations from the womb after child-birth.—Ed.

THE SALIVA.

The saliva, or spittle, is a fluid secreted by the glands of the mouth for the purpose of assisting digestion, and ought, therefore, never to be thrown away, as is too frequently the case in smoking or chewing tobacco, a certain consequence of which is, that the concoction of the food is disturbed, and the digestion impaired. No fluid of the body appears to be more necessary to health than the saliva, as it not only assists in dissolving the food and promoting its due assimilation, but, by its soapy quality, it cleanses and carries off that viscid mucus which clogs the alimentary canal, and would otherwise impede this process. When, therefore, from any cause, there is a deficiency of salivary secretion, digestion becomes much depraved.

THE BILE.

The state and quality of the bile also very much affect the health. The bile, in a vitiated state, or when not duly secreted, will sometimes become obstructed in the liver and gall-bladder. An inordinate use of spirituous liquors, as well as a life of indolence and inactivity, thickens this fluid, and occasions the formation of biliary concretions in the gall-bladder. These obstruct its discharge into the intestines, and are a source of indigestion, obstinate costiveness, jaundice, and hypochondriac affections. When the bile, being once secreted, does not pass properly into the intestines, it is absorbed by the lymphatics, and returned into the circulation, and then gives rise to the jaundice. Enlargement and induration of the substance of the liver itself, sometimes take place in these cases, and the dropsy, or some other fatal malady, follows.

On the other hand, when the bile is too abundantly secreted and quickly discharged, our food is deprived of the chief instrument employed by nature in producing chyle, or that milk-like liquor observed, some hours after eating, in the lacteal vessels of the mesentery, and from which the blood is afterwards formed ; hence, the digestion becomes depraved, the separation of the chyle from the grosser part of the aliment is obstructed, and the expulsion of the excrements retarded. A general distemperature of the system, particularly of the fluids, is thereby produced, and persons liable to these affections are apt to feel a preternatural degree of coldness, together with extreme debility, and frequent fits of fainting, the countenance at the same time being very pale.

EVACUATION BY STOOL.

The regular state of the bowels is a point deserving very careful attention. When the feculent matters are retained too long in the intestines, they vitiate the humors, and when they are discharged too soon, the body is not duly nourished. A medium is, therefore, most desirable, and this is to be obtained by regularity in diet, and sufficient exercise.

Great constipation of the bowels produces flatulency and painful distention of the belly, colics, and even convulsions, in persons in whom there exists a predisposition to hypochondriac and hysterical complaints. Moreover, the effluvia arising from too long a retention of feculent matter in the bowels, being absorbed and carried into the circulation, are apt to occasion an acrimony in the fluids, and not unfrequently obstinate eruptions upon the skin.

Too great a looseness of the bowels or habitual diarrhœa, is productive of as much danger and inconvenience, as considerable constipation. The occasional occurrence of a moderate looseness is frequently only an effort of nature to expel and carry off something morbid from the intestines, and therefore not to be considered in the light of a disease; still, when it occurs too frequently, or too copiously, and is long continued, some obscure disorder in the bowels, or some material defect, may be suspected. Under circumstances of this nature, the looseness must be stopped, or rather mitigated by the assistance of medicine; otherwise the body will be deprived of its due nourishment, the strength and spirits be exhausted, and ultimately it will destroy life.

One *copious* stool a day is sufficient for an adult in health. More or less may be injurious in a general way. To obtain this regular action of the bowels, the best plan is to rise betimes in the morning, take gentle exercise in the open air, then breakfast, and very soon afterwards visit the privy, whether the person has an inclination or not, *soliciting* nature patiently and perseveringly and by proper efforts. Habits of this kind may be acquired, which will in time become perfectly natural. In this way many cases of habitual costiveness have been completely subdued, and perfect regularity in the action of the bowels established.

A serious evil attendant on frequent recourse to medicines for the purpose of removing costiveness is, that after a time, the bowels will not act without them, from a want of the accustomed stimulus. Those who are subject to habitual constipation, had better attempt to remove it by diet and exercise, than by drugs, carefully avoiding, at the same time, all articles of aliment which are of an astringent nature.

Persons troubled with habitual looseness, should make use of food that is likely to brace and strengthen the bowels, and which is rather of an astringent quality, such as rice boiled, milk, eggs, cheese, sago, arrow-root powder, and wheaten bread made of the finest flour. Red Port wine, brandy sufficiently diluted, and toast and water, will be the most appropriate liquors to drink.

As obstructed perspiration is not unfrequently a cause of looseness in the bowels; persons who are affected with it, should wear flannel next to the body, and carefully avoid all exposures to cold.

THE URINE.

When it is too copiously discharged, it gives rise to thirst, emaciation of the flesh, prostration of strength, depression of spirits, &c., and constitutes that species of disease called diabetes. On the contrary, when the urine is too long retained, it is not only re-absorbed or taken up again into the mass of fluids, but by stagnating in the bladder, it becomes thicker, and the formation of gravel and stone is promoted. Hence it happens, that indolent and sedentary persons are much more liable to these diseases than those who lead an active life.

It has been supposed that the quantity of urine secreted, and voided in the course of the twenty-four hours by a person in health, is generally about a third part of the fluids that are taken. This being habitually exceeded is presumptive proof of debility, with too great a laxity of the urinary organs and passages, the effect of which is to expose the person to a general waste of the flesh and strength. The urine being smaller in quantity than what has been stated as the general average, unless proceeding from a deprivation of liquids, denotes an extraordinary degree of heat in the system, or it may arise from a dropsical tendency, or from some obstruction in the urinary passages.

By retaining the urine too long, many persons have greatly endangered their lives. The calls of nature in this way, ought, therefore, never to be postponed; for if the bladder is over distended, it is very apt to lose its power of action altogether, and to become unable to expel the urine properly, and this over-distension destroys the powers of the organ.

A retention or suppression of urine, under all circumstances, and in all situations, may be considered as an alarming and dangerous disease, which demands the most prompt and speedy means of relief that can be afforded. In pregnant women, in or about the time of labor, the urine being retained or suppressed, calls for prompt assistance, otherwise they will be exposed to the risk of a ruptured bladder, or a retroversion of the womb.

PERSPIRATION.

Perspiration is the fluid that is secreted by the extremities of the cutaneous arteries from the external surface of the body. It is usually distinguished into *sensible* and *insensible*. The last is separated in the form of an invisible vapor; the first is visible in the form of very little drops adhering to the skin.

The insensible perspiration is supposed to exceed any of the other discharges from the human body, and is of the utmost importance to health; for when it is obstructed, the whole frame soon becomes disordered. It varies in quantity according to the temperature of the atmosphere, the season of the year, climate, age, sex, and general mode of living. Thus men have a more copious, viscid, and higher colored sweat, on summer days, and in warm countries, than in colder regions. The sweat of a man usually exceeds that of a woman, and is also supposed to be of a more acrid smell. The young are more subject to sweat than the aged, who, during the excessive heat of summer, perspire very little. A long abstinence from drink causes a more acrid and colored sweat; and the drinking a great quantity of cold fluids in warm weather, a limpid and thin perspiration.

The uses of the insensible perspiration are, to liberate the blood from superfluous animal gas, azote, and water; to discharge the noxious and heterogenous excrements; hence the acid, rancid, or putrid perspiration of some men.

The use of what is termed the sensible perspiration, or sweat, in a healthy man, is scarcely observable, unless from an error of the six non-naturals, which comprehend air, meat and drink, sleep and watching, motion and rest, retention and excretion, and the affections of the mind. The first effect of the sensible perspiration on the body, is somewhat prejudicial, by its exhausting and drying it, although it is sometimes of advantage by supplying a watery excretion; (for when the urine is deficient in quantity, the sweat is frequently more abundant;) and also by discharging at the same time, any morbid matter; thus various subtile particles are critically expelled from the human body, in acute and chronic diseases, with the sweat.

Whatever gives a sudden check to perspiration may be productive of very injurious consequences, and these should be carefully guarded against, as many persons annually die by not paying proper attention to the various causes from which perspiration may become obstructed; one of the most common of which is, taking cold.

By sudden transitions from heat to cold, either from changeableness of the weather, the state of the atmosphere, going immediately from a hot room into the cold air, or throwing off some part of the clothing when heated by exercise, the perspiration is very apt to be obstructed, and colds, coughs, and inflammation of the lungs, are the usual effects of such conduct. Drinking freely of cold water, or any other small liquor, *when the body is heated*, is not only injudicious, but fraught with many ill consequences. Damp houses, and damp beds, or linen; exposure to night air, especially in hot countries; not changing clothes quickly after their getting wet; and continuing to wear stockings, shoes, or boots, which are saturated with water, exposing the feet thereby to cold, are all likely to be attended with injurious consequences, by occasioning obstructed perspiration. The same will happen by throwing open a window, when the room is hot, and sitting in or near it, so as to be exposed to a current of air. In the hot season of the year, some persons are so imprudent as to sleep with a window open, exposing themselves thereby to considerable danger. Whenever this practice is adopted, great care should be taken that the window is at a considerable distance from the bed, and that the air admitted into the chamber does not come in a current upon the person.

Some are so imprudent, or foolhardy, as to bathe themselves in cold water when considerably heated by exercise, and by such conduct have been soon attacked with severe disease. In some instances death has been the consequence.

Some persons, when they happen to get wet feet, wash them with some kind of ardent spirit. This is always attended with very great danger; for instead of promoting and keeping up the due circulation in the feet, it will greatly increase the check which has been given to it by the exposure to wet. The speedy evaporation of the spirit produces a considerable degree of coldness. The better and safer way is, to well dry the feet, then to rub them for some time with flannels made warm by the fire, covering them afterward with woollen stockings; and lastly, for the person to take a little warm drink, keeping for some time in motion.

On all occasions, carefully avoid sudden transitions from heat to cold, keep the body in as uniform a temperature as possible, and when it is overheated, let it cool gradually.

CHANGE OF RESIDENCE.

RULES FOR PERSONS WHO GO FROM A COLD TO A TROPICAL CLIMATE.

Avoid arriving in a tropical climate during what is termed the rainy season of the year; this, with some little variation, according to the place of destination, commences in August, and terminates at the end of October, or beginning of November.

Your place of abode should be somewhat elevated, dry, open to the air and sun. Marshy grounds, and stagnant waters, when acted upon by a powerful sun, always send forth noxious exhalations and vapors, which give rise to intermittent and remittent fevers, fluxes, &c. When obliged to inhabit a house which is situated low, it will be prudent to occupy one of its highest apartments.

Expose yourself at first, as little as possible, to the intense heat of the sun at mid-day, and cautiously avoid the dews and damp air of the night.

Wear cotton* next to the skin, not linen. Go early to bed, rise betimes, making use very soon afterward of a cold bath, one of the best means of counteracting the injurious influence of a warm climate, and affording the most grateful sensations.

After cold bathing, take gentle exercise, the morning being preferable for this to any other part of the day. Avoid any exposure of the body afterward to a current of air, and the drinking any cold liquor when you are much heated. If at any time overtaken by rain, so as to have your clothes wetted, change them as quickly as possible. Pay strict attention to cleanliness, not only by changing the linen once or twice every day, but also by minor ablutions of different parts of the body with cold water.

Persons just arrived in a tropical climate should partake only moderately of the delicacies of the table, and make a very temperate use of vinous or spirituous liquors. Before dinner, a solution of preserved tamarinds in water, simple lemonade, or the liquor known by the name of imperial, are appropriate drinks.

Such persons should also refrain from all amusement and exercises of a heating nature. They should moderate all sensual gratifications, and cautiously guard against a costive state of the bowels, by regularly repairing to the privy once or twice a day at a stated hour, and then *soliciting* natural evacuations. If at any time these efforts should not be attended with due effect, one or two motions ought to be procured by the aid of an injection, or some cooling laxative.

* *Gauze* flannel is preferable.—Ed.

Soldiers and sailors are very apt to suffer, in a tropical climate, from the effects of intemperance, conjoined with an exposure to intense heat during the day, and moist air at night; and it therefore greatly behooves those who are placed in command over them, to be as attentive as possible in preventing such occurrences. The health of seamen, in particular, will much depend upon their avoiding undue exposure to the sun, rain, night air, intemperance, unwholesome duties on shore, and, in fine, to all such occupations as subject them to excessive heat or noxious exhalations, as these never fail to be highly dangerous to those not assimilated to the climate.

When pitching tents for soldiers or sailors on shore duties, the driest and highest spots should be chosen, and under cover of these, hammocks should be suspended. The men ought not to be suffered to sleep on the ground.

Persons who come from a cold to a warm country are more liable to many diseases, and particularly to fever, than the natives, and those who have been acclimated by time. The same exposure will produce fever, or other disease, in a stranger, while the native and old inhabitant will not be at all affected by it; or even supposing that both are attacked, the symptoms will be tenfold more urgent and severe in the former than in the latter.

Observe a strict temperance in diet, living chiefly on vegetables and ripe fruits for the first two or three months, partaking very moderately of pure wine, and avoiding, as much as possible, any exposure to the intense rays of the sun during the day, and the cool or damp air of the night, until the constitution has become assimilated to the climate. In closing this article we give a word for those who come from a warm climate.

The principal precaution to be observed by those who leave a warm climate, and either visit or become settled inhabitants of a cold one, is to arrive in the latter before the approach of winter, and to make such a suitable change in every part of their dress as shall effectually guard their bodies against the difference and vicissitudes of the atmosphere which they must encounter. On this account waistcoats and drawers of flannel should be worn by persons of both sexes next to the body on the approach of cold weather, and the outer garments should consist of articles of a close and warm texture.

MANAGEMENT OF SICK ROOMS.

FURNITURE.

This should always be both selected and arranged so that every article whenever wanted, and however suddenly, may be instantly found, and without needless disturbance of the patient in any way. In cases of severe sickness (to which alone we here refer) the sick room should be disencumbered of all needless furniture; and all which can avail to the comfort and convenience of the invalid, should, if possible, be procured.

One small table should stand near the bed for all articles wanted for *frequent* use, such as glasses, cups, spoons, drinks, medicines for the day, &c.

A larger table placed more remotely from the bed, should also be provided for medicines and utensils *occasionally* used, and for an extra supply of pure water. This should be furnished, and from time to time replenished, and amply, with articles necessary to the various ministrations of the sick room, that the patient may not be disturbed by the opening and closing of the door whenever any such article may be suddenly needed.

There should always be in the room a convenient place of deposit for broad and narrow tape; old, clean linen; sponges; lint; rolls of muslin; linen and flannel bandages about two inches wide; pins, needles, thread, scissors, plasters, &c., that they may always be at hand upon any possible emergency.

Drawers should be furnished for a plentiful supply of clean, well-aired linen. Soiled linen should never be allowed to remain in the room a moment.

Again—provide a distinct place of deposit for an abundance of towels.

Let the wash-stand be constantly provided with additional vessels, and with an abundance of water.

A sofa, easily moveable, or something which will answer the same purpose, is very desirable—sometimes essential—for the comfort of the patient when the bed-linen needs to be changed.

The *entire* room should be carpeted for the sake of stillness, cleanliness and dryness. If but a part of the room can be thus covered, let the remainder never be washed, but swept, and (to avoid annoying the patient) with a brush, rather than with a broom.

A matress, a bed-pan, a pillow stuffed with curled horse-hair, or one made of India-rubber, to be filled with air, a thermometer, a pair of apothecaries' scales, a basin—when it can be procured—graduated to ascertain the quantity of blood taken by bleeding, a minim measure, to measure precisely the quantity of fluid medicine to be given at a dose, a syringe for the bowels, and a common *nurse lamp*, should always be at hand. With these articles every family should at all times be provided. Most of them can be obtained at small expense.

No kettle or any implement of cooking should be allowed in the room. The nurse lamp will answer for heating fluids.

BEDS AND BEDDING.

Beds without curtains are always preferable. In cases of fever especially, the matress should be placed uppermost. The bed-clothing should not be burdensome, and should be immediately removed and well aired, when the patient is transferred from the bed. The sheets used at night should be exchanged for others in the morning, and again used, if not soiled, at night. If this latter cannot be done, the sheets should be changed once in twenty-four hours, especially when the fever is infectious. This will essentially prevent its communication to the blankets or to the furniture of the room.

NOISE.

Even the slightest is excessively irritating and therefore injurious to the sick. To prevent it—open and shut the doors with the utmost gentleness, list them and oil their hinges—check the whistling of the wind through doors, windows, and key-holes—move all articles in the room with care—let every person in the room be shod with slippers or with something equivalent—forbid all needless conversation even in whispers, for *concealed* conversation will very probably excite the jealousy and fears of the patient—and *let no neighbors enter the room merely to gratify curiosity, to express sympathy or to give advice.* If their services are needed, employ them and thank them; otherwise exclude them. Medicines and medical skill have often been baffled, and the lives of the sick sacrificed by the intrusion, always agitating, of friends whose assistance is not needed.

VENTILATION.

Ventilation is always of primary importance, particularly in those fevers in which miliary eruptions display themselves; under no circumstances is it so essential as in febrile diseases of an *infectious* kind. Infection, however, rarely extends above a few feet from the body of the patient; and, even in the most malignant diseases, with the exception of confluent small-pox and malignant scarlet-fever of the worst kind, its influence does not exceed a few yards if the room be well ventilated. On the contrary, if ventilation be neglected, the power of infection becomes greatly augmented, it even settles upon the clothes of the attendants and on the furniture of the room; and these imbibe it most readily when their texture is wool, fur, or cotton, or any loose or downy substance capable of receiving and readily retaining the air. Smooth and polished surfaces do not easily receive or retain infectious matter; consequently the nurses and attendants, in cases of infectious diseases, should have glazed gowns, and aprons of oiled silk.

In no infectious diseases are these rules more essentially necessary than in small-pox and scarlet-fever. It is well known that, if the bed-clothes of a patient laboring under either scarlet-fever or small-pox be closely folded up, they will retain the infectious matter, and communicate the disease at a great distance of time; but the influence of free ventilation is so great, that medical practitioners who are attending small-pox patients, and who go from them into the open air, do not spread the disease. Indeed all infection is weakened by dilution with air. The danger of infection is augmented, if, along with bad ventilation, the atmosphere of the room be moist from any cause.

Infectious matter, even of the most virulent description, is not poisonous to every one within its influence. A predisposition of the body to receive the infection must exist before it can be communicated; a condition which is augmented by fatigue and watching, defective nourishment, mental depression, or any thing which can lower the vital powers. The necessity, therefore, of maintaining these powers by attention to rest, a sufficient quantity of good and generous diet, and cheerfulness of mind, need not be insisted upon.

In every case of infectious disease, the attendants, even in the best ventilated rooms, should stand on the windward, or on that side of the sick-bed from which the current of air comes; as by neglect of this rule, and by standing in the current which has passed over the patient, the infectious exhalations are blown upon them in a direct stream from the body of the patient. The attendants should never lean over the sick, nor should they receive their breath. The health also of the nurses should always be supported by a nutritious and generous diet; but not by brandy, nor any other ardent spirit.

The term infection, in its most extensive signification, implies some deleterious matter, originating from any source and transmitted through the air, which is capable of causing diseases in the human body. When this matter is emanated from the diseased bodies of men, the term is frequently regarded as synonymous with *contagion;* but, in strictness of language, the latter refers only to the communication of disease by *contact*. To prevent the communication of disease by infection, not only is it necessary to dilute the atmosphere of the room with pure air, but also to destroy the virulence of the infecting matter by chemical agents or fumigations. (See section on "*Fumigations*.") But no such agent is equivalent to cleanliness, frequent changes of the sheets and linen of the patient, and free ventilation, for checking the propagation of infection.

TEMPERATURE.

Next to ventilation, nothing is of more importance than the regulation of the *temperature* of the sick-room, avoiding both extremes of elevation or of depression; but much depends on the nature of the disease.

The best general temperature of a sick-room is 60° (Fahr.), or that of summer in this climate; and it is preferable to regulate this rather by the thermometer than by the sensations of the patient or the attendants. Under some circumstances, however, the feelings of the patient, and his susceptibility of impressions upon the skin, should not be overlooked. Thus, if the temperature be a little above that of summer, and the patient, nevertheless, feel chilly, it should be raised five or six degrees. This chilliness is very apt to be felt in a dyspeptic state of the habit, and more especially when it is accompanied with hypochondriasis. It differs from that more severe but transient coldness which accompanies intermittent fevers and some other periodical affections; and it requires only an elevated temperature of the air for its removal, whilst the cold stage of intermittent diseases is best relieved by the warm bath, either general or local.

So important is the regulation of temperature, especially in fevers, that it often does more good than any other remedial measure. I have seen patients laboring under high delirium, in a close, ill ventilated room, become rapidly quite collected by merely lowering the heat of the apartment twelve or fifteen degrees. On the contrary, even a moderate depression of the usual temperature of the sick-room, in pulmonary diseases, will excite coughing and augment the severity of all the symptoms.

In regulating both the admission of air into the apartments, and temperature of the bed-rooms of the sick, in particular of those susceptible of pulmonary diseases, much caution is requisite not to overheat, nor to keep too dry, the air of the room. Great dryness of the atmosphere augments the irritability of the mucous membrane, and excites coughing: hence, when the invalid-room in winter is shut up, means should be taken, occasionally, to diffuse the vapor of warm water through the room.

CLEANLINESS.

Although cleanliness in the sick-room is essential, yet it may be carried so far as to become an annoyance to the invalid, and consequently to prove injurious. It is not requisite to sweep the room daily, nor to dust and to arrange the furniture every morning, provided order be preserved in the room, and nothing but what is immediately necessary for the comfort and the convenience of the invalid be permitted to remain in it. It is truly distressing to observe the confusion which prevails in some sick-rooms: everything being out of place, and to be searched for when it is wanted.

The period chosen for cleaning and arranging the sick room should be the morning; as, after a night's rest, the patient is more able to bear the little noise and bustle which it always more or less occasions. The carpet should be sprinkled with moist tea-leaves and lightly swept; and, during this operation, the curtains of the bed, if there be any, should be drawn.

It is scarcely requisite to insist on the necessity of the utmost attention to the cleanliness of everything in the sick room. The moment after any vessel or implement is used by the invalid, it should be removed from the apartment, and returned as soon as it is cleaned. Nothing in the form of a slop-basin or a slop-pail is admissible: they only administer to the laziness of nurses.

The necessity of cleanliness in the vessels used for the food of invalids is strikingly illustrated in the bad effects arising from the neglect of it when an infant is brought up by hand. In such a case, if either the feeding-bottle or the boat which is employed be not instantly cleansed after the meal has been given, the small portion of the pap or food which remains in the vessel becomes sour, and taints the whole of the fresh food mixed with it, causing colic and convulsions in the infant. The same risk of injury occurs in the sick-room, if the vessels used for administering food to the invalid be not instantly and well cleansed, after every time they are used.

It is too customary, also, to use one glass or cup for administering medicines, and to leave it unrinsed from time to time—a custom which may prove as deleterious as a defect of cleanliness of vessels employed for food. Some medicines, when they are exposed to the air, rapidly undergo changes which alter their properties; and this alteration having been undergone by the small portion which is always left in the glass or cup, communicates the disposition to be decomposed to that which may be next poured into the cup. An active medicine may be thus rendered inert; or one which is mild in its operation may be so changed as to operate with hazardous energy.

The same precaution, as to cleanliness, is also requisite with respect to the minim measure, when the medicines are directed to be administered in a form which requires its employment.

FUMIGATIONS.

It is necessary to preserve the sick-room free from all smells, and in as pure a state as possible. But this is difficult to be done when typhoid fever is present, or when any disease which is under treatment is accompanied with ulcers on the legs or on other parts of the body; and the difficulty is increased when the complaint is cancer, or when mortification occurs. In such cases, chloride of lime should be sprinkled over the floor of the room; and dishes containing it mixed with water placed in different parts of the apartment, and frequently replenished.

Whenever infectious or contagious fevers occur, fumigations are employed to prevent the spreading of the deleterious effluvia which emanate from the bodies of the invalids, and the extension of the diseases.

They are also necessary after these diseases; for the tenacity with which the infectious matter adheres to the substances in the sick-room is scarcely credible.

It is often, therefore, of as much importance to purify an apartment and its furniture after the termination of an infectious disease, as during its existence. In this case, the fumigation with chlorine about to be described should be used after the floor of the room and every solid thing in it have been washed with soap and water; and all bright metallic substances, such as pokers, tongs, and fenders, have been removed from it. The walls should afterwards be whitewashed, or fresh painted or papered, and the room thrown open to the air for some time before it is again inhabited.

It may be said that *fumigations* are not to be solely relied upon; and that they ought never to supersede ventilation or cleanliness. Whilst this must be admitted, it would be absurd to deny their utility; consequently, their nature and the mode of employing them should be understood.

Fumigations of the most varied kind have been suggested and employed for this purpose; namely, *Pastiles*, *Tobacco*, *Camphor*, *Vinegar*, *Ammonia*, the *Mineral Acids*, and *Chlorine*.

Pastiles, *Tobacco and Camphor*, are unworthy of the slightest confidence as agents for neutralizing infection. Merely to diffuse an agreeable smell throughout the sick apartment, pastiles and camphor may very properly be employed, but further than this, they ought not to be relied on.

Vinegar is, not without reason, regarded as possessing some chemical influence in decomposing infectious and contagious matters; and, consequently, it is almost invariably sprinkled over the floor of the rooms of those suffering under infectious diseases; or the vapor of hot vinegar is diffused through their apartments. It is thought to be still more salubrious, and a more powerful disinfectant, when it holds camphor or aromatic oils in solution; hence the great popularity of the preparations called *Aromatic Vinegar and Thieves' Vinegar.*

Vinegar, in this state of combination, is extremely agreeable and refreshing, both to the invalid and the attendants of the sick-room. The benefit which it produces depends upon a certain degree of stimulus imparted to the sensitive nerves, which are generally in a low condition in an infectious atmosphere: but, as a chemical agent, its powers are too feeble to be followed by much benefit.

The most efficacious *fumigation* which has yet been proposed is *chlorine.* This is extricated from the decomposition of muriatic acid by peroxide of manganese; but this is too expensive a process for ordinary occasions. The best materials, and the proportions of them, for extricating chlorine at a cheap rate was ascertained by Dr. Faraday, in the disinfection of the Millbank Penitentiary:—namely, *two ounces* of powdered peroxide of manganese, mixed with *ten ounces* of chloride of sodium (sea-salt), and *six ounces* of strong sulphuric acid, diluted with *four ounces* of water. This quantity of materials is sufficient for purifying a room forty feet by twenty. The mixture should be put into a porcelain cup or basin, which should be placed in a pipkin of hot sand. The doors and the windows of the room being shut, the fumigation may be left in it for ten or twelve hours; after which, both the doors and the windows should be thrown open, to admit a current of air to pass through the apartment and carry off the chlorine.

One objection exists to the employment of the above mode of extricating chlorine in apartments which are inhabited; namely, its powerful irritant influence on the lining or mucous membrane of the air tubes in the lungs, and the cough which it excites. In order to obviate these inconveniences, the *chloride of lime* is employed; which, by attracting the carbonic acid of the air, and causing the conversion of the lime into a carbonate of lime, separates the chlorine in a free or gaseous state. The chloride of lime should be mixed with water, in the proportion of one part to forty of the water, in a flat dish or plate, so as to expose a large surface to the action of the air; and the dish holding this mixture should be placed on a table, on the *leeward* side of the bed of the patient. The floor of the sick-room should be also sprinkled with it; and rags, moistened with it, suspended in different parts of the room. The solution of chloride of soda may be employed instead of the chloride of lime.

If the putrid odor in a sick-apartment do not arise from the general state of the system of the invalid, but from ill-conditioned ulcers and sores, these should be washed and poulticed with the solution of chloride of soda, which operates not only by destroying the fœtor, but by improving the condition of the sores.

Chlorine, even when extricated from chloride of lime, or from chloride of soda, is apt to excite coughing in those unaccustomed to breathe it. But the nurse should be made aware of this fact; and should so apportion the quantity of the materials on the first introduction of it into the room, that it may cause no such effect: and by afterwards adding to the number of the dishes in which it is distributed through the room, no inconvenience will result; the lungs being thus gradually accustomed to the irritant impression.

The decomposition and consequent development of the chlorine is much quickened by placing a piece of coarse calico in the bottom of the vessel containing the chloride of lime or the chloride of soda and water.

NURSES.

When all the arrangements are completed in the sick-room, little benefit can be anticipated if a proper nurse be not obtained to render them available to the invalid. Before describing the qualifications requisite to constitute an efficient nurse, we cannot avoid embracing this opportunity of mentioning the great difficulty of procuring properly instructed nurses in this country. It is, indeed, to be greatly lamented, that, amidst the numerous improvements which characterize the present era, the females who assume to themselves the character of sick nurses, and are employed as such, are still left to acquire information, respecting the important duties which their office demands, from imperfect experience, or from accident. We expect that the skill of our medical attendants shall be certified by diplomas and licences before they are permitted to practice; but we leave their orders to be executed by the ignorant and the prejudiced, who not only too often fail in performing what they are ordered, but who, with the usual temerity of ignorance, presume to oppose their own opinions to those of the physician.

In hiring a sick-nurse, the qualifications which should regulate our choice, refer to *age*, *strength*, *health*, *temper*, *disposition*, *habits*, and *education*.

1. *Age*. She should not be under twenty-five, nor above fifty

years of age. This period is fixed upon, on account both of the physical powers and the moral conduct of the individual. Under twenty-five, the strength of a woman has not reached its maturity, and is scarcely adequate for lifting patients in and out of bed, and for many other duties which require strength, connected with the office of a nurse; but the strength and the muscular power in females begin to fail after fifty-five, when the natural transition from maturity to decay takes place. There is also a greater proneness to disease at this age than in the middle period of life.

2. *Strength.* Whilst strength is requisite, the frame should be such as to indicate activity. The stature should not exceed the medium degree; a little below this being less exceptionable than a little above it, provided the appearance displays a frame well knit together. Obesity and a heavy movement are objections, as they are frequently connected with self-indulgence, defective energy, and an inability to keep awake, or to be easily aroused from sleep.

3. *Health.* None of the qualifications of a sick-nurse are of more importance than health. An individual who herself requires attention is ill calculated to attend upon others.

4. *Temper and Disposition.* It is scarcely requisite to say that an attendant upon the sick should possess a happy, cheerful, equal flow of spirits; a temper not easily ruffled; and kind and sympathetic feelings; but, at the same time, not such as to interfere with firmness of character.

When the mind is weakened, and the nervous system morbidly susceptible, a harsh look or an unkind expression sinks deep into the mind of the invalid; and when the disease is of a nervous kind, a melancholy, anxious, or forboding look, or one which in any degree indicates an apprehension of danger, either in the physician or the nurse, instantly excites alarm in the mind of the invalid; and may counteract, in a great measure, the influence of the medical treatment.

On the other hand, a collected, cheerful expression of countenance, in the attendant on the sick, is likely to inspire hope, and to aid the efforts of the physician for the recovery of his patient.

The general disposition of a sick-nurse should be obliging. Every little office which the invalid may require to be done, should be performed at once, and without the smallest apparent reluctance, even when the necessity for its immediate performance is not absolute. There is also an earnestness of manner, which should, if possible, be obtained, or acquiesced in, by the sick-nurse; as it impresses the idea that she feels deeply interested in the case; a circumstance which is always highly appreciated by the patient.

With respect to gossiping, it is a detestable habit under any circumstances; but, in a nurse, it may be productive of the greatest danger, produce family feuds, and a thousand other evils.

5. In her *habits*, a sick-nurse should be sober, active, orderly, and clean and neat in her person.

The *activity* essential for a good nurse does not imply a bustling or fidgety manner, but a quiet, steady method of proceeding in the performance of her duties, equally devoid of fluster, turbulence, or noise. This activity is generally associated with orderly habits; a most valuable qualification, and without which the sick-room becomes a scene of confusion and disgust. Every medical man must have witnessed this state of disorder with regret: when, on visiting his patient, he finds no chair to sit upon, until some article of bedding, or of clothing, be removed from it, and the seat dusted with the apron of the nurse; and when a former prescription, or any thing else, is wanted, he must wait until the nurse rummages out half a dozen of drawers in search of it.

Another quality, usually conjoined with activity and orderly habits in a nurse, is cleanliness in her own person, and in that of her charge, as well as that of the sick-room. The dress of a nurse should be simple and neat, without trimmings. Nothing is more out of place than a fine lady attempting to perform the duties of a nurse. Whatever may be the stuff of which it is made, the apron should have pockets in it, in the fashion of the Parisian servants. Neither the gown, nor any of the outer garments, however, should be woolen, especially if the disease be infectious; as owing to its spongy tissue, woolen is apt to absorb and retain the infection. When the disease is decidedly infectious, the apron of the nurse should be made of glazed calico, or oiled silk.

Every nurse should be able to read and write. The better informed, the less likely is she to be biassed by low prejudices. A nurse, also, who cannot read, may be the cause of much mischief in the administration of medicines.

The term "*an experienced nurse*," is supposed to comprehend every good quality. Experience deserves to be much and justly prized in a nurse, were the term not too frequently misapplied, and confidence placed in the nurse merely because she is advanced in years and has seen much, without any inquiry as to her capacity for observing, and making a proper use of what she has seen. Number of years and much opportunity are not a guaranty of wisdom nor of true experience. Age may undoubtedly be supposed to afford the means of enlarging the ideas; but every one is not endowed with the power of benefiting by the best opportunities; and it is here that the advantages of education are displayed in the nurse. Without it, seventy years may have only added to her sum of stupidity. The poor woman has had eyes; but she has never fixed them with attention upon what was before them; and when she has accidentally observed, having no capacity for generalization, the observations, like most isolated facts, have been lost. She is a mere creature of routine; a machine moved by custom or prejudice; whereas the properly educated unrse acquires the power of observing and comparing, and consequently of reflecting and drawing proper conclusions.

COOKERY FOR THE SICK AND THE CONVALESCENT.

USEFUL FORMS OF DOMESTIC MEDICINES.

The cookery for the sick and the convalescent is confined to the simple processes of *boiling*, *baking*, and *roasting*. Before entering into the details of Sick-room Cookery, therefore, it will be useful to offer a few remarks upon the principles which render these processes serviceable in the preparation of food.

1. *Boiling* softens the animal fibre, and enables it to be more readily and effectually acted upon by the juices of the stomach; but, at the same time, it robs it of some of those nutritive matters which are soluble in boiling water. Much depends, however, on the slow or the rapid manner in which the process is conducted. If the boiling be too quick, it coagulates the albuminous matter of the meat, renders the flesh on the outside hard, whilst the interior is not sufficiently done; consequently, quick boiling diminishes its digestibility. In boiling meat, the water should scarcely be brought to the boiling temperature; and it should be long kept at a lower than a boiling point of heat, or at that state which approaches more to simmering than to boiling. Every kind of meat for invalids, except poultry, should be put on the fire with cold water, and very slowly boiled.

The nature of the water is also of some importance. Beef or mutton boiled in hard water is always more tender and juicy than when soft water is employed; a fact, probably, depending on the solvent properties of the water increasing in the ratio of its density. Fish, on the contrary, is rendered firm in the ratio of the hardness of the water in which it is boiled. Hence, fish boiled in sea-water, or in water containing much salt, is always firmer and more highly-flavored than that which is boiled in soft water, or water without salt.

Vegetables require rain or soft water, with the addition of salt.

In general, they are rendered indigestible from being too little boiled. This is especially the case with respect to the cabbage, the cauliflower, brocoli, turnips, and peas; which, too frequently, are cooked rather to please the eye than to afford nutriment. For the sick-room, vegetables should be boiled in two waters; when too little boiled, they prove highly injurious.

2. *Stewing* requires the heat to be kept under the boiling point; and a small quantity of water only is required. It softens the meat, and renders it more readily acted upon by the juices of the stomach than when it is boiled; stewed meat, therefore, is a good form of cookery for the convalescent.

3. The process of *Baking* is inadmissible for the preparation of animal food for either the sick or the convalescent; but it may be employed in the preparation of light puddings for the latter. The surface of the puddings, however, should not be browned by the aid of butter.

4. *Roasting* softens the tendinous parts of animal food better than boiling, and it retains more of the nutritive principles of the meat; hence, if the meat be neither too little nor too much done, roasted is more nutritive than boiled meat; but it is less easily digested. This fact is demonstrated by the comparative loss which takes place in these two modes of cooking. It has been ascertained that mutton loses one-fifth and beef one-fourth of its weight by boiling; but both lose only a little more than one-sixth in the process of roasting. The digestibility of the meat, however, being in the ratio of the softness of the fibre, that property is increased by slow boiling. It has, of late years, been much the fashion to regard under-done roasted meat well adapted for weak stomachs; but no opinion is more erroneous.

The processes of *frying* and *broiling* are wholly incompatible in cookery for the sick-room.*

The cookery for those actually suffering under the pressure of disease differs considerably from that which is required to repair the ravages of previous illness, and to restore the vigor and the strength of the body in convalescence. The following directions are, therefore, arranged under two distinct heads, namely,

1. Cookery for the Sick-room.
2. Cookery for Convalescents.

1. The *cookery for the sick-room* comprehends *farinaceous preparations*, *animal teas*, *broths*, *milks*, and *drinks*.

FARINACEOUS PREPARATIONS.

The whole of these may be regarded as modifications of starch,

* Vide Human Health, by R. Dunglison, M. D.

more or less pure. They are not capable of conveying much nourishment into the habit; and being mild, and completely devoid of stimulant properties, they are well calculated for the sick.

ARROW-ROOT MUCILAGE.

Arrow-root is a white, inodorous, insipid, light powder, procured from the tubers of the Maranta *arundinacea*, or arrow-root plant, and manufactured in the East and West-Indies, of which it is a native.* The powder is a pure starch, which, although insoluble in cold water, yet forms a mucilage with boiling water. This *mucilage* is made by rubbing the *arrow-root powder* with a little cold water in a basin, by means of the back of a spoon, until it is completely mixed with the water; then pouring boiling water over it, at the same time stirring it assiduously until a soft, gelatinous, tenacious mucilage is formed; and, lastly, boiling it for five minutes. A table-spoonful of the *arrow-root powder* is sufficient to make a pint of the mucilage. It may be moderately sweetened, and rendered more palatable by the addition of a little lemon-juice; but cinnamon powder, or any astringent substance, precipitates the starch, and destroys the smoothness of the mucilage; hence, if wine be ordered with it, Port-wine should not be used.

TOUS LES MOIS.

This is a species of starch prepared from the rhizomes or tubers of some species of Canna, either C. *edulis*, or *coccinea*, both of which are natives of Peru. It is converted into a mucilage, and used in the same manner as arrow-root, over which it possesses no superiority. The great advantage of both, indeed, as articles of diet for the sick, depends on the small quantity of nutriment which they convey into the habit. It is often useful to satisfy the prejudices of the friends of invalids, by the appearance of supplying nourishment, when it would prove injurious.

MUCILAGE OF SAGO.

Sago† is the pith of several species of Palms and Cycadeæ,

* In the island of Portland, the farina of the roots of the Arum *maculatum*, cuckow-pint, which grows abundantly there, is manufactured into starch, and sold under the name of British arrow-root. Much potato starch is also sold as arrow-root. The fraud, however, is not a hurtful one, as the properties of these starches do not materially differ. Potato starch mucilage sooner becomes sour than arrow-root mucilage.

† There are three varieties of Sago known in European commerce; namely—*Sago of the Maldives*, in brownish-grey grains, possessing few of the chemical properties of starch; 2, *Sago of New Guinea*, in grains of a brick-red hue, passing to dull white; it is a nearly pure starch; 3, *Malacca Sago*, of which there are three kinds—*a*, in fawn-colored grains,

natives of tropical climates: the best is that made by the Chinese at Malacca, and known in commerce by the name of *Pearl Sago*. It resembles roundish seeds, of a brownish-grey color, passing to pearl-white, or brick-red passing into dull-white. When soaked in water, at a moderate temperature, it absorbs from five to ten times its weight of water, swells, and becomes transparent. It consists of starch, with a small proportion of salt.

To make Sago into a proper *Mucilage* for the sick, an ounce or a table-spoonful of it should be macerated in a pint of water, in a pan placed on the stove, or on a *hot plate*, for two hours, and then boiled for fifteen minutes, stirring assiduously during the boiling. The Mucilage may be sweetened with *sugar*, and flavored with *lemon-juice;* or *milk* may be added to it, according to circumstances. Like other farinaceous mucilages, it affords very little nourishment; and is, therefore, well adapted for invalids laboring under acute diseases.

MUCILAGE OF TAPIOCA.

Tapioca is the pith of the roots of Jatropha *Manihot*, a native of Brazil, which, although combined with a poisonous principle in the fresh state, yet is easily freed from it by washing in cold water, after the roots are barked and crushed. The fecula is then dried and granulated. It resembles Sago; but it is less colored and in larger grains.

The mucilage of tapioca is prepared in the same manner as that of sago, and with the same proportions of tapioca and water; but tapioca is more soluble than sago, and, consequently, it requires only half the time for its maceration and boiling. It forms a semi-opaque mucilage, which may be sweetened and flavored in the same manner as sago.

MUCILAGE OF SALEP.

Salep is prepared from the cormi or bulbs of the Orchis *mascula*. It is imported chiefly from the Levant; but some is brought from India. It consists of a peculiar kind of gum, termed Bassorin, and Fecula. It is more nutritive than either Arrow-root or Sago, and consequently is better adapted for the convalescent than for the sick. The mucilage is prepared by dissolving the powdered Salep in hot water, with assiduous stirring, and adding to the solution sugar and milk.*

passing into grey; a pure starch, containing more salt than the other varieties; *b*, in rose-colored grains, in chemical characters the same as the former; *c*, in white grains, a very pure starch.

* Dr. Percival states that a mixture of Salep and flour makes excellent bread.—*Med. and Experimental Essays.*

GRIT-GRUEL.

Take three ounces of *Grits*,* wash them well in *cold* water, and, having poured off the fluid, put them into four pints of *fresh* water, and boil slowly, until the water be reduced one-half; then strain the whole through a sieve, to separate the mucilage from the undissolved part of the Grits.

OAT-MEAL GRUEL.

Take two onnces of *Oat-meal*, free from mustiness, and a pint and a half of *soft* water. Rub the meal in a basin, with the back of a spoon, in a moderate quantity of the water, pouring off the fluid after the grosser particles have subsided, but whilst the milkiness continues; and let this operation be repeated until no more milkiness is communicated to the water. Next put the washings into a pan, after having stirred them well, in order to suspend any fecula which may have subsided; and boil until a soft, thick mucilage is formed.

Both the gruel of grits and of oat-meal consist not only of the starch of the oat, but also of a small proportion of gluten; on which account, they are more nutritive than any of the feculaceous mucilages. They may be sweetened and acidulated, or mixed with milk, according to circumstances. Butter and honey, which are frequently added to these gruels, are inadmissible in inflammatory diseases.

Besides being excellent demulcent articles of diet, these gruels are usually employed as the vehicles for administering substances in the form of clyster; for which purpose they are better adapted than the purer starches, as they are not so susceptible of precipitation by astringent vegetable infusions and decoctions.

Gruel is apt to ferment when it is kept longer than twenty-four hours.

MUCILAGE OR JELLY OF ICELAND MOSS.

The *Iceland Moss* is a Lichen, named Cetraria *Islandica*, which grows on mountains, exposed situations in Iceland; in the north of Germany; in many northern countries. It contains a bitter principle, which is useful, as a medicinal agent, in some diseases; but from which it should be freed, when it is to be employed as diet. This is to be effected by pounding the dried Lichen, and soaking it for twenty-four hours in tepid water containing a small quantity of carbonate of soda, and then pressing it forcibly in a coarse cloth; after which, if any bitterness remain, the process must be repeated.

* These are Oats freed from their cuticle or testa, and coarsely broken.

The Lichen, thus treated, is next to be put into water, in the proportion of *an ounce* to *a quart* of water; then slowly boiled down till one half the fluid is evaporated; and, lastly, strained through a sieve. The mucilage may be sweetened and acidulated; or it may be mixed with milk, in the same manner as the mucilages already noticed.

Any portion of the bitter may be separated by regulating the period of the maceration. When the bitter is not objectionable, it has one advantage; namely, that of enabling the stomach to digest more readily the mucilage, by the tone which it affords to that organ. The idea that it possesses any specific medicinal virtue for the cure of consumption is erroneous.

MUCILAGE OF CARRAGEEN—IRISH MOSS.

Carrageen is a Fucus, the Chondrus *crispus*, which grows upon rocks and stones in the sea, and is very common on the Irish coast. It has a tough, horny, flexible, crisp appearance; it almost wholly dissolves in water during boiling. One ounce of it, boiled in a pint and a half of water, is sufficient to form a semi-transparent, moderately consistent, nearly tasteless jelly; which, when sweetened and acidulated, or when mixed with milk, forms an excellent diet for invalids who require to have the strength supported.

MUCILAGE OF RICE.

Take one ounce of good Carolina rice, and, having washed it, macerate it for three hours in a quart of tepid soft-water, in a pan placed upon the stove, then boil the whole slowly for another hour, and strain through a sieve.

This mucilage may be sweetened and acidulated, or mixed with milk, in the same manner as the other feculaceous mucilages. It forms an excellent demulcent diet for the sick, especially in irritable conditions of the intestinal canal, and in diarrhœa; but it is a mistake to suppose that it possesses any astringent property.

The soluble part of rice is chiefly starch, which it contains in the proportion of eighty-five parts in the hundred. The less soluble parts are about five per cent. of parenchymatous matter; an animalized principle, amounting to rather more than three and a half per cent.; and some phosphate of lime. It is the animalized matter that affords any nutritive property which the rice possesses; but this is not taken up by the water in the above preparation; consequently, in a nutritious point of view, it is on an equality with the foregoing mucilages.

GROUND RICE.

Take a table-spoonful of ground rice, a pint and a half of milk, and half an ounce of candied lemon-peel. Rub the rice smooth with the milk, then add the lemon-peel cut into small pieces; boil for half an hour, and strain whilst the milk is hot.

This is an excellent nutritious beverage for the sick, when strict abstinence is not required; and for early convalescence.

SIMPLE BREAD PANADA.

Put any quantity of grated, stale bread into enough of water to form a moderately thick pulp; cover it up and leave it soak for an hour; then beat it up with two table-spoonsful of milk, and a small portion of refined sugar, and boil the whole for ten minutes, stirring all the time.

This may be eaten by the sick, laboring under any disease in which abstinence is not strictly enjoined.

ANIMAL PREPARATIONS

HARTSHORN JELLY.

Take *six ounces* of hartshorn shavings, cut into small pieces; boil them in *four pints* of water down to *two pints;* strain, and add to the liquor, whilst hot, *two table-spoonsful* of lemon-juice, *six ounces* of white sugar, and *two glasses* of Sherry wine. This forms an excellent light nutriment for the sick and convalescent, when wine is not improper. Without the acid and the wine, but with an equal quantity of milk, it is an excellent substitute for the breast-milk, for infants who are unfortunately attempted to be brought up by hand.

BEEF-TEA.

Take *half a pound* of good rump steak, cut it into *thin* slices, and spread these in a hollow dish; sprinkle a little salt over them, and pour upon the whole a *pint* of boiling water. Having done this, cover the dish with a plate, and place it near the fire for an hour; then throw the sliced beef and the water into a pan, cover it, and boil for fifteen minutes; after which, throw the whole contents of the pan upon a sieve, so as to separate the beef-tea from the meat.

The quantity of water directed to be used is too little for the strength of the beef-tea usually proper for invalids; but it is sufficient to extract all the soluble matter of the beef; and tea can be reduced to the strength required by the addition of boiling water.

CHICKEN-TEA.

Take a small chicken, free it from the skin and from all the fat between the muscles; and having divided it longitudinally into two halves, remove the whole of the lungs, the liver, and everything adhering to the back and the side bones. Then cut it, bones and muscles, by means of a strong, sharp knife, into as thin slices as possible; and, having put these into a pan with a sufficient quantity of salt, pour over them a quart of boiling water, cover the pan, and simmer, with a slow fire, for two hours; lastly, put the pan upon the stove for half an hour, and strain off the tea through a sieve.

Both of these animal decoctions are of a strength proper for any invalid whose condition, during the progress of actual disease, admits of animal diet in its lightest form. When concentrated with some farinaceous additions, and slightly spiced, they are equally useful in convalescence.

VEAL-TEA.

This may be made in the same manner as beef-tea, using a pound of fillet of veal, free from fat and sliced, and a *pint and a half* of boiling water, and boiling for *half an hour* instead of *fifteen minutes.* It may, also, be made with the same quantity of the fleshy part of a knuckle of veal.

By boiling down the Knuckle-of-Veal-tea, whilst the meat is in it, to one half, and straining, the decoction gelatinizes; and, when it is poured into small cups, it will keep good for several days. By adding an equal quantity, or more, of *boiling* water to a cupful of this jelly, a moderate quantity of veal-tea for one individual is prepared in two minutes.

MUTTON-TEA.

This is prepared with a pound of good mutton, freed from the fat and cut into thin slices, and a pint and a half of boiling soft water poured over it, in the same manner as for beef-tea; but it requires to be boiled, after the maceration, for half an hour, before it is strained through a sieve.

If the invalid desires the addition of barley; an ounce of good pearl barley, washed and macerated in boiling water for an hour, may be boiled with the mutton-tea, and the undissolved barley separated on straining.

TURTLE-SOUP.

Plain turtle soup, made from the green turtle, Chelonia *mydas*, without wine or spices, is sold in pots, and requires only the addition of water to reduce it to a proper consistence for the use of the sick and convalescents. It is extremely nutritious, and of very easy digestion; but it should be given only in small quantities, at moderate intervals. In cases of great debility, the consequence of long continued chronic diseases, either wine or brandy may be added to the soup; but the propriety of such an addition, and the quantity requisite in each case, must be left to the judgment of the medical attendant.

PREPARATION OF BEVERAGES.

DISTILLED WATER.

This, the purest state of water, may be readily obtained by fixing a curved tin tube, three or four feet long, to the spout of a tea kettle, and conducting its free end into a jar placed in a basin of cold water, and enveloped with a wet towel. The steam thus condensed is distilled water. The softer the water is, the better solvent it is of all soluble animal and vegetable substances; and distilled water, being free from every foreign ingredient, is necessarily the softest of all water, and consequently the best adapted, not only for diluting in febrile affections, but for pervading the minutest vessels, and improving their secreting powers. Its use is recommended in diseases of the kidneys, in gout, scrofula, consumption, and cancerous affections.

Distilled water is mawkish to the taste; but this is easily corrected by pouring it from one jug to another, successively, for ten or fifteen minutes, so as to involve in it a quantity of atmospheric air.

The temperature of water, when low, is most agreeable to the palate, yet it should approach to that of the body; and, therefore, when the diluent influence only of water is required its temperature should not be under 60 deg., nor above 70 deg. When the heat of the body, however, is considerable, and the skin dry, in febrile diseases, water at as low a temperature as it can be obtained in the fluid state may be used. For the dyspeptic, water as a drink should be either very cold or very hot. In catarrh and coughs, the beverage should be tepid.

TOAST-WATER.

Toast thoroughly, but not to a cinder, half a slice of a loaf, of the usual size and of a day or two old, put it into a jug, and pour over it a quart of water which has been boiled and cooled; and, after two hours, pour off the water gently from the bread. A small piece of orange or of lemon-peel, put into the jug at the same time as the bread, is a great improvement to toast-water.

The toast, in this case, communicates taste and color to the water, without affecting its diluent properties. The reason for employing water which has been boiled is to bring the fluid as near as possible to the state of distilled water.

Toast-water may be used at will in every febrile affection. It diminishes the heat of the mouth, the throat, and the stomach; and, by sympathy, that of the whole body.

APPLE-TEA OR WATER.

Slice two large, not over ripe, apples, and pour over the slices a pint of boiling water. After an hour, pour off the fluid, and, if necessary, sweeten with a moderate quantity of refined sugar.

LEMON-PEEL TEA OR WATER.

Pare the rind of one lemon, which has been previously rubbed, with half an ounce of refined loaf sugar, put the peelings and the sugar into a jar, and pour over them a quart of boiling water. When cold, pour off the fluid, and add one table-spoonful of lemon-juice. If wine be not improper, a glass of Sherry may be added, instead of the lemon-juice.

ORGEAT.

Blanch two ounces of sweet almonds, and four bitter almonds. Beat them in a mortar with a little orange-flower water into a paste, and rub this with a pint of milk diluted with a pint of water, until an emulsion is formed. Strain, and sweeten with sugar. The Bitter Almond, when treated with water, develops a volatile oil, which has the odor of the peach-blossom, and contains prussic acid. In some individuals, the bitter almond causes an eruption on the skin, closely resembling nettle-rash; consequently this fact should be ascertained in reference to the individual for whom the orgeat is intended, before it be ordered.

RASPBERRY VINEGAR WATER.

This is merely diluted raspberry vinegar. It is generally made too acid.

All of these drinks are good diluents in fever, and may be taken at the pleasure of the invalid.

LEMONADE.

Take the juice of two lemons; add it to a quart of boiling water, having the rind of one of the lemons in it, in a covered jar, and sweeten it moderately with refined sugar.

To be moderately drank as a refrigerant in fevers.

BARLEY-WATER.

Simple Barley-Water.—Take two ounces and a half of pearl barley, and four pints and a half of soft water. Wash first the barley with cold water, to remove from it every foreign matter; and then pour upon it half a pint of the water, and boil for fifteen minutes. Throw this water away; and, having heated the four remaining pints of the fluid, pour them upon the barley, and boil down to two pints, and strain.

Compound Barley-Water.—"Take two pints of simple barley-water, two ounces and a half of figs, sliced; five drachms of liquorice root, sliced and bruised; two ounces and a half of raisins, and a pint of soft water. Boil down to two pints, and strain."

These decoctions are not only good demulcent diluents, but, in cases where a very moderate degree of nutriment is not objectionable, they answer the purpose of diet.

Simple barley-water, when mixed with an equal quantity of milk and a small portion of refined sugar, is a good substitute for the breast-milk, for infants who are attempted to be brought up with the spoon.

When an ounce of gum is dissolved in a pint of simple barley-water, an excellent beverage is formed for cases of strangury from blistering plaster; and in gravel.

ALMOND EMULSION.

Take one ounce and a quarter of sweet almonds, blanched; five drachms of sugar; and a quart of soft water. Beat the almonds with the sugar, in a porcelain mortar, into a smooth pulp, adding the water gradually, and stirring assiduously until the whole of the fluid is added; then strain through linen.

An excellent demulcent in febrile affections.

MARSH-MALLOW TEA.

Take four ounces of dried roots of the marsh-mallow (Althœa *officinalis*); two ounces of raisins, freed from the seeds; and five pints of boiling water. Boil slowly down to three pints, and when the sediment has subsided, pour off the clear liquor.

This is an excellent demulcent drink in diseases of the kidney with a tendency to gravel.

FLAXSEED TEA.

Take an ounce of flaxseed, *not bruised;* two drachms of liquorice root, bruised; and one pint of boiling soft water. Place the jug containing these ingredients, covered, near the fire for four hours, and then strain through linen or cotton.

The mucilage resides in the husk, and the fixed oil in the kernel of the flaxseed; and, therefore, the seeds ought not to be bruised. When flaxseed is boiled, the fixed oil is extracted, and renders the decoction both nauseous and stimulant.

Flaxseed tea is a useful demulcent drink in coughs, and affections of the urinary organs; but it should be made daily, as it soon gets ropy, and spoils.

RENNET-WHEY.

Infuse a moderate-sized piece of rennet* in a sufficient quantity of boiling water to abstract all the soluble matter; separate the fluid, and stir a table-spoonful of it into three pints of milk; cover up the mixture with a clean cloth, and place it before the fire until it forms a uniform curd. Divide this curd with a spoon, and, pressing it gently, separate the whey.

Good whey should be nearly transparent, of a pale straw-yellow color, and should have a sweetish taste. It constitues ninety-two parts in one hundred of the milk; and, besides water, contains sugar of milk, and some salts. It is an excellent diluent in febrile affections. When boiled down to one half, it proves nutritive as well as diluent.

VINEGAR AND TAMARIND WHEYS.

A small wine-glassful of vinegar, sweetened with a dessert-spoonful of Muscovado sugar; or two table-spoonsful of tamarinds, stirred into a pint of boiling milk, and the whole boiled for fifteen minutes, and strained, form these wheys. They are useful refrigerant drinks in febrile diseases.

* Rennet is a production of the inner or mucous membrane of the stomach of a calf. Its action in coagulating milk is not understood. It does not depend on the acid which the rennet contains; but on a peculiar substance, which has been named *Chymosine.* The quantity of liquid rennet necessary to curdle 1000 grains of milk is only eight drops; but it requires a heat of 68 deg. of Fahrenheit; and its action is aided by the acidity of the rennet.

WHITE WINE WHEY.

Take two-thirds of a pint of good milk, and dilute it with as much water as will make up the pint.

Take two glasses of sherry wine, or any other good white wine, and a dessert-spoonful of Muscovado sugar.

Place the milk and the water in a deep pan upon the fire; and, watching the moment when it boils, which is known by a scum rising to the edge of the pan, pour into it the wine and the sugar, and stir assiduously, whilst it continues to boil for twelve or fifteen minutes. Lastly, strain the whey through a sieve.

This is an excellent mode of administering wine in small quantities in low fevers, and in cases which demand a moderate degree of excitement. It may be drank either cold or tepid, in a wine-glassful at a time.

MUSTARD-WHEY.

Take half an ounce of bruised mustard seeds, and one pint of milk; boil them together until the milk is curdled, and strain to separate the whey.

This whey has been found to be a useful drink in dropsy; it stimulates the kidneys, and, consequently, augments the urinary secretion. It may be taken in a tea-cupful at a time.

MIXTURE OF SPIRIT OF FRENCH WINE.

Egg Brandy. Take four ounces of French brandy, four ounces of cinnamon water, the yelks of two eggs, half an ounce of purified lump sugar, and two drops of oil of cinnamon. Mix the yelks of the eggs first with the water, the oil, and the sugar, agitating assiduously; and then add the brandy by a little at a time, until a smooth fluid is formed.

This is an excellent mode of administering brandy in the sinking stage of Typhus and other low fevers.

ARTIFICIAL GOATS' MILK.

Take an ounce of fresh suet, cut into small pieces, and tie them in a muslin bag, large enough to leave the morsels free from compression; boil this in a quart of cow's milk, sweetened with a quarter of an ounce of white sugar-candy.

This is an excellent article of diet in scrofulous emaciation, especially when ordinary articles of food pass through the bowels nearly undigested. It is also useful in the later stages of pulmonary consumption. It may be used for infants who are unfortunately attempted to be brought up by the spoon.

ARTIFICIAL ASSES' MILK.

Take half an ounce of gelatine; dissolve it, by the aid of heat, in a quart of barley-water; add one ounce of refined sugar; then pour into the mixture a pint of new milk, and beat up the whole with a whisk.

It should be drunk warm, and exercise taken after it. It may be also prepared by dissolving two ounces of sugar of milk in one pint of tepid skimmed cow's milk. These, however, are but poor substitutes for asses' milk; which is one of the best restoratives in convalescence from severe disease. When taken in too great quantity, it is apt to cause diarrhœa.

MILK AND SODA WATER.

Heat, nearly to boiling, a tea-cupful of milk, and dissolve in it a tea-spoonful of refined sugar; put it into a large tumbler, and pour over it two-thirds of a bottle of good soda-water.

This is an excellent mode of taking milk when the stomach is charged with acid, and consequently is apt to feel oppressed by milk alone.

BUTTERMILK.

When buttermilk is newly churned, it is a wholesome, delicious, and cooling beverage in fever or any disease of excitement; but, as it cannot be procured in large towns, and not always in the country, the method of making it in small quantities, daily, should be understood. It is readily prepared by putting a quart of new Milk into a bottle which will hold half a gallon, corking the bottle, and covering it with a towel in such a manner, that, by drawing alternately each end of the towel, the bottle can be rolled upon a table. This movement should be continued until such time as all the butter is separated, which is known by its appearing in clots or masses swimming in the milk. During the rolling, it is necessary to open the bottle occasionally to admit fresh air into it, as that is essential for the formation of the butter. When the process is finished, all the butter should be carefully separated from the buttermilk.

Buttermilk may be drunk at pleasure.

SAGO POSSET.

Put two ounces of sago into a quart of water, and boil until a mucilage is formed; then rub half an ounce of loaf-sugar on the rind of a lemon, and put it, with a fluid drachm (a teaspoonful) of tincture of ginger, into half a pint of sherry wine; add this mixture to the sago mucilage, and boil the whole for five minutes.

This is an excellent cordial where acute diseases, not of an inflammatory kind, have left the body in a state of great debility. A large wine-glassful may be taken at once, at intervals of four or five hours.

COOKERY FOR THE CONVALESCENT.

This comprehends farinaceous and animal preparations of a more nutritious and stimulant nature than is admissible for the sick-room; but, at the same time, considerably within that which is usual and not improper in a state of health.

FARINACEOUS PREPARATIONS.

These are not solely modifications of starch; but they admit of the presence of gluten and other components of the *Cerealiæ*. They are rendered more nutritive by the addition of milk and other animal substances of a moderately stimulant character.

BOILED FLOUR AND MILK.

Knead any quantity of wheaten flour with water into a ball, and tie the whole firmly in a linen cloth; put it into a pan with water, and boil it slowly for twelve hours. Place it before the fire to dry; and afterwards, on removing the cloth, separate a thick skin, or rind, which has formed, and again dry the ball.

A table-spoonful or more of this, grated and boiled with a pint of milk, forms an excellent article of diet in convalescence from diarrhœa, or from dysentery, and in cases of emaciation.

ARROW-ROOT PUDDING.

Take a table-spoonful of arrow-root powder, rub it with a little cold water in the same manner as in making the mucilage, and add to it, stirring assiduously, a point of boiling milk. With this mucilage, mix the contents of one egg, and three tea-spoonsful of powdered, refined sugar, which have been previously beaten up together. The pudding thus formed may be baked, or it may be boiled in a basin.

This is an excellent pudding for the early stage of convalescence. For a more advanced period, a table-spoonful of Scotch orange-marmalade is a good and agreeable addition to this pudding.

ARROW-ROOT BLANCHE-MANGE.

Make the mucilage in the usual manner, using three times the quantity of the arrow-root powder; then add milk in a moderate proportion; and having boiled down the mixture to a sufficient degree of thickness, pour it into a shape to cool and set; after which it may be turned out.

In convalescence, this *blanche-mange* may be eaten with currant-jelly, or with wine or lemon-juice and sugar. It is sometimes eaten with cream; but such an addition is improper in convalescence.

MILK OR BEEF-TEA ARROW-ROOT MUCILAGE.

This mucilage is made exactly in the same manner as the simple arrow-root mucilage, except that beef-tea, or milk, is used in the boiling state instead of water; and the mucilage is boiled for twenty minutes instead of five minutes.

Either of these preparations forms an excellent diet in the early stage of convalescence, and for delicate children.

FLUMMERY OR SOWANS.

Take a quart or any quantity of grits, or of oatmeal; rub the grits or the meal for a considerable time, with two quarts of hot water and leave the mixture for several days at rest, until it becomes sour; then add another quart of hot water, and strain through a hair sieve. Leave the strained fluid at rest until it deposits a white sediment, which is the starch of the oats; lastly, pour off the floating water, and wash the sediment with cold water. The washed sediment may be either boiled with fresh water, stirring the whole time it is boiling, until it forms a mucilage or jelly; or it may be dried, and afterwards, prepared in the same manner as arrow-root mucilage Flummery should not be made in a metallic vessel.

Flummery is light, moderately nutritious, and very digestible; it is, consequently, well adapted for early convalescence. It may be eaten with milk or with wine, or lemon-juice and sugar.

OAT-MEAL PORRIDGE.

Sprinkle into a pint of water, kept boiling, small quantities of oatmeal, at short intervals, stirring assiduously, until a moderately consistent mixture is formed; and continue to boil, afterwards, for half an hour.

Oatmeal porridge, eaten with milk, is a moderately nutritive diet, well adapted for early convalescence, when there is no dyspeptic tendency. When the stomach is deranged, it is apt to prove acescent, and is improper.

RICE AND APPLES, OR SNOW-BALLS.

Instead of preparing this dish in the usual manner—namely, cutting the apples, freed from the rind and internal seed-cells, into quarters longitudinally, then surrounding them with rice, and boiling the whole in cloths—it is preferable to boil the rice in hot water rapidly, and after straining off the water through a cullender, to expose it for ten or fifteen minutes before the fire, and having stewed the apples separate from the rice, to mix them together with a very moderate quantity of sugar.

The rice thus prepared is more digestible, and assuredly much more palatable, than when it is run together into a paste. Too much sugar is apt to disagree with the stomachs of convalescents, and induce an attack of dyspepsia. The butter which is often added to this dish is improper in convalescence. With these precautions, rice and stewed apples form a dish well adapted for invalids recovering from acute disease.

BOILED BREAD PUDDING.

Grate half a pound of stale bread, pour over it a pint of hot milk, and leave the mixture to soak for an hour in a covered basin; then beat it up with the yelks of two eggs. Put the whole into a covered basin, just large enough to hold it, which must be tied in a cloth, and placed in boiling water for half an hour. It may be eaten with salt or with sugar; and, if wine be allowed, it may be flavored with a glass of Sherry.

SIMPLE RICE PUDDING.

Wash two table-spoonsful of good Carolina rice, and simmer them in a pint and a half of milk, until the rice is soft; then add the contents of two eggs, beaten up with half an ounce of sugar. Bake it for three-quarters of an hour in a slow oven.

In an advanced state of convalescence, two glasses of Sherry to the pudding, before it is baked, is an agreeable addition.

MACARONI OR VERMICELLI PUDDING.

Take two ounces of macaroni or of vermicelli, a pint of milk, and two fluid ounces (four table-spoonsful) of cinnamon-water; simmer until the macaroni or vermicelli is tender. Next, beat up three yelks of eggs and the white of one egg, an ounce of sugar, one drop of the oil of bitter almonds, and a glass of Sherry wine, in half a pint of milk; and add the mixture to the macaroni or vermicelli. Bake in a slow oven.

BATTER PUDDING.

Take a table-spoonful of wheaten-flour, a pint of milk, the yelk of two eggs, and half an ounce of sugar. Beat the yelks of the eggs with the sugar, and mix them with the milk and flour. This pudding should be boiled, in a basin tied in a cloth, in boiling water.

TAPIOCA PUDDING.

Beat the yelks of two eggs and half an ounce of sugar together, and stir the mixture into a pint of tapioca mucilage made with milk. Bake in a slow oven.

Sago, *arrow-root*, or *millet-seed mucilage* may be converted into light puddings in the same manner.

In advanced convalescence, these puddings may be eaten with wine.

MASHED CARROTS AND TURNIPS.

Boil the turnips and the carrots, peeled, separately, in three successive waters; then press strongly the water out of them, through a clean coarse cloth. Mash them together with enough of new milk to form them into a pulp, and season with salt. Place them before the fire until the surface seems dry.

This is an admirable dish for convalescents who are restricted to farinaceous and vegetable diet; and it is one which invalids get fond of. The author once ate of this dish for dinner daily, in convalescence from a severe disease, for several months; and he now prefers it to every other kind of vegetable food.

PLAIN BOILED VEGETABLES.

Almost every kind of vegetable may be eaten by the convalescent, if it is well boiled. All the cabbage tribe, turnips, carrots, and onions should be thoroughly boiled in two waters. If salt be added, and the boiling be brisk, in an uncovered vessel, green vegetables do not lose their color; and, whilst by this means they are well boiled, they remain pleasant to the eye.

ANIMAL PREPARATIONS.

RICE OR VERMICELLI, OR MACARONI SOUP.

Make a quart of beef-tea, in the manner already described, and boil it down one third; then add to it an ounce of vermicelli, or two ounces of macaroni, which have been previously well boiled in water, and boil down the whole to one pint. The soup may be salted to the taste, and five grains of Cayenne pepper added to one pint of it; provided the condition of the invalid does not forbid the addition of so moderate a stimulant.

When rice is used instead of vermicelli or macaroni, it should be put into boiling water, and boiled rapidly in a close vessel; then thrown upon a cullender, and slightly dried before the fire. It should not be boiled with the soup, but added after the concentration of the soup, in quantity agreeable to the taste of the invalid.

This is an excellent soup for convalescents.

CHICKEN-BROTH.

When chicken-tea, is boiled down one half, with the addition of a little parsley or celery, and the yelk of an egg previously beat up in *two ounces* of *soft* water, it forms a soup much relished by the convalescent. It may be rendered still more palatable by the addition of some properly boiled rice, or vermicelli, or macaroni; and by the addition of *three or four grains* of Cayenne pepper, to a pint of the broth.

CHICKEN-PANADA.

Take the white meat of the breast and of the wings of a chicken which has been either boiled or roasted, free it from the skin, and cut it into small morsels; pound these in a mortar with an equal quantity of stale bread, and a sufficiency of salt; adding, by little and little, either the water in which the chicken was boiled, or some beef-tea, until the whole forms a thin, fluid paste: lastly, put it into a pan, and boil for ten minutes, stirring all the time.

A similar panada may be made with a slice from the under side of a cold sirloin of roasted beef; or from a leg of cold roasted mutton. Either should be freed from fat and skin; and the gravy, kept until the fat is thrown in a cake and separated, may be added to it.

This panada is a nutritive article of diet for convalescents and delicate children.

RICE AND GRAVY.

Take the gravy from a leg of roasted mutton, or from a sirloin of roasted beef; leave it at rest until the fat forms a cake on the surface; remove this; and stir into a tea-cupful of it as much well-boiled rice as will suffice for a meal. This is also a wholesome diet in early convalescence for delicate children.

GLOUCESTER JELLY.

Take of rice, pearl barley, sago, and gelatine, each an ounce;

simmer the whole in three pints of water until they are reduced to two pints, and strain. When cold, the decoction forms a strong jelly, which may be dissolved in warm milk or in beef-tea, or melted in hot water, and flavored with wine and sugar.

SAGO MILK.

Soak an ounce of sago in a pint of cold water for an hour, pour off this water, and add a pint and a half of good milk, and boil slowly until the sago is well incorporated with the milk.

MUTTON BROTH, WITH VEGETABLES.

Take a pound of mutton-chops, freed from the fat, put them into a pan with three pints of water and boil them slowly, and simmer them for two hours. Take three moderate-sized carrots and the same number of turnips, peel and cut them into slices; boil them for half an hour in a quart of water; then throw them upon a cullender to drain off the water; and, having boiled two onions, sliced, in a pint of water, and also poured off the water, add the turnips, the carrots, and the onions to the mutton liquor, after removing the mutton-chops. Season with salt and a little celery-seed. Simmer slowly for four hours, then put in the chops again, and continue the simmering for another hour. The chops may be dished up with the broth.

This is a palatable, very nutritive dish for convalescents; and, owing to the long and slow simmering, the mutton is rendered soluble and of easy digestion.

TRIPE.

Few things are more easily digested than tripe, when it is properly cooked. After partially boiling it in the usual manner, and also after boiling some onions in two waters, both should be slowly boiled together, until the tripe is very soft and tender. A sufficient quantity of salt, and a pinch or a few grains of Cayenne pepper, may be added.

SWEETBREADS.

These, when plainly cooked, are well adapted for the convalescent. They should be slowly boiled, and very moderately seasoned with salt and Cayenne pepper.

FOWL, WITH RICE.

Free a young fowl from the skin and the fat between the muscles on the surface of the body, and simmer it in good beef-tea, till it is very tender; season with salt only; and having boiled some rice as if for currie, add it to the liquor before the fowl is dished.

PREPARATIONS OF FISH.

WATER-SOUCHY.

Take two small fresh flounders, boil them in a quart of water to one-third, or long enough to reduce the fish to a pulp. Strain the liquor through a sieve, and, having cut the fins off four other small flounders, put them into the above-mentioned liquor, with a sufficient quantity of salt, a few grains of Cayenne pepper, and a small quantity of chopped parsley; and boil just long enough to render the fish proper to be eaten. The fish and the sauce should be eaten together.

If flounders are not in season, soles, or whitings, or small haddocks, may be prepared in the same manner.

Few dishes are so much relished as this by convalescents from fever. Invalids sometimes ask for it daily for ten or more days. It is sufficiently nutritive, and very easily digested.

In advanced convalescence, the yelk of one or two eggs may be beaten up with a little soft water, and added to the strained liquor before the fish is put into it.

BROILED WHITINGS.

Broil the whitings without freeing them from the skin; and when they are sufficiently done, take out the back bone, and introduce a little cold butter in its place.

By cooking whitings in this manner, the juices of the fish are retained, and its nutritive property augmented. The fish thus cooked is of easy digestion, and well adapted for convalescents.

PREPARATION OF BEVERAGES.

AROMATIC BARLEY WINE.

Take a quart of barley-water, and boil it down one-third; then add to it, while it is hot, a pint of Sherry wine, a drachm of tincture of cinnamon, and an ounce of refined sugar.

A wine-glassful, two or three times a day, is a good cordial in convalescence attended with much debility.

MULLED WINE.

Take a quarter of an ounce of bruised cinnamon, half a nutmeg grated, and ten bruised cloves ; infuse them in half a pint of boiling water for an hour, strain and add half an ounce of lump sugar ; and pour the whole into a pint of hot Port or Sherry wine.

This is a useful cordial in the low stage of typus fever; and in the debility of convalescence from fevers.

THE EFFECTS OF THE PRINCIPAL ARTS, TRADES, AND PROFESSIONS ON HEALTH AND LONGEVITY.

Butchers. The atmosphere of the slaughter-house, though sufficiently disgusting to the nose, does not appear to be at all injurious to health. The mere odors of animal substances, whether fresh or putrid, are not apparently hurtful ; indeed, they seem to be often decidedly useful. Consumption is remarkably rare among the men employed in the slaughter-house. Butchers are less subject than those of other trades to diseases of the bowels, (cholera and dysentery,) and are comparatively exempt from diseases considered as infectious or contagious. Still, longevity is not greater in them than in the generality of employments, who spend as much time in the open air. Butchers are apt to live too highly ; not too highly for temporary health, but too highly for long life.

Brick-makers, with the advantage of full muscular exercise in the open air, are subject to the annoyance of cold and wet. These, however, appear little or not at all injurious. Brick-makers, half naked, and with their bare feet in the puddle all day, are not more liable to catarrh, pneumonia, (inflammation of the lungs,) and rheumatism, than men whose work is under cover and dry. Of twenty-two brick-makers, of whom we made personal inquiry, only one had been affected with rheumatism, or could state himself subject to any disease. All declare, that neither rheumatism nor any inflammatory complaint is frequent among them. Individuals of great age are found at the employ.

Coopers have good muscular exercise. When lads enter the employ, the stooping posture affects the head ; and the noise, the hearing. This, indeed, is often permanently, though not greatly impaired. The men are annoyed also by pain in the loins, the result of posture. On the whole, the employment is healthy.

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TAILORS. Sitting all day in a confined atmosphere, and often in a room too crowded, with the legs crossed and the spine bowed, they cannot have respiration, circulation, or digestion well performed. The employment, we must admit, produces few acute diseases; but disorders of the stomach and bowels are general, and often obstinate. Pulmonary consumption is also frequent. Some of the men state their liability to pains of the chest; but the majority make no complaint. It is, nevertheless, apparent, even from observing only the expression of countenance, the complexion, and the gait, that the functions of the stomach and the heart are greatly impaired, even in those who consider themselves well. We see no plump and rosy tailors; none of fine form and strong muscle. The spine is generally curved. The tailor now sits cross-legged on a board; because, in the ordinary sitting posture, he could not hold a heavy piece of cloth high enough for his eyes to direct his needle. Let a hole be made in the board of the circumference of his body, and let his seat be placed below it. The eyes and the hands will then be sufficiently near his work; his spine will not be unnaturally bent, and his chest and abdomen will be free. Old workmen will be unwilling to regard this or similar suggestions; for every man is formed to his habits. If, however, masters and medical men would urge an alteration, and if especially boys apprenticed to the trade were taught to work in the posture recommended, tailors would assuredly become much more healthy.

MILLINERS, DRESS-MAKERS, and STRAW-BONNET-MAKERS are often crowded in apartments of disproportionate size, and kept at work for an improper length of time. The bent posture in which they sit tends to injure the digestive organs, as well as the circulation and the breathing. The constant direction of the eyes, also, to minute work affects these organs. Sometimes it induces slight ophthalmia, (*inflammation of the eyes*,) and sometimes, at length, a much more serious disease, palsy of the optic nerve, (*and, consequently, blindness.*)

SHOEMAKERS, it is well known, are placed in a very bad posture,—a posture second only to that of the tailors. The abdominal viscera, and especially the stomach and liver, are compressed. Lads put to this employ, often suffer so much from head-ache and general indisposition that they are obliged to leave it; and men who have been able to bear it for years, loose appetite and strength. Digestion and circulation are so much impaired, that the countenance would mark a shoemaker almost as well as a tailor. The secretion of bile is generally unhealthy, and bowel complaints are frequent.

CURRIERS AND LEATHER-DRESSERS are subject to no injurious agent, except the bent posture in the process of "shaving." This affects the head. The smell of the leather produces no disagreeable effect. The men are generally very healthy; and a considerable proportion live to old age.

Widely different is the account given by Merat.—Curriers, he says, are commonly pale, emaciated, and bloated, affected occasionally with putrid and malignant diseases, and generally with the maladies of debility. He mentions also malignant pustules and carbuncle. He seems to ascribe all these evils to the sickening smell of the skins and leather. The result, however, of examinations confirms the statements in the text. Curriers are good-looking, healthy, and long-lived. The exceptions to be found are almost solely among intemperate individuals.

SADDLERS are obliged to lean forwards, and are confined to this position. Hence they are subject to head-ache and indigestion.

PRINTERS are kept in a confined atmosphere, and generally want exercise. Pressmen, however, have good and varied labor. Compositors are often subjected to injury from the types. These, a compound of lead and antimony, emit, when heated, a fume which affects respiration, and are said also to produce partial palsy of the hands. Among the printers, however, care is generally taken to avoid composing till the types are cold, and thus no injury is sustained. The constant application of the eyes to minute objects gradually enfeebles these organs. The standing posture long maintained here, as well as in other occupations, tends to injure the digestive organs. Some printers complain of disorder of the stomach and head; and few appear to enjoy full health. Consumption is frequent. We can scarcely find or hear of any compositor above the age of 50.

BOOKBINDERS. Their work is remarkably easy, and keeps no muscles fixed, nor demands excessive action from any. The workmen suffer no annoyance, except occasionally from close atmosphere, and from the smell of the putrid serum of sheep's blood, which they use as a cement, (*or rather as a glazing*.) The selection of this substance is unwise, since white of egg or other albuminous matter would answer the purpose, without offending the senses.

CARVERS AND GILDERS are kept in a confined atmosphere, and often for long periods in a leaning posture. Hence they sometimes suffer from head-ache. Though the pallid appearance, general among these workmen, indicates a reduction of health and vigor, life is not abbreviated in a marked degree.

WATCHMAKERS sit all day with the trunk bent forward. The digestive organs almost always suffer, and the lungs are sometimes affected. The close and continued application also greatly injures the eyes. Many youths apprenticed to watchmaking are obliged to leave the employ, and the individuals who remain, rarely live to old age.

Smiths have an employment remarkably conducive to muscular power. The use of the large hammer powerfully excites all the muscles, and especially those of the arms, throwing on them a large supply of blood, and consequently producing their enlargement. Exertion like this, moreover, has a considerable effect on the circulation in general, and the functions with which it is connected. For youths of strong constitution, no labor is better than that of the smith. For those, however, naturally delicate, the exertion is too great, and young men of scrofulous constitution are particularly liable to sink under the employ. Smiths are subjected to high temperature, and frequent changes of temperature, but with no obvious injury. They are rarely affected with rheumatism and catarrh.

Cabinet-makers are generally healthy, though employed within doors. The labor is good; and there is no hurtful accompaniment, with the exception of the dust, which is produced by sawing certain kinds of wood.

We will now advert to *employments which produce dust, odor, or gaseous exhalations.*

Bricklayers, and particularly their laborers, are exposed to lime-dust. This frequently excites ophthalmia and cutaneous eruptions, but not internal disease. We hear an adage in the mouth of the workmen, that "Bricklayers and Plasterers' laborers, like asses, never die."

Plasterers and Whitewashers, who are also, of course, exposed to lime-dust, suffer from it no sensible injury. They are, however, more pallid and less robust than the men last noticed.

Tobacco-manufacturers are exposed to strong narcotic odor, and in the stoving department to an increase of temperature. Yet the men appear healthy. Here as well as in several other employments, we admire the agency of that conservative principle which nature provides. Men breathe an atmosphere strongly impregnated with a poisonous substance, yet become insensible to its influence. The only ill effect we can find, is from the heat of the stoving department, which some men cannot bear.

Snuff-making is more pernicious. The fine dust of the tobacco, combined with muriate of ammonia, and other substances, produces disorders of the head, the air-tube and the stomach.

We next advert to the employments in which the *substances or odors evolved seem to be beneficial generally or partially.*

Brushmakers have a sedentary occupation, but their arms are actively exerted. Some dust arises from the bristles; and sometimes carbonic acid gas is rather freely evolved from the charcoal fire which heats the pitch. But the chief peculiarity of the employ is the vapor of the pitch. This has a sanative effect in bronchial affections, as chronic catarrh, and in some forms of asthma. The workmen are generally free from disease.

GROOMS AND HOSTLERS daily inhale a large quantity of ammoniacal gas generated in the stables. This appears beneficial rather than injurious. They have, moreover, full and varied muscular exertion.

GLUE AND SIZE BOILERS are exposed to strong putrid and ammoniacal exhalations from the decomposition of animal refuse. The stench of the boiling and drying rooms is indeed well known to be highly offensive, even to the neighborhood. Yet the men declare it agrees well with them—nay many assert, that on entering this employ, they experience a great increase of appetite and health.

TALLOW-CHANDLERS, subjected to an offensive animal odor, enjoy health, and attain a considerable age. During the plague in London it was remarked that this class of men suffered much less than others.

TANNERS, it is well known, are subject to disagreeable odors. They work in an atmosphere largely impregnated with the vapor of putrifying skins, and this combined with the smell of lime in one place, and of tan in another. They are exposed constantly to wet and cold. Their feet are scarcely ever dry. Yet they are remarkably robust; the countenance florid; and disease almost unknown. Tanners are said to be exempt from consumption; and the subject has of late been repeatedly discussed in one of the medical societies of London. We have carefully inquired at several tan-yards, and could not hear of a single example of this formidable disease.

We have next to examine a class whose *employments produce a dust or vapor decidedly injurious.*

CORN-MILLERS, breathing an atmosphere loaded with the particles of flour, suffer considerably. The mills indeed are necessarily exposed to the air,—the number of men is comparatively small, and the labor is good. Yet millers are generally pale and sickly; most have the appetite defective, or labor under indigestion; many are annoyed with morning cough and expectoration; and some are asthmatic at an early age. The preceding statements do not apply to the men who drive the corn and flour carts, nor to the porters who unload the grain. These persons are little exposed to dust, labor chiefly in the open air, and are generally selected for their muscular power.

Turning, boring, and grooving *wrought iron* present nothing remarkable. But the turning of *cast iron* is so laborious, that the men can scarcely bear it for the whole of the day. The particles of iron cast off in the process are large, and do not consequently affect the lungs in a sensible and great degree.

Draw-filing cast iron is a very injurious occupation. The dust is much more abundant, and the metallic particles much more minute, than in the filing of *wrought* iron. The particles rise so copiously as to blacken the mouth and nose. The men first feel the annoyance in the nostrils. The lining membrane discharges copiously for some time, and then becomes præternaturally dry. The air-tube is next affected. Respiration is difficult on any increase of exertion; and an habitual cough is at length produced. At the same time, the digestive organs become impaired; and morning vomiting, or an ejection of mucus on first rising, is not infrequent. The disorder varies of course with the constitution of the individual; but the common termination, when men pursue the employment for years, is bronchial or tubercular consumption.

The *founders* of brass suffer from the inhalation of the volatilized metal. In the founding of *yellow* brass in particular, the evolution of oxide of zinc is very great. It immediately affects respiration; it less directly affects the digestive organs. The men suffer from difficulty of breathing, cough, pain at the stomach, and sometimes morning vomiting.

House Painters are almost constantly subjected to the volatilized oxide of lead. The effects are most immediately felt during the process of "flatting," or finishing the dead colors with turpentine. The exhalation produces first dizziness, and afterwards, in many individuals, vomiting. Painters are unhealthy in appearance, and do not generally attain full age. The more serious and permanent evils of working in paint are colic and palsy.

Chemists and Druggists are exposed to various odors, and the evolution of gasses, many of which are injurious. Hence the persons employed in laboratories are frequently sickly in appearance, and subject to serious affections of the lungs.

Civil Engineers, Surveyors, and Architects, though confined to the desk occasionally, travel frequently through the country, and thus enjoy fresh air and muscular exertion. They are, indeed, occasionally exposed to wet and cold; but these seldom injure persons in motion. Few individuals in this department are unhealthy.

Clergymen have a similar alternation of study and exercise. The latter, however, is too gentle or restricted for muscular men. Hence, congestion of the venous system of the bowels is a frequent occurrence. Clergymen, who preach long, frequently, or with vehemence, are subject to pains in the chest, spitting of blood, and diseases of the upper portion of the windpipe.

Clerks, Book-keepers, Accountants, &c., suffer from confined atmosphere, and a fixed position. Spending most of the day in one apartment, they breathe impure air. Their muscles are distressed by the maintenance of one posture, and they especially complain of pain in the chest. The digestive organs suffer most; a fact apparent even from the countenance and tongue. The circulation is imperfect. The head becomes affected; and though urgent disease is not generally produced, yet a continuance of the employment in its full extent, never fails to impair the constitution, and render the individual sickly for life. The simple and effectual remedies are fresh air, and full muscular exercise.

Schools demand our particular attention. Children are crowded in rooms of disproportionate size. The air, consequently, is greatly contaminated, and the vital power is more or less reduced. Even where attention is paid to ventilation, the evil must, in a greater or less degree, exist in *large* schools. Children, and very young children, are kept, too, for many hours daily, in a state as nearly motionless, as it is possible for the masters to produce. The time devoted to amusement is much too little. Instead of two or three hours a day being allowed for play, only two or three hours a day should be devoted to confinement and labor. To fix a child in a particular posture for hours, is vile tyranny, and a cruel restraint on nature.

Young ladies especially suffer from habits of schools. Their exercise is much too limited. Full romping exercise, exercise which brings all the muscles into play, is discouraged. It is vulgar to use the limbs as nature designed; it is vulgar to take the food which nature requires; and young ladies must not do any thing that is vulgar. Sitting, moreover, for hours at needlework, or in learning what are called accomplishments, they leave a numerous class of muscles wasting for want of exercise. The muscles of the back are especially enfeebled,—and the spinal column in youth, comparatively soft and flexible, bends under the weight of the head and arms. The spine yields, because the muscles, which closely connect the bones, and by their action keep them in a proper line, are too weak. We are often asked, why are spinal complaints so common? We answer, that a principal cause is the want of full exercise; we say that young persons are obliged to acquire what is of little or no use in after life, while they neglect what is necessary to the establishment of the body in health and vigor; in short, we have daily to lament that muscular exercise is so often sacrificed to accomplishments and to learning. If it be asked, why are girls more subject to distortion than boys, we reply, because they do not romp like boys. The amusements of boys are far more active than sedentary; those of girls, are more sedentary than active. Several hours a day they must devote to music, and frequently a considerable time to the more injurious occupation of drawing; most of the remaining day, they spend in finger occupations. Little time is devoted to exercise in the open air, and the exercise they *do* take is such as to chill, rather than invigorate the circulation.

POPULAR SURGERY.

THE IMPORTANCE OF SOME SURGICAL KNOWLEDGE TO EVERY PERSON.

The following directions are not designed to induce the public to usurp the province of the regular surgeon, but merely to put our readers in possession of a few broad principles, and a certain portion of the modes of operation, by which they can calmly face the danger of an accident that involves the question of life or death in a fellow-being, grapple with it until the arrival of a surgeon, and, when life *can* be preserved, preserve it! No family is proof against accidents. You may, perhaps, be called on, almost at any instant, to listen to the painful intelligence that a calamity of a threatening nature has happened to a member of your own household. Suppose such an one to have severed the main artery of the thigh; an accident entailing certain death, unless aid be immediately rendered; and no surgeon within some miles! The blood is gushing out in torrents from the wound, or he is already at the point of exhaustion! You would go calmly and scientifically to his relief, (*without instruments!*) quiet the tumultuous grief of his surrounding friends, while dexterously applying a bandage which you would instantly construct of your pocket-handkerchief, and coolly put aside the arm of death!

There are accidents of a very common character which require surgical assistance, but which do not threaten life; such, for example, are fractures and dislocations. But even here assistance cannot be obtained too soon; for after the utmost and permanent contraction of the surrounding muscles, which generally takes place in about three quarters or even half an hour, the reduction is effected with the extremest difficulty, and with inconceivable suffering to the patient; while, accomplished in the first moments after the accident, the adjustment of the displaced parts is comparatively easy, and is accompanied with very little pain. In short, the surgical cases of which we treat are those in which relief may be administered in the first moments, which are the most precious; and that, too, with as much facility, and with as much efficacy, in almost every instance, as if a surgeon were actually present.

OF THE MEANS OF ARRESTING A FLOW OF BLOOD.

Whenever an accident occurs, wherein the loss of blood is liable to expose the wounded person more or less immediately to danger, the hemorrhage, or flow of blood, may be always suspended by applying one or more fingers, according to the extent of the injury, upon the place from whence the blood issues, while the other more important means are being got ready.

These consist of any soft substances which are capable of being rolled up or moulded into the form of a plug, and are to be applied directly upon the open vessel, so as completely to fill up and cover the wound; for this purpose recourse may be had to sponge, German tinder, puff-ball, spiders' web, moistened paper, tow, lint, old and soft linen, wool, or, if in the country, and at a distance from any habitation, even fine moss. But whenever it can be obtained, the preference should be given to sponge, as it can be more easily insinuated into the wound, the interstices of which it fills completely up, by reason of its peculiar structure and its elasticity.

But in order to impart the greatest efficacy to the means just recommended, the clots of blood, if there are any, should be removed, and the wound washed with cold water, in order that the place from which the blood issues may be exposed as completely as possible; the point of the plug ought then to be placed directly upon the vessel, and not upon the clot. The cleansing of the wound alone will often cause the flowing of the blood to cease. The substances thus wedged in should be maintained in their situation by a neck-kerchief, or a pocket-handkerchief, folded in the form of a cravat, a common band, or even a garter. If the means already pointed out should be insufficient to suspend the flow of blood, the whole application should be removed, and the pressure of the finger alone relied upon, until the surgeon, or a person acquainted with the nature and treatment of such accidents, can be called in. The wounded person could manage this himself in case of need.

The pressure of the fingers upon the same place during several hours would suffice to arrest the most considerable hemorrhage; but as this continued pressing, if confided to one person, would become too painful to be long endured, two or three persons should be employed to aid alternately.

If, however, it should be found necessary, from the great depth or extent of the wound, to have the powers of restraining the hemorrhage under still more complete control, a tourniquet should be applied to the limb. When this instrument cannot be obtained, (which is most likely to be the case,) it may be readily and efficaciously replaced by the following means, namely, a handkerchief folded in the form of a cravat, to each end of which is to be fastened a band or garter, should be bound tightly round the upper part of the thigh or arm, care being taken to apply previously along the inner side of the limb, immediately beneath the bandage, a handkerchief folded several times over, or a piece of linen doubled backwards and forwards of sufficient thickness to press upon the principal vessel which runs along this part, and which may be easily felt by its pulsation or beats.

In the majority of cases, and particularly when the wounded person is not very fleshy, the above method of exerting compression upon the main artery would alone suffice; but otherwise, a substitute for the tourniquet, not less simple, more expeditive, and, on the whole, much better, may be formed from a cravat, in the middle of which is to be made a double knot. This knot is then to be applied upon the course of the main vessel which it is necessary to compress, while the ends of the cravat are carried, one before and the other behind the limb, to its outer side, from whence, after crossing, they are to be returned over the knot and effectually secured, either upon the front or back part of the limb, by means of pins, or on the opposite side by a knot or bow. A powerful compression may be also effected by applying the ends of the fingers upon the part where the pulsation of the main artery is felt.*

The best means is to tie or twist the bleeding vessel itself just above the part which is open,—the course which is generally pursued by surgeons, and which is not a very difficult thing to perform; but if, from timidity or otherwise, this be not practicable, nothing more can be done than to employ the means just pointed out, which will effectually suspend the flow of blood, until a surgeon can be procured. It may not be altogether useless to observe, before proceeding further, that when, after the common operation of bleeding in

* The tourniquet is used to produce so powerful a compression upon a severed artery, or upon any wound accompanied by alarming hemorrhage, that the blood shall be restrained by mere mechanical force. A very simple means of effecting this object is as follows. Suppose, for example, that the large artery of the thigh has been cut, by which death will be produced in a few minutes, unless the flow of blood be stopped. Take a common pocket-handkerchief, and pass it around the thigh over the wound, previously inserting a strong stick between the outside of the limb and the handkerchief. Let the latter be drawn tight, and firmly knotted. Then turn the stick, which will operate as a lever, and will make the bandage press upon the artery with almost any force desirable. Many lives have been lost which might have been saved by this application, and which almost any one can command at any time.—Ed.

the arm, and the surgeon has left the patient, the blood should gush out afresh,—which not unusually happens—the bandage should be removed from the arm, the wound washed, a fresh pledget placed upon the orifice, and the ligature re-applied in a similar manner; that is to say, in the form of the figure eight, the inter-crossing of it being of course made to correspond to the pledget; the patient should then be told to keep the arm quite still, and in a half bent position. Sometimes a completely bent position will, of itself, suffice to arrest the flow of blood.

Leech bites, especially in children and very delicate individuals, will often give rise to a loss of blood difficult to suppress. If the means ordinarily employed, fail to effect the desired end, recourse may be had to the following methods. The skin is to be gently pinched up, about the spot where the blood is flowing freely, and the part itself covered with finely powdered charcoal or powdered alum, or, better still, a morsel of sponge or lint soaked with a spirituous liquor. Surgeons sometimes employ a small needle, which is run through the cuticle, or outer skin, immediately above the orifice; this is instantly and effectually closed, and the flow of blood quickly suspended.

A most essential thing to be observed is, to keep the wounded person perfectly quiet, in order that whatever may have been applied, may not become displaced. He should never be lost sight of, in order that if the hemorrhage return, instant assistance may be offered him; but unless such a circumstance take place, nothing should be touched, for fear of the slighest alteration occasioning the closed vessel to re-open. Attention, however, should be paid to the bandage, so that if it should be found at all loose it may be gently tightened; or that if on the contrary, it should prove too tight, so as to occasion pain or swelling of the parts, it may be relaxed. *In no case should any exciting food or drink be given to the patient; he should be allowed but little aliment, and the use for drink of nothing but pure water.*

ON THE FIRST ASSISTANCE TO BE RENDERED IN CASES OF DANGEROUS ACCIDENTS.

In the event of a fall, or of a severe blow, or of any considerable violence which may have given rise to accidents of a serious character, or at least to those which are supposed to be so, every thing depends, in most instances, upon the *first attentions* afforded to the injured person; their aim should be to relieve his sufferings, and facilitate his re-establishment. On some occasions they will even recall life and preserve his existence.

But before proceeding upon what ought to be done, a few remarks may be offered upon what is essential to be avoided.

1st. On no account let beer, wine, ardent spirits, or spirits and water be given him in the mistaken view of reviving him, of doing him good, or affording him strength. It is exceedingly rare that such means are useful; and in the vast majority of cases they are positively injurious, not to say highly dangerous. Pure water alone, if he asks for drink, should be offered him.

2d. The patient should not be surrounded by a number of persons, for fear that, in the disorder and confusion inseparable from a crowd, his case may be aggravated, some fatal movement be occasioned, or some misunderstanding arise about what should be done or what given, while the employment of things which are really useful may be neglected or prevented. Two or three persons are quite sufficient to be about him; and more particularly if the chamber be small and close, and the weather warm.

3d. The greatest caution should be used, that he be not shaken or inconsiderately removed before it has been ascertained whether such removal would not be injurious, or, at least, whether it would not be preferable to tender him the attentions his situation requires on the spot, in allowing him to remain quiet. The first thing to be done is to place him in a good position; one that will enable him to breathe freely; his nose and mouth should be cleared of any dirt or blood that might impede respiration; his limbs also should be placed in a favorable direction, in order that if there should exist a fracture, this might be less menacing by being less complicated; his dress should be attended to in order that nothing tight should press about his neck, body or limbs. An examination must be made to ascertain if there is any loss of blood, and from whence this hemorrhage arises, to the end that if it be considerable it may be restrained by the means which we have previously indicated. If not considerable, the flow of blood should not be suppressed, but encouraged by the use of a sponge and warm water, for it is well known that blood-letting is generally necessary in cases of this character, as it tends to ward off the most serious consequences of an injury, and that therefore a moderate loss of blood advantageously replaces that which on other occasions must be drawn by leeches or the lancet. When these first cares have been devoted to the sufferer, the good sense of his attendants will teach them not to expose him to the cold, to an undue degree of heat, or to the wet, as also to call in immediately a surgeon. But in very grave cases it would be advisable to send for the two nearest; for the presence of both would not be too much under such circumstances, while, on the other hand, there would be an extra chance in favor of enlightened aid.

If the protracted absence of the medical men, or the great distance from their dwellings, should give rise to serious apprehensions for the safety of the sufferer, no hesitation should be made in sending for a good nurse, or some one who may have had an opportunity of frequently witnessing cases of accident, and the usual methods of treatment of such cases; and then, perhaps, it would be advisable, after taking off, as well as can be done, the patient's dress, to draw blood from the arm, or apply leeches, fomentations, or emollient poultices, upon the seat of the injury, which is generally swollen and painful. But as these means, especially the two first, are not always easy, nor always requisite, it will be enough, in the first instance, to have recourse to cold water constantly applied to the seat of the injuries by means of soft rags upon the cut, lacerated, or contused parts.

Water, simple as it may appear as an application, is, in the opinion of the greatest surgeons of all nations, the very best of remedies, and renders totally superfluous the application of the balsams, ointments, and other external remedies which are ordinarily employed. Some persons are led to expect a miraculous good from the addition of certain articles to the water, but let them rest assured, that so far from increasing its efficacy, they are far more likely to render it irritating and injurious.

Let attention be paid to the temperature of the chamber, that it be neither too warm nor too cold, and that there be no more persons present than are absolutely necessary to the duties required by the situation of the sufferer. The occasional visit of a friend, which is always better avoided, should be of short duration, and more particularly if it should appear to cause much excitement to the patient, or to trouble him.

On no account should heating liquids be administered; a little lemon whey, or better still, lemonade or barley water, should be preferred; nothing should be given to the patient to eat; (the strictest abstinence is *rigorously* to be observed and persisted in for the first few days;) the bowels are to be gently opened by means of injections; (an ounce or an ounce and a half of salts in a little thin gruel;) and the wet rags frequently changed, attention being paid to those which are saturated with blood, for the reasons already mentioned. A good nurse will always preserve her presence of mind, and that calm which is so necessary to assure the patient. She will endeavor by all means to restrain the sobbings and lamentations of assistants, and, in short, babbling and noise of all kinds, which not only tend to fatigue the patient, but to trouble that repose of body and mind of which he stands so eminently in need.

In circumstances such as these, and when there exists general and very serious contusions, a warm bath is particularly recommendable; and where it is possible to procure one, it is advisable to keep the patient in it an hour or more. But when this is difficult to obtain, or when it would be necessary to wait a considerable time, a sheet, or what is still better, a blanket, soaked in warm water, and frequently renewed, may be advantageously substituted for it.

It is the same with the freezing body as with fruits when nipped by the frost, and which become almost immediately rotten, if care be not taken to thaw them first in cold water; and experience, moreover, teaches us the suffering we expose ourselves to, when being extremely cold we approach our hands too near the stove. If the individual's feet who has received an injury are extremely cold, hot flannels may be applied to them, or otherwise a bottle of hot water. A cup of tea may be administered, or a little gruel, to which may be added two or three table-spoonsful of wine, or a tea-spoonful or two of spirits. If he should have been in liquor, or should have the stomach overcharged with food, vomiting should be excited by tickling the fauces or back part of the mouth with a feather. This operation, or rather the evacuation which results from it, is of the highest utility, and prevents, or at all events calms, many very bad symptoms.

If the individual is insensible, and if the means just pointed out fail to recover him, or if from the exhaustion and debility occasioned by the loss of blood he is in a fainting state, means should be employed to re-animate him, such as are usual in similar states arising from ordinary causes; namely, the application of hot flannels on the pit of the stomach; rubbing the limbs with a brush or a hard towel; strong vinegar or spirits applied to the mouth, to the temples, or introduced into the nostrils by means of a feather; a clyster (or injection to the bowels) composed of one half water and the other half vinegar; sudden aspersions of cold water upon the face or the region of the heart, taking care afterwards to rub the parts dry with hot towels; in short, by currents of fresh air. But the best and most energetic of all these means is, without contradiction, *boiling water.* To use this conveniently and effectually, it must be brought alongside the patient, and a metallic body plunged into it, which is then to be carried alternately and in the following manner over the different parts about to be pointed out.

The bowl of a spoon or a hammer are as good as any thing for this purpose, and are extremely convenient. The instrument must be plunged into boiling water, and placed with rapidity upon the sole of one of the feet. After some instants it must be applied to the sole of the other foot; then successively upon the neck, the pit of the stomach, the calves, along the spine of the back, and upon various parts of the head; the application being pursued in this manner until the patient returns to himself, or until the surgeon arrives, who will prescribe other remedies.

The application of the hot iron need rarely be continued beyond one second upon each particular part; that is to say, it should be made to touch the skin but lightly; although in some serious cases it will be found necessary to allow the instrument to remain somewhat longer in contact with the part which it is considered necessary to irritate, in order that a stronger and more lasting impression may be produced.

Should there exist reasons for managing with still more control the delicate susceptibility of the patient, a sheet of paper or a morsel of linen rag may be interposed between the skin and the instrument; but then the latter must be more frequently applied, and allowed to remain longer upon the part.

The very slight and circumscribed burns thus occasioned, of an inch or an inch and a half in extent, are in no respect dangerous, and are unattended with any inconvenience; but, renewed with sufficient frequency, they offer the most powerful agent medicine possesses for awakening sensibility, and reviving the spark of life about to become extinguished.

With this view it is that the method just described is recommended, it being a means so simple and so much within the reach of ordinary persons; it is one which imitates, in short, the happy and salutary effect of mustard poultices, blisters, and the moxa; while it is unattended by the unpleasantness of all those applications.

The moxa is the application of a burning substance to the surface of the body, to act as a counter-irritant in a variety of diseases. The operation for the moxa is usually performed thus:—A piece of German tinder, of the size of a shilling, is dipped in camphorated spirits of wine, and, after being inflamed at a candle, is held, by means of an instrument, in contact with the skin, which becomes burnt, and afterwards forms an eschar.

OF THE FIRST ATTENTIONS GENERALLY REQUIRED BY WOUNDS.

The first thing to be done is to wash or gently cleanse the wounds which may happen to be covered with earth, clots of blood, or other foreign bodies. If the blood flows abundantly or disagreeably, the hemorrhage may be stopped by the means already mentioned; and in general it suffices to apply upon the injured part a bit of soft linen, moistened with cold water, and maintained in place by a handkerchief. Should the wound be produced by a slug or ball, or should it be lacerated and considerably contused, nothing remains to be done but to sprinkle the dressing from time to time with cold water.

This is all that it would be necessary to do, if it should be a case of burn.

But if it should be a cut or incised wound, whether from a sabre, hatchet, knife, scythe, or other cutting instrument, there is this precaution always to be taken; namely, to bring into exact contact the edges of the wound, in order that they may unite, and the cure be accelerated. As to the after treatment, it is strictly the affair of a regular surgeon, but every one may be taught to imitate it, by placing the injured limb in such a position that the wound gape as little as possible. The good sense of the attendants, and some little instruction, will suffice to put each in a condition to effect this important object. Thus, the fingers and hand must be closed as when the fist is clenched, if the wound be within, and kept maintained in that position; if, on the contrary, the wound be on the opposite side, the hand must be kept upon the stretch. If the wound be on the bend of the knee or of the elbow, the leg or arm must be bent; or, on the contrary, extended, if it occur upon the knee or elbow themselves.

When the wound is on the neck, the head must be brought to incline toward the side upon which the wound exists.

As a general rule, that position is to be sought for, which will diminish to the greatest degree the extent of the wound, and must be maintained in the best manner possible, after the edges have been brought with great exactitude together.

Such will be the object of the surgeon upon his arrival; but before his presence can be procured, and there is no possibility of constructing the appropriate bandage, the hands of an attendant should be made to supply its deficiency. It is more especially when wounds occur in the neighborhood of the joints, or when they are accompanied by a division of the bones or sinews, (tendons,) that the edges of the wound should be immediately brought into contact, and maintained so by the means just recommended.

What has been already said of the regimen to be imposed on the patient, and of those attentions which wounds in general demand, is not less applicable to the injuries lastly spoken of, and must be rigorously observed.

Every family ought to be in possession of a large piece of

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adhesive plaster; as to linen rag, it will in general be readily found. The general directions given above for the first attentions to be bestowed upon a wound, suffice for every case; as to the application of the dressings, the following rules will be found equally to hold good.

There are circumstances in which surgical aid cannot be procured. In such cases persons should be able to conduct the after treatment throughout. We will suppose a common incised wound, from a sharp instrument, in which no large vessel is implicated. The first thing to be done is to cleanse it. The next is to cut a number of strips of adhesive plaster, and prepare some soft linen rag for compresses or pledgets. When these have been prepared, the muscles of the injured parts must be brought into relaxation, the edges of the wound brought into contact, and strips of adhesive plaster, previously warmed, applied so as effectually to maintain them thus. These strips should be placed at distances apart, varying from half an inch to an inch, according to the extent of the wound, so as to allow of the exudation of fluids in the progress of the cure. A light compress or pledget should then be laid over the injury, and a bandage applied to keep the whole in place, and support the action of the sticking plaster. *The bandage may always be constructed by means of a handkerchief, or a piece of linen of the same form, folded to suit the nature of the accident, or the part upon which it is to be applied.*

After the wound has been dressed and the bandage applied, which should always be done rather lightly, to guard against subsequent inflammation, the sufferer should be compelled to observe perfect repose. The process of healing will then instantly commence; but, should there be too much action in the parts—that is to say, should inflammation arise and the parts swell—the bandage should be loosened and cold water constantly applied, which will soon restore the parts to a healthy state. Under common circumstances, the first dressing should remain until about the fourth day, when it is to be changed in the following manner. 1st. The *bandage* is carefully to be lifted off. 2dly. The *compresses*, which generally adhere, and require the application for some time of warm water to detach them easily. 3dly. The *plasters;* the ends of which should be first lifted up; and then the person officiating, seizing them with his right hand, (while with the left he presses gently, the thumb on one and the fingers on the other side of the wound, to prevent the uniting edges from being at all disturbed,) raises them perpendicularly, but slowly and gradually, never acting upon more than one plaster at a time. The wound ought then to be gently sponged with warm water, and a fresh dressing applied in the way already stated.

Although strapping be not *rigorously* required in wounds of this character, (the bandage sufficing in a great majority of instances, with a compress on each side of the wound,) yet it is unquestionably the most secure method, and particularly in hands not often accustomed to treat such accidents.

Torn or lacerated wounds demand nearly the same treatment, but the dressings require to be put on with the utmost gentleness, and the bandage applied still more lightly. When inflammation comes on, which it does much more commonly in this than in the former species of wounds, leeches, if they can be obtained, should be applied upon the seat of the injury, or blood taken from a vein to the amount of about a pint. In all cases, of course, the strictest regimen should be observed.

OF FRACTURES.

Although the bones are almost insensible to pain when in a sound state, yet when they are fractured, the slighest motion of the fractured extremities is attended with acute suffering. This has the effect of securing repose and quietude, without which the process of recovery would be prevented, and an exact reunion of the broken part could not be accomplished. The irritation produced has also the effect of exciting the healthy action of the nutritive vessels of the part* causing them to pour out the soft substance technically called *callus*, which, when fractured parts are in an exact state of adaptation, glues them, as it were, together. This union in the course of a few weeks is consolidated, and the limb is again fitted for the performance of its functions. In ordinary cases of fracture, nature sets up no greater action than is necessary for the reparation of the injury; if the bones be properly set, and kept in their natural position by the judicious use of splints and bandages, the limb being retained in a suitable posture, little or no pain or inflammation will occur. We shall now proceed to notice the methods of treating the fractures which are of the most frequent occurrence.

Simple fractures may be easily cured by any one possessed of common sense and a gentle hand. Yet from ignorance of a few simple rules, the patient's friends are often unable to afford him any relief, the future usefulness of the limb is impaired, and permanent

* The reader will hence perceive that *pain* has its uses. It is an (apparent) evil which by no means conflicts with divine benevolence. When we *cannot* perceive its benign purposes, we ought to trust in the wisdom and loving-kindness of Him who orders all things, especially as we see in some cases its positive benefits.—Ed.

deformity is frequently the result. In more complicated cases, where the bones are crushed, and the soft parts bruised and lacerated, or the fractured extremities of the bones protruded through the skin, all the skill of the experienced surgeon is required to restore the injured parts. Yet the following hints, for the management of simple fractures, may be of service when the aid of the surgeon cannot be obtained.

FRACTURES OF THE THIGH-BONE.

The bone is generally broken about the middle, or towards the lower extremity; the fracture is often transverse, but more frequently oblique.

The patient experiences severe pain at the moment of the accident, and is unable to move the limb; the foot is turned outwards from the weight of the limb; and the thigh is more or less shortened, according to the degree of obliquity of the fracture, the lower end of the bone being almost invariably drawn behind the upper one, which remains stationary; thus the ends of the fracture ride over each other. If the bone be broken directly across, there can be no shortening of the limb, unless the upper end of the fracture ride over the lower, which rarely happens.

The first thing to be done is to prepare a long splint, which may be made of a piece of firm deal-board, of a degree of thickness sufficient to prevent it from being bent, or easily broken. It must be long enough to extend from a little above the false ribs to three or four inches beyond the sole of the foot, and should decline gradually in breadth, so that the breadth shall correspond to the dimensions of the limb. At the lower end two deep notches are to be made for the attachment of the bandages, and the upper end is to be perforated by two holes, for the same purpose. The patient having been placed on a smooth and firm bed (a hair mattress is generally preferred,) his limb is to be covered with a common bandage or roller, from the toes to near the knee. This is done merely to prevent the leg from swelling, which would otherwise happen from the pressure that must necessarily be made higher up. The operator should now gradually draw out the fractured member, while an assistant keeps the upper part of the thigh firmly fixed until the limb is of the same length and direction with the sound one. The long splint, well padded with proper cushions, in order to prevent the skin from being injured, is then to be applied, and attached to the limb by means of a roller, which is to be passed round both, from above the knee down to the foot, and having been turned round the ancle is to be passed through the notches, so as to be firmly fastened to the end of the splint; the foot is thus effectually prevented from changing its position. A broad bandage is now to be applied round the lower part of the body, so as to fix the upper extremity of the splint, thence down over the groin, and continued downwards, still involving both the limb and splint, until it reach the bandage first applied. The splint being now firmly attached along the whole length of the limb, we are next to fasten a broad bandage round the lower part of the waist, in order to bind it to the trunk of the body. Next pass a handkerchief or shawl over the groin and buttock, and securing its ends through the holes at the top of the splint. By tightening the handkerchief, or whatever bandage may be employed, we of course extend the limb, and this must be done frequently, in order to preserve it of the proper length. It will be advisable to reapply the bandages twice or thrice in the course of the cure, which generally takes place in about six weeks; but the patient must be careful not to rest his whole weight upon the limb till three months have elapsed, because the osseous substance, by which the ends of the bones are united, is for a long time tender, and might be readily broken again. To prevent the skin from being injured, it will be necessary to pay particular attention in adjusting the cushions about the ancle and at the groin, where the bandage, which passes up between the thighs, must necessarily cause considerable pressure.

FRACTURES OF THE BONES OF THE LEG.

Sometimes the shin bone, or *tibia*, is fractured, while the fibula, which is situated behind and towards the outside of the leg, remains entire. When it occurs near the protuberance below the kneepan, the injury is readily recognized, particularly if the knee be bent, for then the upper part of the broken bone is thrust forwards. Roll a bandage round the limb from the toes upwards. Extend the leg. A splint of wood, hollowed to fit the limb, and long enough to reach from the middle of the thigh to near the heel, is to be placed behind, whilst a pasteboard splint is to be applied on each side. The whole are then to be secured in the usual way by means of a bandage. If the two side splints are of wood, they should be applied by means of a linen splint-wrapper a yard wide, and of sufficient length to cover the splints. The wrapper is to be placed underneath, and the splints rolled up in its longitudinal border, until they reach the limb; if they do not fit properly, we must roll them over again, until they come accurately in contact with the sides of the limb. Wherever two wooden splints are required they may be applied in this manner, which, though a little more troublesome, is decidely the best. Five bands of tape, or strong linen, two fingers' breadth wide, placed under the lower splint, are now to be brought round and tied at the outer side of the limb; or a roller may be applied as above directed. Care must be taken to keep the heel sufficiently raised, by placing pads under it.

If the shin-bone be broken lower down, the patient loses all power of the limb, and the slightest movement causes great pain, but there is not much deformity. By moving the fingers along the front and sharp edge of the bone, which are only covered by skin, the seat of the fracture may be easily ascertained; or if we grasp both ends of the bone, and move them in opposite directions, the displacement of the pieces may be perceived, and we may also distinguish a grating noise. The treatment here consists in placing a pasteboard splint on the outside of the leg from a little above the knee to the ancle; and another on the inside of the same length, cushions having been interposed between the splints and the leg, to prevent the skin from being injured. The apparatus is then to be secured by five or six flat pieces of tape, which may be easily relaxed or tightened, according to the degree of swelling. The limb is to be placed upon its outer side, with the knee bent upon a pillow. If wooden splints are employed, they should be applied with the wrapper in the manner above described, and oaten chaff cushions or proper pads placed along the limb, to protect the skin.

When both the bones of the leg are broken together, they seldom give way opposite to each other. There may be a distance of several inches between the fractures. This injury causes the foot to be turned out, and the leg to be bent and deformed. The eighteen-tailed bandage, is generally employed in the treatment of this fracture; many surgeons use it in every case of fracture of the extremities. It is made as follows. To a piece of linen three or four inches wide, according to the size of the limb, and as long as the leg, are to be stitched crosswise eighteen strips of the same width, and in length sufficient to make a turn and a half round the limb, from the knee down to the ancle. They are to be stitched so as to cover each other for about two-thirds of their breadth. The lower ones do not require to be so long as the upper, and they should be attached rather obliquely to the middle piece, so as to allow them to fit properly round the limb. In setting the bones, the knee is to be slightly bent, and the leg drawn out so as to bring the ends of the bone in contact. The limb having been carefully raised, a splint extending from above the knee to beyond the ancle, covered with a soft pad, and having over this the eighteen-tailed bandage, is to be placed underneath; the leg is then to be gently lowered until it rests upon the apparatus. But in raising the limb from the bed, the operator must be careful to keep the upper and lower parts of the bone on the same level, by firmly grasping the limb above and below the fracture, and elevating them together, so that the fractured surfaces may be maintained in opposition. The eighteen-tailed bandage is now to be applied in the following manner. The operator lays hold of the extremity of the lowest band or tail, the opposite one being fixed by an assistant, and passes it obliquely across the leg to the opposite side; he then brings over the end held by the assistant with one hand, while with the other he retains the first firmly in its place, and applies it in the same manner round the limb so as to intersect the first. The tails are to be thus applied in succession from the ancle up to the knee. The ends should always be carried underneath the limb. Another pad of some soft substance, is next to be applied over the upper part of the limb, and over that another splint of the same length as the first. Five or six pieces of flat tape, or strong linen, which ought in the first instance to be placed under the lower splint, are now to be brought round and tied. The limb should be fixed upon a frame in the form of a double inclined plane, made by nailing the boards together at an obtuse angle, with the addition of a foot board. The splints are to be retained for five or six weeks, the time required for the union of the bones varying according to circumstances. After their removal, the limb should be accustomed to its former functions by degrees; and the patient should be careful not to put much weight upon it for at least two months.

FRACTURE OF THE COLLAR BONE.

The fracture generally takes place about the middle of the bone and is easily detected, because we can feel the bone along its whole length. The weight of the shoulder and arm makes the outward portion of the broken bone fall downwards and forwards along with the arm; and thus causes the shoulders to seem narrower, while the piece which is attached to the breast bone appears raised without really being so. To place the broken ends of the collar bone in contact, both shoulders must be pulled strongly backwards, and kept in that position, by turning an appropriate bandage round the shoulders. The arm being now placed across the chest, with the fingers pointing to the top of the opposite shoulder, is to be supported and fixed in that position by fastening a broad bandage round the arm and chest, or by rolling a firm pad made of soft material in a shawl and placing it in the arm-pit, which it should be large enough to fill. The shawl is then to be tied over the opposite shoulder, and the ends brought down and secured at the arm-pit of the sound side; cushions or pads being interposed to prevent the knots from injuring the skin. The arm is to be supported and fixed as above directed. No splints or lotions are required, but the part should be examined occasionally, and the bandages adjusted so as to keep the ends of the bone accurately in contact.

It may be necessary to draw blood, and to keep the patient on spare diet for a few days.

FRACTURE OF THE RIBS.

The fracture unites readily, and the only danger to be dreaded is inflammation of the lining membrane of the chest, called the *pleura;* hence it is absolutely necessary to bleed the patient freely, if his countenance becomes anxious, his pulse quick and strong, the breathing short and hurried, with other symptoms indicating the approach or commencement of pleurisy. When one or more ribs are fractured, the patient feels the broken surfaces grating on each other every time he attempts to take in a full inspiration; the ribs may also, in most cases, be felt working backwards and forwards under the fingers. This crepitating or grating movement cannot, however, be discovered in every case. The pain is sharp, and augmented by moving the trunk of the body, by coughing, sneezing, or attempting to take in a full breath. All that is necessary to be done for the cure of fractured ribs is, to apply a broad belt or bandage round the chest, to prevent the ribs from being alternately raised and lowered during respiration, and the firmer it is applied the more relief the patient experiences. It is usual to pass a split cloth over the shoulders, which is to be fastened to the circular bandage, to prevent its being displaced. In general it is proper to draw blood from the patient soon after the accident, and to confine him to low diet for a few days.

FRACTURE OF THE ARM-BONE.

The fracture is sometimes oblique, but more commonly transverse; there is generally considerable displacement of the broken ends of the bone, and more or less shortening of the limb; the latter is sure to occur if the fracture be oblique; the arm hangs useless by the side, and the slightest movement of the limb causes the broken ends of the bone to grate against each other (*crepitation*); in fact, there can be no mistake about the nature of the accident. There is no difficulty in setting this fracture. The operator grasps the elbow with one hand, and gently extends the arm, while with the other he straightens the limb, and replaces the bones. To secure the fractured parts in their situation, a splint of strong pasteboard is to be placed along the outside of the arm, from the top of the shoulder to a little way beyond the point of the elbow; and another splint of the same description is to be applied from the arm-pit to the elbow on the inside. The splints should be steeped in hot water, and padded with some soft substance, to prevent them from galling the skin. "The conjoined breadth of the splints," says Mr. Liston, "should be sufficient to embrace the limb almost entirely; some space being left, so that when the swelling subsides they may neither meet, and consequently lie loose nor overlap each other. A long bandage or roller, is now to be applied over the whole, commencing from the fingers, and extending it as high as the shoulder. This must not, however, be applied so tight as to interrupt the circulation of the blood in the limb. A wooden splint should be placed on the outside, and another bandage applied; this, however, is only to be retained until the pasteboard splints dry, so as to form a sort of case for the arm. The elbow should be bent at a right angle, and the whole of the fore-arm properly supported in a sling. If pasteboard cannot be obtained, wooden splints may be substituted. On the seventh or eighth day, if the bandages have slackened from the subsidence of the swelling, the bandages must be removed, and one of the splints raised, to ascertain that there is no shortening of the limb, nor any displacement of the bones, and again carefully applied as before. If any deformity be observed it may easily be remedied, for the bones do not begin to unite before the seventh day from the date of the accident. In ordinary cases the bone will be firmly united in about a month; but the arm should not be used with much freedom before the expiration of six or seven weeks.

FRACTURES OF THE BONES OF THE FORE-ARM.

Of the bones of the fore-arm, the one called the *radius*, is more exposed to fractures than the other, called the *ulna*. Fracture of the radius is an accident of frequent occurrence. There is very little distortion unless the fracture takes place close to the wrist, and then there is considerable deformity. Whether the bone be broken high up towards the bend of the arm, or down near the wrist, the fracture may be easily ascertained by tracing the bone with the fingers. In all cases the patient experiences difficulty and pain in attempting to turn the arm round; and if we grasp the limb above and below the part where the pain is chiefly felt, and endeavor to move the hand in different directions, a grating noise will be heard, while a sensation is experienced by the patient in consequence of the motion, which convinces him of the nature of the accident.

When the radius is fractured, the ulna, or inner bone, serves as a splint on one side, while it effectually prevents shortening of the arm, and therefore renders extension unnecessary in setting the fracture. There is no difficulty in placing the ends of the bone in apposition, and retaining them in their situation. A pasteboard splint, which has been softened in hot water, is to be placed upon the outside of the arm, from a little above the elbow, to the tips of the fingers, soft pads being interposed between it and the arm. A similar splint is to be applied on the inside, from the bend of the arm to the end of the palm of the hand. A long bandage is then to be applied, to retain the splints in their places. The arm is to be placed in a sling, the palm of the hand being turned towards the breast. The patient must take care to keep the hand in this position, and the wrist steady; no attempt should be made to turn the palm up or down, because nothing tends more to displace the bones.

The ulna, or inner bone of the fore-arm, is not so often fractured as the radius; but is as easily set, and is kept in its place by means of two splints, with a bandage, as above directed.

Both the bones of the arm are sometimes broken; in this case the patient is unable to move the hand; there is much deformity and shortening of the limb, and considerable swelling soon follows the accident. In setting the bones, it is necessary to extend the arm until it is of the proper length, the ends of the bones are then to be placed in contact, and two splints, with a bandage, applied as already directed. It is advisable to apply a wooden splint on the outside of the fore-arm, until the pasteboard splints are sufficiently dry and firm; it is then to be taken away. When the patient is thin, it is customary to place a compress of soft linen or lint between the bones, both before and behind, to prevent them from approaching each other, and growing together. When pasteboard is not at hand, wooden splints may be employed, but the former is always preferable, because it readily takes the shape of the limb, and, when dry, forms for it a sort of firm mould or case.

FRACTURE OF THE FINGERS.

When a finger is fractured, the injury is easily recognized. The treatment consists in applying on the front of the finger a narrow wooden splint, padded with tow or lint, which is to be supported by a suitable bandage.

DISLOCATIONS.

In consequence of an accident, or some violence, a bone is occasionally dislodged from its natural situation, or, perhaps, removed out of its socket, whereby its proper functions are greatly impeded or obstructed, and, as such occurrences frequently take place at a considerable distance from any surgical assistance, it appears proper to point out a few of the most common cases of this kind, with the method of restoring them, through the medium of other persons possessed of a mechanical turn.

The dislocation of a bone is usually ascertained with ease, from its being attended with a swelling or degree of protuberance on one side, and a corresponding hollow on the other, which are particularly apparent on making a comparison between the member that has been injured and its fellow ; by tension and pain, and by inflammation and febrile symptoms being present.

The usual causes of dislocations are, any sort of external violence suddenly and forcibly applied, as in falling, leaping, twists, blows, &c.

A recent dislocation may frequently be reduced with great ease by extending the limb, and using such a degree of force, in a gradual manner, either by the hands, or a towel tied round it, as will be requisite to overcome the power and resistance of the muscles. If, with the dislocation, there be a fracture of a part of the bone, the difficulty of reduction will be much increased, as well as the cure protracted. Moreover, when the reduction of a dislocated part has been long delayed, such as to the distance of some weeks, there will be but little prospect of being able to replace it, so that the patient will have a stiff joint, and, if the injury is in the lower extremity, will be rendered lame through life.

Treatment.—When the bone has been displaced for some time, and swelling and inflammation occupy the joint, it will be necessary to bleed the patient, and, after well fomenting the part with flannel cloths, wrung out in warm water, to apply soft poultices composed of oat-meal, oil, and vinegar, for a time, before we make any attempt to reduce it, which should never be done till the tension and inflammation have subsided.

After the reduction has been effected in the manner before mentioned, all that will then be necessary is to apply one or two folds of linen cloth, wetted in vinegar or camphorated spirits, to the part, and keep it perfectly still and quiet, with the muscles in a state of relaxation. If it be the shoulder, arm, or elbow, the arm should be kept in a sling, fastened round the neck. If the lower extremity, it should be raised on a chair, or sofa, as high as that on which the patient sits. When a dislocation and fracture exist together, the healing of the fracture might first take place, previous to any attempt being made to reduce the laxation.*

* That is, the dislocation or disjointing of the limb.—Ed.

DISLOCATION OF THE SHOULDER.

The head of the upper bone of the arm may, and does slip out in different directions, in consequence of a fall, and other violences. It seldom takes place upwards, however, but most commonly downwards, in which case, a hollow place is found in the upper part of it, easily perceived by pressing the finger on it. The head of the bone may also be felt in the arm-pit, and the patient cannot move the limb without experiencing severe pain.

In such a case, there is a considerable difference in the length of the arm which has not been injured, when compared with the one which is dislocated, and, when it remains long in this state unassisted, a swelling and impaired sensibility of the limb ensues. Moreover, there is an inability to move the arm, and every attempt to do so is attended with considerable pain.

When the bone has been recently dislocated, and no tension and inflammation have come on, it may, in general, be readily reduced by employing a moderate force; but when it has remained out of its socket for a considerable time, the operation of reduction will prove both painful and difficult.

Treatment.—When a dislocation of the shoulder is accompanied with swelling and inflammation, the reducing it should be suspended until these have in a great degree subsided. In the mean time, the patient should be promptly bled, his bowels freely emptied by some cooling purgative, and a low regimen be enjoined. The limb is to be kept perfectly at rest, and the part moistened with vinegar and water, by linen cloths wrung out therein.

As soon as the swelling and inflammation have subsided, the following course should be adopted. The patient is to be placed upon a low stool, an assistant is then to hold the body very firmly, so that it cannot give way on exerting the necessary force, whilst another person lays hold of the arm a little above the elbow, and gradually extends it, increasing the force as may be requisite. The operator then is to put a napkin under the patient's arm, causing it to be tied behind his own neck, and by this he is gradually to raise the head of the bone, whilst, at the same time, a considerable extension and resistance are effected by the assistants, and with his hands directs it into its right place, on which a slight crack or noise is usually heard. After the reduction the parts may be rubbed with camphorated liniment made gently warm, and the arm be kept very still by putting it into a sling.

Should pain, swelling, or inflammation succeed the reduction of the bone, they are to be relieved by topical bleeding with leeches, laxative medicines, and a cooling regimen. If the limb remains in a weak state for any length of time in consequence of the injury, pouring cold water from a tea-kettle, or pumping on it, may be likely to strengthen it.

DISLOCATION OF THE ELBOW.

The bones of the fore-arm may be dislocated in various directions, and the injury may readily be discovered by the patient's inability to bend the limb, together with its stiffness, and a protuberance being observed on that side of the arm towards which the bone is pushed, although this is occasionally obscured by a degree of swelling and inflammation.

To reduce a dislocation at the elbow, it will be necessary to have the assistance of two persons, one of whom must hold the arm above, and the other below the joint; an extension is then to be made by one of them in a gradual manner, till the operator is enabled to return the bones into their proper place, after which the arm is to be bent, and kept suspended in a sling for a considerable time, the injured part being for a few days frequently wetted with equal parts of vinegar and camphorated spirits.

Dislocations of the wrists, fingers, &c., are to be reduced much in the same manner as those of the elbow, viz. by making a proper extension, and guiding the bones into their natural situation with the operator's fingers.

DISLOCATION OF THE THIGH-BONE.

The head of the thigh-bone may be dislocated in almost any direction, but in general it takes place inward and downward. In this case the knee and foot are turned outwards, and the leg is longer than the other. But when it is displaced backward, it is usually pushed upwards at the same time, by which the limb is shortened, the foot turned inward, and the head of the thigh-bone may be felt on examination.

To replace this bone when it is dislocated forward and downward, the patient must be laid on his back, and either be held by proper assistants or fastened by bandages. A strong extension is then to be made by other persons through the means of a sling fixed on the thigh a little above the knee, and during this period the head of the bone is to be pushed outward by the operator, till it slips into its socket. If the dislocation be outward, the patient must be laid on his face, and while the assistants are making due extension, the operator is to push the head of the bone inward until it is replaced, to succeed in which effectually, a proper co-operation of the assistants in raising the bone must be attended to.

Dislocations of the knees, ancles, and toes, are to be reduced by making a due extension in opposite directions, through the medium of assistants, while the operator replaces the bones in their right situation. Where tension and inflammation prevail, active means by both general and topical bleeding, freely evacuating the bowels by purgatives, and confining the patient to a spare regimen, must be resorted to, not only in dislocations of the thigh-bone, but likewise in those of the minor ones.

In very robust persons, the force of the muscles sometimes resists every effort to reduce a disjointed limb, in which case it may be well to excite some degree of languor and debility, either by putting the patient into a warm bath, or giving him a grain or two of tartarized antimony, the operator taking the advantage of the effect produced thereby previous to the act of vomiting, for reducing the dislocated bone.

DISLOCATION OF THE JAW-BONE.

To reduce a dislocation of the jaw-bone, the person is to be placed on a low stool, and his head being firmly held by an assistant, the operator is then to thrust his two thumbs, covered with linen cloths that they may not slip, as far into the mouth as he can, while his fingers are applied externally to the jaw. After he has got a firm hold of this, he is to press it strongly downward and backward, by which means the protruded ends of the jaw-bone may be easily restored to their proper cavities or sockets. The jaw is afterward to be kept still for some time, the patient avoiding mastication, particularly of any hard substance, till the parts have acquired their former tone.

DISLOCATION OF THE NECK.

When the neck is completely dislocated, speedy death ensues if it is not instantly replaced, owing to the pressure made by the parts on the spinal marrow. If it be only partially displaced, the life of the patient may be preserved, if the reduction be promptly made.

When only partial dislocation of the neck has taken place, the chin appears fixed to the patient's breast, which prevents his speaking, swallowing, or at all moving the parts; his face is generally turned towards one side, his countenance appears bloated, and his neck swells. Moreover he is deprived of sensibility.

The patient must be turned immediately on his back, and the operator place himself immediately behind him, so as to be able to lay hold of his head with both his hands, whilst a proper resistance is made by fixing his knees against the shoulders of the patient. The head is then to be pulled with some force, which is to be gradually increased, the head being moved at the time from side to side until the joint is replaced, and this may be known by the snapping of the bone when passing into its socket, as well as from the sensibility of the patient being in some measure restored, and his beginning to breathe.

After the dislocation has been reduced, the head should be secured in its place by a proper bandage, the parts be well bathed with camphorated spirits, the patient bled and put to bed, and the bowels freely purged. Until the tone of the injured part is properly restored, quietness will be necessary, and for a due length of time a spare diet will be advisable.

RUPTURES.

Ruptures are common to both sexes, although from the peculiar structure of the parts where they most usually occur, they are far more frequent in males; and are occasioned by a variety of causes which tend to overcome that nice balance of forces, which exists in every individual, between the intestines themselves and the surrounding muscles which contain them; the first, by their elasticity, tending to escape outwards; the second, by their contractile structure exerting an uniform compression, and opposing their displacement. There are, at the lower part of the belly, corresponding to the bend of the thigh, certain openings, by which vessels, &c., pass out; and it is through these openings that a bowel is protruded, when, by any sudden exertion, the whole mass are forcibly pressed downwards. Among the most common causes, are violent horse exercise, or violent exertion of any other kind, more particularly when the body is tightly girt by stays, belts, high trowsers, &c. The causes which predispose to this accident, or, in other words, the peculiar state of the individual most favorable to its occurrence, is a laxity of fibre, from constitutional weakness, or from a previous dilatation or extension of the walls of the body from dropsy or child-bearing.

This complaint may exist for a considerable length of time, and cause no inconvenience to the patient, nor in any way affect his health; but notwithstanding this, should he neglect the use of the truss, or abandon it too early, under the impression that he is cured, and that he has no relapse of the accident to apprehend, he is but too frequently lulling himself into a fatal error; for the parts, from a slight cause, will again suddenly protrude, and often become difficult of reduction, or sometimes even incapable of being replaced. This latter state is what is generally termed strangulated rupture,* and oftentimes requires a surgical operation; for it is, in certain cases, so dangerous, that without this, the patient's life must infallibly be lost.

Now, the use of the truss, be it clearly understood by every one, is to press upon the opening, and supply an artificial strength to the surrounding fibres, whose power of resistance has been overcome by the violence already spoken of. *It is quite evident, therefore, that the first thing to be done, when a rupture has been distinctly recognized, is to return the protruded parts into their natural place, and maintain them by an accurate and well regulated pressure for a considerable period of time.* No delay should ever be indulged in, whether the rupture be altogether new, or one which has been already long existing; for strangulation occurs so suddenly, that frequently, before a surgeon can be procured, or employ the means of his art, the danger has become insurmountable.

How, then, is a rupture to be recognized?—There is to be perceived, in the parts in which rupture usually takes place, a swelling, sometimes tense or elastic, at others soft and compressible, without any discoloration of the skin. The causes of the accident should be considered, and will probably reveal at once the fact. However, the more certain signs are, a variation in the size of the swelling from the position of the individual; being smaller while he is lying down, and larger when he is standing upright and holds in his breath; a disappearance, or at least considerable diminution, when pressure is exercised upon it, and a return to its former dimensions when that pressure is removed. The swelling is usually larger and more tense when the patient coughs, or after he has taken a full meal; but is, on the contrary, smaller and softer in the morning before he has broken his fast. He is often troubled with colic, vomiting, and constipation.

When the rupture is easily reducible, it is sufficient to place the individual in a convenient position, and exert a gentle compression upon the swelling from below upwards, and a peculiar gurgling

* The bowel being protruded through the membrane enclosing the intestines, is sometimes *grasped*, or *choked* by the muscular contraction of the membrane. Hence the word strangulated, as applied to this case. The reader upon a moment's reflection will perceive, that in such a case, if severe, no passage can be allowed to the contents of the intestines. Hence the necessity of the knife to enlarge the aperture of the lining membrane, by which means the intestine may be replaced, and its natural function restored.—Ed.

noise will at once announce that the protruded bowel is restored to its proper place. But when, on the contrary, the rupture is strangulated, (which is known by the great hardness and pain under pressure, or from coughing, sneezing, or any other agitation of the body; by the absolute constipation; the continuance of vomiting; and the general symptoms of fever,) something more is required than a mere attempt at pushing up the intestine. The warm bath should be first employed. If this fail, bloodletting must be resorted to, which had better be practised while the patient is in the bath. It is hardly necessary to observe, that, in all such cases of danger, no time should be lost in procuring the aid of a surgeon; but such is the danger of a strangulated rupture or hernia attended with the symptoms last described, that it is highly advisable, when a considerable delay would take place before his arrival, to employ the means first pointed out, which are not only the best, but by far the most secure in the hands of others than regularly educated practitioners.

The position of the patient at the time of effecting the restoration of the intestine is of the highest consequence. He should repose on his back, his head and shoulders raised with pillows, his body bent, to put the muscles of the belly into perfect relaxation, by the knees being brought upwards. The person who officiates should then take hold of the neck of the swelling (for it is of the form of a pear the thick end downwards) with the left hand, while with the right he grasps the larger portion, and gently pushes the protruded parts upwards, which the left hand is intended to direct through the opening. This should be done very gradually, and patiently, and always in the direction in which the parts have protruded. It will sometimes require to be persisted in for a considerable time, (perhaps for an hour,) before all hope of reduction can be fairly given up. If violence be employed the greatest danger is liable to ensue; mortification being almost sure to follow.

While the patient is in the warm bath, and before the reduction is attempted by the hand, he should be placed as directed for the latter attempt, and not unfrequently the parts return of themselves.

When bleeding and the warm bath have been employed without avail, the end has been attained by dashing cold water over the parts. But this should only be done as a last resource.

BRUISES.

A SLIGHT bruise is of little consequence, and requires no particular attention; but when severe, it demands proper treatment. A severe bruise is followed by swelling and discoloration of the injured parts, as is exemplified when a blow is received on the eye, which causes what is commonly called a black eye. The extensive discoloration which, in many cases, arises from a bruise, alarms some patients; this is, however, a favorable sign. Danger arises in consequence of blood escaping from the vessels in particular situations, and not from the quantity discharged. Hence, a small quantity effused into the brain, in consequence of a blow on the head, or into the chest or belly, from a similar cause, will endanger life, and probably cause death; while a large quantity thrown loose under the skin, causing extensive discoloration, may be rapidly absorbed without much inconvenience to the patient. A severe blow received on a large joint always produces serious consequences; and a blow on the lower part of the belly may burst the bladder, if it happen to be distended with urine at the time, and cause death.

The effusion of blood under the skin is not the only effect of a bruise. The muscles, and other soft parts, are generally injured, and remain in a weak and painful state during a longer or shorter time, according to the severity of the injury; or they may be so destroyed as to deprive them of life. In this case *sloughing*, as it is called, or the separation of the dead parts from the living, must take place.

Treatment.—The first thing to be attended to in treating a bruise is to prevent inflammation. Cold lotions should be constantly applied to the parts. The sooner they are employed the better. When resorted to early, they are not only useful in keeping off and subduing inflammation, but tend also to prevent the further effusion of blood from the lacerated vessels. The best lotions are those in common use, namely, Goulard water and vinegar, or spirits and water. When the bruise is slight, and the injured parts kept at rest, no other treatment than this will be required. But if inflammation comes on in consequence of a severe bruise, leeches ought to be repeatedly applied, low diet strictly adhered to, and the bowels freely opened by occasional doses of cooling purgatives. Quiet is necessary. The inflammation which arises from a bruise seldom terminates in suppuration; but, if the formation of matter appears inevitable, the cold lotions should be discontinued, and warm poultices applied.

If the above means have had the effect of preventing or subduing inflammation, apply friction with opodeldoc, the compound camphor liniment, or sal-ammoniac, half an ounce, vinegar and spirits, of each twelve ounces, mixed.

The pouring of cold water from a height on the bruised parts, two or three times a day, is one of the best remedies that can be used. Pressure by the application of a bandage rolled round the parts is also an excellent treatment. It ought to be observed, however, that the employing of these stimulating applications, before the inflammation is entirely subsided, would be highly improper. A common, though a decidedly wrong practice, is to apply leeches when there is no inflammation present, under the mistaken idea that they abstract the effused blood; but, instead of doing any good in this state of the parts, they would only tend to increase the weakness of the skin which the injury has caused, or their bites might give rise to extensive inflammation.

BURNS AND SCALDS.

Burns are usually divided into four varieties or degrees.

In the *first* degree there is redness, slight swelling, heat and acute pain of the part. These symptoms continue a few hours, or perhaps two or three days; in the latter case the injury terminates in a peeling off of the scarf-skin.

In the *second* degree, there are in addition to the symptoms of the first, vesicles (or bladders) filled with a transparent fluid of a pale yellowish color; this fluid (or serum) lies between the true skin and the thin scarf-skin (or cuticle).

In the *third* degree, the life of the (true) skin is destroyed, and the burned part presents a moist and soft surface of a yellowish or brown color, with or without vesicles, containing fluid of a dirty brown or of a bloody and turbid appearance; or it may be dry, black, and charred.

In the *fourth* degree, the injury extends deeper than the skin, the fat and muscles are more or less destroyed, and the tendons, ligaments, and other parts, even as far as the bone, may subsequently inflame and mortify.

When parts are burned deeply, so as to destroy their vitality, the pain is less severe than when the surface of the skin only is injured.

When a great extent of surface is burned, the intensity of the pain may cause death in the course of a few hours.

After a burn of the worst description, the patient complains of being cold, his pulse is weak and almost imperceptible, and shivering usually comes on. If there be also great pain, he soon falls into a state of stupor or insensibility, which, if reaction do not take place, continues until death. This state of insensibility to pain seems wisely ordained to prevent the extreme suffering which would otherwise be the fate of the unfortunate patient.

Treatment. It becomes every one to know how to act in case of such accidents, because burns are inflicted suddenly, medical men are not always at hand, and yet it is necessary to do something immediately, to relieve the acute pain which follows these injuries.

The want of presence of mind at the time of the accident often renders burns more severe than they otherwise would be. How frequently does it happen that females, when their dresses catch fire, instead of taking the most prompt means of extinguishing the flames, generally increase them, by running about screaming for assistance, when they ought to lie down on the floor and roll over and over on the carpet. The erect position of course allows the flames to spread and rise rapidly to the head and neck, parts where the fire is most to be dreaded; whereas the horizontal position, on the contrary, has a considerable effect in preventing their extending. In such cases the hearth-rug, table-cover, a shawl, or any woollen article, are the things to be used by any one who may happen to be near, for the purpose of extinguishing the flames. It also frequently occurs when the legs and feet are scalded, that instead of cutting the stockings and removing them gently, they are drawn off, carrying the scarf-skin along with them; and the true skin being then exposed, the most excrutiating pain is produced.

The principle on which burns are now treated is that of excluding them from the air; which may be done by covering the burned or scalded parts with flour, or enveloping them with cotton wool. It is in general advisable before employing the cotton, either to immerse the parts in cold water, if their situation will admit of this being done, or apply to them pieces of fine linen dipped in cold water, or vinegar and water, and wetted frequently during several hours, or until the pain and heat are removed. But when the burned surface is extensive there is always a sensation of chillness, which is generally accompanied with shiverings. In this case cold applications would do harm, and they ought not to be employed, even when the burn is slight, if there be a tendency to shivering; nor should they be continued if the patient be not relieved by them, or if they bring on shivering; and they are always improper when the injury is on the breast, belly, or on any part of the trunk of the body.

When the legs and feet are scalded, they should be plunged as soon as possible into cold water, and kept immersed in it a considerable length of time before the stockings are removed. By this means blisters are often prevented.

The blisters, or vesicles, which frequently make their appearance suddenly, in consequence of a burn or scald, should be punctured with a needle, and the fluid allowed to escape. The burned parts are afterwards to be carefully washed with tepid water before applying flour or cotton.

The cotton employed should be finely carded, and then applied over the burned surface in thin layers one over another, until there is a covering sufficiently thick to exclude the air, and protect the parts from undue pressure. Bandages are then to be applied over the whole of this envelope, so as to keep up a moderate and equal degree of pressure. In mild cases this dressing will be sufficient, and when removed in the course of ten or fourteen days, the part will be found covered with new skin. But if the discharge of matter be very profuse, it will find its way through the dressing, the soiled part of which must then be removed, allowing that which adheres to the skin to remain, and fresh layers of cotton applied with as little delay as possible, in order to prevent the action of the air on the burned parts. The dressing is to be renewed in this manner as often as it may be found necessary, until the cure is completed.

The application of flour to burned and scalded parts is now preferred in some of the London hospitals to any other plan of treatment. This method is preferable to the use of cotton, inasmuch as the flour relieves the pain almost as soon as it is applied, thus rendering the application of cold lotions unnecessary.

In cases of deep burns, treated either by cotton or flour, it becomes necessary to remove the dressing and examine the parts about once a week, until the sloughs have separated, and the subsequent discharge of matter is diminished. After the dead parts have been detached, it is often found difficult to keep down proud flesh; in such cases pressure over the dressing by means of sheet lead, has an excellent effect when properly graduated. The principal advantage derived from cotton or flour is during the acute stage, and therefore when the crust or paste formed in the manner above mentioned is detached from the ulcerated surface, the ulcers may either be treated by astringent lotions, pressure, keeping the proud flesh under by touching it with lunar caustic or blue vitriol, and the other means in general use in such cases (see *Ulcers*,) or the flour or cotton may be re-applied and removed every six or eight days until a cure is effected.

The dressings should be changed quickly, so that the parts may be exposed as little as possible to the air; and when the burned surface is extensive, it must not be all exposed at once.

In whatever manner burns may be treated, the greatest care must be taken to prevent contractions of joints, and improper adhesions between the raw surfaces. The position ought always to be such as to keep the skin extended. Hence, when the front of the arm and fore-arm, or the back of the leg and thigh, are burnt, splints are required to keep the limbs extended; but attention must be paid not to allow the joints to become stiff by retaining them too long in one position; they ought to be moved by an attendant from time to time, in order to prevent rigidity, otherwise it might afterwards be both a tedious and difficult matter to restore them to freedom of motion. To prevent raw surfaces from adhering to each other they must be kept separated by placing something between them; for example, to keep the fingers from growing to each other, it is usual either to place strips of adhesive plaster between them, or to keep them extended on a hand-board.

In slight burns no internal treatment is necessary, repose and low diet are sufficient; but in severe cases, when there is shivering, or a tendency to it, and the patient complains of being cold, and has sickness at stomach, a pale countenance and weak pulse, stimulants are indicated; a little brandy or wine and warm water, with six or eight drops of laudanum, are to be given occasionally; and bottles of hot water, or hot bricks, are to be applied to the feet, until the system recovers from the sudden shock which it has received, and reaction takes place. The warm bath is the best thing for restoring reaction in children.

During the inflammatory stage, the diet must be very sparing, and confined to vegetables, fruit, and farinaceous substances; and barley-water, with thirty or forty grains of nitre, may be given in the course of the day, or the patient may drink freely of soda-water, lemonade, or any other cooling beverage. Attention should also be paid to the state of the bowels, which are to be kept moderately open, without producing purging; for this purpose castor-oil is preferable to saline medicines, which might bring on shivering. Blood-letting is seldom necessary, and can only be resorted to with safety when the patient is of a robust and plethoric habit of body, and the inflammatory symptoms are running high. The feverish symptoms, after being absent for many days, may return at the time when the eschars or sloughs are being detached, and the same treatment is then again requisite.

When there is much ulceration, with a free discharge of matter, the patient's strength must be supported by light and nourishing diet, such as soup, jelly, and light puddings; and at dinner a little chicken or fish, with a moderate quantity of wine or porter, may be allowed. In this stage it is also advisable to give a grain of quinine in Port wine twice or thrice a day, in order to increase the appetite and promote digestion.*

* We wish to turn the attention of our readers to a preparation designed for injuries upon the surface of the skin, whether by violence, burns, or otherwise. It consists simply

ASPHYXIA, OR SUSPENDED ANIMATION.

FROM DROWNING.

The mouth and nostrils must be first cleansed, and preserved free and open; the body immediately stripped of the wet clothes, wiped and cleaned, and wrapped in dry clothes or blankets. All this should be done upon the spot, if a convenient place for receiving the body be not near.

In carrying the body (which should be laid upon the litter or cart, upon its back), care should be taken to keep the head and shoulders supported. The same position should be observed when the body has arrived at the house destined to receive it. The blankets should be warm.

The following means should never be had recourse to, in the attempt at resuscitation, namely; holding the body up by the heels, rolling it on casks, the employment of frictions with salt or spirits, the use of emetics, snuff, injections of the infusion or smoke of tobacco, the application of volatile salts, &c., to the nostrils.

The proper resuscitative means are artificial respiration, application of heat, friction, stimulants, and, under particular circumstances, bleeding.

1. *Artificial respiration.*—When the proper bellows used on these occasions are not at hand, which are provided with an elastic tube, the common bellows may be substituted, the nozzle being introduced into a wine-strainer, or a conical tube made of stout paper or leather. The end of this should then be carefully pushed up one of the nostrils by an assistant, while a second assistant, with one hand closes the open nostril, and with the other presses backwards and a little downwards the projection of the windpipe, situated at the fore-part of the throat, with the view of closing the gullet, and so preventing the entrance of air, (destined by the use of the bellows for the inflation of the lungs,) into the stomach, which would

of a solution of gun cotton (a recent discovery) in ether. Upon the application of this liquid, the ether almost instantly evaporates; leaving upon the surface of the wound an almost imperceptible shield; answering the purpose of a new and instantaneous *epidermis*, or outside skin; thus protecting the wound securely from the aggravating influence of the air, dust, &c.

Yet the *common* gun cotton, although partially soluble in ether, and forming a shield analagous to what we have described, is not a perfect preparation. The gun cotton should be prepared with particular reference to this specific purpose. Otherwise it will leave a deposit upon the wound resembling whitewash; whereas the preparation which we recommend leaves, as we have said, a shield almost imperceptible to the eye.

The article may be obtained at any of the druggist stores in New-York, belonging to Rushton, Clarke, & Co.—Ed.

otherwise become injuriously distended by it. When, therefore, the air is propelled (as, for instance, through the right nostril, the left being closed by the assistant, and the gullet flattened by pressure of the projecting part of the windpipe backwards against the spine, between which it descends) it has no other channel through which it can pass, and must of necessity freely enter and inflate the lungs, as in ordinary respiration. As soon as the chest is inflated, the first assistant should cease to work the bellows; and the second, removing his hands from the left nostril and the prominence of the windpipe, should press upon the chest in order to expel the air.

The inflation should be repeated from fifteen to twenty times per minute, to imitate the natural breathing.

This process should be kept up, if animation does not return, for five or six hours.

Great precaution should be employed in the use of the bellows; for if the air be forcibly injected, the delicate structure of the vesicles of the lungs (the termination of the air tubes) will be torn, and the consequences prove fatal. It is for this reason, that a simpler means has been substituted for the bellows. It is more safe, more simple in its use, and as readily arranged, as the common apparatus just spoken of. It consists merely of a strip of an old blanket, sheet, or cloth of any other kind, six feet in length by a foot and a half broad. This is to be split in the direction of its length into six strips, extending so far towards the middle as to leave an untorn portion of about two feet in length; each strip will thus be two feet long by three inches wide. The unsplit portion is then to be placed under the patient's back, from the armpits to just above the upper part of the hip bones. The strips are then to be brought forwards over the fore-part of the chest and belly, and interlaced with those of the opposite side, just in the same manner as the fingers are interlaced in clasping the hands.

Thus arranged, the strips are gathered up on each side, into a bundle, and drawn by two assistants in opposite directions, by which the edges of the unsplit portion will be made to approach, and a due pressure exerted upon the chest and belly of the patient. The alternate compression and relaxation of the bandage should be at a rate of ordinary respiration; that is to say, twenty-five times per minute.

In the absence of a bandage of this kind, a very fair substitute may be found in a similar interlacement of a few handkerchiefs folded like cravats.

2. *Heat.*—The application of heat must be very various, according to the means at hand. Among other processes of affording it, may

be cited, sunshine, warm blankets, or blankets wrung out with hot water, a warming-pan wrapped up in flannel, hot bricks, hot bottles, bags of warm grains, sand-bags, &c., the use of boiling water, as mentioned on page 207, should be tried, and might be found very useful. But of all other means, where it can be procured, the warm bath is the most efficacious.

The application of heat should be made during the attempts at artificial respiration and persisted in as long as it is necessary.*

3. *Friction.*—Frictions of warm flannel, the flesh-brush, or, better still, a warm hand suffice. They are used as a means of increasing warmth, and assisting the circulation of the blood.

4. *Stimulants.*—When the body commences to resume its natural warmth, when the vital powers are capable of being brought again into action, stimulants may be then judiciously employed. Hartshorn and oil, &c., may be rubbed into the palms of the hands, the wrists, the temples, and the neighborhood of the heart and stomach. Vinegar and water, aromatic spirit, hartshorn, &c., may be applied to the nostrils. But stimulating cordials, such as half a pint of wine and water, or spirits and water, not too strong, carefully introduced, by means of a syringe with an elastic tube, through the œsophagus or gullet, into the stomach, may be used earlier. The same may be said also of clysters, (or injections,) which may be formed of the same materials, but may be used a little stronger.

5. *Bleeding.*—The only period at which it would be safe for any other than a medical practitioner to employ a lancet, is when the animal heat is restored, and a full pulse and flushed countenance indicate that reaction is established, which threatens inflammation. From six to ten ounces of blood may be then withdrawn; all stimulating treatment should be put an end to; and should the patient complain of thirst, a little water or lemonade administered frequently.

FROM HANGING.

The ligature should be instantly removed from the neck; artificial respiration employed, as in cases of drowning; and, when reaction comes on, or, in other words, when the circulation is restored, recourse should be had to the lancet. If, however, at the moment of taking down the body, (the patient having been but a short time suspended,) there should exist a swollen state of the vessels of the head and neck, the lancet must be instantly employed; the blood being abstracted from the jugular, or the veins of the arm.

* The communication of *natural* heat is better. If some one can be found willing to divest himself of his clothing, and bring the whole surface of his body in contact with that of the patient; the heat thus imparted will be the most beneficial.—ED.

FROM EFFLUVIA, OR POISONOUS GASES.

The theory of asphyxia, from exposure to deleterious gases, can only be well understood by those who have some knowledge of the structure and physiology of the respiratory apparatus. However, to give a tolerable idea of the reason why persons are suffocated when such gases or effluvia are present, it may suffice to observe, that the object of the function of respiration, (that is to say, *breathing*,) is to reconvert the refuse of the blood (which flows in the veins, and which is dark-colored, and has already served for the nutrition of the body) into red or nutritious blood, which flows in the arteries. This is effected by the *black blood* passing through infinitely branching vessels in the lungs, in order to be changed, by the *oxygen* of the inhaled air which penetrates through the delicate coats of those vessels, into the *red blood*, which, besides being nutritious, is also stimulating. When noxious gases, or effluvia, *which are irrespirable*, replace the common or vital air, the great agent (oxygen) of converting the food into chyle is absent, or nearly so, from the lungs, and, as a necessary consequence, the red blood is not duly formed. Now, this red blood not only nourishing, but stimulating into action, by its presence, the heart and circulatory system in general, as well also as the brain and nervous system, is a necessary means to effect that nourishment. It evidently follows, that when the balance between the black and red blood is overcome, and the black blood predominates, vascular and nervous action cease, and life becomes extinct. This has been proved by many experiments. For example, black or venous blood has been injected into the carotid artery, (a red-blooded vessel which supplies the brain,) asphyxia has been instantly produced, and the vital functions have ceased.

This is the case in drowning. The black blood cannot be oxygenated; cessation, therefore, of vital action follows. It is the same when one has been strangled, unless the patient dies by apoplexy, or the bursting of the vessels in the brain, from their over-distension; and also in smothering.

When persons are suffocated from the presence of deleterious effluvia, artificial respiration should be performed, as in asphyxia from hanging or drowning. If the heat of the body should be above the natural standard, it should be placed naked in the open air, with the head and shoulders considerably elevated. Cold water should be then dashed briskly and continually over the head and chest.

But should the heat of the body be below the natural standard, it will be necessary to use the means of restoring warmth mentioned under the head of Drowning. Bleeding can only be safely recommended when there is reaction, or great fulness of the vessels.

Lemonade, or barley-water, is the only proper drink for the patient when recovering, and total abstinence for a time should be insisted on.

Emetics have been recommended when the patient has been recovered from the state of asphyxia by effluvia. Their efficacy, however, may be said to be dubious, if not even prejudicial; more especially, when it is considered how great a determination of blood to the head usually ensues in such cases. Acidulated drinks are not only refreshing, but are thought to communicate oxygen to the blood in circulation, and have, therefore, a double advantage in relieving the kind of stupor which remains ordinarily for some time after.

FROM BEING SMOTHERED.

The treatment is founded on the same rules as those laid down for *suffocation from effluvia.*

IN NEW-BORN CHILDREN.

If the new-born infant has not already breathed, the navel-string, if it still pulsates, should not be tied until the after-birth is about to come away; for the child is still nourished from the mother.

When the child is detached, its mouth and nostrils should be cleansed of any mucosities, and it should be wrapped in warm flannels, or it may be placed in a warm bath. Artificial respiration should be employed, as also frictions, stimulants to the nose, to the temples, and to the pit of the stomach. When there is no pulsation to be felt either about the heart or at the navel-string; when the skin is pale, discolored, or livid, the flesh flabby, the limbs pliant and without motion, and, it may be, to all appearance dead, the means just pointed out should be, nevertheless, tried and persisted in for a considerable length of time. But let the child be instantly detached, in order that no time may be lost; for its remaining connected with the mother can be of no avail. The simplest means of effecting artificial respiration is to push the wind-pipe gently backwards, to compress the gullet, and then closing the child's nostrils, to blow into its mouth, either by applying directly on it one's own mouth, or interposing between the two a bit of gauze or muslin. Gentle pressure upon the chest and belly should be made by turns with the inflation or blowing into the lungs, in order to expel the air, and prepare the lungs to receive a new supply. When the breathing commences, but goes on feebly, a little cordial or gentle stimulant should be given; it is frequently of great service. But when the breathing commences freely, appearing, however, slow and labored, and the child is in a state of stupor, it is in a state bordering on apoplexy; and then the ligature should be loosened from the navel-string, and a tea-spoonful or two of blood should be allowed to escape. If the good effects of this are soon apparent, the ligature should be again applied; but if they are not soon manifest, under these circumstances, also, the ligature should be reapplied, as the too great loss of blood would tend to throw the child into the same state of debility, or asphyxia, as that from which it has been withdrawn.

The following remarks by Dr. Currey merit attention. "Before children are born, and until they have begun to cry, the tongue is drawn back into the throat, so that a kind of valve, which is attached to its roof, is shut down over the opening into the wind-pipe, and the entrance of any foreign matter into the lungs thereby prevented. A finger should be, therefore, introduced into the throat, and the root of the tongue be drawn forward, and the valve raised before proceeding to inflation." The upper part of the wind-pipe should also be pressed gently backwards and downwards, as noticed in the treatment of drowned persons.

APOPLEXY IN NEW-BORN CHILDREN.

This is known by the absence of all signs of life, the child remaining in a state of lethargy, and immovable; the face is dark, livid, and considerably swollen; the skin also is discolored; there is an appearance generally of engorgement of the blood-vessels.

In such a case, the treatment is totally different to that employed in asphyxia, the navel-string must be cut so as to allow the blood to flow, the head must be elevated, and the chest and stomach rubbed with warm cloths. If there are leeches at hand, one may be placed behind each ear. The warm bath should be employed.

TREATMENT OF PERSONS STRUCK WITH LIGHTNING.

"When persons happen to be overtaken by a thunder storm, although they may not be terrified by lightning, yet they naturally wish for shelter from the rain which usually attends it, and therefore, if no house be at hand, generally take refuge under the nearest tree they can find. But in doing this, they unknowingly expose themselves to a double danger; *first*, because, their clothes being thus kept dry, their bodies are rendered more liable to injury, the lightning often passing harmlessly over a body whose surface is wet; and *secondly*, because a tree or any elevated object, instead of warding off, serves to attract and conduct the lightning, which, in its passage, frequently rends the trunks or branches, and kills any person or animal who happens to be close to it at the time. Instead of seeking protection, then, by retiring under the shelter of a tree, hay-rick, pillar, wall or hedge, the person should either pursue his way to the nearest house, or get to a part of the road or field, which has no object that can draw lightning towards it, and remain there until the storm has subsided.

"It is particularly dangerous to stand near leaden spouts, or iron gates at such times; metals of all kinds have so strong a conducting power for lightning, as frequently to lead it out of the course which it would otherwise have taken.

"When in the house, avoid standing near the window, or door, or walls, during a thunder-gust. The nearer you are placed to the middle of a room the better.

"When a person is struck by lightning, strip the body and throw bucketsful of cold water over it for ten or fifteen minutes; let continued frictions and inflations of the lungs be also practiced; let gentle shocks of electricity be made to pass through the chest, when a skilful person can be procured to administer them; and apply blisters to the chest."

TREATMENT OF APPARENT DEATH FROM THE EFFECTS OF COLD.

The body should be brought into a room in which there is no fire, and rubbed with snow or cloths dipped in cold water. The frictions should be directed from the stomach towards the extremities. In a few minutes after, the temperature of the water should be very gradually increased, so as not to heat the body suddenly. Stimulants may be applied to the lips and nostrils.

The lungs must be inflated as in the treatment of the drowned. When the natural warmth of the body is returning, the patient should be put into a bed, wrapped in dry blankets, and be well rubbed with a flesh-brush. A little weak wine and water may be given, or a clyster administered containing a little wine or something slightly stimulative.

Strict diet should be adhered to for some time after recovery.

When the limbs only are frozen, the application of snow or wet cloths is to be confined to the affected parts; half a tea-spoonful of hartshorn, in a glass of water, may be advantageously administered, or a little weak spirit and water.

CONVULSIONS IN CHILDREN.

In children there are two remarkable kinds of convulsions, namely, what are called inward fits and the common violent convulsions. The inward fits occur generally during sleep, and are known by the corners of the mouth being drawn up into a sort of smile; the eyelids are open, and the eyes are usually turned up, so as to show the whites. There is a fluttering in the breathing, and the child frequently starts. Fits of this kind are generally relieved by a warm cordial medicine, such as a little aniseed or syrup of rue; appearing as they do to depend on wind and flatulence of the intestines.

As to the more violent convulsions, they depend on disorders of the nervous system, most usually brought about by the irritation dependent on teething. The symptoms by which such convulsions may be known are these. There is spasm throughout the muscular system, the arms and legs are drawn up and agitated, the body drawn back, the eyes are either fixed in their sockets, or are rolled to and fro, the child grinds its teeth, and the countenance is distorted. Sometimes there is a sort of breathing, which resembles greatly the breathing in croup. The first thing to be done, is to place the child in a warm bath, to which a handful of mustard or salt may be advantageously added; and while in the bath to sprinkle cold water upon the head. A clyster should also be administered. After remaining some time in the bath, if the violence of the symptoms is but little mitigated, the child should be removed, and after being wiped dry, the spine should be rubbed with spirits, or hartshorn and oil, and mustard poultices applied to the feet. When, together with these symptoms, the face is flushed, and the pulsation about the neck strongly increased, leeches should be applied to the temples if they can be obtained; or if there is any one who is provided with a lancet, and could draw blood from the arm, a portion should be instantly taken away. But whenever there is reason to believe that the convulsions are from teething, the gums should be immediately and freely lanced. A sharp pen-knife will serve perfectly well in this operation, which any one would be able to perform. At times, however, the child is weak and pale, and then instead of applying leeches or bleeding, a little stimulant medicine should be given, containing two or three drops of laudanum.

When the child has recovered from the fit, it is usual to give a dose of calomel with a little rhubarb, in quantity proportioned to the age.

POISONING.

It is not necessary, in a treatise like the present, to enter into particulars relatively to the modes of action of the numerous descriptions of poisons, to which the unfortunate who resolve on suicide have recourse, or to which such as are the victims of their own carelessness or that of others, or even of circumstances purely accidental, are but too often exposed. They are for the most part extremely doubtful, and can serve only, when understood, the members of the profession. Happily, however, the antidotes to the greatest number of poisons are perfectly well known, and it is to their skilful administration that it is most necessary to attend.

Our purpose is to state as clearly and as fully as the nature of the work will admit of, the means of distinguishing the kind of poison swallowed, (where there is doubt upon the subject,) deduced from the symptoms which invariably ensue, in order that the proper antidote may be at once administered.

Poisons are so numerous, that it would be more than absurd to attempt to describe them all; it would be attended with danger, resulting from the confusion in which a person would be thrown from the examination of so much detail. Those only will be mentioned which are the most commonly made use of; and they will be arranged in such a manner, that each respective group will embrace those which have a common train of symptoms, and require similar modes of treatment to counteract their effects.

It must not be supposed, that the descriptions here given of the symptoms of each respective class of poisons, are to be all met with at the same time; for it is with poisoning as with other disordered states of the system, the symptoms are by no means constant; yet, herein, the symptoms, as they will be found grouped, are sufficiently characteristic to lead to the detection of the nature of the poison, when the judgment is not aided by the light of more favorable circumstances.

For the sake, then, of simplicity and of real utility, they will be arranged in the following classes.

1. CONCENTRATED MINERAL ACIDS.

The most common concentrated mineral acids are, Sulphuric Acid, or *Vitriol;* Nitric Acid, or *Aqua fortis;* and Muriatic Acid, or *Spirits of Salts.*

Common Characters of Symptoms.—Astringent taste, with burning heat; acute pain at the entrance and along the course of the gullet, and also at the stomach; an insupportable stench from the breath, nausea, and the abundant vomiting of a liquid, sometimes black, at others reddened with blood, and which effervesces when it falls upon the pavement or upon chalk or whiting; hiccup; sometimes constipation, sometimes stools tinged with blood; acute pain in the belly, extending to the chest; difficulty of breathing; coldness of the feet and hands, and cold sweats; the desire but impossibility of urinating; the voice altered, and sometimes resembling the sound observable in children who suffer from the croup; the lips and inside of the mouth covered with black or white gangrenous spots.

The following are the more distinctive characters of each of the above poisons;

Vitriol is remarkable for reducing to a black pulp the parts it touches.

Aqua Fortis produces, on the parts it touches, lemon or orange colored spots.

Spirits of Salts disengages thick white fumes of a very penetrating smell.

Oxalic Acid (a vegetable poison) has occasionally been taken through mistake for Epsom Salts, which it strongly resembles in appearance. The treatment for it is the same as for mineral acids.

Treatment.—The patient should be made to drink freely of liquids containing in suspension a quantity of calcined magnesia; or, when the latter cannot be procured, water in which soap is abundantly dissolved; after which may be given linseed or marshmallow tea, or barley-water. These same remedies should also be administered in the form of clysters.

When it is presumed that the acid has been neutralized, and that it has been ejected from the inside, and it is perceived that inflammation has set in, let leeches be applied to the pit of the stomach and to the throat; let warm fomentations be constantly applied to the belly, or very large warm poultices. Should there be cramps or convulsions they ought to be treated by antispasmodics.

2. ALKALIES.

These are usually Potash, Soda, Ammonia (generally in a liquid state, as in the form of hartshorn) and lime.

Common Characters of Symptoms.—The symptoms much resemble those present in cases of poisoning by the mineral acids, but they more particularly affect the throat. The vomited matters, however, do not effervesce upon the pavement, or upon chalk or whiting. The action of ammonia (hartshorn,) is by far the most powerful, giving rise to horrible convulsions.

Treatment.—The patient should be made to swallow, from time to time, a glass of water containing the juice of a lemon or a tablespoonful of vinegar; if neither of these are at hand, warm water should be given abundautly, and vomiting excited by tickling the throat.

If olive oil can be readily obtained, it might be advantageously administered, as it would form a soap, which would be easily got rid of by the last means above described.

3. METALLIC POISONS.

Arsenic. White arsenic—yellow arsenic—the *Ague-drop.*

Copper. Blue vitriol—Verdigris—The peculiar poison found where copper coins are put into the pot in which greens are boiling, to give them a bright green color, or when the latter are boiled in copper vessels.

Lead. White lead—Ceruss powder—Goulard's extract or Goulard water—Litharge—Red lead—Sugar of lead.

Antimony. Tartar emetic,—Antimony wine,—James's powders.

Silver. Lunar caustic.

Mercury. Corrosive sublimate—Vermilion.

Iron. Green vitriol.

Zinc. White vitriol.

Tin. Salts of tin, used by dyers.

Common Characters of Symptoms. The patient experiences an acrid and metallic taste in the mouth, with a sense of constriction at the throat; pains, at first slight, afterwards most severe, along every part of the digestive canal; nausea, and vomiting of matters which do not effervesce; a continual and ardent thirst; difficulty of urinating; hiccup, difficulty of breathing, and a sensation approaching to that of suffocation; cramps and convulsions; and lastly, the limbs become cold, indicative of approaching dissolution.

Treatment. In all these cases, vomiting is the first thing to be attended to, and should invariably be produced, but before giving fluids to the patient; for these, by dissolving more completely the particles, and spreading them over a wider surface, increase the liability of absorption. There are, however, some of these poisons which require in addition other means; as, for instance, *Antimonial preparations*, which require the administration of an infusion of Peruvian bark, or other astringent barks, or even of common tea, which is a good antidote. If the pains still continue very violent, a grain of opium, or twenty drops of laudanum, may be administered every three hours till they abate; or a table-spoonful of syrup of poppies at the same intervals, mixed with a glass of water.

Lunar caustic requires the frequent administration of a tea-spoonful of table salt in solution.

Arsenical preparations should be treated with linseed or marshmallow tea, or barley water.

For *salts of tin*, the best antidote is milk.

For *corrosive sublimate*, the whites of a dozen eggs should be mixed with two pints of cold water, and a glassful given every two minutes.

For the *preparations of lead*, Epsom or Glauber salts, dissolved in water in the proportion of a dessert-spoonful to a quart, administered frequently by glassesful. If plaster of Paris is at hand, it should be given, in the absence of salts, mixed with water.

When, however, inflammation has set in, as it most often does, the then *after-treatment* requires the same measures to be employed as those which have been pointed out for the after-treatment of poisoning by mineral acids.

4. VEGETABLE POISONS.

1. Opium or Laudanum, Prussic Acid, Laurel-water, Henbane.

General Character of Symptons.—Numbness all over the body, with weight and swimming in the head; nausea, vomiting, state of intoxication; swelling of the eyes; slight convulsive movements. The pupil of the eye afterwards becomes greatly dilated, and the patient falls into a torpid state resembling apoplexy.

Treatment.—For prussic acid and laurel-water, tickling the throat or an emetic, to excite vomiting; afterwards, strong coffee, or coffee with a little brandy or turpentine, or hartshorn and water.

For opium or laudanum, and henbane, emetics to excite vomiting, but administered in very small quantities of water; an active purgative clyster, when it is supposed that the poison has reached the bowels.

After the poison has been evacuated, drinks should be given freely acidulated with lemon-juice or vinegar, and then strong coffee. To overcome the numbness of the limbs they should be vigorously rubbed with a flesh-brush or a piece of flannel; and the patient should be constantly moved about, and spoken to, to prevent his sleeping.

2. Monkshood, Hellebore, Tobacco, Foxglove, Meadow-saffron, Hemlock, Deadly Night-shade.

General Character of Symptoms.—Excited state of the nerves; the patient is greatly agitated and convulsed; there is delirium; the pupil of the eye becomes dilated, and sometimes violently contracts; vomiting, looseness of the bowels, with extreme pain all over the belly. Occasionally there is a great prostration of strength, insensibility, trembling, desire and incapability of vomiting.

Treatment.—The same as in poisoning by opium, &c.

3. Nux Vomica or Ratsbane.

General Character of Symptoms.—After the poison has been swallowed, the patient undergoes alternately, a state of calm, and one of horrible spasmodic contraction of all the muscles of the body.

These attacks rarely extend beyond the fifth or sixth, and terminate by death the patient's sufferings.

Treatment.—A vomit; afterwards the following mixture:—A tea-spoonful of ether, one of spirits of turpentine, and half a tumbler-ful of water sweetened with sugar. Give a table-spoonful every seven or eight minutes. Large doses tinct camphor

4. Poisonous Mushrooms.

General Character of Symptoms.—Weight and pain at the pit of the stomach; then nausea, violent pains in the stomach and bowels, with vomiting and looseness; cramps and convulsions; unquenchable thirst; sometimes delirium, at others, stupor; lastly, faintings and cold sweats.

The symptoms only come on from seven to fourteen hours after the swallowing of the poison.

Treatment.—Active emetics and purgative clysters; afterwards, antispasmodics (the mixture prescribed for poisoning by ratsbane) and water acidulated by vinegar.

5. Ergot of Rye (Blighted rye, Spurred rye.)

This is a peculiar excrescence which appears upon the ear, in the form of a long grain, very slightly curved, three-sided, and pointed at each extremity, of a dark violet color; it is a disease of the corn which appears in wet seasons.

General Character of Symptons.—An unpleasant tickling or creeping sensation at the palms of the hands and the soles of the feet; heaviness in the head; occasional blindness, delirium, and intoxication; spasmodic contraction of the muscles, violent convulsions, and foaming at the mouth; afterwards, violet-colored spots appearing all over the body.

Treatment.—No emetics! Alternate doses of an antispasmodic mixture and water acidulated with vinegar. If gangrene or mortification ensues, the medical practitioner alone can treat it properly.

5. ANIMAL POISONS.

1. Poisonous Mussels.

General Character of Symptoms.—About three or four hours after eating poisonous mussels, an uneasiness is felt all over the body, succeeded by numbness, and afterwards by intense pain at the pit of the stomach, excessive thirst, and continual nausea.

If vomiting do not take place, the belly becomes considerably swollen, the symptoms increase altogether in intensity, and very often a rash appears on the face, which sometimes extends itself over the rest of the body. Lastly, delirium sets in, convulsions, and cold sweats.

Treatment.—Emetics, or the tickling of the throat to induce vomiting; afterwards, cordials, ether, and drinks acidulated with vegetable acids.

2. Spanish flies.

General Character of Symptoms.—These are very remarkable, the poison affecting to a horrible degree the urinary organs and the organs of generation.

Treatment.—Linseed tea, or other emollient drinks; from 12 to 20 drops of laudanum every four hours; frictions of spirits of camphor all over the body; bleeding and leeches.

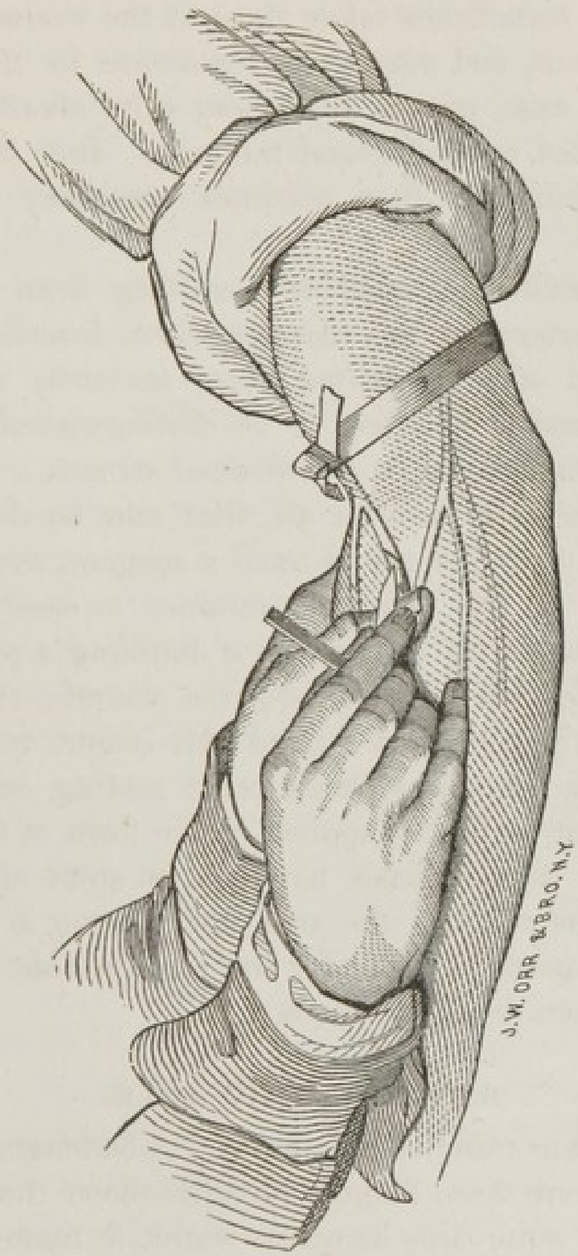
BLOOD-LETTING.

It is the province of the surgeon to use the lancet, yet cases occur frequently in which surgical assistance cannot be procured, and where immediate blood-letting is not to be dispensed with without endangering life.

The operation of blood-letting is usually performed at the bend of the arm, the veins there being in general more superficial, larger, and more distinctly seen than any where else.

The first thing to be done, before using the lancet, is to ascertain the position of the artery at the bend of the arm.

This vessel will, in general, be felt pulsating immediately under the largest vein. A fillet, or bandage, about two fingers' breadth and a yard in length, (a riband or garter will answer the purpose,) is then to be applied round the arm, about a finger's breadth above the place where the opening is to be made, which will cause the veins to rise, but care must be taken not to fasten it so tight as to prevent the pulse being felt at the wrist. The next thing to be done is to make choice of a vein. The largest vein would be, from its size, the most suitable, were it not that an artery, as above mentioned, runs immediately under it. This vein must, therefore, be avoided; because the danger of passing the lancet too deep and wounding the artery is very considerable, and the consequences resulting from such an accident are always of a serious nature. The vein, therefore, next in size is to be preferred. It ought, however, to be remarked, that neither arteries nor veins are always regular in their course, and, therefore, with those unaccustomed to perform the operation, it should be held as a rule, that the vein under which the artery is felt throbbing is not to be opened. The operator should now grasp the elbow, and place his thumb upon the vein a little below the place where he intends making the puncture, with a degree of firmness sufficient to prevent it rolling under the skin or changing its position; the lancet is then to be passed obliquely into the vein.



Keeping the hand and wrist in motion facilitates the flowing of the blood. When the requisite quantity has been discharged, the bandage is to be removed, and the operator placing the thumb of his left hand over the wound, with the other hand washes the blood from the arm. The sides of the wound are then to be placed in contact, and a small compress of old linen applied over it, which is to be secured with a bandage, passed round the elbow in the form of the figure 8. The crossing of the bandage should take place immediately over the compress. Sometimes, after the arm has been bound up, the blood makes its way through the linen. As soon as this is observed, the bandage must be bound tighter, and may be slackened a little some time after the bleeding has ceased. The bandage should be retained two or three days, and the arm be kept in a sling at least twenty-four hours.

Inflammation sometimes takes place at the wound, attended with a good deal of pain, and may even terminate in the formation of matter. In this case, purges of Epsom salts should be given, and two or three leeches applied round the part. But if matter cannot be prevented forming, it then becomes necessary to apply warm poultices.

The most formidable accident resulting from blood-letting is puncturing the artery in the manner above described. When this takes place, blood of a bright-red color instantly issues from the wound in jerks, and is at once to be distinguished from the dark blood of a vein which flows in a continued stream.

When this accident occurs, all that can be done is to apply pressure over the wounded vessel until a surgeon can be found to tie it. Compression in the following manner is easily managed. A small compress formed by rolling up or doubling a piece of linen or lint, is to be applied immediately over the wound ; over this a larger compress is to be placed, then a third still larger, and so on, until a sort of pyramid is formed, with its point resting on the wound; a bandage must then be firmly applied in the form of the figure 8.

In fat people it sometimes happens, in spite of all the means resorted to, such as rubbing the arm, and placing it in warm water, that it is quite impossible to render the veins visible. In such cases blood may be drawn from the ancle.

BLEEDING AT THE ANCLE.

This operation is sufficiently simple. A bandage is to be applied round the leg, about three fingers' breadth above the ancle, and the foot immersed for some time in warm water, to make the veins rise; the largest vein either at the outside or inside of the ancle is then to be opened, and the foot again plunged into warm water, otherwise the blood would not run freely. One disadvantage attending this operation is, that the quantity of blood lost cannot be exactly ascertained, in consequence of the necessity of keeping the foot in warm water; an idea, however, may be formed of the extent of the discharge from the color of the water, and the quantity of clotted blood found at the bottom of the vessel.

BLEEDING AT THE WRIST.

Bleeding at the wrist will often be found advantageous, when the veins at the bend of the arm are too small, or otherwise difficult to operate upon.

The more preferable vein for operation will be found on the back and outer side of the wrist, running upwards from the thumb and following its direction; it is the cephalic of the thumb. The proceeding will be the same as in the former case. The ligature is applied at about two inches above the place where the vein is the most prominent; the hand is plunged into warm water for some minutes; the vein is to be fixed and punctured according to the rules already laid down; a compress is then to be placed upon the orifice, and maintained in its position by means of one or other of the bandages just described, in the form of a figure of 8, passed about the wrist and hand.

BLEEDING AT THE NECK.

The external jugular vein at either side of the neck is the only one distinct, and therefore the only one upon which the operation can be performed.

It is seen running in an oblique direction. The operation should be performed at the lower part of the neck; first, because the vein is there more prominent, and, secondly, because higher up it is surrounded by a network of nerves which it would be highly dangerous to wound.

For the operation, the usual materials are required, and, in addition, a card to form a channel for the blood.

To commence, two or three pledgets are placed one upon the other upon the jugular vein at its lowest part, that is to say, just over the collar bone; these are maintained in place by a ligature, the centre of which is applied immediately upon them, while the two ends are carried down, the one forwards, the other backwards, to the opposite arm-pit, where they are tied in a single bow. The vein will now be found to swell, and must be fixed by two fingers of the left hand. To effect the incision, there is this to be first of all observed, namely, that beneath the skin, lying upon the jugular vein, there is a muscle, as thin as paper, the fibres of which run in an oblique direction from the border of the lower jaw to the collar bone, that is to say, in the direction of the vein itself; the incision must, in consequence, be made at a right angle with respect to the direction of these fibres, in other words, *cross-wise*, in order that they may contract, and thus form no impediment to the issue of the blood.

The incision, also, should be rather wide, a very necessary precaution to insure the free issue of the blood.

The blood will be found to trickle down; therefore the card must be made use of to direct it into the vessel destined for its reception. To encourage the bleeding, the patient should be told to keep his mouth in action as in mastication, and frequently to take a deep breath.

When the bleeding is ended, a bit of sticking plaster should be *instantly* applied to the orifice, and a pledget placed upon it, which should be maintained in place by the second ligature, wound gently round the neck and fixed with a pin.

This is an operation neither difficult nor dangerous, and may be performed in all those cases where there is a congestion of blood in the head, as in apoplexy, hanging, &c.

CUPPING.

The principal use of cupping will be found in its being a substitute for leeches, when the topical abstraction of blood becomes requisite, and these animals are not at hand. Military, naval, and country physicians are frequently unprovided with the usual instruments, and they resort in such cases to the following means.

They provide themselves with three or four wine-glasses, (those which have the stems broken off are the most commodious,) or the same number of *small* beer-glasses, a lancet, a little strong spirits, a sponge or some pieces of soft rag, two towels, or a sheet and towel, and a basin of warm water. Whatever glasses be employed, they should be quite level at the edges, in order that they may lie perfectly flat.

To commence the operation, the patient must lay bare the part to be acted on, below which one of the towels or a sheet is to be placed to protect his clothes or the bed-linen.

Every thing being in readiness, he takes one of the glasses and introduces therein a few drops of ardent spirits, which he allows to spread over the sides; and then holding it for an instant to the flame of a candle or bit of lighted paper, applies it, whilst the spirit is still inflamed, with the utmost rapidity, and with the mouth of the vessel downwards, flat upon the skin. In a few seconds, in consequence of the vacuum formed in the glass, the parts become engorged with blood and greatly swollen, the glass remaining firmly fixed by the atmosphere, which presses on it at the rate of 15 lbs. to the square inch of surface which it covers.

The effect of this application may be favored by dashing cold water over the surface of the glass, while it is still hot, which causes the little air remaining therein to become more speedily condensed.

As soon as one glass has been applied, the rest should be applied, in succession, and in the same manner; and after they have remained on, from four to six minutes, or more, to give time for the afflux of blood into the parts, the first glass is to be lifted off, which is readily done by putting the nail under the edge and allowing the entry of the air. The operator then takes the lancet, and makes a number of rapid incisions *into* the skin, but *not quite through* it if this can be avoided, drawing the lancet from the shoulders to the point. During this part of the operation, an assistant should wipe the glass quite dry; and the operator, introducing into it a few more drops of spirits, applies it as before, first to the flame, and then with rapidity upon the skin. He then proceeds to take off the second glass, scarifies the parts, and re-applies it as before directed; doing the same with the remainder, one only at a time. When the last has been re-applied, the first will be found sufficiently full of blood; this should be emptied of its contents, plunged into warm water to cleanse it, and then wiped and again applied; but the scarifications should be well sponged or cleansed by means of the soft rag, with warm water, to remove the clots. The others are to be treated in succession, in the same way; but if, after the removal once or twice of the glasses, enough blood has not been obtained, the parts should be again scarified.

The great secret of good cupping, is rapidity in the application of the glasses, and dexterity in placing them quite flat upon the parts; and as regards the scarification, the cutting *into* and *not quite through* the skin, otherwise the fatty tissue beneath enters into the incisions and blocks them up.

When sufficient blood has been obtained, the patient is to be wiped clean, and the scarified parts covered with square pieces of sticking plaster, snipped along the edges to make them lie flat, in number corresponding to the glasses.

VACCINATION.

This is an operation which is well known as a preventive of small-pox.

It will be better that the vaccine matter be taken from the human subject. It is generally obtained from the pustule from six to nine days after the operation; it should be transparent, colorless, or of a very light yellowish tinge. It suffices merely to introduce into the pustule the point of the lancet, upon which it will remain for some time without its qualities being at all impaired. It is sometimes kept between little square bits of glass, or in a fine glass tube hermetically closed at both ends; and when destined to be used at a distant period, it is better preserved by these means. However, when about to be employed, it should be rubbed down with the point of a lancet upon a bit of glass, the point being previously dipped in cold water.

The operation is usually performed upon the upper and outer part of the arm. The operator should lay hold of the back and inner part with the left hand, in order to stretch the skin at the place where he intends to operate; then, the lancet being properly furnished at its point with the matter, and straight open, he inserts it flatwise under the cuticle to the extent of about the eighth of an inch, allowing it to remain there for some instants. Three or four other punctures are to be made in the same manner, with this precaution—that they are to be far enough apart to prevent the red circular patches, which ought to surround them when the matter has taken effect, from touching each other. This precaution is so much the more necessary to be observed in infants, as erysipelas not unfrequently arises from this cause.

It is not necessary, and is sometimes dangerous, to vaccinate infants before the age of six weeks or two months.

APPLICATION OF LEECHES.

The best leeches are those of a moderate size, which have never been before applied, which have been but recently taken out of water, and which are vigorous and brisk in their movements.

The first thing to be done is to shave off any hairs that may be present on the parts, washing and sponging these parts well with warm water, and moistening them with a little milk or sugar and water.

In disorders of the eyes, they should not be applied immediately upon the lids, but just below the ridge or border which forms the lower part of the orbit; and never, as a general rule, upon the redness of inflamed parts, but as near, however, toward the verge of this as prudently may be.

When they are to be applied over some extent of surface, they should be thrown into a basin of warm water, and then put into a dry square piece of linen, the angles of which are to be drawn up together, so as to form a sort of bag; the warmth thus communicated to them tends to excite them, and render them more apt to bite. Having acquired sufficient energy, which will be seen by the briskness of their movements, the corners of the rag, which rests upon the palm of the hand, are to be thrown back, and the whole reversed upon the part where it is intended they should take. They should be kept in place either by means of a glass applied over rag and all, or merely the hand, which should be stretched out so as only to rest upon the borders. Or they may be placed in the cover of a small pill box and applied.

But when they are to be applied upon those parts where they can only be directed one by one, the best plan is to procure a small card, and roll it up so as to leave two openings, the one large enough to admit the whole body, the other very small, just large enough, in short, to give passage to the head; the animal being then introduced, the head downwards, the small end is to be applied to the proper spot, and the other closed by means of the pulp of one of the fingers; when it has adhered, this funnel-shaped card may be loosened and withdrawn, and reconstructed for the rest.

There are three ways of encouraging the bleeding; the first is, by the application of a cupping-glass, a method only employed by practitioners; the second, by bathing the bleeding orifices, left by the leeches, with warm water; the third, by the application of poultices, which are best made of linseed meal.

When leeches are to be applied to the chest, stomach, or bowels, it is advisable to fold a sheet three or four times long-wise, and lay it across the bed under the patient, before commencing the application of the leeches; during which time a second person should be engaged in preparing a large linseed meal poultice, to be applied as soon as the leeches have fallen or been taken off. The ends of the folded sheet should then be lifted up, lapped over the whole, and secured with pins; and, in this way, the soiling of the patient's dress and bed-linen will be totally prevented.

CYCLOPÆDIA

OF

POPULAR MEDICINE.

ABRASION OF THE SKIN.

When the skin has been accidentally ruffled or grazed, the injured part should be carefully washed with tepid water, in order to remove any sand or other impurity from the abraded surface. It should then be bathed with spirit and water until the pain has in some measure subsided.

To protect the part from the air, and prevent inflammation, a piece of folded lint, or soft linen rag, moistened with water, should then be applied, and covered with a piece of oiled silk to retain the moisture.

Sometimes warm poultices will be found to give more relief than cold applications.*

ABSCESS.

An abscess is a collection of matter, or *pus*, in some part of the body, invariably caused by previous inflammation. Abscesses are generally situated in the cellular structure or tissue, and they form more frequently in that structure near the surface than where it is deep-seated; the same structure or tissue also enters into the formation of all the internal organs liable to abscess.

An abscess is either *acute* or *chronic*.

ACUTE ABSCESS.

When acute inflammation is about to terminate in abscess, the pain, which was previously sharp, becomes dull, the swelling is

* See previous note on gun-cotton on page 230.

increased, and throbbing of the part commences. When the matter is completely formed, the part becomes softer, with an uneasy feeling of weight, the throbbing ceases, and, if the matter be not too deeply seated, we may feel it fluctuating by pressing with the fingers. At the same time, the feverish symptoms, which existed during the inflammatory stage, lessen, and rigors or shiverings take place at intervals; they are felt principally in the back and loins. The tumor at length begins *to point* at or near the middle of its surface. The skin at this part gradually becomes thinner, ultimately gives way, and the matter is freely discharged.

CHRONIC ABSCESS.

Chronic abscess is frequently situated in the lymphatic glands, as well as in the cellular tissue. It forms slowly. The tumor is round, without redness or heat of skin, and does not offer much resistance when pressed upon. The pain, if any exist, is comparatively slight, but there is an uneasy sensation of tension and weight. After remaining a longer or shorter period in this state, the pain becomes a little increased, a slight degree of redness may be observed on the tumor, and softening commences at its centre, gradually extending throughout. The inflammation then goes on until the skin bursts, and allows the matter to be expelled.

The matter of acute abscess is a bland fluid, thick, white, and without smell. This is called *healthy pus;* but sometimes, when long confined, it becomes thin, fetid, and acquires a grayish color. In chronic abscesses, the matter varies in consistence. It is generally serous, containing little flaky or curdy masses, which have in some cases the consistence of cheese, and the smell is disagreeable; this, in contradistinction to the former, is called *unhealthy pus.*

Treatment—Acute Abscess.—When inflammation of a part is going on, threatening abscess, our object must be to prevent this termination, if possible. But, if suppuration cannot be prevented by the usual means, viz. low diet, keeping the bowels freely open, the liberal use of leeches, and the constant application of cold lotions to the part, such as *Goulard water*, vinegar and water, &c., recourse should then be had to the soothing treatment, which consists of warm applications, as fomentations of marsh-mallow, and large poultices of bread and milk, or linseed; these are to be changed frequently, so as to keep up a due degree of heat and moisture, all stimulating applications being carefully avoided. Internally, the following mixture, recommended by Sir Astley Cooper, should be administered.

Liquor of the acetate of ammonia, six ounces,
Epsom salts, one ounce,
Laudanum, sixty drops. Mix.

The dose of this mixture is three or four table-spoonsful three times a day. Half a grain of *acetate of morphia* may be substituted for the laudanum.

When the abscess has gone through its stages regularly and begins to *point*, it should be left to burst of itself; but, if the matter be confined under the membrane which envelopes the muscles, or if the skin be very thick and unyielding, it will be necessary to make a free opening with the lancet.

Chronic Abscess. The treatment of chronic abscess is very different from that of acute. In this case the diet must be generous, and tonic medicine should be administered to give strength to the constitution.

Sulphate of quinine, forty grains.
Extract of gentian, a sufficient quantity to form a mass to be divided into twenty pills.
One to be taken twice or three times a day.

Cold stimulating poultices should be applied over the part. The one generally used is made by dissolving a table-spoonful of common salt in a pint of water, and mixing it with oatmeal or flour. If the case be very tedious, a *compound galbanum plaster* may be applied. This form of abscess will also require the lancet if the matter be deeply seated, or under the muscular covering, so as to prevent its spreading among the muscles; and as a general rule all abscesses, whether acute or chronic, situated in the arm-pit, near the anus, in the groin or neck, should be opened early, in order to prevent the matter from accumulating and extending in the cellular tissue. When it is found necessary to use the lancet, a free opening should be made in the most depending part of the abscess, and a piece of lint smeared with olive oil or spermaceti ointment placed in the wound, to prevent its closing before the cavity has healed up from the bottom.

If the abscess has been extensive, a roller or bandage should be applied, so as to bring the sides of the cavity together without covering the mouth of the wound. Whether the matter has been discharged through an opening made by the lancet, or from the spontaneous bursting of the abscess, it will be necessary to continue the poultices for some time after.

In people of scrofulous constitution, the absorbent glands of the neck not unfrequently become enlarged and hard without being discolored or painful, though there is generally tenderness on pressure. These glandular swellings, for the most part, come on slowly, remain for a considerable length of time, perhaps weeks or months, and occasionally disappear of themselves without any treatment. But in general, after they have continued for some time in this indolent state, matter begins to form, the skin over the enlarged gland acquires a reddish tint, and there is pain either more or less severe. Warm poultices, and sometimes stimulating applications, are then made use of by those who are ignorant of the means which ought to be adopted in such cases; after a time the skin assumes a lived or purplish color, and at last bursts and the matter is discharged. A considerable portion of the dark-colored skin is lost by sloughing, and an ugly ulcer forms, which is healed with difficulty, leaving an indelible scar which remains for life. In a boy a scar in the neck is kept out of sight, being covered by the dress, and is, therefore, of no great consequence; but to a girl it is of the utmost importance, for when arrived at womanhood it must be a source of deep regret to bear scars not only offensive to the sight, but which point her out as tainted with scrofula, or *king's evil*, a disease that has always been considered as more decidedly hereditary than perhaps any other. As soon as these glandular swellings make their appearance on the necks of children, we should, if possible, prevent their suppurating; to effect this, gentle, alterative doses of *calomel* and *rhubarb* should be given, proportioned to the age of the child.

Calomel, one or two grains,
Rhubarb, five to ten grains. Mix.

This dose may be given every second or third day, or in smaller doses repeated at shorter intervals, and the part should be kept cool by the constant application of the following lotion.

Goulard's extract (liquor of the acetate of lead) two drachms,
Spirit of wine, two drachms,
Water, two pounds. The two first ingredients are to be mixed before the water is added.

But it often happens after the greatest care and the utmost attention in conducting the treatment, that the suppurative process commences and matter forms; as soon as this is ascertained the powders prescribed above must be discontinued, and the following medicine given.

Dried subcarbonate of soda, four to eight grains,
Sulphate of quinine, a quarter of a grain,
Rhubarb, two or three grains. Mix. To be continued daily. Or,

Myrrh in powder, three to six grains,
Carbonate (or rust) of iron, the same quantity,
Rhubarb, two or three grains. Mix. To be given twice a day.

Food difficult of digestion, or of a stimulating quality, should not be given, but the diet should be sufficiently nutritious, and not confined to vegetable or farinaceous substances. When a slight blush or degree of redness is observed on the skin covering the part, and when matter can be distinctly felt on pressing with the fingers, vent should be immediately given to it. The opening should be made transversely with a lancet, or a fine double-edged knife, and the greatest care must be taken to squeeze out all the peculiar curdy matter which these abscesses almost invariably contain. By making the wound transversely, it follows the course of the folds or creases of the neck, or runs parallel with them, and consequently when healed the cicatrix will scarcely, if at all, be observed.

After the matter has been discharged, bread poultices mixed with either of the following cold lotions should be applied.

Sulphate of zinc, twenty grains,
Water, ten ounces,
Spirit of wine, half an ounce. Mix. Or,

Nitric acid, twenty drops,
Distilled water or common water, a pint. Mix.

The strength of these lotions must be gradually increased, but not made so strong as to produce pain.

If the wound do not heal readily, which is sometimes the case, the best plan is to inject a little of the following lotion with a syringe every time it is dressed.

Water, a pint,
Sulphate of zinc, twenty to twenty-five grains. Mix.

The time to make the opening, as has been already stated, is when the matter can be felt on pressure with the fingers; the skin covering the tumor will then in all probability have a slight appearance of redness; but if this stage of the abscess has not been taken advantage of, and suppuration has been allowed to go on until the skin has acquired a livid or purple color, the use of the knife will then do no good; it will be better to apply fomentations and warm poultices until the abscess burst of itself.

The time required for the formation of an abscess varies according to its situation and the constitution of the patient. Matter generally begins to form from seven to fourteen days after the commencement of inflammation, and an acute abscess usually runs its course in about three weeks. A lumbar or psoas* abscess, or any other extensive chronic abscess, requires a much longer period, sometimes several months.

* The name of two inside muscles of the loins.—Ed.

ACONITE, (Wolfsbane or Monkshood.)

The extract is a powerful remedy in all the stages of rheumatism, and in gout. It soothes the excruciating pain arising from cancer and diseases of the womb, when the extract of hemlock ceases to produce that effect. It is of the greatest service in tic-douloureux, scrofulous swellings, old syphilitic diseases, long continued cough, and affections of the stomach.

The symptoms which point out the extent beyond which Aconite should not be carried, are a slight degree of uneasiness at the stomach, with inclination to vomit, and occasional dimness of sight, which may be removed almost immediately by taking a little warm brandy and water.

ÆTHER.

Sulphuric æther is used in nearly all spasmodic diseases, such as asthma, hysterics, hiccough, cramps, and other nervous affections. It is given sometimes as a cordial in low fevers, and also in malignant fevers with the intention of allaying spasmodic twitchings.

Applied externally, æther stimulates and reddens the skin ; it is used for this purpose in nervous headache, and in toothache, being applied to the cheek. To produce the effect of irritating the skin, the part to which it is applied must be kept covered, otherwise it evaporates so quickly as to cause extreme cold.

The dose is from a half a tea-spoonful to a tea-spoonful in a little water, or in three or four ounces of camphorated mixture.

The recent announcement of the power of æther, when inhaled, to produce insensibility, and thus render patients incapable of feeling pain during the performance of surgical operations, renders it necessary for us to give a brief account of this interesting and important discovery. The vapor of æther, mixed with atmospheric air, is inhaled or taken into the lungs by means of an instrument made for that purpose. When the inhalation has been continued for three, four, or five minutes, effects are produced which bear a close resemblance to those of excessive intoxication from spirituous liquors. The pupil of the eye first becomes considerably dilated, the breathing slower, the face congested, and the patient rapidly falls into a lethargic state, generally unconscious of what is passing around him, and almost completely insensible of pain. The insensibility, in ordinary cases, continues for two or three minutes, after which the patient recovers more or less completely, without any subsequent ill effects. The insensibility, as we have said, is often complete ; but sometimes consciousness partially remains, while the power of feeling is suspended ; the patient, during the most severe operation, thinks that he is dreaming, and awakes to find that his sensations must have been those of pain, by some strange process, metamorphosed into pleasurable feelings.

Teeth have been extracted; limbs amputated; stone in the bladder taken out; tumors of all kinds extirpated; strangulated hernia relieved; operations on the eye performed; and all, if the published accounts be authentic, without suffering or pain. In some cases, however, the insensibility produced by the æther was partial only, and the patient, therefore, experienced some slight degree of pain.

AGUE, OR INTERMITTENT FEVER.

Ague generally declares itself under three regular forms, namely, the *quotidian*, *tertian*, and *quartan*.

The *quotidian* form has an interval of twenty-four hours, and the fit usually commences in the morning, This type of ague is not so common as the other two, and occurs generally in spring.

The *tertian* has an interval of forty-eight hours, the fit occuring about noon. This is the most common form, and prevails also in spring.

The *quartan* has an interval of seventy-two hours, commencing in the afternoon. This form prevails in autumn, and is the most difficult to overcome.

It must not be supposed that these forms of ague commence invariably at certain periods of the day; they may commence at any hour; the periods we have mentioned, however, are the most usual.

Each paroxysm or fit of intermittent fever has three well-marked stages, a *cold*, a *hot*, and a *sweating stage*.

The *cold stage* is ushered in by the following train of symptoms; languor, listlessness, general uneasiness, with depression of spirits, aversion to food, a feeling of soreness on the back and extremities. The face and extremities then become pale, and a cold sensation is felt in the back and loins, gradually extending over the whole body, until decided shivering takes place; the lips and nails assume a livid hue, the teeth chatter, the skin presents the appearance of what is vulgarly called *goose's skin*, respiration becomes oppressed, the pulse is weak, the mouth and throat dry, all the secretions are diminished, and the patient sometimes vomits.

The *hot stage*. After a longer or shorter duration, the shaking gradually goes off, the heat of the body returning, until it goes far beyond the natural standard. The skin then becomes dry, the face flushed, the pulse full and hard, the tongue furred, and the breathing, which was considerably affected during the cold stage, becomes easier.

There is great thirst, severe headache and restlessness. The urine, which in the first stage was pale, is now high-colored, the sensibility, previously more obtuse than natural, is now increased, the eyes have a bright and glistening appearance, and sometimes delirium comes on.

The *sweating stage*. The hot stage having continued an indefinite time, a slight degree of moisture is at length observed on the forehead and neck; this gradually extends to the trunk and extremities, and terminates in profuse perspiration, which relieves the patient from his suffering. He is left, it is true, with a feeling of fatigue; but the appetite returns, all the secretions again become natural, and he is able to follow his usual occupation until the commencement of another fit.

The quotidian has the shortest cold stage, but the longest paroxysm or period required for the completion of the three stages; the tertian has a long cold stage, but a short paroxysm; and the quartan has the longest cold stage and the shortest paroxysm.

The usual duration of the quotidian paroxysm is from twelve to fifteen hours, of the tertian ten hours, and the quartan form commonly completes its stages in six or seven hours. These rules, however, admit of many exceptions.

When the disease is giving way, the fits become milder, and gradually later, until at length the ague is no longer felt; but when it is increasing, the fits become more severe, and gradually return earlier, so that it is not unusual for the tertian form to become quotidian, and the quotidian to assume the remittent type of fever.

Causes. The exciting or specific cause of ague, is undoubtedly *malaria*, or the exhalation from decaying vegetable matter. In some parts of Italy, during the excessive heat of summer, the *malaria* becomes so noxious, that it causes ague of a pernicious or malignant character, the patient sometimes being carried off in the second or third fit. The most deleterious effects of *malaria*, whether derived from decaying vegetable matter or not, can only be manifested under a high temperature; it then acquires a virulence truly extraordinary.

Ague is certainly very apt to relapse, and slight causes, such as exposure to cold and moisture, errors in diet, certain winds, such as the north-east, &c., will bring it back after an absence of months, or even years. Individuals whose general health is not good, are more liable to be acted on by *malaria* than those in robust health. Poor diet, fatigue, debauchery, or any other debilitating cause, by enfeebling the powers of life, predispose the body strongly to ague, when exposed to the influence of *malaria*.

Treatment.—In the treatment of ague, we have two objects in view, the one to alleviate and shorten the fits, the other to prevent their return.

Treatment during the fit. In the *cold stage* it will readily occur to every one to cover the patient with blankets or other warm clothing, and to administer warm drinks. Wine and spirits in any form are to be avoided, because they are of little or no use in modifying or relieving this stage, and they certainly render the hot stage more severe, particularly if the ague be complicated with any affection of the stomach, liver, or spleen, and they are still more likely to be injurious when there is determination of blood to the head; this is beyond a doubt, and the patient's request therefore ought not to be complied with when he asks, which he is very likely to do, for hot negus, or hot spirits and water.

Laudanum is often given at the commencement of this stage, with the effect of shortening it and rendering the whole paroxysm milder, but the dose should be large, at least sixty drops mixed with a little warm water; for females or individuals of delicate constitution, a smaller dose, twenty, thirty, or forty drops will be sufficient, but it ought to be avoided altogether, if there be much congestion in the blood vessels of the head, or if the patient is aware that laudanum disagrees with him, in consequence of some peculiarity of his system.

Hot stage. In this stage neither blood-letting nor laudanum should be had recourse to; the former is sometimes dangerous, and the latter is more likely to do harm than good. The quantity of bed clothes is to be diminished, and the patient should be allowed to drink freely of cold water or cold acidulated liquids, such as cream of tartar, or tamarind beverage, with the addition of twenty or thirty grains of purified nitre. The cream of tartar beverage is made in the following manner.

To three pints of boiling water, add
Four ounces of refined sugar,
Half an ounce of cream of tartar, and
Three drachms of orange-peel, or an orange cut in slices.

Sweating stage. In this stage medicine is not requisite. We have merely to take care that the body is not chilled when the patient's clothes are being changed.

Treatment during the intermission. It is only during the intervals or periods between the fits, that we can expect to effect a cure. We then have recourse to *Peruvian bark*, or the *sulphate of quinine*, which are possessed of almost a specific property in preventing the return of the fits, and may be considered as our sheet anchor in all the forms of ague. The dose of bark in powder, is from a drachm to two drachms every three or four hours, so as to allow nearly two ounces to be taken during each intermission. The concentrated form of sulphate of quinine, is much preferable and should be given in the following manner.

Sulphate of quinine, twenty-four grains,
Extract of gentian, a sufficient quantity to make a mass to be formed into twelve pills.

One pill may be given three or four times a day, commencing immediately after the sweating stage, or two grains of quinine may be given in place of each pill, in a little Port wine and water, care being taken to continue this medicine for some time after the disease appears cured. The power possessed by quinine in overcoming ague is truly extraordinary, and must ever be considered as one of the most curious facts in medicine. It does not, however, produce the desired effect in all cases, and, when it fails, we have reason to suspect that the ague is kept up by some organic derangement of the bowels, lungs, liver, spleen, &c. If there be disease of any organ, it is aggravated during the fit, in consequence of the increased determination of blood to the part, causing congestion; and, during the intermission, the affected organ keeps up constantly a greater or less degree of irritation in the system, and thereby prevents the quinine acting as it otherwise would do.

When chronic inflammation or enlargement of the liver, spleen, or any other organ, can be distinctly traced, leeches should be repeatedly applied over the part affected, or a seton or blister may be placed in the same situation, and the blistered surface kept discharging for some time. In such cases, when quinine is obstinately resisted, the *arsenical solution*, or *Fowler's solution*, which is the most powerful antiperiodic remedy we possess, next to quinine, may be found of the greatest advantage. The dose to commence with should be as follows.

Fowler's solution of arsenic, three drops,
Laudanum, eight or ten drops,
Water, an ounce. Mix. To be given every four or six hours, gradually increasing the dose of the solution to eight or ten drops, according as the stomach will bear it.

It should not be given before breakfast, or on an empty stomach. If carefully watched, there is no danger whatever in using the arsenical solution, and it frequently cures ague when quinine fails. If it produce griping of the bowels, or sickness at stomach, the dose should be diminished.

The bowels must never be allowed to remain constipated at any period of the disease; constipation will be prevented by giving occasionally two or three grains of *calomel*, with eight, ten, or fifteen grains of *jalap*, *rhubarb*, or any other mild laxative which the patient may have been in the habit of taking. Purging to any extent is never necessary in ague. Keeping the bowels gently open is sufficient.

It is only during the intermission that food should be taken, and, as ague is almost invariably attended with debility, the diet ought to be light, nourishing, and of sufficient quantity; but if there be a tendency to inflammation of any particular organ, the patient must confine himself to low diet.

ALOES.

This medicine is an excellent purgative, and one of the most certain in its action we possess. It does not produce watery stools nor create wind in the bowels, rarely disagrees with the stomach, and when taken in small doses assists digestion. It is particularly useful in cases of habitual costiveness in connexion with indigestion, and answers well with hypochondriacal people and those of sedentary habits; it is also serviceable when the constitution is sluggish or scrofulous. Aloes when combined with myrrh and a preparation of iron, is beneficial in obstruction of the menses, and when given in conjunction with small doses of blue-pill has been found one of the best medicines in jaundice.

It acts principally on the lower intestines, and has a tendency to irritate them when given too frequently or in too large doses. Hence it ought not to be given to those who have piles, nor when there is inflammation of the bowels, and should be particularly avoided by females who are subject to immoderate flowing of the menses. It is improper when there is any disease of the womb, during pregnancy, and also during the period of the menstrual discharge. Aloes is usually given in the form of pills; the dose is from five to fifteen grains; it is, however, seldom taken alone. When intended to give tone to the digestive organs and also to open the bowels, the following form of combination, recommended by Professor A. T. Thompson will be found one of the best.

Take of myrrh, six drachms,
Subcarbonate of soda, three ounces,
Ammonia, four drachms and a half,
Extract of aloes, six drachms,
Sherry wine, twenty-four ounces. Macerate during seven days, and strain.

Two or three table-spoonsful of this mixture to be taken twice a day in the same quantity of a solution of extract of liquorice, (the common Spanish liquorice dissolved in warm water,) which answers the purpose of concealing the taste of bitter medicines, better than anything else.

ALUM.

This medicine was strongly recommended by Dr. Percival in cases of painter's colic, in doses of ten to twenty grains every fourth or fifth hour. It was formerly employed in internal bleeding and gleet, but is now very little used internally. It has been found useful in stopping the bleeding from leech bites in children by keeping a portion for some time applied to the parts, and may be used in the same way to stop the bleeding arising from the extraction of a tooth. It is serviceable as a wash in arresting bleeding from the nose. Alum, also, forms a very useful gargle in common sore throats.

In the following form it is found beneficial as an injection in the discharge called *the whites.*

Take of alum, a drachm,
Water, seven ounces. Mix.

It is often used as a lotion for the eyes, after the inflammatory stage of ophthalmia has been subdued.

Take of alum, ten grains to a scruple,
Rose water, six ounces. Mix.

AMAUROSIS, OR GUTTA SERENA.

By this term is meant a complete or partial loss of sight, resulting from an affection of the part or parts of the brain connected with the nerves of the eye, or from palsy or atrophy of the optic nerve and its expansion in the bottom of the eye, called the *retina.*

This disease may be easily known by the pupil being in general dilated and motionless, while the globe of the eye retains its transparency. There is also in most cases a slight appearance of squinting.

Amaurosis is rarely met with alone, being either complicated with or caused by some other disorder. It may commence suddenly, the patient being struck with blindness of one or both eyes, but in general it comes on gradually. It begins either in one eye, which is usually the case, or may attack both at once. It is sometimes intermittent, occurring at regular or irregular intervals.

When Amaurosis is commencing, the patient fancies he sees a variety of minute objects intervening between his eyes and the object at which he is looking. They assume the appearance of insects' wings or little pieces of net-work or gauze, or present a circular or serpentine form, and are sometimes like bits of cobweb; he tries to get rid of them by rubbing his eyes, but in spite of all his efforts continues to see them moving rapidly before him in whatever direction he turns. These symptoms go on increasing until at length the patient can see nothing but an obscure cloud or haze, with occasional flashes of light or other luminous appearances. The patient at any period of the disease may be troubled with severe head-ache and giddiness, but no regular train of symptoms can be pointed out, since the disorder depends on so many different causes, several of which may be acting at the same time.

If the individual be young and the Amaurosis has come on suddenly, the pupil not much dilated and remaining to a certain extent moveable, a cure may be effected; but if it has come on slowly, the patient being in advanced life, the pupil remaining immoveable and continuing either dilated or contracted, while the globe of the eye is either harder or softer than natural, the patient will have little or no chance of recovery.

Treatment.—In directing the treatment of Amaurosis, all that can reasonably be done is to give a few general rules for well-marked cases; this disease being usually so complicated, that each case requires its own particular treatment.

If Amaurosis arise from determination of blood to the head, the vessels of the brain, particularly those connected with the optic apparatus being overcharged with blood, it will at once be obvious that local blood-letting by the application of leeches to the neck (along the course of the jugular veins) and to the temples, or cupping the nape of the neck are indicated; and if the individual be of a plethoric or robust habit of body, he should be bled freely from the arm. The extent to which blood-letting should be carried must depend on the age and constitution of the patient, as well as on the urgency of the case. In ordinary cases, however, twelve or fifteen leeches will be sufficient, and when general blood-letting is required, fifteen or twenty ounces of blood may be drawn from the arm, the bleeding to be repeated if the congestion continue. Low diet must be strictly enjoined, and the patient should be directed to bathe his eyes frequently with cold water, and to use the shower bath, or sponge his head night and morning with cold water. To these means must be conjoined rest and purgative medicine to keep the bowels freely open, such as the *black draught*, and afterwards one, two, or three pills of the *compound extract of colocynth* every other night at bed-time; the greatest care must be taken to prevent irritation of the eyes by exposure to strong light.

Blisters are advisable in all cases where there is any chance of effecting a cure. They should be applied in succession behind the ears, on the nape of the neck, and on the forehead, above the eyes. To these means must be added regular exercise in pure air, and nutritious diet, easy of digestion; the eyes should be allowed repose, the patient taking care not to fatigue or expose them to strong light.

After the above treatment, *tonics* will often be found necessary.

In Amaurosis, brought on from the healing of old ulcers, or the disappearance of an eruption, recourse should be had to *counter-irritation*, by means of setons or issues.

ANGINA PECTORIS, OR BREAST-PANG.

This is an intermittent affection, coming on in fits at irregular intervals, and is one of the most painful and most fatal of all diseases. The fit commences suddenly, and usually when the patient is walking, with a severe lancinating or stabbing pain, generally behind the lower part of the breast-bone, extending in the direction of the left nipple. The constrictive suffocating sensation which accompanies the pain, compels the patient to stop, and, in the course of a few minutes, if quiet be observed, the attack goes off. The first attacks are comparatively slight, and of short duration, no particular inconvenience being felt when they are over; but, after a time, they become more severe, and continue much longer; the pain extending to the arm, and even to the ends of the fingers, generally on the left side only, though sometimes it extends to both, accompanied with a feeling of numbness, which prevents the use of the arm. Occasionally the neck, the left jaw, and even the ear, are affected, the speech being slightly impeded, and the anxiety and suffocating sensation are frequently so severe, that the patient dreads immediate death. When the disease has advanced to this extent, the fits last from half an hour to an hour, or even longer. The respiration is usually very little affected, though it may be sometimes a little more frequent than natural. The pulse is in some cases natural; in others quick, strong, irregular, or intermitting. The face may be either pale or red; sometimes pale, or with a sallow tinge. The skin may be hot, or covered with a cold clammy sweat.

After the termination of a severe attack, the patient experiences a feeling of fatigue, and soreness of the parts affected, and the sensation of numbness frequently continues for a considerable length of time.

Angina pectoris is a disease of so marked a character, that it can scarcely be mistaken for any other; the acute pain behind the breast-bone, extending to the left arm, distinguishes it from asthma, which is the only disease at all resembling it.

Treatment during the Fit.—The *tincture of henbane* answers better than any thing else, in doses of from two to four drachms, according to the urgency of the case, in combination with four or six ounces of peppermint-water. Shortly after receiving this mixture, the patient not unfrequently discharges a quantity of air from the stomach, which gives the greatest relief, if it do not terminate the fit entirely. In some cases, from half a grain to a grain of the *acetate of morphia* may be advantageously substituted for the tincture of henbane.

Blood-letting, to the extent of from four to ten ounces, has been known to mitigate and shorten the fit, when the patient is of a full or plethoric habit of body, but it should be used with the greatest caution, and never when the patient is pale or debilitated.

Brandy, æther, ammonia, and other strong stimulants, are more likely to do harm than good, since we know that Angina is so frequently complicated with disease of the heart.

The best writers on Angina condemn the use of purgatives and emetics, or at least consider them useless.

Treatment during the Interval.—Medicine, during the intervals, can do little good compared with the advantage to be derived from a strict attention to regimen and diet; the latter should be almost entirely vegetable or farinaceous; animal food, if used at all, must be taken very sparingly, and should be confined to a little chicken or mutton. Wine, malt liquors, strong tea and coffee, and every thing tending to quicken the circulation, must be altogether abstained from, (see the instructions with respect to diet in the article on Apoplexy.) With regard to regimen, mental and bodily quietude becomes absolutely necessary; the patient should, if possible, reside in a sheltered situation, where the air is dry, and the ground sufficiently level to admit of gentle exercise, avoiding all the exciting causes already mentioned. Flannel should be worn next the skin, and the feet kept warm by woollen stockings.

Much benefit has been derived from *issues* and *setons*, applied to the left side of the chest, or to the inside of each thigh; or the *tartar emetic ointment*, composed as follows, may be rubbed in over the chest.

Tartar emetic, a drachm and a half,

Lard, or spermaceti ointment, an ounce. To be well mixed together; about the size of a nutmeg to be rubbed in night and morning.

This ointment soon brings out a crop of large pustules, resembling small-pox. They are sometimes attended by a good deal of pain and irritation, which can be easily relieved by applying warm bread and milk poultices.

The patient should know that no remedies, however appropriately prescribed, can be of much use, if the exciting causes of the disease are not strictly avoided; nor without rigid attention to the proper regimen and diet.

ANTISPASMODICS.

Medicines which allay spasms, or in other words, painful and involuntary contraction of the muscles, are called Antispasmodics. The principal remedies of this class are opium, æther, camphor, assafœtida, musk, and galbanum.

APOPLEXY.

Apoplexy is characterized by a sudden suspension, more or less complete, of the power of sense and motion, the organic functions of circulation and respiration continuing to be performed, though impaired to a certain extent.

This disease is caused by pressure on the brain from an effusion of blood, its symptoms varying according to the extent of the effusion.

There are certain symptoms which sometimes give notice of the approach of apoplexy, namely, giddiness, indistinct vision, with the appearance of motes or sparks before the eyes, buzzing or ringing in the ears, drowsiness, a sensation of fulness in the head, general headache, or a pain in some particular part of the head, inability to articulate distinctly or to walk firmly. But in the majority of cases, people are struck with apoplexy, when to all appearance, in excellent health, and without any indications of the approach of this dreadful disease.

Causes. Stature rather low, with a plethoric or full habit of body and short neck; certain diseases of the heart; hereditary disposition; excess in eating rich or highly-seasoned food; intemperance in drinking; violent mental emotion; suppression of the discharge from piles; the drying up too quickly of setons or issues, and in fact any cause tending to determinate the blood too strongly to the head. Old age may also be considered as a predisposing cause, apoplexy being more common between sixty and seventy years of age, than at any other period of life.

This disease may be mistaken for a *fainting fit*, though the distinction is sufficiently well marked. When a person faints, the face and lips lose their color, and the skin becomes cold. In apoplexy on the contrary, the face is generally red and the skin hot. In fainting, the pulse and respiration are almost suspended. This is not the case in apoplexy. A fainting fit is but of short duration, and the individual on recovering does not experience pain.

Epilepsy, or the falling sickness, resembles apoplexy, in so far as the individual in both cases falls down in a fit; but in the former disease there are convulsions, the limbs are not paralyzed but rigid, and the eyes are convulsed and look upwards; these symptoms distinguish it sufficiently from apoplexy. (See *Epilepsy.*)

Complete intoxication is distinguished from apoplexy by the smell of the liquor which the individual has drunk, and by the weakness of the pulse.

Treatment. When a person falls down in a fit of apoplexy, the first thing to be done is to expose the head and neck to the open air, the head and shoulders being considerably raised. Blood should be taken freely from the arm, and at least twenty leeches applied along the course of the jugular veins, at the angle of the jaws, and on the nape of the neck. No spirits or stimulating medicine should be given. The next thing to be done, after cutting the hair from the head, is to employ cold applications; ice, if it can be had, should be pounded, put in a bladder, and placed on the head in the form of a cap, and kept there until it dissolve; the bladder should then be removed, and the head exposed to the air during twenty minutes or half an hour, until it recover its warmth; the bladder replenished with ice should then be again applied. This remedy should not be continued too long at a time; it ought to be discontinued for some hours, and during the interval thin pieces of cloth dipped in vinegar and water, or in the spirit of wine lotion (composed of one ounce of spirit of wine to five ounces of water) should be applied. And if ice cannot be procured, the head must be kept constantly moist with these lotions. If after twenty or twenty-four hours from the first blood-letting the pulse be found still hard and vibrating, the vein should be again opened, and the blood allowed to flow until the pulse become softer. The patient must be kept perfectly quiet and allowed to remain in the position in which he was first placed, nothing stronger being given than whey or barley water. If the bowels be constipated, the following clyster should be employed.

Barley water, a pint,
Oil of turpentine, one table-spoonful,
Castor oil, two table-spoonsful.

If not found sufficiently active, it should be repeated, with the addition of a table-spoonful of Epsom, Glauber, or common salt, or the following injection, which is still more active, may be used.

Croton oil, two drops,
Glauber or Epsom salts, an ounce,
Infusion of senna leaves, twelve ounces,
Castor oil, an ounce. Mix.

This is all that should be done during the first forty-eight hours; after the expiration of that period, when the congestion and determination of blood to the head have been relieved, the following purgative powder should be administered.

Calomel, five grains,
Aloes in powder, three grains,
Jalap, ten grains. Mixed with a little jelly or honey.

If this powder do not operate in the course of a few hours, it should be followed by an infusion of senna leaves.

Senna leaves, two drachms, infused in
Warm water, five ounces.

Three ounces of this infusion to be given as a dose, and the rest if necessary in the course of an hour, or the draught called the *black-draught*, may be administered, which is composed of

An ounce and a half of infusion of senna leaves,
Three drachms of Epsom salts, and
One drachm of tincture of senna.

When there is much difficulty in swallowing, croton oil will be found an excellent purgative, in a dose of two or three drops placed on the tongue.

It ought to be observed that in the early stage of this disease, the most powerful purgatives are frequently very slow in their action, producing no effect for a considerable length of time after they have been taken; it therefore not unusually happens, that under the idea that the first doses have not been sufficiently active, purgatives are repeated at short intervals, until at length their action commences all at once, and to such an extent as to endanger life.

Vomiting determines the blood strongly to the head; emetics ought therefore to be avoided, and even if vomiting commence spontaneously, it should not be promoted by causing the patient to drink warm water.

Blistering the head or nape of the neck, setons, issues, and every thing which may act as a source of irritation, should be carefully avoided during the first days of the disease, though at a more advanced period they may be used with advantage.

The cases which do not admit of general blood-letting are comparatively rare, but when the face is pale, the pulse weak and small, and the whole body appears paralyzed, it would certainly be improper; but this state, even when we are aware that the patient has been previously much debilitated, ought not to prevent the application of leeches and ice, or evaporating lotions in the manner already directed. In such cases washings of warm turpentine, and mustard poultices applied to the legs or feet, will be found useful. The poultice is made as follows.

Mustard seed in powder, and
Linseed in powder, of each half a pound.
Hot vinegar, a sufficient quantity to give the consistence of a poultice.

The state of the bladder ought to be carefully observed; if the urine accumulates, and the patient has not the power of making water, it must be drawn off night and morning with the catheter.

The treatment hitherto has been intended to relieve the congestion in the vessels of the brain, and diminish the undue determination of blood to the head, with the object of preventing an increased effusion in the brain, as well as to counteract the inflammation which might result from the portion of coagulated blood already there acting as a source of irritation. But we will now suppose the attack over and the patient recovering, though laboring under the usual consequence of apoplexy, viz., *palsy*, either more or less complete, of one side of the body, caused, as has been already mentioned, by a clot of blood pressing on the opposite side of the brain.

The *regimen* and diet of the patient now require particular attention. Wine, and all kinds of distilled and fermented liquors, must be prohibited; also coffee, strong tea, tobacco in any form, and indeed, every thing stimulating. Animal food, if taken at all, should be used in very small quantity. The diet must consist principally of vegetable or farinaceous substances. Ripe fruit, and fish, may be taken in moderate quantity, with the exception of salmon, or other fish difficult of digestion. Butter and cheese are not to be allowed, nor vegetables difficult of digestion, such as cabbages, cauliflowers, and beans; cucumbers, radishes, and all raw vegetables, are to be carefully shunned. The general rule is to eat moderately, and avoid food of a stimulating nature, or difficult of digestion; and as apoplexy commonly occurs late in life, the patient must know pretty well the sort of food which agrees best with him.

The patient must keep his mind perfectly quiet, and be on his guard against any bodily or mental fatigue, and avoid going to theatres, or other places of public amusement Benefit will be derived from caustic issues, or a seton in the nape of the neck; or a blister may be applied to the same part, and kept open for some length of time. Sponging the head night and morning with cold water, or the shower-bath, will in many cases be found highly advantageous.

The utmost attention must be paid to keep the bowels gently open with mild laxatives, such as castor-oil, Henry's calcined magnesia, or three grains of blue-pill at bed-time, followed by a Seidlitz-powder or the black draught in the morning. Nothing tight should be worn round the neck, and if the patient be of a plethoric or full habit of body, blood-letting, or cupping the nape of the neck every spring and autumn, may be had recourse to with advantage. A sea voyage, travelling for amusement, or any mild exercise taken regularly, and in moderation, will be found beneficial.

APTHÆ; OR THRUSH.

This is a very common complaint amongst children, and almost invariably arises from a disordered condition of the stomach and digestive organs. It is sometimes caused by improper diet in children brought up by the hand, or by milk of a bad quality from an unhealthy nurse, or one who is immoral or intemperate in her habits.

Symptoms.—When this complaint is of a mild character, the general system is not much disturbed; there is commonly an increased degree of redness on the inside of the mouth and about the tongue, and these parts are covered with specks or patches resembling curdled milk. But in more severe cases these whitish-looking flakes extend to the back parts of the throat, and even down into the gullet. The child is fretful, an increased degree of slavering and hesitation in sucking may be observed, and the mouth is hot and tender. The little patient now becomes slightly feverish, although this symptom is not always present, is sick at stomach, drowsy, and starts in its sleep, as if frightened or suffering pain. In all cases there is acidity of the stomach, while the breath, and the coagulated milk which is vomited up, have a sour smell; the bowels are also affected, the stools being watery, and of a green color, with considerable griping. Sometimes the *anus* becomes excoriated by these acrid evacuations, which are discharged so frequently as greatly to distress the child, who now becomes pale and loses flesh. Thrush generally lasts eight or ten days, but is not dangerous unless in some cases where the white flakes or crusts fall off, leaving the surface of a brown or bluish color, followed by a bad kind of ulceration of the parts. When this occurs the purging is very severe, and the stools have a slimy appearance.

Thrush is not contagious, and is generally observed in weak children, or when the mother's milk is of a bad quality.

Treatment.—If there be no purging at the commencement of this affection, the stools will generally be found of a green color; and as there is always acid in the stomach and bowels, one of the best remedies is *magnesia* in small doses, repeated from time to time until the bowels are freely opened. The best local application is *finely-powdered borax*, mixed with an equal quantity of sugar, and placed upon the tongue, which, by its natural movements, will soon carry the powder to every part of the mouth. This should be repeated every two or three hours, or the honey of borax may be applied to the affected parts of the mouth, with a camel's hair pencil. In mild cases no other treatment will be required.

If the evacuations from the bowels still retain a green color, and if there be little or no purging, equal parts of *lime water and milk* will be found useful. A table-spoonful of this mixture may be given four or five times a day. If there be thin watery stools, with griping and straining, a tea-spoonful of the following mixture may be given every two hours until the child is quieted:—

Magnesia, twelve grains,
Laudanum, three drops,
Water, one ounce,
With a sufficient quantity of sugar to make it palatable.

Instead of the above mixture, the following medicine may be given, which has generally an excellent effect in correcting the purging.

Compound powder of chalk, and
Dried carbonate of soda, of each a scruple,
Mercury, with chalk, half a-scruple.

From three to five grains of this powder may be given three times a day.

To aid in relieving the irritation of the bowels, the little patient should be placed, from five to ten minutes, in a bath of about eighty degrees of Fahrenheit's thermometer, and then well dried and wrapped up warmly.

During the continuance of this complaint the mother's diet should be carefully regulated, so as to prevent acidity at stomach, and should be of such a nature as to ensure the purity of her milk. Plain animal food, with bread or rice, is the most suitable kind of diet; no vegetables which will induce acidity upon the stomach should be taken, and water should be the only beverage at dinner.

Thrush generally occurs before the child is weaned, and then the mother's milk is the only nourishment that should be allowed. But if the child has been weaned before the complaint makes its appearance, the diet should consist of chicken broth, or weak beef-tea; lime-water with milk or gum-water made by mixing gum arabic with warm water. But, although there is generally considerable thirst, children seldom have much appetite for food during the progress of thrush.

Rubbing the inside of the child's mouth with a rough cloth or a piece of flannel, is a barbarous custom.

As long as the complaint continues the greatest attention should be paid to cleanliness; the lower extremity of the bowels and the hips should be washed with tepid water, or milk and water, after every evacuation, and then, if there be any excoriation or abrasion of the skin, the parts should be anointed with fine soft pomatum or fresh butter.

ARSENIC.

The Arsenical Solution, commonly called *Fowler's Solution*, is the only preparation of arsenic used internally. It is seldom given until other medicines fail, and then, when conducted with due caution, is as safe as many other remedies in every-day use, such as Prussic acid, morphine, strychnine, &c. When the sulphate of quinine does not produce the desired effect, this is the most powerful remedy we possess in curing the ague. (See *Ague.*)

We have known this remedy to be of the greatest service in some cases of the remittent fever of warm climates, when no local inflammation could be discovered; and, indeed, in this, as well as in many other diseases of a periodic nature, such as periodic head-ache, rheumatic pains coming on at certain hours, and rheumatic affections of the eyes, it is a valuable medicine, and should never be lost sight of when quinine and preparations of iron have been tried without success.

This solution has been used advantageously in many nervous affections, such as epilepsy, St. Vitus's dance, catalepsy, (or trance,) and *tic-douloureux*. Good effects have resulted from its use in some diseases of the skin, also in cancer; and it is the most efficacious remedy in the treatment of elephantiasis, (or *Barbadoes leg*.)

The dose of the arsenical solution is four to six drops, with six or eight drops of laudanum to each dose, twice a day. The proper time for taking it is about half an hour after eating When given in this manner, no bad effect will result; in larger doses (twelve or fifteen drops) it sometimes causes a little griping and sickness at the stomach, which may be removed by giving a small quantity of laudanum, (fifteen or twenty drops.) When these symptoms come on, the dose should be diminished.

Arsenic has been used externally in cases of cancer and inveterate ulcers, but, in this manner, is attended with considerable risk; indeed, it has been known to find its way into the system by absorption, and cause death. It has been the means of curing many obstinate ulcers of the lips and face, but in some cases, when applied externally, has caused the most intolerable pain. We can only use this remedy with safety internally. Arsenic enters into the composition of several dangerous quack medicines.

ASSAFŒTIDA.

This medicine is principally used as an antispasmodic in doses of five grains to twenty. It is useful in allaying inordinate muscular action in asthma, hooping-cough, colic, and hysterical affections; and is given to promote expectoration in long-continued coughs, particularly in those of old people with debilitated constitutions. When there is any inflammatory action going on it ought not to be administered, on account of its stimulating and heating properties. In flatulent colic it is often of the greatest service when given as a clyster; when used in this manner, a drachm to two drachms should be dissolved in a pint of warm milk, or linseed tea.

The action of the *tincture of assafœtida* is quicker than that of the gum; and should be given in the quantity of one or two drachms.

ASTHMA.

It is generally unaccompanied with fever, and is characterized by great difficulty in breathing, recurring in fits at irregular intervals, attended with a feeling of constriction in the chest, wheezing, and a difficult cough, terminating in expectoration.

There are certain symptoms which give notice of the approach of a fit of asthma, particularly if the individual has been subject to it for some time; viz. a sensation of oppression and fulness at the pit of the stomach, eructation of air, head-ache, sickness, disturbed rest, and not unfrequently an increased flow of pale urine; they are, however, by no means regular, and in some cases are entirely wanting.

The fits usually come on between eleven o'clock at night and two o'clock in the morning. The patient awakes suddenly with great difficulty of breathing, and a most distressing sensation of tightness and constriction about the chest, which compels him to sit up in bed; he raises his shoulders, throws back his head and elbows, and uses every means in his power to expand his chest; he breathes with a wheezing noise, which may be heard at some distance, and coughs occasionally, but with considerable difficulty; and, though he can scarcely speak, he requests the windows to be opened, that he may breathe fresh air. The face sometimes remains pale, but in general becomes red, or acquires a bloated appearance; the eyes also appear red and prominent, and the face and breast are covered with sweat. The pulse is quick, weak, and not unfrequently irregular or intermittent; the hands and feet are cold, and in some cases, when the fit is very severe, the patient vomits frothy, bilious-looking matter.

The fit having continued two or three hours, or even longer, terminates with cough and expectoration, either more or less profuse. and the exhausted patient falls asleep. When any one has once suffered from a paroxysm of asthma, he may be almost certain that it will recur at intervals of longer or shorter duration.

When asthma is purely spasmodic, uncomplicated with any other disease, the individual, after the fit is over, recovers his breathing entirely, and suffers no inconvenience until the recurrence of another attack. True, spasmodic asthma, not associated with other diseases, is not common, yet it does occur; and we have the best of evidence, that individuals have died during the fit, and on opening the body, not a trace of disease has been found. In the great majority of cases, however, the breathing during the intervals is either more or less affected, and symptoms of the morbid changes, which have either caused the disease, or resulted from it, may be easily traced.

Exciting causes. The exciting causes which have an immediate tendency to bring on fits of asthma are very numerous, the principal of which are, errors in diet, particularly if attended by acidity at stomach or *heartburn;* excess in drinking wine and spirits; distension of the stomach from an accumulation of wind; exposure to cold moist air, or too dry an atmosphere; suppressed perspiration of the lower extremities, caused by sitting with cold or wet feet, sudden changes of weather, certain winds, and indeed all the causes which bring on cold or catarrh of the *bronchi* or air passages; sudden mental emotions, as anger, terror, surprise, &c.; loud, or too long speaking; certain occupations of artisans, which expose them to an atmosphere charged with dust; irritating gases, metallic fumes, or minute particles of cotton, wool, fur, and metal. In some people exhalations from the vegetable kingdom, as the effluvia from ipecacuan, from hay, or from grass in flower, will induce an attack of asthma. The presence of an excess of the electric fluid in the atmosphere affects many asthmatic people. Some suffer least in flat countries and in large towns, pure mountain air being almost insupportable to them; others, again, are rendered miserable by the smoky atmosphere of a large town.

1. *Treatment during the attack.* In the purely spasmodic or nervous form of asthma, unconnected with other diseases, and in cases where it attacks hysterical females, we, as a matter of course, resort to the class of medicines called antispasmodics, the most powerful of which is *opium;* and this remedy, to be of use, must be given in large doses, ordinary ones producing little or no effect; for in this as well as in all other spasmodic affections, there is an unusual resistance offered to the action of even the most powerful remedies. Care, however, must be taken to regulate the doses according to the strength of the patient and the urgency of the case. We give the four following prescriptions because it frequently happens that the medicine which alleviates or shortens the fit in one individual, produces no effect in another.

Laudanum, forty to sixty drops,
Æther, the same quantity,
Peppermint-water, two ounces. Mix.
To be taken at the commencement of the fit.

Camphor, three grains,
Musk, five grains,
Opium, one grain.
Mucilage a sufficient quantity to form two pills. To be taken at the commencement of the fit, and repeated if necessary after two hours.

Opium, one grain,
Carbonate of ammonia, five grains,
Camphor, a grain and a half.
Mucilage a sufficient quantity to form two pills. To be repeated after two hours if the fit continue.

Extract of henbane, six grains,
Tartar emetic, a quarter of a grain,
Nitre, eight grains,
Peppermint-water, two ounces. Mix.
To be taken at the commencement of the fit.

Blood-letting occasionally does good, but it should be used with the greatest caution, and only when the patient is young and plethoric; in such cases when the disease is commencing it often works like a charm.

Bathing the feet in warm water, to which a portion of powdered mustard has been added, and the application of mustard poultices over the chest, is a mode of treatment much used in France and Italy, and frequently with advantage.

Smoking the dried leaves and stalks, or the root of the thorn-apple, is frequently attended with the greatest benefit, though in some cases it increases the difficulty of breathing; as a general rule it does good only when it causes expectoration. The thorn-apple root may be used alone or smoked along with tobacco; a small quantity should be employed at first, gradually increasing the dose, until slight giddiness is produced. It may be safely tried in all cases.

Indian tobacco, has an action similar to that of thorn-apple root. The dose of the powder is from eight to twenty grains, and the tincture, prepared as follows, is given in doses of half a drachm to two drachms in two ounces of distilled water—

Take dried leaves of the lobelia inflato, (tobacco,) two ounces,
Rectified spirit of wine, a pint.
Macerate for twelve days, and strain.

The following prescription is one of the best that can be used.

Extract of henbane, three grains,
Diluted nitric acid, thirty drops,
Tincture of squills, fifteen drops,
Water, an ounce and a half. Mix.
To be repeated every three hours during the fit.

This draught often gives relief when every thing else has failed. We have known five grains of powdered ipecacuan, given in a drachm of the oxymel (a mixture of vinegar and honey) of squill every hour, to alleviate the fit, both in the dry and humoral forms of asthma.

The various remedies which have been recommended are but too frequently of no avail. The fit runs its course, and is even rendered worse in many cases by the indiscriminate use of stimulants. But though we can do little when the fit has fairly commenced, yet timely treatment may be of the utmost service as a preventive. Asthma is usually associated with morbid sensibility or chronic inflammation of the bronchial mucous membrane. In all such cases the fit is almost invariably preceded by catching cold. If, therefore, when an individual is aware that he has caught cold, (and there are generally certain premonitory symptoms which give him due notice,) and is in consequence threatened with a fit of asthma, he ought immediately to bathe his feet in hot water with mustard, then go to bed, drink freely of barley-water or any other warm drink, and take sudorifics, such as

Dover's powder, fifteen grains,
James's powder, five grains. Mix.
To be taken in a little jelly.

Nitre, twenty-five grains.

Tartar emetic, a quarter of a grain, dissolved in barley water, the dose being repeated until copious perspiration is brought on, and the bowels opened the following morning by a dose of Epsom salts or a Seidlitz powder.

By these means, if used sufficiently early, the cold will be checked and the fit of asthma prevented, and this is more easily effected than to mitigate the fit or cut it short after it has commenced.

2. *Treatment in the intervals.*—The manner of living and habits of people affected with asthma are generally such that they can have very little chance of getting rid of the disease. Indeed they too frequently adopt the most direct means to prolong their suffering. Knowing their liability to catch cold, and being well aware that a cold or catarrh is generally the prelude to a fit of asthma, they, (at least those who have it in their power,) shut themselves up in close rooms on the approach of winter, dreading the slightest exposure to cold air. They deprive themselves of exercise, and in consequence indigestion is brought on, the general health is impaired, and life becomes almost a burden. If they do occasionally venture into the open air they return to the same overheated atmosphere or sit near a large fire, not taking into consideration that by far the most common cause of cold is *the sudden change from cold air to an overheated room.* The patient blames the cold air, but the fact is, the lungs bear cold well, or an equal temperature, whether cold or hot.

More dependence should be placed in proper regimen, than medicine, in this disease. Regular exercise in the open air, either on foot or horseback, is absolutely necessary in all seasons, and the means of next importance is cold bathing. In winter the patient should sponge his body every morning on getting out of bed with salt water, (two table-spoonsful of salt to each pint of water,) rubbing the body well after the ablution with rough towels. The water used should at first be tepid, and then gradually colder until the patient can bear it perfectly cold. In summer, bathing in the sea or the cold shower bath will be preferable. Cold ablution in winter tends more than any thing else to do away with the susceptibility to cold which exists in the catarrhal forms of asthma. After using it regularly for some time, exercise in the open air can not only be taken in winter with impunity, but with the greatest advantage. To regular exercise and cold bathing must be conjoined the strictest attention to diet, which should be light and easy of digestion, and never in such quantity as to exceed the powers of digestion.

Purging does no good in asthma. The patient, however, should take care to keep his bowels regular by taking, when necessary, a tea-spoonful or two of Gregory's stomachic powder, prepared as follows.

Calcined Magnesia, eight parts,
Rhubarb, in powder, two parts,
Ginger in powder, one part. Mix.

Or the patient may take a little castor-oil, or any other laxative which he has found to answer best.

The production of an eruption on the chest by the use of the *tartar emetic ointment*, is often of considerable benefit, if continued a sufficient length of time.

Take of oxide of zinc, twenty-four grains,
Ipecacuan in powder, twelve grains,
Myrrh in powder, twenty grains,
Syrup, a sufficient quantity to form twelve pills.
One a dose three or four times a day.

BISMUTH.

The subnitrate of bismuth, (or magistery of bismuth,) is an excellent antispasmodic and sedative. It is a valuable remedy in chronic affections of the stomach, and very efficacious in checking vomiting. In cases of indigestion, attended with heartburn and pain at the stomach after eating, we have known it produce the best effects when combined with extract of henbane, in the following form.

Take of subnitrate of bismuth, thirty grains,
Extract of henbane, the same quantity. Mix, and divide into twelve pills. One to be taken in the morning, one in the middle of the day, and two at bed-time.

This treatment, with low diet, and abstinence from every thing stimulating, is to be continued during a week or ten days.

Some practitioners prefer combining it with rhubarb and magnesia.

Take of subnitrate of bismuth, two or three grains,
Rhubarb, two grains,
Magnesia, five grains. Mix.
To be given as a dose, and repeated twice or thrice in the course of the day.

Bismuth does not dissolve in water, and, if not given in the form of pills, should be mixed with a little jelly, honey, or any other convenient vehicle.

INFLAMMATION OF THE URINARY BLADDER.

The symptoms which characterize acute inflammation of the bladder, are heat, tension, and pain more or less severe at the lower part of the belly, which is increased on pressing with the hand over the bladder, or by sneezing, coughing, going to stool, or by any movement of the body. There is great and frequent desire to void the urine, which is high-colored, and passed in a few drops at a time with much pain and difficulty, and sometimes it cannot be discharged at all. As the disease advances, the lower part of the belly appears swollen, in consequence of the space which is taken up by the bladder distended with urine. The slightest pressure there is then insupportable, and the whole abdomen is painful to the touch, the pain extending to the loins and anus, and even shooting down the thighs. When the inflammation has gone to this extent, the skin is hot and dry, the pulse quick and hard, and the tongue dry, with great thirst. If the disease go on increasing, the pulse becomes small and very frequent, hiccough, vomiting, delirium, fainting, and death ensue.

The inflammation, however, may be of any grade. Sometimes it is mild, yielding readily to proper treatment, and continuing but a short time.

Causes.—It may be brought on by a variety of causes, such as stone in the bladder, wounds, blows, irritating injections, the inflammation of gonorrhœa, extended along the urethra or urinary canal to the bladder, boils, swelling of the prostate gland, the internal use of Spanish flies, (cantharides,) allowing the urine to remain too long in the bladder, excess in drinking wine or ardent spirits, long-continued exercise on horseback, particularly if the individual has been unaccustomed to it; inflammation of neighboring parts, as the womb or rectum, the introduction of instruments into the bladder, exposure to cold or sudden changes of temperature, and long-continued compression of the bladder by the head of the child during tedious labor. The sex, also, must be considered as a predisposing cause, men being more liable to this disease than women.

Acute inflammation of the bladder continues from ten to twenty or thirty days, and is in general subdued by the necessary treatment without leaving any bad symptoms. But sometimes it terminates in ulceration or mortification, or matter is formed which passes off along with the urine, or is discharged into the cavity of the abdomen. These terminations, however, are rare, compared with its not unfrequent sequence, chronic inflammation.

Treatment.—It sometimes happens, when a medical man finds a patient suffering from inflammation of the bladder, with incapability of voiding the urine, that he attempts to give relief by emptying the bladder with an instrument used for that purpose, called a *catheter.* If he succeeded in effecting this easily, the patient for a time will be much relieved, but it occurs not unfrequently that the inflamed and swollen state of the neck of the bladder, or other causes, render it almost impossible for him to introduce this instrument. Unwilling to be foiled, he endeavors repeatedly to reach the bladder, and, perhaps, at last succeeds in drawing off the urine. From the tender and irritable state of the parts, the patient is put to a great deal of pain, and the temporary relief is not sufficient to compensate for the irritation produced by long-continued efforts to introduce the catheter. Whether the urine be withdrawn or not, the most active treatment should be used to subdue the inflammation. To effect this, the patient must be bled freely from the arm, and at least thirty leeches should be applied over the bladder and round the anus, followed by warm fomentations to promote the bleeding, or this may be done still more effectually by sitting in a warm hip-bath. Ten or twelve leeches should be applied on the following day, if the inflammation be not considerably abated, and, indeed, the local blood-letting must be had recourse to repeatedly until the inflammation is overcome. The following pills are to be given every four hours.

Extract of henbane, twenty-four grains,
Tartar emetic, three grains. Mix, and form into twelve pills.

These pills are to be continued regularly until the inflammation is diminished. If they produce much giddiness or vomiting, they should be given at longer intervals; but, if they do not act too powerfully on the head or stomach, it will be advisable to give one every three hours. Instead of tartar emetic and henbane, calomel and opium may be given in the following form

Calomel, twenty-four grains,
Opium, two grains,
Syrup, a sufficient quantity to form twelve pills.
One to be given every two hours.

Warm fomentations should be constantly applied over the lower part of the belly, and the bowels are to be acted on by a full dose of castor oil, or a clyster of decoction of marsh-mallow or linseed-tea, with an ounce of castor oil. The diet must be very sparing in this, as in all other inflammatory diseases. At the commencement, only very small quantities of linseed-tea, or other mucilaginous drink, should be allowed; but, when the inflammation is giving way, and the urine begins to be voided more easily, the linseed-tea, or any other demulcent beverage, (such as gum-water, prepared by pouring a pint of boiling water on an ounce of gum-arabic,) may be given freely, with the addition of from five to ten grains of nitre to each pint.

IRRITABLE BLADDER.

The patient suffers the most acute pain when he allows the urine to accumulate in the bladder, and is therefore obliged to make water frequently, in some cases every half hour, or even oftener. The evacuation of the urine gives immediate relief, but as it collects again the pain gradually increases. This affection, after continuing a considerable length of time, frequently terminates in ulceration of the bladder. All the symptoms then become aggravated, and the unfortunate patient drags out a wretched existence, until death puts an end to his misery.

Causes.—Irritable Bladder may be caused by chronic or slow inflammation, and is therefore sometimes the sequence of acute inflammation of the bladder. It may be brought on by gonorrhœa, by retaining the urine too long, or may depend on increased sensibility of the bladder, arising from a deranged state of its nerves, or from some peculiarity of the urine. It is sometimes caused by an excited state of the brain, the result of intense study, want of sleep, or indigestion.

Treatment.—When Irritable Bladder is caused by chronic inflammation, recourse should be had to local blood-letting, carried as far as the patient's strength will allow, by the application of ten or twelve leeches to the lower part of the belly (over the bladder) every other day. The *extract of henbane* will be found useful, in pills of two or three grains, three times a day. This remedy sometimes causes giddiness at first; it is therefore better not to go beyond six grains a day commencing, gradually increasing the dose as the patient can bear it, and taking care always to diminish the quantity a little when giddiness is produced. Henbane in general will be found to answer better in this disease than opium, and it can be discontinued without difficulty at any time. The habit of taking opium, on the contrary, is easily acquired and most difficult to get rid of; and after all it serves no other purpose than merely to palliate the disease. In using counter-irritation, blisters should be avoided. The *tartar emetic ointment* should be rubbed in freely over the lower part of the belly, and used regularly so as to keep up a copious crop of pustules. An observance of the horizontal position is of the greatest importance in diseases of the bladder; the patient therefore must abstain from moving about or sitting up for any length of time.

The bladder will be much relieved by introducing a gum elastic catheter, and allowing it to remain; this instrument must be only a little longer than the urinary canal or urethra, which is generally about nine inches in length, so that its end may not rest upon the neck of the bladder, into which it should just enter, without being allowed to extend farther; to the other end of the catheter must be fastened a pig's or bullock's bladder, into which the urine will run as fast as it is secreted, and by this means the bladder will be allowed to remain at rest, no effort being required to expel the urine.

In some cases the catheter when frequently introduced or allowed to remain long in the bladder, brings on a slight degree of fever. It must then be laid aside until the fever has gone off.

When this disease is accompanied by chronic inflammation of the bladder, the diet must be very moderate. Animal food should be entirely abstained from, and nothing of a stimulating quality should be taken. When it arises from excess in eating and drinking, and indulging in high-seasoned dishes, an entire change in the patient's manner of living becomes absolutely necessary, and unless he has the resolution to confine himself to low diet, medicine will be found of little use. When he is weak, with a pale or sallow complexion, and his urine alkaline, the diet must be nutritious, and animal food may be allowed, care being taken not to charge the stomach with more at a time than can be easily digested. Sedentary habits should be given up, and regular exercise taken in the open air.

BLEEDING FROM THE NOSE.

This is by far the most common, and entirely the least dangerous hæmorrhage. In general it is slight and frequently advantageous to the individual, and is injurious only when it continues too long or recurs too frequently.

Causes. Bleeding from the nose occurs most frequently in young people with an excess of blood, and in females with suppressed menstruation. The causes which commonly produce it are those which determine the blood too strongly to the head, such as exposure to heat, too full living, excess in drinking intoxicating liquors or strong coffee; long-continued study, anger, or any violent mental excitement, long watching, constipation of the bowels, and suppression of the discharge from piles. It is also caused by wearing the neckcloth or stays too tight, blows on the nose, &c. It comes on from scurvy, in consequence of the blood losing its natural consistence, and also during typhus fever, and sometimes from disease of the heart and liver.

Treatment. In the majority of cases, bleeding from the nose is salutary. If it go on to such an extent (which it seldom does) as to cause paleness of the face, sickness at stomach, and a sensation as if the patient were about to faint, it then becomes necessary to use means to arrest its progress.

The individual should be exposed to cool air, and his head should not hang over the basin which receives the blood, but must be kept raised. Pieces of linen dipped in vinegar and water or ice are to be applied over the forehead and temples and round the nose; nor should the popular remedy be forgotten of placing a large key or piece of cold metal between the clothes and the back. If the bleeding still continue, vinegar and water or iced water should be applied frequently over the head, and the feet and hands placed in warm water containing powdered mustard. Bleeding from the nose seldom resists this treatment, but in the event of its doing so we have still other means in reserve.

Powdered gum-arabic blown into the nostrils by means of a quill will sometimes stop the hæmorrhage when every thing else fails. When clotted blood begins to form in the nostrils it should be disturbed as little as possible.

Cold vinegar and water, or ice applied to the thighs and genitals, has sometimes an excellent effect. A method of arresting bleeding from the nose, which is said to be very effectual, has been lately laid before the public. The patient is to stand up, with the head elevated. The nostril from which the blood flows is to be compressed by the finger, and the corresponding arm to be raised perpendicularly, and to be kept in that position about two minutes; this in almost all cases has proved sufficient.—*Dunglison's Pract. Med.*, ii., 364.

Bleeding from the arm is seldom necessary, and ought never to be made use of when the nose bleeds freely, nor when the individual is pale and debilitated, with his blood unusually thin. But when the blood continues to fall from the nostrils in drops for a considerable length of time, and the person is of a robust habit of body, with flushed face, and complains of buzzing in the ears, throbbing at the temples, and other symptoms indicative of a preternatural quantity of blood in the head, then free blood-letting is advisable, and will in all probability put a stop to the hæmorrhage.

The internal treatment consists in opening the bowels freely with calomel and jalap, five grains of the former and sixteen of the latter to be taken in a little jelley or honey. Or a full dose of castor oil may be given, and cooling acidulated drinks administered. In extreme cases it is necessary to give *sugar of lead* (a powerful remedy in checking hæmorrhage) in conjunction with opium or some preparation of it.

Sugar of lead, two grains,
Water, an ounce and a half,
Vinegar, half a drachm,
Black drop, (or Battley's opiate,) five drops,
Syrup, a drachm. Mix.

This draught to be repeated every four or five hours, or in such manner that the quantity of sugar of lead does not exceed eight or ten grains in twenty-four hours.

Sugar of lead, (or acetate of lead,) six grains,
Acetate of morphia, one grain, or extract of opium, three grains,
Confection of roses, a sufficient quantity. Mix, and form into six pills. One to be

given every three hours; the quantity of sugar of lead being confined as above to eight or ten grains in the course of twenty-four hours.

Laudanum, fifteen drops,
Tincture of myrrh, half a drachm,
Camphor mixture, an ounce. Mix.

The following pills may be given in place of the mixture—

Subcarbonate of ammonia and
Camphor, of each eighteen grains,
Opium, three grains,
Extract of gentian, a sufficient quantity to allow the whole to be formed into six pills. One a dose every four or five hours.

When bleeding from the nose comes on in men advanced in life, who are in the habit of living freely and enjoying all the luxuries of the table, it ought to serve as a warning of the approach of apoplexy, and distinctly points out the necessity of a change in their manner of living, which ought to be moderate and suited to their age and habit of body. In such cases it will be proper to place a seton in the nape of the neck.

BOILS.

A boil begins with a pimple in the skin, which continues to enlarge until it reaches the size of a walnut, though sometimes it does not extend beyond the size of a large pea; it is of a conical shape, red, or of a purple hue, and hard, with burning heat and great pain. Between the fourth and eighth day it becomes very prominent, and begins to *point;* a speck of matter may then be seen on the summit, which gradually softens; the skin at last bursts, and matter mixed with blood is discharged through a small opening. A day or two after this, the core, which is supposed to be a portion of dead cellular substance, finds its way out of itself, or may be squeezed out, leaving an open cavity, which soon fills up, and heals entirely about the twelfth or fourteenth day.

A boil seldom comes alone, there are generally several, either at the same time or following one another. Boils may appear on any part of the body, but they commonly form on the face, nape of the neck, inside of the thighs, hips, arm-pits, groin, or near the anus.

Causes.—Children and people in robust health are most subject to boils; they often come on without any known cause, and appear more frequently in spring than at any other season. They may be brought on by friction, inattention to keeping the skin clean, or from irritation of the digestive organs, and they sometimes follow fever or inflammatory eruptive diseases.

Treatment.—It is needless to attempt preventing a boil going on to suppuration; it almost invariably follows the course above described, in spite of every means used to arrest its progress. We should, therefore, endeavor to hasten the suppurative process, by the application of warm bread and milk poultices, or poultices of linseed. In many cases a piece of diachylon plaster applied over the part and changed twice a day, will answer better than any thing else. If the boil be of a very indolent character, the application of roasted onions will be of service, or poultices of honey mixed with oatmeal. As soon as it is known that the tumor contains matter, the best plan is to give it vent, by making a free opening with the lancet, and then squeezing out the matter and the core. When the patient is averse to this and allows the boil to burst of itself, the opening is always small, and the core consequently does not readily find its way out. In some cases it requires to be drawn away. In general the cavity heals quickly after the core is discharged, and nothing is required except a little cerate or other simple dressing; the sore in some cases, however, becomes indolent, and requires dressing of a more stimulating nature. such as

Basilicon, a drachm,
Red precipitate, five grains. Mix.
A little of this ointment to be applied on a piece of lint or linen rag.

When there is hardness of the part after the sore is healed, it should be rubbed with camphorated mercurial ointment night and morning.

With regard to the internal treatment, all that is necessary in general is to abridge the diet a little, avoid stimulating food, and keep the bowels open with *Epsom salts* or other cooling purgatives. When a succession of boils arise from disorder of the digestive organs, or from derangement of the system generally, it will be advisable to give three grains of *Plummer's pill*, or the same quantity of *blue pill* every second night; and an infusion of chamomile flowers, with twenty grains of *carbonate of soda* every morning, until the general health be improved.

INFLAMMATION OF THE BOWELS.

This disease, when severe, is preceded by general uneasiness, shivering and heat alternately, listlessness, and a feeling of weakness. A sharp pain in the bowels soon follows, with griping, and a sensation of internal heat at the seat of the pain, which is generally about the navel. The pain is constant, and is increased by the slightest pressure over the belly, which after some time becomes hot, swollen, and tense. There is great prostration of strength, urgent thirst, sickness at stomach, perhaps vomiting, and constipation of the bowels, though sometimes there is purging of a thin, bilious, stinking matter. The pulse is quick, hard, and small, the urine high-colored, and passed in small quantities, and the tongue is at first white, and becomes afterwards furred and brown in the middle, with its point and edges red. The patient moves his head and arms frequently, and appears very restless, though afraid to move his body, from a dread of increasing the pain; his limbs are drawn up towards his belly, and he can only lie on the back. All these symptoms, however, are not present in every case, and they are of course more or less severe, according to the extent and severity of the inflammation.

When Inflammation of the Bowels is about to prove fatal, the pulse becomes exceedingly weak, the features shrink, hiccup and cold sweats come on, and the hands and feet become cold; but when it is about to terminate favorably, the pulse recovers its firmness, the stools become natural, the urine is voided freely, and the pain lessens by degrees.

Causes.—The most common causes of this disease are, exposure to cold when the body is much heated, or drinking cold fluids when in the same state; accumulation of hardened excrements in the bowels; eating too freely of high-seasoned food, unripe fruit or crude vegetable substances; excess in drinking; too strong purgatives; blows on the belly; swallowing acrid or poisonous substances; but it may come on without any obvious cause.

Treatment.—Much can be done within the first twenty-four hours in arresting Inflammation of the Bowels, but if sufficiently active means be not employed at an early stage, the consequences may be very serious. When the disease assumes a formidable appearance from the beginning, the most active treatment is called for; no half measures will be of any permanent service. The most powerful means we possess in checking this disease are general and local blood-letting. The patient should be bled from the arm with as little delay as possible, and the opening made in the vein ought to be large. The quantity of blood to be taken away must depend on the age and constitution of the individual, as well as on the intensity of the inflammation; in general, however, from sixteen to twenty ounces will be required.

A good general rule in drawing blood in urgent cases, is to make the patient sit up, and allow the bloood to flow from the arm until he faint, or at least, until he become pale, and feel as if he were about to faint. The apparent weakness and prostration of strength, and the feeble pulse, must not prevent blood-letting, for the pulse will be found to rise after the blood has flowed during some time. Warm fomentations or warm poultices are to be applied frequently over the belly, so as to keep up a proper degree of heat and moisture. A good application for this purpose is warm bran, moistened with hot water, and placed between two pieces of linen. If the pain be not much relieved by the general blood-letting and warm applications, it will be necessary to apply from thirty to fifty leeches round the navel or over the seat of the pain; and when they have fallen off, the warm bran or fomentations must be again applied. If the symptoms continue to run high after this treatment, it will be advisable to repeat the leeching, for the abstraction of blood is the principal thing we have to trust to at the commencement of the disease, and when boldly used, has generally the effect of overcoming it.

Although there be constipation, as stated above, at the commencement, yet the administration of purgatives would then be improper, inasmuch as they would have no effect in opening the bowels, but might prove injurious by increasing the inflammation. The proper time to give them is, after the bleeding has produced a decided effect on the inflammation; in fact, reducing the inflammation, by the abstraction of blood, often has the effect of opening the bowels without the aid of any medicine. We must employ remedies to act on the bowels of a mild nature, and in small doses frequently repeated; a tea-spoonful of *castor oil* every hour will in general be found to answer best.

Emollient clysters may be given every three or four hours; a pint of linseed-tea, or the same quantity of barley-water, or thin gruel, will be sufficient at a time.

The tepid bath, during twenty minutes or half an hour, assists greatly in soothing the pain.

A large blister, applied over the belly, will be of service after the pain is considerably relieved by the bleeding, and other means.

The active treatment above directed will, in most cases, arrest the progress of the disease, if made use of sufficiently early; but there is still another method of subduing it, viz. the administration of mercury, which seldom fails when assisted by free blood-letting. *Calomel* is the preparation of mercury, commonly used in acute inflammation. It may be either given alone, or in conjunction with opium, and continued until the mouth become slightly affected. It is decidedly wrong, under any circumstance, to give mercury after the system is under its influence, which is sufficiently shown by the gums becoming slightly sore and tender.

When calomel is given alone, (the best way of using it in this disease,) the dose should not be less than five grains every three, four, or five hours, according to the urgency of the case. When given in combination with opium, it will be found most convenient to administer it in the form of pills, or it may be given in powder, as follows.

Take of calomel, twenty-four grains
Opium, eight grains,
Extract of liquorice, or crumb of bread, a sufficient quantity to form twelve pills. One a dose every second or third hour.

Calomel, two grains,
Dover's powder, five grains, mixed with a little jelly every second or third hour.

Many medical men prefer rubbing in the mercury, instead of giving it internally. When used in this way, a drachm of strong *mercurial ointment* should be well rubbed over the inside of the thighs twice or thrice in the course of twenty-four hours, and the frictions continued regularly until the mouth be slightly affected. This may be considered the best method of using mercury, when there is much irritability of stomach and vomiting.

During the first three or four days, the diet must be confined to a little arrow-root, sago, or any dry farinaceous food, and barley or rice-water and linseed-tea, with a little gum-arabic dissolved in it as drink.

When the disease has been subdued, the greatest care must be taken to prevent a relapse. Flannel should be worn next the skin, and the diet should be easy of digestion, and as little stimulating as possible. Wine and spirits should be abstained from for a considerable length of time.

The diseases most likely to be mistaken for inflammation of the bowels, are rupture, colic, and affections of the kidney. Rupture may always be suspected; it is, therefore, necessary to examine carefully both the abdomen and groin. Colic is a spasmodic affection, and commonly requires to be treated with opium, brandy, and other stimulants. The greatest care must, therefore, be taken not to confound it with inflammation of the bowels, in which stimulants would be highly injurious. Colic commences suddenly, and is not attended with fever; the pain is not constant, as in inflammation of the bowels, and it is rather relieved than otherwise by pressing on the belly. In affections of the kidney, though the patient complain of severe pain in the belly, yet it is not increased by pressure, which is invariably the case in inflammation of the intestines.

CONCUSSION OF THE BRAIN.

Concussion of the brain generally arises from injury done to the head by blows, or from a violent shock received by the whole body, in consequence of falling from a height. When the concussion is very severe, the following are the most marked symptoms; insensibility, without the power of moving; pulse weak, slow, and perhaps intermitting; cold extremities; oppressed breathing, but without snoring; pupils of the eyes generally contracted. When to these symptoms are added coldness of the whole body, with short and interrupted breathing, a fatal termination is about to take place. But if the system recover, and reaction come on, then the pulse becomes regular and stronger, the breathing more natural, and the legs and arms get gradually warmer. If the patient be now spoken to in a sufficiently loud tone of voice, he will answer questions, though not very coherently, and, if pinched, he will show by moving that he is not insensible to pain. These symptoms may give way by degrees, until at length the patient is left without any thing to complain of, except perhaps a head-ache. This favorable termination, however, does not always follow reaction, which, in some cases, is very strong, and accompanied by inflammation of the brain, which, in spite of every treatment, may in a short time end in death. Concussion is more or less severe, according to the injury which the brain has sustained. When the shock is slight, and the person only stunned, he remains but a very short time insensible, and then gets up as if nothing had happened; when more severe, sickness and vomiting follow, and the patient may have his ideas confused, attended with unwillingness to move about for several hours, or perhaps days.

Treatment.—When a person is rendered insensible, in consequence of a fall or blow on the head, there is a strong prejudice among people in general in favor of immediate blood-letting.

All that can be done with safety at first is to cover the patient well in bed, keep him perfectly quiet, and endeavor to bring heat into his limbs by the application of pieces of flannel wrung out of hot water, and then moistened with spirits of turpentine. Warm cloths may be applied in the same manner over the chest. Mustard poultices, or any other warm application, will answer the same purpose. When reaction commences, the pulse rises a little, and the extremities gradually become warmer; inflammation of the brain is now to be dreaded. To prevent this, a tea-cupful of blood should be withdrawn, and a purge adminstered. The patient must still be carefully watched, and if his pulse become quick and hard, and the skin hot, it will be necessary to repeat the bleeding and purging. He must be kept in a dark room, and confined to low diet.

INFLAMMATION OF THE BRAIN.

This disease may come on suddenly, but when not caused by external injuries, there are in general certain symptoms which give notice of its approach, namely, head-ache, attended by a sensation of weight and fulness of the head, slight giddiness, ringing in the ears, occasional drowsiness, confusion of ideas, irritability of temper and disturbed sleep. The face is more or less flushed, the head feels hotter than natural, and any unusual noise or strong light annoys the patient.

After chills or shivering, which in general precede all inflammatory diseases, strong symptoms of fever come on. The skin becomes hot, the face much flushed, the eyes red, and the pulse full and hard. The patient is then very restless; and light, and the slightest noise are insupportable to him. As the disease advances, the thirst becomes urgent, the tongue white, the urine high colored, and the bowels constipated. In the majority of cases there is irritability of stomach, accompanied by vomiting. At length spasms of the face and limbs, and the most furious delirium come on, and the pupils of the eyes remain contracted. In many cases it is necessary to confine the patient's arms, to prevent him injuring himself or those near him. One or both arms first and then the legs become stiff and contracted, and occasionally convulsed. When the limbs are in this rigid state, any attempt to straighten them, or even any effort on the part of the patient to move in bed, is attended with severe pain.

In the majority of cases inflammation of the brain reaches its height about the third or fourth day, and generally terminates fatally within a week or ten days. It is one of the most dangerous diseases to which man is liable, and even when it has been overcome, its effects are of the most serious nature.

Causes.—The usual causes of inflammation of the brain are, injuries done to the head by blows or falls; great mental excitement; exposure to excessive heat or cold; excess in drinking spirituous liquors; suppression of the menstrual discharge, or of that from piles. It often comes on in the course of fevers, rheumatism, small pox, scarlatina, and other diseases of the skin, and may be brought on by certain diseases of the ear.

Treatment.—As soon as inflammation of the brain is detected, the patient should be placed in an upright position in bed, or in a chair, and bled from the arm. The quantity of blood to be withdrawn must depend on the severity of the inflammation and the strength of the individual. The blood may safely be allowed to flow until the lips lose their color, and the patient appears ready to faint; and even if he do faint, no harm will accrue. A purgative is then to be given composed of five grains of *calomel* and twenty-five grains of *jalap*, to be repeated if necessary every three hours, until the bowels are freely opened. The head must be shaved and kept cool with cold lotions of vinegar and water or spirits and water, by means of pieces of linen dipped in the lotion and changed frequently. An excellent way of applying cold to the head is by pouring cold water on it from a height, during a quarter of an hour or twenty minutes, or until the head becomes perfectly cool. This process may be employed while the patient is sitting with his feet and legs immersed in warm water, containing mustard. The cold affusions are to be repeated as often as the head becomes hot and the face flushed. The application of cold in any of these ways, if carefully and properly conducted, most effectually soothes the pain of the head, and calms the excitement. Next to blood-letting it is most useful in subduing the inflammation. If the above treatment do not produce a decided effect, a second blood-letting will be necessary, and afterwards local bleeding, by the application of twenty or thirty leeches on the sides of the neck and behind the ears, or by cupping at the nape of the neck.

The following mixture when given in doses sufficiently strong to keep up a slight degree of sickness at stomach, without producing vomiting, which would do harm, is advisable.

Purified nitre, two drachms,
Tartar emetic, six grains,
Water, seven ounces,
Syrup of orange peel, one ounce. Mix.

One or two table-spoonsful to be given every two hours, or oftener, as it may be tolerated.

If there be much irritability of stomach, with vomiting, it will be best to substitute four drachms of tincture of henbane for the tartar emetic, until the vomiting be completely subdued.

Light and noise must be excluded from the patient's room as much as possible, and while the inflammation continues, the diet should consist of a little sago, arrow-root or barley-water.

Blisters applied to the head and neck at the beginning of this disease, invariably do harm; but they may be applied with advantage to the legs and inside of the thighs in the second stage, when the patient is in a state of stupor, with his extremities cold. It is also well to apply mustard poultices and warm turpentine to the feet.

If the tartar emetic mixture do not act on the bowels, they must be kept open throughout the whole course of the disease with *calomel* and *jalap*.

The state of the bladder ought to be particularly attended to, because it sometimes happens that the catheter is required to draw off the urine.

When the patient is convalescent the diet should be increased very gradually, and the greatest care taken to keep him out of the way of every kind of excitement. A seton may be placed in the nape of the neck if the slightest determination of blood to the head be again observed. Great precaution is necessary to prevent a relapse or return of this disease.

BRONCHITIS.

By this term is meant inflammation of the bronchi, or tubes which convey the air into the lungs.

When the wind-pipe arrives as low down as the third or fourth vertebra of the back, it divides into two great branches, called bronchi; one of which goes to the right and the other to the left lung. These branches having entered the lungs, divide, subdivide, and ramify into innumerable small branches, all of which terminate in very minute bags, called air-cells. These air-tubes and cells are lined with a membrane, termed from the nature of its secretion, mucous membrane, which is the seat of bronchitis.

Bronchitis shows itself in two forms, the *acute* and *chronic*.

ACUTE BRONCHITIS.

After exposure to cold, which is the usual cause of this affection, the mucous membrane which lines the nostrils, wind-pipe, and bronchi, becomes slightly inflamed. The consequences of this are dryness and stuffing of the nose, hoarseness, dry cough, and a slight degree of fever, soon followed by expectoration of a thin fluid, a feeling of tightness about the chest, and increase of cough. After some time the expectoration becomes very copious, and of a much thicker consistence; all the feverish symptoms give way, and in the course of a few days the cough gradually moderates, and the patient recovers. This is a mild form of bronchitis. It is frequently accompanied by cold in the head, is not of a serious nature, and requires very little medical treatment.

Bronchitis, however, does not always appear in this mild form. It presents a variety of grades, from the slightest *common cold* to the most acute inflammation, causing symptoms of a character so urgent as to require the most active treatment to prevent a fatal termination.

When severe it commonly commences with hoarseness, slight sore throat, perhaps cold in the head, and the feverish symptoms which usually precede all acute inflammatory diseases, viz., chilliness or shivering, alternating with flushes of heat, lassitude, unwillingness to move about, and pain (or at least a sensation of soreness) in the back and loins. The pulse is quick and weak, and the urine diminished in quantity. These symptoms are soon followed by head-ache, hot and dry skin, thirst, foul tongue, quick and full pulse, and scanty urine of a high color. To these general symptoms of fever are added those more peculiar to bronchitis, namely, oppression on the chest, attended with dull pain and heat, a distressing dry cough, and considerable difficulty in breathing. At first there is no expectoration, because the mucous membrane is dry; but as the disease advances each fit of coughing brings up a thin acrid fluid of a salt taste. As the expectoration increases in quantity, it becomes less acrid and loses its salt taste. It then acquires a thicker consistence, and assumes the appearance of white of egg; is very viscid, and sticks to the sides of the vessel. The more viscid and tenacious it is, the more severe is the inflammation. The feverish and other symptoms become more severe towards evening, and during the night the patient is very restless, and the fits of coughing continue longer and recur more frequently than during the day. About the sixth or seventh day the expectoration begins to grow thicker and more opaque, and the difficulty of breathing and tightness at the chest gradually diminish. At length the expectoration acquires a yellow or greenish color, and is brought up easily, the sensation of heat within the chest is no longer felt, and the cough is not so frequent or troublesome, except on awakening in the morning, when it continues until the mucus which accumulates in the air passages during the night is freely discharged.

Bronchitis seldom terminates fatally unless complicated with other diseases; but when it attacks a great part of the mucous membrane of the air passages of one or both lungs, and extends to the smallest air-tubes, it is not unattended with danger, and in old people and children frequently proves fatal. In such cases the breathing becomes much oppressed, a wheezing or rattling noise is heard in the chest, and there is great prostration of strength. The mucus accumulates in the air passages, and the patient has no longer strength to cough it up. The face and lips then change from deadly pale to a livid color, the pulse is small and quick, cold clammy sweats break out on the body, the extremities become cold, and the patient sinks.

CHRONIC BRONCHITIS.

Is almost invariably the result of the acute form, and is generally met with among old people, and those of weak habit of body. It differs from the acute form merely in the mildness of its symptoms and in its longer duration. There is cough and profuse expectoration of an opaque, white, yellow, or greenish matter, of a loose consistence, not resembling the viscid discharge of the first stage of the acute form. In many cases there is a slight degree of feverish excitement during the day, which increases a little towards night; but fever is not a characteristic symptom of the chronic form, unless in the worst cases, when it comes on in the evening, followed by night-sweats and other hectic symptoms. The cough is most troublesome during the day, and on awaking in the morning it continues for an hour or two, followed by very copious expectoration. One may labor under chronic bronchitis for years without the general health being much impaired, but in most cases, when it continues long, habitual shortness of breathing, wheezing and oppression in the chest ensue; and these symptoms are aggravated on going up stairs, or in using any particular personal exertion. With many persons chronic bronchitis is of so mild a character that they scarcely consider it a disease. In other cases, the patients are completely worn out by the cough and excessive expectoration.

Causes. A most fruitful cause of bronchitis is exposure to cold after the body has been heated by exercise or sitting in a warm room. This seems to be understood by every one, but it does not appear to be so well known that cold is caught just as readily by changing suddenly from cold to warm air. When the body has been chilled by long exposure to cold, warmth should be restored by degrees. When a person has been in the cold air, he should remain for some time in a room moderately heated, and avoid at first, sitting near the fire. By avoiding sudden changes of temperature any one, however susceptible of catching cold, may take exercise with impunity in the coldest air, provided the surface of the body and feet are kept warm by suitable clothing.

Treatment.—Acute Bronchitis. The patient having bathed his feet in hot water, should go to bed early, and then take a basin of thin warm gruel, barley-water, or some other warm drink, and three grains of *calomel* with six grains of *James's powder*, or three grains of James's powder with fifteen grains of *Dover's powder* in a little jelly, to be followed early the next morning by a dose of *Epsom salts*, or the black draught. If he perspire during the night and the purgative operate freely in the morning, the cold will in all probability be checked, and all that is necessary afterwards is to remain in the house a day or two, avoid animal food, and drink nothing stronger than tea or barley-water. If a cold be neglected at the commencement, or if the above treatment fail in putting a stop to it, cough comes on, and the complaint runs its course. If it be of a mild character, very little medical treatment will be required. The patient must wear warm clothing, remain at home as much as possible, avoid changes of temperature, live sparingly, and abstain from all stimulating liquors. To relieve the cough and assist expectoration, the following mixtures may be found useful—

Squill vinegar, an ounce and a half,
Tincture of henbane, two drachms,
Mucilage of gum arabic, two ounces and a half,
Syrup of orange peel, honey, or common syrup, an ounce and a half,
Peppermint-water, six ounces. Mix. A table-spoonful to be taken four or five times in the course of the day, or at any time when the cough is troublesome. Or,

Almond emulsion, eight ounces.
Acetate of morphia, half a grain. Mix. A table-spoonful of this mixture is to be taken four or five times a day, and two table-spoonsful at bed-time. Or,

Almond oil, half an ounce,
Solution of the carbonate of potash, half a drachm,
Syrup of tolu, an ounce,
Syrup of poppies, an ounce,
Water, five or six ounces. Mix. A dose of two table-spoonsful to be taken several times in the course of the day, or when the cough is troublesome.

Bronchitis demands a more energetic treatment when it begins with shivering, followed by a considerable degree of fever, with difficulty of breathing, and a feeling of tightness and oppression in the chest. To stop the inflammation, or in other words, to prevent the disease running a certain course, is in general, if not always, impossible; but a great deal can be done to keep it within bounds, and thereby allow us to conduct it to a safe termination. To effect this our most powerful agent is blood-letting; a vein ought therefore to be opened without delay, *and the patient should sit up* while the blood is flowing. When the strength of the pulse abates and the countenance begins to change, the arm must be bound up.

The bowels having been freely opened by means of five grains of *calomel*, and twenty or twenty-five grains of *jalap*, the *tartar emetic mixture* is to be given regularly, or a table-spoonful of the following mixture may be administered every hour, or to such an extent as to cause slight nausea, without vomiting.

Tartar emetic, two grains,
Ipecacuan in powder, a scruple,
Oxymel of squills, half an ounce,
Water, three ounces. Mix.

Other preparations may be advantageously used, such as *mercury* given internally, *tartar emetic ointment*, and anodynes. In reference to the use of these, consult a physician.

When there is debility to such an extent as to render the patient unable to expectorate, and no symptoms of fever present, the following mixtures or pills may be had recourse to, care being taken at the same time to keep up the strength by beef-tea, strong soup, and a moderate quantity of Port wine.

Gum-ammoniac, two drachms,
Mucilage of gum arabic, an ounce, to be dissolved in peppermint-water, four ounces.

Paregoric elixir, three drachms,
Subcarbonate of ammonia, half a drachm,
Honey, syrup of marshmallow, or any other syrup, two tea-spoonsful. Two table-spoonsful a dose, to be repeated twice or thrice a day.

Camphor, three grains,
Carbonate of ammonia, three grains,
Ipecacuan in powder, one grain,
Extract of hemlock, three grains,
Extract of liquorice, a sufficient quantity to form three pills; to be taken as a dose, and repeated twice or thrice a day, or according to the urgency of the case.

A uniform and moderate temperature in the patient's apartment is of essential importance.

Purging is unnecessary, but the bowels are to be kept moderately open.

The diet at the commencement must be very sparing and confined to a little sago, arrow-root, or chicken broth; but when the febrile and inflammatory symptoms have subsided, it may be more generous, and regulated according to the strength of the patient.

In *infancy* there is no disease, except inflammation of the lungs, more common than Bronchitis. In very young children it often advances to a state of great danger before it is detected, and then the most judicious treatment is frequently found of no avail.

A very important part of the treatment of Bronchitis in children is local bleeding, by the application of three or four leeches applied over the chest at the onset of the disease. Emetics are very serviceable. Five grains of *ipecacuan* in a little water form the most suitable emetic. The best laxatives are *rhubarb* and *magnesia* in small doses, a tea-spoonful of *castor oil* or a little *manna.* Much benefit may be derived by means of mustard poultices applied to the chest, or by the application of pieces of flannel wrung out of hot water, and then moistened with spirits of turpentine; either of these applications may be repeated frequently, and kept on until the skin becomes red. Small doses of *calomel* and *ipecacuan*, a quarter of a grain of each every three or four hours may be given, or a constant state of nausea may be kept up by giving two tea-spoonsful of the following mixture every half hour, or in doses proportioned to the age of the child and violence of the inflammation.

Tartar emetic, two grains,
Tincture of squills, fifteen drops,
Water, four ounces,
Syrup or sugar a sufficient quantity to sweeten the mixture.

Opiates given to make the little patients sleep are very dangerous. They ought also, to be avoided in old people, and in all cases where there is much debility, with a copious secretion from the mucous membrane of the bronchi.

Treatment of Chronic Bronchitis.—The debility which attends this affection renders both general and local blood-letting improper. Without the greatest caution it cannot be resorted to even when acute Bronchitis supervenes upon the chronic form, a complication which always constitutes a very serious case. The acute form, in such case, is announced by considerable diminution or a total cessation of expectoration, great difficulty in breathing, and the usual train of febrile and inflammatory symptoms; it is very difficult to manage, and frequently in old people and debilitated subjects, goes on rapidly to a fatal termination, in spite of every effort to arrest its progress.

There is no remedy of more service than counter-irritation, by the frequent application of blisters over the chest, or the long-continued use of tartar emetic ointment. Issues and setons are also of great use when the patient has sufficient strength to bear them. The application of a tartar emetic plaster is a very harsh method of producing counter-irritation. It gives severe pain, and often causes a deep ulcer. Many practitioners prefer stimulating embrocations such as these.

Opopeldoc, three ounces,
Turpentine, two ounces,
Soap, two drachms. Mix. To be used once or twice daily.

Tincture of Spanish flies, and
Camphorated spirits of wine, of each two ounces. Mix.
Part of this embrocation to be rubbed over the chest night and morning.

The constant use of cough mixtures, composed principally of expectorant remedies, such as squill, ammoniac, &c. can only tend to debilitate and weaken the patients. Small and frequently repeated doses of anodyne remedies should be administered to mitigate the cough, and thereby diminish the irritation; and though this treatment can only be considered as palliative, it gives considerable relief. We ought to remember that every anodyne medicine loses its effect after a time, consequently it becomes necessary either to increase the dose, or have recourse to another remedy of the same class.

ANODYNE COUGH MIXTURES.

Acetate of morphia, a grain, dissolved in a little almond oil,
Almond emulsion, three ounces,
Camphor mixture, the same quantity,
Mucilage of gum arabic, half an ounce. Mix. A table-spoonful to be given as a dose three or four times in the course of the day.

Extract of hemlock and extract of henbane, of each five grains,
Mucilage of gum arabic, two drachms,
Spirit of mindererus (solution of the acetate of ammonia,) half an ounce,
Peppermint-water, or common water, six ounces,
Syrup of red poppy, a drachm. The two first ingredients to be well mixed with the mucilage before the others are added. A table-spoonful a dose, three or four times a day, or at any time when the cough is troublesome.

To prevent the recurrence of bronchitis, the patient should guard against changes of temperature as much as possible, take regular exercise in the open air, attend to the state of his bowels, and wear flannel next the skin. Sponging the chest every morning with sea-water, or cold water containing a portion of salt, and in summer bathing in the sea, and the shower bath, are also excellent preventives of bronchitis.

BRONCHOCELE.

Bronchocele is a swelling on the fore-part of the neck, caused by a preternatural enlargement of the thyroid gland, one of the cartilages of the larynx. In England it is generally called *Derbyshire neck*, and in France and Switzerland is known by the name of *goitre*. The swelling, in its simple state, presents a smooth surface; the skin which covers the tumor is not discolored, and is neither painful nor tender when touched. In the more complicated cases the neighboring parts become affected, and the swelling sometimes increases to a great extent, causing a shocking deformity. In some individuals it hangs down over the upper part of the breast, and in others it rises as high as the ears. When the tumor is large it presses on the windpipe, and causes hoarseness of voice, and impedes the breathing; the jugular veins being also compressed, the free circulation of the blood in the head cannot be carried on, and the consequences are head-ache, drowsiness, giddiness, and sometimes apoplexy.

Bronchocele is very seldom attended with danger; it may continue for years, and even throughout life, without causing pain or much inconvenience. There are no doubt cases occasionally in which inflammation comes on; the tumor then becomes hot and painful, the skin covering it assumes a red and shining appearance, and the veins running under the skin are much enlarged. In scrofulous persons matter has even been known to form and find vent externally. Scrofula, however, does not appear to be particularly connected with this disease.

Causes. The various opinions started respecting the cause of Bronchocele, when closely examined, appear so doubtful and contradictory, that we are left, after all the inquiries and observations made with regard to it, as ignorant of its origin as we are of the use of the thyroid gland, where the complaint is seated.

Treatment. Iodine, if judiciously used, particularly when the individual is removed from the locality where this disease prevails, may be said to cure it in the majority of cases. This should be given in small doses frequently repeated. It is then perfectly safe; but if given in too large doses, or carried too far, it brings on lowness of spirits, loss of appetite, dimness of sight, nervous irritability, and palpitation of the heart, or it may irritate the stomach and produce purging. If the patient complain of heat of the stomach and griping, the iodine should be discontinued for a day or two, or the dose may be diminished; these effects, however, are very seldom produced when the following preparation is given as here directed—

Hydriodate of potash, thirty-six grains,
Iodine, ten grains,
Distilled water, ten ounces. Mix. Dose of five drops three times; gradually increase to twenty or thirty drops.

As an external application, use the following ointment—

Hydriodate (or iodide) of potash, half a drachm,
Lard, an ounce to an ounce and a half. Mix. A drachm of this is to be well rubbed in over the surface of the tumor night and morning.

Or a liniment composed of

Tincture of iodine, a drachm,
Compound soap liniment, an ounce. Mix.

In some cases the skin covering the tumor is irritated by the iodine ointment, and a considerable degree of inflammation takes place. When this occurs, the ointment should be discontinued, and the inflammation reduced by the application of six or seven leeches to the part, to be followed by poultices of warm bread or linseed.

In some cases Bronchocele yields to iodine in the course of a month or two, in others it is necessary to keep the system under its influence during ten or twelve months before a cure can be effected.

A seton placed in the skin over the Bronchocele has sometimes the effect of curing it when iodine fails; but if the tumor be very hard or partly ossified, neither of these remedies produces any good effect. The diet ought to be of a sufficiently substantial and nutritive quality, since this disease generally occurs in delicate females of relaxed constitutions. Bronchocele has disappeared entirely in many cases, particularly in young people, from change of residence alone. In others it has been cured by simply rubbing the tumor two or three times a day (a quarter of an hour or twenty minutes each time) with a dry towel; or with a little camphor liniment. The swelling must be always carefully covered, so as to prevent its being acted on by sudden changes of temperature.

BUCHU LEAVES.

Distinguished medical men speak highly of the benefit derived from them in certain affections of the bladder.—(See *Catarrh of the Bladder.*) They are useful in gleet, and certainly have an excellent effect in strengthening the digestive organs.

The leaves of the buchu are given in the forms of infusion and tincture.

Infusion.—Take of buchu leaves an ounce, boiling water a pint; macerate for four hours in a lightly-covered vessel, and then strain through a piece of linen. Two or three table-spoonsful to be taken as a dose three or four times a day.

Tincture.—Take of buchu leaves two ounces, proof spirit a pint; macerate for seven days. Three or four tea-spoonsful a dose, in a little water, three or four times daily.

BUNYONS.

A bunyon is a swelling on the inside of the first joint (or ball, as it is commonly called) of the great toe, caused by the pressure of tight boots or shoes. The same term, however, is sometimes applied to a similar swelling on the first joint of the little toe, or on the instep. Those who are troubled with bunyons have generally the great toes turned outwards, and the little toes inwards, to an unnatural extent. This almost invariably arises from wearing boots or shoes too narrow at the extremities, thereby causing the toes to be squeezed in an improper position against each other.

Treatment.—Since a bunyon is caused by undue pressure, the pressure, of course, should be removed. The necessity, therefore, of wearing loose boots or shoes is obvious. They should be without high heels, which would cause improper pressure on the fore part of the foot, and made of cloth or of buck-skin, or some other soft leather, and so constructed as to allow ample room at the parts corresponding to the bunyons.

When a bunyon is not inflamed, the pressure may be, in a great measure, removed by applying over it and the surrounding parts a piece of thin linen or silk, spread with diachylon plaster, and over the latter a piece of thick buck-skin leather of the same dimensions, likewise covered with diachylon, perforated with a hole of the size of the bunyon. The pressure is thus removed, and thrown on the adjacent parts. This method of treatment may be assisted by having the sole of the shoe considerably thicker towards the inside of the foot.

Wearing a new shoe, or one tighter than usual, much walking, particularly in warm weather, or other causes, may bring on inflammation in the bunyon, which then becomes so painful that the slightest pressure cannot be tolerated. In this case, use warm linseed poultices and warm fomentations, and apply leeches to the surrounding parts. But it sometimes happens that, notwithstanding these remedies, matter forms, and the lancet is required to give vent to it. The application of iodine ointment, prepared as follows, has often an excellent effect in relieving an inflamed bunyon.

> Iodine, twelve grains,
> Lard, or spermaceti ointment, half an ounce. Mix.

A small portion of this ointment (about the bulk of a horse-bean) is to be rubbed gently on the bunyon twice or thrice a day.

CALAMINE, OR CARBONATE OF ZINC.

Prepared calamine is sometimes sprinkled over ulcers, with the intention of diminishing the discharge of matter when in excess; or for the purpose of absorbing acrid matter, and thus preventing it from spreading, and irritating the surrounding parts. It is used in the same manner when the skin is chafed, particularly in children, who are very liable to excoriations at the arm-pits, groin, and behind the ears. It generally checks the discharge of matter in these cases, and prevents the necessity of employing astringent lotions. To prevent excoriations in children, the powder is also frequently dusted over the parts where they are most likely to take place.

Calamine enters into the composition of the cerate commonly known by the name of *Turner's Cerate*, which is prepared by mixing calamine and yellow wax, of each half a pound, with a pint of olive oil. The oil is first mixed with the melted wax, and, when removed from the fire, the calamine is gradually added, and the mixture constantly stirred until it becomes cold. This cerate is used to promote the healing of ulcers and excoriations, and was formerly much in repute as an application to the ulcerated surface arising from burns.

CALUMBA.

Calumba, or columbo, has been long in high esteem as a mild tonic and stomachic, having no astringent quality, and being but very slightly stimulant. When there is loss of appetite, flatulency, acidity, nausea, and the train of symptoms arising from a debilitated state of the stomach, calumba is of great use, and sits lightly on the most delicate stomach, without producing any excitement of the system; on this account, it is the tonic commonly used to strengthen the stomachs of consumptive patients. We may give it with advantage to relieve the acidity and sickness of stomach so common at the commencement of pregnancy; and also to children, for the purpose of allaying the vomiting and purging to which they are so subject when teething. Those who have lived long in tropical climates have generally weak stomachs, easily deranged by errors in diet, and are subject to occasional derangement of the biliary organs; in such cases, calumba will often be found more beneficial than any thing else, by giving tone to the weakened stomach, and correcting the depraved or redundant secretion of bile. It is of the greatest service in the bilious disorders of warm climates.

The dose of calumba root in powders is from fifteen to sixty grains. The tincture is given in doses of two or three tea-spoonsful. The dose of the infusion, which is made in the following manner, is two or three table-spoonsful, repeated three or four times a day.

Take of calumba root, sliced, five drachms,
Boiling water, a pint. Macerate for two hours, and then strain through a linen rag.

This infusion spoils if kept long.

CAMPHOR.

Camphor is a powerful stimulant. It should be given in doses of from four to fifteen grains in malignant typhus, in the worst forms of measles, small-pox, scarlet-fever, and other eruptive diseases, when accompanied with typhoid symptoms; and also to bring back the eruptions when they have disappeared too suddenly. It has often an excellent effect in painful menstruation, when given in doses of three grains three or four times a day. As an antispasmodic, it is given in asthma, hysterics, St. Vitus's dance, epilepsy, hiccup, and other spasmodic diseases. To promote perspiration at the commencement of a cold, an ounce of the camphor mixture, with ten grains of nitre in barley-water, or any other warm drink, every three or four hours, is a common and very serviceable remedy. Camphor is useful as a sudorific in many cases; but should never be given when any inflammatory action is present. Camphor mixture is given to prevent, as well as to soothe the irritation of the urinary organs, which sometimes arises from the application of a blister; and with the same intention when squills, balsam of copavia, turpentine, and other medicines which act on these organs, are administered.

Camphor mixture is prepared in the following manner.

Take of camphor, half a drachm,
Rectified spirits, ten minims (drops,)
Water, a pint. First rub the camphor with the spirit, then with the water, gradually poured in, and strain through linen.
Of this mixture four table-spoonsful may be given every three or four hours.

The following camphor julep, in common use, is made by rubbing together

A scruple of camphor,
Two drachms of sweet almonds, blanched,
A drachm of sugar,
And six ounces of peppermint-water,
Two table-spoonsful to be taken as a dose every two or three hours.

Camphor is much in use as a counter-irritant; for this purpose it is usually mixed with oil. An ounce of camphor dissolved in four ounces of olive oil forms the camphor liniment of the London Pharmacopœia; either this or the compound camphor liniment, which contains ammonia, is rubbed over the joints, or other parts affected with chronic rheumatism. It is used in the same manner for nervous pains, bruises, sprains, indolent swellings, &c. A piece of flannel soaked in a strong solution of camphor, (two ounces of camphor mixed with four ounces of rectified spirits of wine,) applied over the chest, and covered with oiled skin, has sometimes the effect of relieving attacks of spasmodic asthma, angina pectoris, cramp, and other cases, where there is local derangement of the nervous power.

CANCER.

Although the most enlightened and skilful men regret their utter ignorance of any means of eradicating this formidable malady, empirics are everywhere to be found, who boast of being able to cure this disease by secret remedies, which they pretend to have discovered; and thus live by deceiving the ignorant and unfortunate individuals who, with that clinging to life so natural to every one, resort to them in the vain hope of being cured.

Cancer is a disease common to both sexes, but women are more subject to it than men. It is not often seen in people under twenty-five years of age, and very rarely before the age of puberty. Women are most frequently attacked after the menstrual discharge has entirely ceased; but it often occurs in men at an earlier period of life. It may attack any organ of the body; but in women the breast and womb, and in men the lower lip, stomach, liver, and testicles, are the parts most frequently affected.

The exciting causes of cancer are *general* and *local*. The most frequent *general* causes are low diet, abuse of spirituous liquors, excess in venery, long-continued trouble of mind, the depressing passions generally, and the suppression of any habitual discharge, such as the menstrual secretion, or the discharge from piles. The most common *local* causes are blows, or other local injuries, undue pressure, and repeated and long-continued irritation; but in many cases no cause whatever can be traced. The general opinion, however, is, that none of these causes could have any effect in bringing on cancer unless the system were previously disposed to the complaint; but of the nature of this predisposition we know nothing.

CANCER OF THE FEMALE BREAST

Is by far the most common of all cancerous affections; and the period at which it is usually observed is between forty and fifty years of age.

It is often a very difficult matter to distinguish between other tumors of the breast and those resulting from the first stage of cancer. The symptoms, however, the most characteristic of a cancerous tumor are, its constant progress, great hardness, irregular shape, and uneqal, lobulated, or knobbed surface; the darting or lancinating pains (though similar pains are sometimes felt in other tumors;) and, at a more advanced period, the dusky leaden color and puckered appearance of the skin, and its attachment to the tumor. When a tumor of the breast is felt fluctuating, and the skin is changed in color and feels hotter than natural, it is certainly not of a cancerous nature. Cancer of the breast is influenced by the menstrual discharge during three or four days prior to its occurrence, the pain in the tumor increases, and it is much relieved for several days after that discharge has ceased. An indurated tumor of the breast may exist for years without giving any pain or uneasiness, until the entire cessation of the menses, at which period it becomes increased in size, very painful, acquires all the characters of cancer, and goes on rapidly to a fatal termination. But when the tumor does not appear until some years after that period, and more particularly if not till after sixty years of age, it usually progresses slowly, and is very little painful.

Treatment. Many tumors of the breast are not of a cancerous nature, are harmless, and may be cured by very simple means. Yet they ought all to be looked upon with the greatest suspicion, particularly if they have originated without any known cause, or have existed for any length of time. No female, on detecting any unnatural hardness in her breast, should rest satisfied until the necessary means have been adopted to get rid of it. There can be no greater folly than to trifle with a tumor of the breast, whether it may have arisen from a blow, or from a milk abscess, or any other cause. Tumors of that organ, though simple, and in no degree malignant at their commencement, may, if neglected, degenerate into cancer. A tumor of the breast may be of long standing, without having declared itself sufficiently to allow one to know whether it be of a cancerous nature or not; nor can we be sure that this is not the case, until the means used to disperse it have been successful. Many, on detecting a tumor in the breast, let it alone, because they feel no pain or uneasiness; some conceal it for years, from a feeling of false delicacy, and others from a dread of the knife, until, at length, they become alarmed by the increase of bulk, and the stinging pain which it occasions; and then, in all probability, the disease is beyond the reach of treatment. Thus, thousands of females lose their lives, or at least the only chance of cure, by not having the tumor cut out at the period which would admit of any chance of success from that operation.

Any external violence done to the breast, may cause a tumor more or less extensive and painful. In this case, apply six or eight leeches to the part, with the constant cold lotions of vinegar and water, or spirits and water. The bleeding by leeches repeat as often as it may be found necessary, until the inflammation be subdued. But when the part remains hard, after the pain and inflammation have been removed, mercurial ointment with camphor, or iodine ointment, will be found the best means of promoting absorption. Also use leeches at intervals of two or three days; the quantity of blood abstracted being regulated according to the strength of the patient. The iodine ointment is preferable when there is reason to suspect that the system is tainted with scrofula. It is prepared in the following manner.

Iodine, half a drachm,
Iodide of potash, the same quantity,
Rectified spirit of wine, a drachm,
Lard, an ounce. Mix.

The camphorated mercurial ointment is made by mixing half a drachm of camphor with an ounce of mild mercurial ointment. About the size of a nut of either of these ointments should be rubbed gently over the part, night and morning; continuing the friction a quarter of an hour or twenty minutes each time. The patient's bowels are to be kept open with rhubarb and magnesia, or any other gentle laxative; and five grains of Plummer's pill should be given every night, or every second night, as an alterative, with decoction of sarsaparilla. This treatment may be adopted in every doubtful case, whether the induration have existed for weeks or years; and if after continuing it for some length of time, no benefit is obtained, the patient should make up her mind to have the tumor cut out. It is quite possible that the tumor at this early stage, even after it has resisted the most energetic treatment, may not be of a malignant nature. But prudence directs us to extirpate the disease rather than to run the risk of its terminating in cancer. Besides, at an early period, before the tumor has adhered to the skin, the operation can be performed with great ease, in a short time, and with very little pain; whereas, if it be allowed to advance until the skin becomes puckered and discolored, and the glands in the arm-pit affected, there would be little or no chance of success from an operation. The system is then too deeply contaminated with the cancerous poison, and the disease would either re-appear at the breast, or somewhere else.

When, from dread of the operation, or from having allowed the only period to pass by in which it might be performed with advantage, the patient has deprived herself of every prospect of getting rid of cancer, all that can then be done is to retard its progress as much as possible, and mitigate suffering. For this purpose we have several remedies, the most valuable of which is certainly *hemlock*. The dose of the extract of hemlock should not be more at first than three grains, formed into a pill, and given night and morning, an hour, or an hour and a half, before eating; the quantity to be gradually increased to twenty-four grains in the course of the day, or until it produce slight giddiness. The diet during this, or any other treatment, should be moderate in quantity, and easy of digestion. Stimulating food, with fermented liquors, would do as much mischief as the method adopted by some of almost starving the patient. Fomenting the breast with a decoction of the leaves of hemlock, or of henbane, and the application of poultices of the fresh leaves, or of the dried leaves softened with boiling water, have often an excellent effect in soothing the pain, when used moderately warm. Sir Astley Cooper recommends a drachm of the *extract of belladonna* rubbed down with an ounce of soap-cerate, to be applied to the part. When hemlock begins to lose its effect, the extract of aconite and the extract of henbane, remedies possessed of similar virtue, when given in the same doses, and continued in the same manner, may be substituted for it with great advantage. Sometimes, however, all these remedies fail, and it then becomes necessary to have recourse to opium, or some of its preparations. A grain of solid opium may be given as a dose to begin with. A quarter or a half a grain of acetate of morphia, will answer the same purpose. The dose of these opiates must of course be gradually increased; and as opium tends to constipate the bowels, the latter ought to be carefully attended to.

It is of the greatest importance, that females attend to the state of the menses. From the intimate connection which exists between the functions of the womb and breast, any irregularity in the monthly discharge is sure to be attended with an aggravation of the symptoms of cancer in the breast.

In the open or ulcerated stage of cancer, nothing more can be done, besides alleviating the pain by the narcotic remedies already mentioned, than to diminish the smell and check the bleeding, which sometimes comes on in consequence of the corrosion of the blood-vessels. Carrot poultices have been long in very general use for the purpose of diminishing the smell and soothing the pain. A similar effect may be derived from finely powdered charcoal mixed with poultices of linseed or marshmallow, or from washing the sore occasionally with a weak solution of the chlorate of lime or of soda. The carbonate (or rust) of iron made into a thin paste with water, and applied over the sore, is beneficial. Some patients find relief from dressing the ulcer with an ointment composed of a drachm of powdered opium, mixed with an ounce of lard or spermaceti ointment. The sore should be dressed more or less frequently, according to the extent of the discharge; but expose it as little as possible to the air. When bleeding takes place, a piece of sponge should be applied, with some dry lint between it and the sore, to be secured with a moderate degree of pressure, by means of a bandage.

The treatment then consists in mitigating the pain, and tranquilizing the nervous system, by means of hemlock and other narcotics; in dressing the sore with emollient and soothing applications; in supporting the patient's strength by light nutritious diet, easy of digestion, and by the administration of tonics, the most suitable of which are *quinine* and the *carbonate of iron;* half a grain of the former, or three grains of the latter, to be given three times a day, in conjuction with the extract of hemlock.

CANCER OF THE STOMACH.

Women are most liable to cancer of the breast; men to cancer of the stomach, which is equally to be dreaded, since the latter form is also invariably fatal in its termination. It is usually brought on from blows over the stomach and other external injuries; long-continued excess in eating and drinking; distress of mind, and hereditary disposition. It is seldom met with before the age of thirty, and is in general a disease of advanced life.

This form of cancer commences with uneasiness at stomach without pain, heartburn, eructations, and other symptoms of indigestion; and it cannot at first, and even for several months, in many cases, be distinguished from that complaint. After a longer or shorter period, however, the symptoms of cancer become so decided, that there can be no longer any doubt with regard to the nature of the case. Shooting pains are felt at times extending to the back and loins; the mind becomes much dejected and the body emaciated; sickness and vomiting are experienced from the slightest error in diet. The parts of the stomach most frequently affected with cancer are the *pyloric*, or lower opening leading to the gut; and the *cardiac*, or upper opening, where the gullet terminates. When the lower orifice, which is more frequently the seat of this disease than the body of the stomach, or its upper orifice, is affected, the pain is much increased about three or four hours after taking food; sickness then comes on, followed by vomiting, which relieves the patient for a time; but, if the disease be at the upper orifice, the pain is severely felt as soon as the food has passed down the gullet; from the irritation produced, the food is frequently returned almost immediately; when, however, it has entered the stomach, the pain ceases. Some patients, rather than be subjected to this kind of torture, almost starve themselves. When these apertures are in a state of health, and the cancer is situated in the body of the stomach, the food enters without inconvenience, but gives great pain shortly afterwards, and vomiting frequently follows. At this stage of the disease, the pain is increased on pressure over the stomach; and in many cases a hard swelling may be felt. To these symptoms are added, obstinate costiveness, thirst, feverish restlessness during the night; and, in some cases, the stomach retains the food which has been just swallowed, and rejects that which had been taken the day before; in others, it accumulates during several days, until at last the stomach becomes so distended, that free vomiting of the half-digested aliment, mixed with watery or ropy mucus, takes place.

At first there is considerable difficulty in detecting this disease, inasmuch as the pain may not be of a lancinating or stinging kind, and the vomiting not regular; and though there may be acid eructations, fetid breath, flatulence, distention and a feeling of weight at the stomach, and occasional vomiting; yet all these symptoms might arise from other causes. But when the more marked signs already enumerated are present, particularly when there is vomiting of a fetid dark-colored matter, resembling coffee-grounds or chocolate; and when a hard tumor can be felt between the false ribs of the right side and the navel, which changes its position to a certain extent, according as the stomach is full or empty, there can then be no doubt with regard to the nature of the disease.

Cancer of the stomach is very irregular in its progress; sometimes the symptoms are much relieved for a time, and the patient thinks he is getting better; in some cases it advances rapidly, and terminates fatally within a few months; in others, it continues during many years.

Treatment.—Since cancer of the stomach cannot be distinguished at first from disorders of that organ, of a slow inflammatory nature, it follows that the treatment, as long as there is any doubt existing, should be directed towards a radical cure, and not to merely palliating the symptoms. A rigorous and properly regulated diet is at this early period the chief means to be relied on. The patient must confine himself to food of a mild nature; and every thing which would excite the stomach, or increase the irritation, should be strictly avoided. Milk in most cases answers better than anything else; some stomachs, however, cannot support it. When milk turns acid on the stomach, it is of course unsuitable. In some cases a little animal food, properly masticated, is most easily digested; in others, liquid diet, such as mutton broth, veal broth, and beef tea, is more suitable. But, in general, arrow-root, tapioca, sago, blanc-mange of rice, the preparation of oats, well known in Scotland under the name of *sowens*, and other mild farinaceous substances, taken in small quantities at a time, will be found to produce the least irritation. Animal jellies in small quantities may be tried; and there can be no better article of diet than asses' milk, when it agrees with the stomach. The object is to give the stomach as little work to perform as possible, and to avoid irritation by improper food; nor should it ever be overcharged with any kind of food, since we know that when in a disordered state it cannot carry on the process of digestion as in health; and half-digested aliment must of course act as a source of irritation. The drinks to which the patient should give the preference are, lemonade, orgeat, barley-water, a decoction of liquorice, and linseed tea.

A pill composed of two grains of *oxide of bismuth*, and the same quantity of the *extract of henbane*, or of *hemlock*, should be taken three times a day; and six or seven leeches are to be applied over the stomach at intervals of three or four days, or a week. The daily use of the tepid bath is also advisable. The bowels must be carefully attended to; and the best laxatives are Henry's calcined magnesia, rhubarb and manna; but it is better to avoid acting on the bowels through the medium of the stomach; the French plan of relieving them by clysters is preferable. At first, an injection of warm water, or a decoction of linseed or marshmallow, will answer the purpose; but afterwards it becomes necessary to throw up an infusion of senna-leaves with castor oil. If there be no appearance of amendment after this treatment has been continued during some weeks, it will be advisable to insert a seton or issue over the stomach, or to rub in the tartar emetic ointment. (See page 266.) But if the symptoms remain unabated, or go on increasing in spite of all these remedies united, and the patient's strength is giving way, we should abandon them altogether, and adopt the palliative treatment recommended for cancer of the breast. At no period of the disease should emetics, antispasmodics, and strong purgatives be given. Towards its termination, when every kind of food is rejected by the stomach, life may be prolonged for some time by the use of injections of strong soup, beef-tea, &c.; but who would wish to prolong such a wretched existence?

CANCER OF THE WOMB.

When cancer attacks the hollow organs or cavities, it begins almost invariably at their openings, as the lips, the upper and lower openings of the stomach, the fundament, and the mouth of the womb. The body of the latter organ is very seldom primarily affected, its mouth and neck first become gradually indurated and enlarged, and the symptoms at this stage are so obscure that the individual may be a considerable length of time without knowing that any diseased action is going on. But when the second or ulcerated stage has begun, the symptoms are sufficiently apparent. No cause can be assigned for this disease; it attacks the married and unmarried, and may commence at any age after puberty; but the period at which it usually begins is a little before or after the turn of life.

In general the first symptom that alarms the patient is a more or less profuse flooding, recurring at irregular intervals, which is preceded or followed by the discharge called the whites. This discharge after some time acquires a fetid smell and becomes thin, and brown or greenish in its appearance. A disagreeable sensation of weight soon begins to be experienced at the lower part of the belly accompanied with occasional pains of a bearing down or aching kind. The patient at this time may retain her usual strength and appearance, but by degrees her limbs waste and lose their natural plumpness, though the face may appear very little changed, and she complains of an aching sensation and weakness about her loins. As the disease goes on the emaciation and debility increase, the face appears shrunk and deadly pale, or of a pale straw color; dull, dragging, burning, and lancinating pains are felt at the lower parts of the belly and back, extending to the groins and thighs, the urine requires to be frequently discharged, and there is considerable pain attending the evacuation of the bowels. At a still later period of the disease all the symptoms are aggravated, the pain without the aid of strong anodyne remedies would be intolerable, the peculiar smell from the matter discharged is almost insupportable, the stomach becomes very irritable, frequent vomiting harasses the patient; and the debility is often greatly increased by frequent discharges of blood from the genitals. The patient being no longer able to withstand the pain, hectic fever, and want of sleep, sinks from exhaustion, or she may perish from a profuse discharge of blood. Sometimes the cancer eats its way both into the bladder and bowels; the urine and excrements are then mixed with the cancerous matter, and are discharged involuntarily. This deplorable state, however, cannot exist long, inflammation soon follows, and puts an end to the patient's suffering. The length of time required by this disease to run its course is very variable; in general, the younger the patient is the quicker it carries on its ravages; but it may remain in the occult or scirrhous state during several years.

We have already mentioned that cancer of the womb commonly commences with flooding, but this symptom is not peculiar to it; the disease may arise from polypus or other tumors of the womb, or of the passage which leads to the womb (called the vagina,) or from chronic inflammation of the same part, attended with softening. But when any unnatural discharge of blood takes place between the periods of the menstrual discharge, or after its final cessation, no time should be lost in seeking the best medical advice. The appearance of whites in females who have passed the turn of life, is a symptom to be looked upon with considerable suspicion, and ought never to be neglected, however small the quantity of the discharge may be, inasmuch as it is often a prelude to cancer of the womb, or a symptom of some other disease of that organ, or of the vagina.

Treatment.—If cancer be found a dangerous and intractable disease, when seated in the breast and stomach, it is not less so when it attacks the womb. All the internal remedies and various methods of treatment which have been tried with the intention of curing this form of cancer, have deservedly fallen into disrepute;

and medical men are now satisfied that they can do nothing more than palliate symptoms and endeavor to retard its progress. The disease is so painful and disgusting, that females have willingly submitted to dangerous operations, and the most severe methods of treatment, in the hope of getting rid of it. Cutting out the neck of the womb was first practised by Osiander, a German surgeon, and high expectations of success were at one time formed from this plan of treatment. An eminent French surgeon, M. Lisfranc, of the hospital of La Pitie, in Paris, stated a few years ago that he had cured eighty-four women out of ninety-nine, on whom he had performed this operation; and were this statement correct, it would be of the greatest importance; but neither the surgeons of his own country nor of this give credit to his assertions. M. Pauly, house surgeon of the same hospital, who assisted Lisfranc in many of these operations, and had paid great attention to their results, says, that he has never seen amputation of the neck of the womb successful when there was real cancer. Burning the diseased portion of the womb with caustic is another painful method of treatment, which has been tried and found equally unsuccessful. If cancer were the result of inflammation, and entirely local, these methods of treatment would in all probability be successful; but since this disease depends on a peculiar vice in the system which cannot be eradicated, it is sure to recommence in the womb or develop itself in some other part of the body. There is every reason to believe that when amputation of the neck of the womb has proved successful it has been in cases in which chronic inflammation, or induration not of a malignant nature, has been mistaken for cancer; cases which might have been cured without this dangerous and painful operation.

Whenever pain or flooding comes on, the patient should remain in the recumbent position; and she ought not to take exercise unless the pain has been absent for some time. A tepid *decoction of poppies* or five grains of the extract of hemlock, dissolved in a decoction of marshmallows or linseed tea, may be thrown up the vagina several times in the course of the day, with the intention of soothing the pain; but great care must be taken not touch the diseased part with the end of the syringe, and while the injection is being thrown up, which should be done very gently, the patient ought to lie with her hips considerably raised. *Hemlock*, *henbane*, and the *preparations of opium*, may either be given in the manner recommended in the treatment of cancer of the breast, or five grains of the extract of hemlock, or from six to twelve drops of Battley's solution of opium, dissolved in one or two table-spoonsful of warm water or linseed tea, may be thrown up the anus, which in this case will in general be found the best mode of using them. As the disease advances the quantity of these anodynes must be increased; but it is advisable not to repeat them more frequently, or use more at a time than is really necessary to alleviate the pain. Instead of using injections which cannot in every case be retained, a pill (suppository) composed of seven or eight grains of extract of hemlock, or from two to four grains of powdered opium with the same quantity of soap, may be passed up the anus. During the ulcerated stage of the disease, when the discharge is very copious and fetid, injections of soap and tepid water, followed by a weak solution of the *chloride of soda*, are to be thrown up the vagina in order to keep the parts clean and diminish the smell. The horizontal position is absolutely necessary, and the strictest attention must be paid to the diet recommended in cancer of the stomach, in order to prevent irritation of stomach and the consequent vomiting, which when once commenced cannot easily be checked. The tepid bath may be used, and great care should be taken to keep the bowels gently open by means of the following electuary, or some other mild laxative—

Take of the confection of senna, an ounce and a half,
Milk of sulphur, half an ounce,
Honey of roses, a sufficient quantity to form an electuary. One, two, or three tea-spoonsful of this to be taken as a dose at bed-time, when necessary.

CANNELLA BARK.

Cannella bark is tonic and aromatic; it is seldom given alone, but is found useful in preventing griping from aloes, senna, and other strong remedies, and also tends considerably to cover their disagreeable taste. In people of sedentary habits, who are troubled with indigestion, attended with constipation of the bowels, canella is a very efficacious medicine in conjunction with aloes. It enters into the composition of *hiera picra*, an old and well-known popular remedy. The *ramier*, or wood-pigeon, so well known in Dominica and other islands of the West Indies, derives the agreeable aromatic and bitter flavor for which it is so much admired, from feeding on the berries of the canella tree, which is common in those islands, where it is known under the name of the wild cinnamon tree. The dose of canella bark is from ten grains to half a drachm.

CARBUNCLE.

Carbuncle may appear without constitutional disturbance, but in general it is preceded by loss of appetite, foul tongue, headache, lassitude, general uneasiness, and shivering. At first it can scarcely be distinguished from a common boil, commencing in the form of a pimple, which gradually enlarges and becomes hard, broad, and elevated. The tumor is circumscribed and flat, the skin of a dark red or violet color; the hardness or firmness which accompanies it is compared to that of brawn; it is hot to the touch and very painful, with a sensation of burning heat, and a disagreeable feeling of stiffness. A carbuncle may not go beyond the size of a hen's egg, but sometimes it becomes as large as a saucer, or may even attain a diameter of eight or nine inches. The accompanying symptoms are, hot skin, thirst, severe head-ache, restlessness, high-colored urine, and other feverish symptoms. When left to itself it softens at the most prominent part, and little vesicles or bladders form, which burst and discharge a small quantity of a bloody, badly formed and fetid matter. The softening goes on, the openings increase in number, enlarge, and run into each other. The matter now discharged has an appearance which Sir Astley Cooper says is peculiar to carbuncle, and which he compares to flour and water mixed together. The skin between the openings is gradually destroyed and sloughs off, allowing the cellular substance or fat which the tumor contains to be easily seen. This substance is in a state of mortification, though it does not appear black, in consequence of being saturated with matter which gives it a greyish or ash color. The smell exhaled is strong and very disagreeable. Carbuncle commonly goes on to mortification in the course of ten days from its commencement, and the dead parts are thrown off towards the end of the fourth week, leaving a deep cavity which requires a considerable length of time to fill up and heal. An ugly cicatrix is invariably left.

Children and robust people are most subject to boils, several of which may exist at the same time; but carbuncle appears alone, and elderly people, whose constitutions have been impaired by improper living, are most subject to it. Carbuncles are seldom seen on the limbs; the parts which they generally attack are the back, particularly between the shoulder-blades, the loins, the nape of the neck, and hips, though they are occasionally met with on the belly, and over the chest. Carbuncle generally terminates favorably, but is a disease by no means unaccompanied with danger; the risk attending it depends upon the age, constitution, and previous habits of the individual, as well as on its size, and the part which it attacks. Carbuncles of the head and neck generally prove fatal.

Treatment.—As soon as a carbuncle begins to make its appearance, the object is to keep the inflammation under as much as possible, without debilitating the patient. The bad habit of body, and advanced age of the individuals who are attacked by this disease, render general blood-letting improper; but local bleeding, by the frequent application of leeches, may be very serviceable, and ought never to be neglected. From ten to twenty leeches should be applied round and over the part, and the bleeding afterwards promoted by warm fomentations, or by the application of a warm poultice. In some cases, the constant use of cold applications to the part, as Goulard water employed as a lotion, or with crumb of bread in the form of a poultice, are found to answer best in keeping down the inflammation; in others they produce shivering, and increase the patient's uneasiness. In general, warm fomentations of the infusion of linseed, decoction of marshmallow, and warm poultices of bread, or of linseed, are most serviceable. The internal treatment consists in keeping the patient on low diet, and in administering the following powders.

Tartar emetic, one grain,
Cream of tartar, half an ounce. Mix, and divide into six powders. One to be given every hour.

If the cream of tartar be found to act too freely on the bowels, the quantity should be diminished. This treatment, when steadily persevered in, although it seldom has the effect of arresting the inflammation, yet, not unfrequently, allows it to terminate in suppuration; when this takes place, an eschar forms on the summit of the tumor, which, when cut into, gives vent to the matter, and the sore afterwards fills up and heals. But when the inflammation ends in the death of the contents of the carbuncle, which is the usual termination, and which may be known by the most elevated part of the tumor becoming soft, with little vesicles or bladders on its surface, the best plan is to make two cuts, crossing each other, completely through to the bottom, carrying their extremities a little beyond its circumference. The loose part of the dead cellular substance is then to be squeezed out, and poultices applied. Sir Astley Cooper recommends a poultice composed of linseed-meal and Port wine, which is, no doubt, as good an application as could be employed, but it has no advantage over the common yeast poultice, which is less expensive. Prior to the whole of the sloughs being detached, the matter is acrid and very fetid; it is, therefore, necessary to change the poultices at least three or four times a day. When the dead cellular substance is entirely thrown off, and the cavity begins to fill up, the dressing should consist of the red precipitate ointment spread on lint, or on a piece of soft linen rag, with a soft poultice applied over it, or the sore may be washed occasionally with a solution of from six to ten grains of lunar caustic to an ounce of water.

CASCARILLA BARK.

This country is supplied with cascarilla bark principally from the Bahama Islands. It is an excellent tonic and stomachic, without being astringent, and was much used before the discovery of quinine as a remedy in ague, particularly in cases in which the Peruvian bark could not be given without producing sickness at stomach and purging. In simple indigestion, arising from weakness of stomach, cascarilla is one of the best and most grateful tonics that can be administered; it is also very useful in checking purging when not caused by inflammation.

An agreeable sensation of warmth in the stomach is produced by this medicine, which never causes vomiting, and is easily digested. Quinine has now, however, in a great measure, superseded the use of cascarilla, canella, and other tonic barks. Cascarilla, when burned, gives out an agreeable aromatic odor, and is on this account used as an ingredient in pastiles, and some people smoke a little of it along with tobacco. The dose of cascarilla, in powder, is from ten to thirty grains; and the dose of the infusion, which is the best method of using it, is from two to four table-spoonsful. "Take of cascarilla bark, bruised, an ounce and a half; boiling water a pint; macerate for two hours in a vessel lightly covered, and strain."

CASSIA. (*Cassia fistula.*)

The cassia tree is cultivated in Jamaica, and its pods, which are about a foot and a half to two feet in length, are imported into this country from the West and East-Indies. The pulp of the pods mixed with manna, pulp of tamarinds, and syrup of roses, form the confection of cassia of the pharmacopœia, which acts gently as a laxative, without producing irritation of the bowels or griping, and is, therefore, well suited for old people and children. It is given in doses of from two drachms to an ounce. Cassia is more used on the Continent than in this country, particularly in fevers and inflammatory affections.

CASTOR OIL.

Castor oil is obtained from the seeds of the Palma Christi, a plant which grows in great abundance in nearly all warm climates. Cold-drawn castor oil is brought to this country from the East-Indies, where it is prepared by pressing the seeds without the aid of heat. It is of a pale-straw color, possesses very little smell, and its taste, though not strong, is mawkish and disagreeable. The West-India castor oil is prepared by boiling the seeds in hot water, and skimming off the oil as it rises to the surface; it is of a darker color than the East-India oil, has a disagreeable odor, and is apt to produce griping. The best East-India castor oil acts quickly as a mild purgative, seldom producing griping or constitutional disturbance; hence, it is considered the best purgative in all inflammatory affections of the bowels, in colic, piles, the dry belly-ache of the West-Indies, and habitual costiveness. There is no better laxative than this oil for children, and for females during pregnancy. When a person is in the habit of taking purgative medicine, it is in general found necessary to increase the dose; the reverse of this, however, is the case with castor oil, the doses of which may be gradually diminished, hence the advantage of it in the treatment of habitual costiveness. In the East-Indies, it is used externally in the treatment of gout and rheumatism, by rubbing it into the parts affected, and then covering them well with flannel. Various plans are adopted to cover its nauseous taste; some take it with warm milk, others prefer it floating in a little spirit. One of the best methods is to beat it up with the yelk of an egg, and then add gradually a little cinnamon or peppermint water, or a little plain water, with two tea-spoonsful of the tincture of cardamoms, to prevent sickness at stomach. It may be given to very young children in the dose of half a tea-spoonful to two or more tea-spoonsful, according to the age. For a grown-up person the dose is one, two, or three table-spoonsful.

CATALEPSY, OR TRANCE.

Catalepsy is a disease of the nervous system, of an intermittent nature, and recurring in fits at irregular intervals. It is characterized by the sudden and complete suspension of consciousness and voluntary motion; the body and limbs retaining, throughout the fit, the position in which they were at the moment of the attack; or any other position which may be given to them during its course. Females are most subject to this rare and singular disease. Many theories have been proposed to account for its extraordinary symptoms, but none of them are satisfactory, and its nature remains still unknown.

We have only seen two cases of catalepsy; the first was that of a woman, about forty years of age, in the hospital of Santa Maria Nuova, at Florence, who had been subject to frequent attacks during several years; the other case was under our own charge, and we shall use the liberty of transcribing from a medical journal a short history, which we communicated to it about two years ago. "Charlotte Limon, twenty-two years of age, servant to Mr. Fowler, farmer, at Ranby, (a village in Lincolnshire,) walked about a fortnight ago a distance of seven miles to consult me. She appeared to be a very intelligent girl, and, though not robust, did not seem in bad health, nor did she complain of any thing, except occasionally of slight head-ache a short time previous to the cataleptic attacks. On entering the room her face appeared flushed; on my remarking this to her, she said it arose from having walked so far during the hottest part of the day. After sitting some time, detailing the history of her case, I was about to feel her pulse, and when in the act of presenting her arm for that purpose, she was seized with an attack, and remained with her body leaning forward, and her arm extended. She was talking at the moment the paroxysm commenced, and left the sentence she had begun unfinished; her eyes were closed, but the expression of her face was not in the least changed; the respiration was so gentle as scarcely to be observed; and the action of the heart was in no way affected; pulse seventy-two. There was very little resistance offered by the trunk or extremities in changing their position, and they steadily retained any attitude in which they were placed. Both arms remained in a raised position much longer than they could have been maintained in a state of health. I ascertained the latter by holding my watch in my hand for forty-five minutes, during which time she sustained the right arm extended in a horizontal position, without exhibiting the slightest appearance of fatigue. At the expiration of the forty-five minutes, I changed the position of her arm myself. Her face retained the same florid appearance throughout the fit that it had on her arrival. After she had been in this state about an hour, I observed tears running down her cheeks; the pulse was then for a short time considerably quicker; I conjectured she was dreaming, nor was I mistaken; for, on questioning her afterwards, she informed me she had had a very disagreeable dream; but that, during the fits, her dreams were more vivid and generally more agreeable than in natural sleep, and that she retained a more distinct recollection of them. While she was in the cataleptic state I have just described, I endeavored to arouse her by employing such means as I had seen employed by Dr. Elliotson, and other advocates of mesmerism. I blew into her eyes, rubbed her eyelids strongly, pressed her shoulders, &c., but without the least effect. After the paroxysm had lasted several hours, she changed her position, and appeared restless; on then speaking to her, she answered questions, though seemingly with reluctance, and rather incoherently. I urged her to get up and walk; but she requested to be allowed to remain a little longer where she was. About half an hour afterwards she got up, and, without the slightest head-ache or uneasiness, walked back to Ranby.

"I have been able to ascertain the following facts with regard to her case. She was seized with the first cataleptic attack about two years since, when in a hot bath, being then under treatment for an affection of the throat, and the fits were during several months after very frequent, occurring every other day, and sometimes daily; they are not so frequent now, though this depends on circumstances, as any cause acting more than usual on the mind, or any bodily exercise continued longer than usual, is almost certain to induce a paroxysm. The attacks are generally preceded by certain premonitory symptoms, such as slight head-ache, confusion of intellect to a certain extent, and ringing in the ears; as soon as these sensations commence, she goes to lie down, being well aware that a fit is approaching; but occasionally there is no warning whatever, and, more than once, she has been seized with a fit while standing; she then remains as motionless as a statue, until placed in a chair or carried to bed. The fits are of various duration, from an hour to twenty-four hours, but seldom any longer. She has not the most distant idea of the length of time she remains in the cataleptic state; for example, a fit occurred one morning about seven o'clock, which continued until the following morning between eight and nine o'clock; she thought it had lasted only about an hour, and (to the amusement of her fellow-servants) seemed much pleased that it had been of so short duration. She had, during a considerable length of time, a determination of blood to the head, for which the medical man who then attended her had recourse to cupping the nape of the neck; being naturally of a timid disposition, the sight of the cupping instrument invariably threw her into a fit. When in the cataleptic state, she is unconscious of every thing going on around her, and insensible to pain. As a proof of this, I may mention that one day when being cupped, through some inadvertency, her neck was burned with the hot spirit of wine; she did not seem to feel it in the least, though she complained of pain immediately on recovering from the fit some hours after. Various methods of treatment have been adopted, but without producing any lasting good effect. Obstruction of the catamenia was at one time supposed to keep up the disease, but in that respect she is now perfectly regular, and has been so for several months, though the disease continues nearly as inveterate as ever. I have not been able to trace any visceral disease with which the catalepsy might be connected.

Hypochondriacal and hysterical women, and those with irritable nervous systems, appear to be most predisposed to this disease. Habitual melancholy, religious enthusiasm, love, great anxiety, extreme sorrow, and other passions which act strongly on the nervous system, are supposed to be predisposing causes. The immediate exciting causes are anger, terror, sudden fright, or any strong mental emotion. In some instances it would appear that catalepsy depended, at least to a certain extent, upon irritation of the brain or spinal marrow, a deranged state of the stomach and bowels, obstruction of the menstrual discharge, and other irritating causes ; but individuals have been affected with it in whom no other disease could be detected, though in the majority of cases it seems to have been intimately connected with hysteria. It is not a dangerous disease, but there is reason to believe that in some instances individuals have been buried while in a cataleptic state.

Treatment. When catalepsy appears to be kept up by any exciting cause, the treatment of course ought to consist in removing that cause if possible ; if from irritation of the brain, or from determination of blood to the head, leeches should be applied, at intervals of five or six days, behind the ears, to the nape of the neck, and along the course of the jugular veins, and the bowels kept freely open. If from obstruction of the menses, then the warm hip bath should be frequently employed and the *carbonate* (*rust*) *of iron*, with *aloes*, administered. If the stomach and bowels or other organs are affected, the necessary means ought to be resorted to for the purpose of restoring them to a healthy state. Persons with pale countenance, soft flesh, and weak constitutions ; aged people, and those with spongy gums and scorbutic spots on the body, who have labored long under this disease, should have recourse to quinine or other tonics, and generous diet, with wine. Antispasmodics, such as *assafœtida*, *æther*, *camphor*, &c., may give some temporary relief; but upon the whole they have been found worse than useless. We do not believe that advantage can be derived from any kind of treatment during the attack. In all cases the shower bath may be tried, regular exercise should be taken in the open air, and nothing is of more importance in the treatment of catalepsy than a proper regulation of the mind.

CATECHU.

Catechu is produced from a species of acacia, which grows in various parts of India. It is an excellent and very powerful astringent, and is frequently used for the purpose of stopping purging, when there are no inflammatory symptoms present, in combination with chalk mixture and laudanum. It is given to check gleet, whites, discharges of blood from the bowels and womb, and all immoderate discharges when not attended with inflammation. A little of it put into the mouth and sucked slowly, is the best remedy for relaxation of the uvula or pap of the throat, when it hangs down, and causes irritation, cough, and difficulty of swallowing. It is used in the same manner in sponginess of the gums, when they bleed from slight causes. When made up in lozenges with sugar and gum arabic, it is used by public speakers and singers to clear the voice, and also to prevent hoarseness. Pale catechu answers best for chewing, and is the least disagreeable to the taste. The dose of the powder is from ten grains to a drachm, of the tincture from one drachm to three drachms; but the infusion, which is made as follows, is the best form of exhibiting it. Take of extract of catechu, powdered, six drachms; cinnamon, bruised, a drachm; boiling water, a pint; macerate for an hour in a vessel lightly covered, and strain. The dose of this infusion is from two to six table-spoonsful.

CAYENNE PEPPER, OR CAPSICUM.

Cayenne pepper is more used as a condiment to food than medicinally; it promotes digestion and prevents flatulence. The natives of warm climates, who live principally on vegetable food, mix with it a large quantity of the various kinds of capsicum to promote digestion and give tone to the stomach; and this diet appears much better suited for those climates than the rich and stimulating dishes of animal food, with wine and spirituous liquors, on which Europeans generally live. The former kind of aliment appears intended by nature for the inhabitants of hot climates, since, without being either too exciting or irritating, it allows them to resist the action of *malaria*, or the effluvia from decaying vegetable and animal matter; and to avoid the fevers, dysentery, and other inflammatory diseases which cause the death of so many Europeans, in consequence of their indulging in the latter mode of living, which disposes to those diseases, and also renders them more frequently fatal than they otherwise would be.

Capsicum is at present extensively cultivated in Europe, and as it is now understood to possess all the virtues of the oriental spices, without producing any of their bad effects, has in a great measure superseded their use. In fact there is at present no other stimulating vegetable substance so much in use in the seasoning of food as this; it is extensively used in the preparation of pickles; and vinegar, which has acquired a sufficient degree of pungency from the pods of the bird-pepper (Chili vinegar) is considered the most wholesome and one of the most agreeable things that can be used with all kinds of fish.

From a drachm to two drachms of the tincture of capsicum, with half a pint of water, form an excellent gargle for malignant sore throat; and Chili vinegar diluted with water is also used in the same manner in relaxed sore throat, with elongation of the uvula. Poultices of the bruised pods of capsicum are much employed in the

West Indies, instead of mustard poultices; they are equally powerful and not so apt to blister the parts. Cayenne pepper, with brandy, in strong doses, frequently repeated, is the best remedy that can be used for the purpose of counteracting the effects of the powerful narcotic poison from the land crabs of the West-Indies. Cayenne pepper is sometimes used along with the preparations of iron, when there is obstruction of the menstrual discharge; and it is also used as a tonic in scrofulous and other chronic cases. It is more used as a medicine in tropical than in temperate climates. The dose of the powder is from six or ten grains, made up in pills; and that of the tincture is from ten drops to a drachm, in barley-water. The tincture is prepared thus: "Take of capsicum, bruised, five drachms; proof spirit, a pint; macerate for fourteen days, and strain.

CHALK.

Chalk is principally employed in medicine for the purpose of checking purging, from acidity in the stomach and bowels. It is mild in its action, and well suited for children. The dose of prepared chalk in powder is from fifteen to thirty grains, but it is usually given in the form of the chalk mixture. "Take of prepared chalk, half an ounce; sugar, three drachms; mucilage of gum arabic, an ounce and a half; cinnamon water, eighteen fluid ounces; mix. The dose is from two to four table-spoonsful every three or four hours." The compound powder of chalk is used for the same purpose, and is prepared as follows: "Take of prepared chalk, a quarter of a pound; cinnamon, two ounces; tormentil, and gum arabic, of each an ounce and a half; long pepper, a quarter of an ounce; rub them separately to a very fine powder, then mix them. Dose from five to thirty grains." The utility of these preparations of chalk is increased by giving along with them a little laudanum, catechu, or kino.

CHAMOMILE FLOWERS.

Chamomile is an excellent stomachic, and is one of the best popular remedies in common use. Those who suffer from heartburn, flatulency, loss of appetite, and other symptoms of indigestion, may find much benefit from cold chamomile tea, with a little powdered ginger, taken early in the morning. The cold infusion, which is the best and most agreeable way of using it as a tonic, is made with half an ounce of the flowers to a pint of cold water. If the warm infusion be preferred, care should be taken in preparing it, not to allow the flowers to remain with the water longer than ten minutes. When there is nausea in consequence of the stomach being overcharged with food, a strong infusion of chamomile taken warm, acts as an emetic; and it is often given to assist the action of other emetics. The flowers steeped in hot water, and wrapped in flannel, retain the heat a long time, and are therefore very useful as a fomentation. The extract of chamomile is serviceable as a tonic, in doses of from eight to sixteen grains: it is usually combined with a little myrrh and a preparation of iron.

CHICKEN-POX.

This disease has been so seldom met with in grown-up people, that it may be considered as peculiar to children. It is a disorder of very little importance, though at the commencement it is often a source of considerable uneasiness to parents who think that their children have caught small-pox; and indeed it is sometimes no easy matter to distinguish chicken-pox from the mild or modified small-pox, so frequently observed since the introduction of vaccination.

The eruption of chicken-pox generally makes its appearance without symptoms of fever, though it is not unfrequently preceded by head-ache, drowsiness, foul tongue, sickness at stomach, and slight increase in the heat of the skin and quickness of the pulse; but these symptoms seldom continue longer than twenty-four hours. The eruption is generally first observed either on the breast, or all over the body, at the same time. The pocks are distinct, irregular in shape and size, though, for the most part, they are oblong, or of an irregularly circular form, and vary from the size of the head of a pin to that of a split pea. They are filled, on the first day of their appearance, with a clear inodorous fluid, are accompanied with a sensation of itching, and there is a red margin round the base of each. On the second or third day, the pocks or vesicles, which are formed merely by the elevation of the scarf-skin, begin to burst of their own accord, or are broken; and, on the third or fourth day, the fluid in those that remain entire acquires a straw-colored appearance, and soon dries up, leaving crusts which crumble away gradually, or fall off in scales about the fifth or sixth day, without leaving pits or any other appearance, except a little redness, which soon disappears. It ought to be remarked, however, that all the eruption does not come out at the same time; there are successive crops of vesicles, and, while some are just appearing, others are in a state of maturity, and at the same time crusts may be here and there observed. During the progress of the eruption, the general health is little or not at all affected, the sleep is not disturbed, nor the appetite impaired.

Chicken-pox cannot be propagated by inoculation. It is quite independent of small-pox and vaccination, and may come on before or after them, nor does it in the slightest degree interfere with the regular progress of cow-pox.

Chicken-pox is a disease of so mild a character that it cannot easily be mistaken for small-pox, which is a very serious, and frequently a fatal disease. It may be well, however, to point out the difference between it and the mild or modified small-pox, with which it is more likely to be confounded. There is little or no fever before the appearance of chicken-pox; the skin round the pocks is red; they are filled with a clear fluid on the first day of their appearance; and they have neither a hardened base nor central depression, and, when punctured, they fall to the level of the surrounding skin. In modified small-pox there is always fever, accompanied with severe head-ache, and sometimes delirium, during at least forty-eight hours before the eruption, which appears first on the face in the form of hard pimples, surmounted with small circular vesicles, containing matter, and depressed in the centre. The scabs or crusts are always considerably raised above the level of the skin, and, when they fall off, leave small hard swellings, which disappear slowly. There is still another distinction between small-pox and chicken-pox; the former, whether modified or not, is highly contagious; whereas, the latter is not considered to be so.

Treatment.—This disease is of so harmless a character that it may be safely left to nature. A little castor oil, or rhubarb and magnesia, may be given if the bowels be constipated, and the patient should not be allowed to eat animal food for a few days.

CHILBLAINS.

Chilblain is a name given to a species of inflammation which arises from exposure to a severe degree of cold. The parts most frequently attacked by it are the fingers and toes, particularly the little finger, and little toe, and the heels; the extremity of the nose, the tips of the ears, and the cheeks are also sometimes affected with it. A chilblain, in the first or mildest degree, is neither accompanied with pain nor heat, unless the part affected be kept near the fire, or be influenced by the atmosphere of a warm room, and then it becomes only a little warmer than natural, with a peculiar sensation of itching and tingling, which is troublesome and disagreeable, though it cannot be called painful; but there is always more or less swelling of the part, and the skin has a livid or purple color. In the second degree of this affection there is considerable heat, pain, and swelling, and these symptoms are occasionally so severe as to deprive the person of the use of the parts; the hands of young ladies, for example, are sometimes so swollen and painful that they cannot write or play on the piano-forte ; and, in fact, are for a time rendered incapable of doing any thing requiring the free use of the joints. In the third degree, little vesicles or blisters rise on the surface of the chilblain, which break and discharge a thin brownish-colored fluid. A raw surface is thus exposed, and sores are produced which give out an acrid matter that irritates the surrounding parts ; and the ulceration, if not checked, penetrates deeply, and destroys the soft parts even as far as the bones.

Children, females, delicate individuals with fair complexion and tender and irritable skin, and those of a scrofulous habit of body, are most liable to chilblains. They are frequently brought on by the bad habit of sitting near the fire immediately after coming out of a frosty atmosphere, with the feet and hands benumbed from cold ; and they are just as likely to be produced by quitting a warm apartment suddenly and going out into the cold air, particularly if the feet and hands happen at the time to be slightly moist from perspiration.

Treatment.—Stimulating applications are found to be the most efficacious in curing chilblains. One of the best liniments in general use is composed of an ounce of *camphorated spirit of wine*, mixed with half an ounce of *Goulard's Extract.* Mercurial ointment spread on lint, or on a piece of soft linen rag, is an excellent application when the skin is not broken. *Lunar caustic* is much employed in the following manner. The chilblain, having been first moistened with a wet towel or handkerchief, is to be gently rubbed two or three times with a piece of caustic, which gives the skin, in the course of a few minutes, first a white, and shortly afterwards a dark brown color. Care, however, must be taken not to make the part too moist before applying the caustic, which should not be used more freely than is really necessary. This plan of treatment is not attended with pain, and, when properly managed, generally effects a cure in the course of a few days. A *tincture of iodine*, prepared by dissolving a drachm of iodine in three ounces of rectified spirit of wine, is, perhaps, the best remedy for this troublesome complaint which has yet been tried. It should be used only once a day, and applied gently over the part with a soft brush.

The proper treatment for *broken or ulcerated chilblains* is, in the first instance, to apply warm poultices of bread and milk, or linseed-meal, which are to be discontinued after two or three days, and the tincture of iodine applied. The ulcers, and all the discolored skin surrounding them, are to be moistened with it once a day, and then dressed with basilicon ointment spread on lint or on a piece of soft linen rag. Lunar caustic, in the proportion of from five to ten grains to the ounce of water ; and a drachm of red precipitate, mixed with an ounce of basilicon, are useful dressings for broken chilblains. When the sores assume a healthy appearance, and begin to heal, these stimulating applications must either be made very much weaker, or discontinued altogether, and basilicon or any simple dressing substituted for them.

Persons whose feet and hands become chilled and benumbed from exposure to a moderate degree of cold, should avoid sudden vicissitudes of heat and cold as much as possible; they should take regular exercise in the open air, having the extremities of the body well protected by warm clothing; and if those parts should become chilled from exposure to cold, care ought to be taken to restore the heat gradually by friction, by means of warm water or otherwise, and not to expose them to the fire or to sudden heat. Those who are subject to chilblains should take care, after washing the hands and feet, to dry them properly, and not leave them in the slightest degree moist; and, during the winter months, they should avoid washing the hands in cold water. Bathing the feet and hands every night in warm water, with some common salt dissolved in it, is one of the best means of preventing chilblains.

CHOLERA MORBUS.

Cholera Morbus is generally divided into two species; common cholera, and the Asiatic or blue cholera.

COMMON CHOLERA.

Common cholera occurs in every country, and at all seasons of the year; though it is most common in warm climates, and when the heat is greater than usual. It generally commences with griping pains in the belly, and sickness at stomach; and these symptoms are soon followed by frequent vomiting and purging. The food in the stomach is first discharged; then a fluid, varying in color, but always containing bile, is thrown up in great abundance; the evacuations from the bowels also contain bile, and are voided with considerable straining, heat, and pain at the lower bowel. There is at the same time a violent pain at the stomach; and the belly, and in some cases the calves of the legs are contracted by strong spasms, which recur at short intervals, accompanied with great pain. These distressing symptoms are attended with much anxiety, restlessness, and a sensation of burning heat at the stomach, with urgent thirst and severe head-ache; and the pulse, which is at first full and rather quicker than natural, becomes feeble and rapid as the disease proceeds; and the patient's strength diminishes. In ordinary cases these symptoms abate of their own accord, or are checked by the assistance of remedies in the course of a few hours, or they may continue during two or three days, and then cease gradually. But in the more severe cases, the symptoms acquire a more alarming character. The vomiting and purging become almost constant, and the matter vomited is sometimes watery, frothy, or slimy, and only occasionally mixed with bile, but that fluid in a highly acrid state forms always a part of the discharge from the bowels; and this appears to be one of the most marked distinctions between the common and the Asiatic cholera, in which the stools do not contain bile. The body and limbs are covered with cold sweat; the muscles of the belly are frequently contracted, and drawn into knots by violent spasms, which also attack the legs, the thighs, and even the hands and arms. If the progress of the disease cannot be arrested, the face soon becomes deadly pale, shrunk, and expressive of the greatest pain. The eyes appear sunk in their orbits. The extremities of the body become cold, and the pulse weak and intermitting. Sometimes the patient recovers even after the disease has advanced to this extent; but in general the strength diminishes rapidly, frequent faintings, laborious breathing, and hiccup supervene; and death is then inevitable. If from the unaided efforts of nature, or from the judicious use of medicine, the stage of collapse or sinking, which has just been described, be prevented, the symptoms, after a longer or shorter period, varying from six to forty-eight hours, usually abate suddenly, and not in the gradually decreasing manner in which recovery takes place from inflammatory diseases; the skin assumes its natural warmth; the pulse becomes more full and less frequent; the vomiting, purging, and cramps cease; and the patient, though very weak, remains quiet, and free from pain. No disease reduces the strength so quickly as cholera, nor is there any other of so violent a character from which recovery is so rapid. Convalescence, however, when proceeding in the most favorable manner, is often abruptly terminated by the imprudence of the patient, who, finding himself completely rid of the disease, and his appetite again in full vigor, indulges in eating animal food, and drinking wine or some other stimulating liquor; and in consequence all the symptoms are reproduced, and soon become less manageable than before; or inflammation of the stomach and bowels comes on, which supervening on cholera, generally runs on to a fatal termination in spite of the best conducted treatment.

Cholera has always been observed to be most prevalent when the weather is hot during the day, and cold and moist at night; and the frequency of its occurence as well as its severity appear to depend on the degree of heat and humidity of the atmosphere.

Cholera is easily distinguished from other diseases by the sudden manner in which it commences, the quickness of its progress, and abrupt termination. The symptoms arising from swallowing acrid poisons, such as arsenic, vitriol, corrosive sublimate, &c., have in most cases a strong resemblance to those of cholera; but the burning sensation extending from the throat down the gullet to the stomach, before the commencement of vomiting; the frequent occurrence of violent vomiting, some hours before the bowels are acted on; the dark, bloody appearance of the matter vomited; and in general the absence of cramps; are signs which sufficiently indicate poisoning from irritating substances.

Treatment.—Instead of administering barley-water, chicken broth, linseed tea, &c., a grain of *solid opium* in the form of a pill should be given, and the dose repeated every hour, or oftener, according to the severity of the case. From the time that the first dose has been taken, all kinds of drinks must be abstained from as much as possible; but in most cases the thirst is so urgent as to render it difficult to restrain the patient from drinking. He may, however, be occasionally permitted to let a small portion of ice dissolve in his mouth, which also may be frequently rinsed with cold water, or any cooling beverage. While opium in the solid form is used to allay the vomiting and irritation of the stomach, a clyster, composed of a tea-spoonful of laudanum, with half a tea-cupful or less, of thin starch or barley-water, should be given and repeated at longer or shorter intervals, as the case may require, in order to check the purging. Three hours after the vomiting has ceased, a little cold water or iced lemonade may be taken from time to time, until the thirst abate; but several hours more must elapse before any kind of food can with propriety be allowed. This method of treatment, if commenced sufficiently early, and steadily persevered in, generally stops the vomiting and purging, in all ordinary cases, in the course of a few hours. Purgatives, when taken at any time during the course of the disease, invariably do harm; but a mild dose of castor oil, Henry's magnesia, or some other gentle laxative, may be given some time after all the symptoms are relieved, to carry off any vitiated bile or other acrid secretions which may be retained in the bowels.

Although cholera is generally subdued by the judicious use of opium, yet that remedy does not produce the same good effect in the more intense forms of the disease so common in warm climates, unless when combined with large doses of calomel. We have found the following treatment the most efficacious in the cholera of those climates.

When the disease commences with nausea, and occasional griping and purging, two table-spoonsful of chalk-mixture with from five to ten drops of laudanum are to be given after each evacuation from the bowels; and this simple treatment conjoined with rigid abstinence in many cases checks it entirely in the course of a few hours. But when the premonitory stage of the disease has been neglected, or the remedies made use of to check it have not produced the desired effect, and violent vomiting and purging have set in, it then becomes necessary to administer large and frequently repeated doses of *calomel and opium*. At least ten grains of the former and two grains of the latter in the form of pills, should be given as a dose, to be repeated without loss of time in the event of the stomach rejecting them. In the course of two or three hours the same quantity is to be given, and it may be necessary according to the urgency of the case to repeat the medicine in this manner until three, four, or more doses have been taken. However formidable this mode of treatment may appear, it is nevertheless the safest and most efficacious which has hitherto been tried; and though we might suppose that such large doses of calomel would affect the mouth, yet they seldom do so; for in the severe forms of some of the diseases of tropical climates, which present symptoms of extreme violence and consequently run their course rapidly, the system offers a powerful resistance to the action of mercury, and moreover in cholera it seldom happens that all the medicine is retained by the stomach.

The pain and burning sensation of the stomach and spasms of the belly may be much relieved by cloths wrung out of hot water and then moistened with spirits of turpentine, applied over the stomach and belly, and kept on as long as the patient can bear them. When frequently repeated, no external application is of more service than this.

When the disease is about to terminate favorably, which it generally does when the above treatment is properly conducted, the irritation of the stomach abates, the vomiting becomes less frequent, and an increased discharge of bile from the bowels is observed. The latter symptom is always favorable, and is soon followed by decrease of vomiting, cramps, and other bad symptoms.

If the disease proceed until the extremities of the body become cold, the pulse feeble and intermitting, and other symptoms of depression come on, the calomel and opium should be discontinued, and mustard poultices and turpentine in the manner already described applied to the extremities. At the same time stimulating cordials are to be given to support the vital powers, such as thin arrow-root with brandy, hot brandy and water with Cayenne pepper, carbonate of ammonia in five-grain doses, æther, &c., alternated with strong beef-tea. But in this stage of the disease no diffusible stimulant will be found so likely to remain on the stomach or to answer the purpose so well as *champagne wine*. The dose may be one or two glassesful every half hour or at longer intervals, according to circumstances; indeed, no general rule can be laid down with regard to the dose of this or any other stimulant in such cases; sometimes the state of exhaustion is so great that large doses frequently repeated are absolutely required to prevent irrecoverable sinking, while in other cases small quantities at short intervals answer every good purpose.

It sometimes happens after the vomiting, cramps, and other symptoms of Cholera have been subdued, that the stomach feels tender and sore when the hand is pressed over it, the tongue being at the same time furred, the pulse quick and sharp, and the thirst urgent. We may then presume that inflammation of the stomach has commenced.—(See article " *Stomach*.")

During convalescence from this disease, the slightest irregularity in diet or regimen may cause a relapse. At first only a little chicken broth or beef-tea with toasted bread should be allowed, and stimulating liquors altogether abstained from.

ASIATIC, PESTILENTIAL, OR BLUE CHOLERA.

This disease is said to have commenced in 1817 at Jessore, a town situated near the mouth of the Ganges, about sixty miles from Calcutta. It soon extended throughout the entire province of Bengal and the neighboring territories, and in the course of the following year reached the utmost limits of the Indian peninsula. It devastated China, the Birman empire, and adjacent countries, in 1820; and in the two following years extended to the numerous islands of the Indian ocean, and also to Arabia, Persia, and the borders of the Mediterranean in Syria. In 1823 it ravaged many towns in the Russian dominions. In 1829, it crossed the Don and the Ural mountains, and appeared in Europe; at Moscow in 1830, and at St. Petersburg in 1831, and then accompanied the Russian army into Poland. In the same year it pursued its frightful career in Egypt, Austria, Hungary, Bohemia, and Prussia, and in the month of October appeared at Sunderland. In 1832 it continued its destructive course to London and Paris. In 1833 it crossed the Atlantic, and raged in the United States of America, Canada, and in the island of Cuba, but did not extend to the other West Indian islands. It subsequently visited the south of France, Portugal, and Spain; and broke out at Naples and Rome in 1837, in which year it disappeared entirely.

More than half of all those who were attacked perished; and it is supposed to have carried off at least fifty millions of people.

The nature of the Asiatic Cholera still remains a mystery. Nothing satisfactory has yet been found out with regard to the specific cause, nor has the part of the body in which the disease originated been ascertained; and whether or not it is contagious is still a question at issue. There is no doubt, however, that people in easy circumstances of life, who have been well fed and clothed, and live regularly, are less liable to it than those who subsist on poor diet and are addicted to drinking spirits.

This disease in the majority of cases commenced with slight giddiness, a feeling of languor and general debility, an uneasy sensation of fulness, heat, and sickness at stomach, flatulent noises in the bowels, and frequent purging, which was the most prominent symptom of the premonitory stage. These symptoms lasted only a few hours in some cases, in others they continued during three or four days; and when they ceased spontaneously or were checked by timely treatment, the disorder was termed by the French *cholerine.* But it frequently happened that these warning symptoms were neglected or could not be arrested, and the disease ran its course; and in many cases the patients without any previous notice were struck down suddenly and died in the course of a few hours. When it came on suddenly the patient was seized with uneasiness or pain at the stomach, quickly followed by retching and vomiting. The contents of the stomach were first thrown up, and then a thin fluid, characteristic of the disease, resembling rice-water, was discharged in great abundance both upwards and downwards. These symptoms were either accompanied or soon followed by a sense of constriction, anxiety, and weight upon the chest; great restlessness; quick and laborious breathing; and painful spasms beginning first at the fingers and toes, and then extending to the arms, legs, and muscles of the belly, and in many cases to the loins and lower part of the chest. There was a burning sensation at the stomach, and dryness of the throat with great thirst, though the tongue remained cool and moist; and the discharge of urine was entirely suppressed. The strength gave way rapidly; the pulse became quick, weak, and at times scarcely perceptible; and the voice was husky, peculiarly plaintive, or almost extinct. As the disease approached a fatal termination, the extremities became cold and shrunk; the fingers and toes appeared corrugated as if they had been long immersed in warm water; the surface of the body was covered with cold sweat; the eyes were sunk and surrounded with a livid circle; the face, the hands, and feet, and in many cases the whole body acquired a blue or purple color, and the pulse could no longer be felt at the wrist. When the patient recovered, reaction took place, the heat gradually returned to the surface of the body, all the bad symptoms ceased, urine was again discharged, and bile made its appearance in evacuations from the bowels; but instead of this favorable termination, it often happened that reaction was followed by fever which frequently proved fatal. After death, which generally took place in from six to twenty-four hours, the fingers, toes, and lower jaw were in some instances seen to move; and even the head was observed to shake, and the legs to approach each other. This extraordinary phenomenon has never been known to follow death from any other disease.

Treatment, Preventive.—During the prevalence of epidemic cholera all the means which an enlightened physiology teaches, should be employed to preserve the system in a perfectly healthy condition. The *diet* should be regulated with unusual care. The *fresh* meat of *well grown* animals, giving the preference to the more easily digestible, as beef and mutton, should only be used. Salt meats, the flesh of young or half grown animals is to be avoided. Fresh fish may be taken sparingly. Well cooked, ripe vegetables may be eaten with safety. Potatoes and rice are best. Perfectly fresh, ripe, and seasonable fruits may be very moderately used. Malt and alcholic liquors are both unnecessary and injurious, and should be avoided. Cold water should be used freely over the surface of the body, in the form of the shower bath or cold sponging. Flannel should constantly be worn next the skin. The sleeping room should be large, airy, and elevated.

Preventive Medical Treatment.—During the prevalence of epidemic cholera, the slightest diarrhœa should receive immediate attention, and it is in this *forming* stage, when medical aid is rarely requested, that safety is to be found *only* in the early administration of remedies.

The treatment at this time should be precisely identical with that in common diarrhœa, when we are very desirous to shorten its duration. The patient should confine himself to his house, or better still, to his bed. To an adult, a dose of calomel, eight or ten grains, combined with two grains of opium, should be immediately administered. This is to be followed in twelve hours by an ounce of castor oil. Warm diluting drinks, as rice, barley, or toast water, should be taken in moderate quantity during and after the operation of the laxative. All saline purgatives should be avoided. The subsequent treatment may be a smaller dose (half the quantity) of calomel and opium for one or two successive nights. A second dose of oil may be necessary. If, at this diarrhœal stage, the patient should experience pain or nausea, great relief may be obtained from the administration of spirit of camphor and laudanum, (ten drops of each,) upon a lump of sugar. This may be repeated every half hour, or until relief is experienced. Double or triple this quantity of laudanum may safely be given. This treatment of the forming stage of cholera will, in the majority of cases, check the diarrhœa, and restore the habitual bilious color of the discharges; thus preventing the cold or choleric stage.

The treatment of the second stage, or of distinctly marked cholera, belongs to the physician. No specific directions, adapted to popular comprehension, can safely be given.]

[CHOLERA INFANTUM,—OR SUMMER COMPLAINT.

This disease of the summer and early fall months, is almost peculiar to the United States, consequently English and French writers give but a very partial and deficient description of this disease. It attacks almost exclusively children between the ages of four and twenty months.

Causes.—The causes are excessive heat. An unusually warm and *moist* season will especially favor the production of this disease; impure air; insufficient or improper food; insufficient clothing; and lastly and most frequently the irritation of teething.

Description.—The manner of seizure is not always the same. It may commence as a simple diarrhoæ, with but few symptoms of derangement of the stomach; or violent vomiting and purging may suddenly occur. The discharges from the bowels are very variable. They may be thin and watery, but are often mucous and mush-like. The features are anxious and expressive of suffering, sometimes pinched and contracted from the first. The skin is dryer than natural; and the extremities cooler. In severe cases they may be cold and blue. The abdomen is usually warmer than natural. The general feverish symptoms increase towards evening.

Treatment Preventive.—In a work like this, this division of the subject is of the first and highest importance. It is in the power of almost every mother to prevent this ferocious disease. If the child's constitution is originally faulty and feeble, no solicitude however anxious—no care however prudent and skilful—may suffice to ward off an attack, but it is the *preventive plan alone which affords a shadow of hope.*

The gums should be frequently examined, and freely lanced, they giving the first symptoms of irritation. But the most important measures, without which all others may prove ineffectual, is early removal to a healthy locality. A child predisposed to bowel diseases, if resident of a city, should be sent into the country as early as June.

The selection of a proper place is of no slight importance. The land should be elevated—the air pure and dry. The vicinities of large fresh rivers; the head of tide waters where salt and fresh water mingle; and marshy districts, should be avoided. The sleeping room should be large and airy; the bed a hair matress or folded blanket; cold bath or cold spongings, should be used every morning. The child should be taken into the open air every pleasant day; not for a few minutes only, but for hours. The dress should be loose and suitable to the temperature; a flannel roller should be kept constantly applied to the abdomen. The mother's milk is the child's best food, if the parent is healthy. It is her duty to attend carefully to her own diet, avoiding indigestible substances, crude and raw vegetables, &c.

Medical treatment, first stage.—At the very onset of the disease, every thing that has been said on preventive measures, is peculiarly applicable. If possible remove the child to a healthy situation *if otherwise* located. Examine and lance the gums if irritated and swollen. If the vomiting is severe and frequent, administer immediately to the child an injection made with a tea-spoonful of common table salt to a gill of molasses and water or flax-seed tea. If this produces a billious evacuation, the stomach will immediately be quieted. The injection is not to be withheld although the discharges of thin and watery fluid from the bowels may be very frequent. A common molasses and water injection will not answer. The stimulus of the salt solution is necessary. This may be repeated if it is not retained or is not effectual. Lime water and milk in equal proportions, given in great spoonful doses will sometimes speedily allay vomiting. Dr. Parrish gives soda water in table-spoonful doses; and Dr. Chapman, lemonade in tea-spoonful doses. The quantity of fluid given at this stage of the disease should be very limited. The thirst is excessive and often unappeasable. Cold water may be given frequently, but in very small quantities. As a general rule the less fluid administered the better, for even the smallest quantity may be rejected. The following prescription may be thrown dry into the mouth. Calomel three grains; sugar six grains; mix very thoroughly and divide into 12 equal parts. One of these may be administered every hour or every two hours while vomiting continues, and until a greenish bilious stool is produced. When this is obtained the disease will yield. In conjunction with this last remedy a mustard or cayenne poultice should be applied to the stomach until redness of the skin is produced. The subsequent treatment should consist of warm baths at night, with brisk and diligent frictions to the abdomen and extremities, with spirits of camphor. If the disease continues, one fourth to a half grain of Dover's powder may be added to each of the above mentioned powders, or three grains of prepared chalk; but these last remedies should never be used without the advice of a physician. If the disease still continues, the second stage comes on, and this is too complicated for any domestic management. In the treatment of the first stage of this disease, if the child is not weaned no food but mother's milk should be allowed; if weaned, milk and water, ice barley, gum or toast water may be given. Hecker's farina, made very thin, is a suitable article of diet. A cold infusion of the benne leaf, (sesamum orientale) is very soothing and proper.

The quantity of food administered at any one time should be small. Do not overload the stomach.

The result of the disease will be favored when the pulse becomes slower, the heat of skin more natural and diffused, and the vomiting ceases, and especially when the evacuations become yellow and of proper consistence.]*

CINNAMON.

Cinnamon is a medicine seldom given alone, but is much used on account of its vegetable, aromatic, and stimulant properties as an auxiliary to other remedies. Medicines for disorders not of an inflammatory nature are frequently given in cinnamon-water, which, to a certain extent, covers their disagreeable taste and flavor, and tends to prevent sickness at stomach. The best vehicle for the administration of prepared chalk, in cases of simple purging, (*diarrhœa*,) is cinnamon-water.

The oil of cinnamon, in doses of three or four drops, on sugar, is sometimes given to relieve spasms of the stomach and flatulent colic.

CITRIC ACID.

Citric acid is obtained from the juice of lemons and oranges. It is principally used in forming effervescing draughts, and is the best remedy for sea-scurvy when fresh vegetables and lime-juice cannot be procured. A pleasant lemonade is made by dissolving thirty grains or more of citric acid in a pint of water, which is to be sweetened with sugar, and flavored with a drop or two of the essential oil of lemons. (See *Effervescing Draughts*.)

* This article and the preceding one, has been furnished by the courtesy of a physician of high repute in the city of New York.—Ed.

CITRINE OINTMENT.

Citrine ointment, which is made with lard and the nitrate of mercury, is an excellent application in chronic ophthalmy, specks, and ulceration of the front of the eye. When reduced in strength by an equal quantity of olive oil or lard, it is a very efficacious remedy for old sores, scald-head, and various diseases of the skin. Citrine ointment, when properly prepared, is of a golden yellow color.

COLCHICUM AUTUMNALE, OR MEADOW SAFFRON.

There is no better remedy in gout, rheumatism, and some other inflammatory diseases, than the root and seeds of this plant. When given in *moderate* doses it soothes the pain, and lowers the pulse without acting as an evacuant; but is an active purgative in *large* doses. It is a mistake to suppose that this remedy does no good unless it purges. The best manner of administering it is in doses suited to the urgency of the case, so as to produce its sedative or soothing effects without bringing on much purging or nausea. In very severe cases, it is proper to draw blood before using colchicum; but, in general, this is not necessary; it should always, however, be preceded by a purgative of calomel and jalap or colocynth.

The dose of the powdered root, in acute cases, is five or six grains every four hours, or oftener, until slight purging is produced; the doses are then to be gradually diminished. The dose of the tincture of the seeds is twenty drops in a little water, to be repeated every four hours, or at longer or shorter intervals, according to its effects.

COLD IN THE HEAD, OR CATARRH.

Although a disorder of no great consequence in itself, yet, when neglected, the inflammation attending it frequently extends to the mucous membrane of the wind-pipe and air passages of the lungs, and brings on severe cough, (see *Bronchitis;*) or it may even terminate in pleurisy or inflammation of the substance of the lungs.

To infants, severe cold in the head is very distressing; the nostrils being completely obstructed, the child, after sucking a few mouthfuls, is obliged to quit the breast, and, returning to it again and again, becomes at length quite exhausted, and perhaps falls into convulsions. Catarrh is a common attendant of measles, and frequently accompanies scarlet fever and small-pox.

Treatment.—A slight cold in the head is usually checked by taking a basin of warm gruel or barley-water, or any other warm drink, and bathing the feet in hot water during at least twenty minutes at bed-time. This simple treatment, with the assistance of a purgative the following morning, is in general all that is required.

In *more severe* cases, the patient should remain in a room as nearly as possible at an uniform temperature, bathe his feet in water as hot as it can be borne, or with some powdered mustard seed added to it, and take one of the following draughts at bed-time.

Sweet spirits of nitre, a drachm,
Paregoric elixir, (English,) a drachm,
Liquor of the acetate of ammonia, (spirit of mindererus,) two drachms,
Camphor mixture, an ounce. Mix.

Dover's powder, fifteen grains,
Liquor of the acetate of ammonia, half an ounce,
Cinnamon-water, two ounces. Mix.

The *black draught*, half an ounce of the tincture of rhubarb, or a dose of rhubarb and magnesia, may be taken the following morning. Liquids tend to increase the running from the nostrils, and should, therefore, be abstained from as much as possible. The discharge would cease entirely in the course of from fifteen to thirty hours, if the patient had sufficient resolution to abstain from drinking.

When infants are affected with catarrh, they ought to be fed with a spoon, and a grain of *calomel* in a tea-spoonful of *castor oil* should be given to open the bowels; the popular remedy, also, of rubbing the nose with lard or oil is often serviceable.

COLIC.

Common colic commences suddenly with griping pain, and a sense of twisting about the navel and lower part of the belly; and sometimes the whole belly is affected. The pain is not constant, but comes on in paroxysms. The bowels are constipated. There may be slight nausea, and even vomiting. A frequent, though not a constant symptom, is a rumbling noise in the bowels, arising from wind, which sometimes accumulates and distends the belly until it feels quite tense. The disorder is then called *Flatulent Colic.* In other cases, the belly is drawn inwards towards the spine, and the abdominal muscles are sometimes seized with strong spasms, and are drawn into hard knots which feel like balls in the belly. There is no fever; but, on the contrary, the skin is cool, the pulse generally weaker than natural, and the face bedewed with perspiration. When this affection continues longer than usual, the pulse becomes very feeble, the skin is covered with cold sweat, and the patient sometimes becomes so weak that he occasionally faints. Common colic is, however, almost invariably relieved in the course of a few hours.

This form of colic may proceed from sudden or long exposure to cold, wet feet, hardened or accumulated fœces lodged in the bowels, eating food difficult of digestion, cold drink swallowed too quickly, violent mental emotions, metallic poisons, rupture, and various other causes. It is distinguished from inflammation of the bowels by the absence of fever, and by the pain being relieved on pressure, which always increases it when inflammation is present. It must, however, be remembered, that colic occasionally terminates in inflammation; there is then pain when the belly is pressed upon, heat of skin, thirst, and quick pulse.

Treatment.—First ascertain, by a careful examination of the groins and belly, that the symptoms do not arise from rupture, which might in a short time prove fatal, if the necessary means to reduce it were neglected.

If colic come on shortly after eating crude vegetable or other food difficult of digestion, or after a full meal, an emetic should be taken without loss of time, viz.

Ipecacuan powder, twenty grains,
Tartar emetic, one grain. Mix with a little warm water.

The following draught, or a dose of rhubarb and magnesia, with a little ginger, taken about an hour after the emetic has ceased acting, will in general be found sufficient to remove every unpleasant symptom.

Rhubarb in powder, half a drachm,
Tincture of jalap, a drachm,
Aromatic spirit of ammonia, a drachm,
Cinnamon-water, two ounces. Mix.

In *flatulent colic*, which comes on most frequently in those who have their digestive organs deranged from indulging in drinking spirituous and fermented liquors, and in individuals who live principally on vegetable diet, and which is distinguished from the other forms of this disease by the rumbling noise in the belly, the shifting pains and partial distention of the bowels, and by the belly at last becoming quite hard and tense from being distended with air, the best remedies are the assafœtida injection and aromatic cordials, with laxatives.

Tincture of cardamom seeds, three drachms,
Henry's calcined magnesia, a large tea-spoonful,
Turkey rhubarb in powder, twenty grains,
Peppermint-water, two ounces. Mix.

Compound tincture of rhubarb, half an ounce,
Spirit of anise, two drachms,
Tincture of senna, half an ounce,
Water, two ounces. Mix.

When colic attacks hysterical females, or if it arise from any mental excitement, and when the belly is contracted and feels knotted, there is every reason to suppose that the disorder is purely spasmodic, and not of an inflammatory character. In such cases, a glass of warm brandy or gin and water, or one of the following anti-spasmodic draughts, will seldom fail of relieving the patient.

Camphor mixture, an ounce,
Compound spirit of sulphuric æther, a drachm,
Aromatic spirit of ammonia, half a drachm,
Spirit of nutmeg, a drachm,
Water, an ounce and a half. Mix.

Aromatic spirit of ammonia, half a drachm,
Tincture of opium (laudanum,) thirty drops,
Compound tincture of cardamoms, half a drachm,
Cinnamon-water, an ounce,
Water, an ounce. Mix.

Warm purgatives will be found to answer better than those containing saline medicines. One of the most suitable is,

Compound decoction of aloes, an ounce,
Cinnamon-water, two ounces, Mix.

In robust, full-blooded persons, there is a risk of inflammation. It is therefore best to have recourse at once to blood-letting, which with the assistance of a strong dose of castor oil, usually proves to be the best and most expeditious treatment.

If the bowels have been constipated during some days previous to the commencement of colic, an ounce of castor oil is to be given in cinnamon water ; and if the bowels are not then opened in the course of an hour or an hour and a half, the same quantity must be repeated. If this fails, a drop of *croton oil* should be administered with a little crumb of bread in the form of a pill, and repeated every hour until copious evacuations are produced. When severe vomiting accompanies colic, arising from hardened or accumulated fœces in the bowels, and no remedy will remain on the stomach, the best method of using croton oil is to rub a drop of it on the tongue every half hour, until the bowels are freely opened.

Warm fomentations applied over the stomach and belly by means of flannel cloths wrung out of a warm decoction of poppy heads, or out of warm water, and rubbing the belly with the following liniment or ointment, will be found useful in all the forms of colic.

Liniment.—Camphor liniment, two ounces,
Laudanum, two drachms. Mix.

Ointment.—Opium in powder, half a drachm,
Camphor, a scruple,
Lard, half an ounce. Mix.

Carefully observe whether or not inflammatory symptoms are present, before giving laudanum and stimulating or cordial medicines.

If the disease be colic, which is a spasmodic affection, remedies of this class would soon put an end to it. On the other hand, although the pain and griping might be urgent, and though there might be other symptoms resembling those of colic, yet if the skin be hotter and the pulse quicker than natural, if the pain be increased on pressing upon the belly, and if the tongue be furred in the middle and red at the edges and point, stimulating medicines would certainly aggravate all the symptoms, although they might give relief for a short time.

COLIC FROM LEAD, OR PAINTERS' COLIC.

This form of colic arises from the action of lead on the body, and occurs principally among house-painters, miners, plumbers, color-grinders, glaziers, gilders, those who are employed in melting lead, and among manufacturers of white lead and other preparations of that metal. It is also caused by drinking wine, cider, spirits, or water containing litharge or the carbonate or acetate of lead in solution. Lead colic was first traced to its source about a hundred and thirty years ago, in Germany, where it was ascertained that a custom had long existed of sweetening wines with litharge ; and indeed this pernicious method of adulterating wine is far from being extinct. It is well known, for example, that the sweet wines of Italy are frequently adulterated with sugar of lead.

This disease seldom commences suddenly. During three or four days or even longer, before the patient is prevented from attending to his work, he experiences a slight degree of numbness in his hands and feet, a dull uneasy sensation in his bowels, loss of appetite, and sometimes slight purging during a day or two. At length sickness at stomach, head-ache, acute pain in the limbs, costiveness, and griping pain, with retraction of the belly, come on. These symptoms increase in violence as the disease advances ; the bowels remain obstinately constipated ; the pain in the belly and limbs becomes very severe, and extends to the back, loins, and hips ; and, as in common colic, is not constant, but recurs in frequent paroxysms, which are accompanied in many cases with painful retraction of the testicles. The patient lies on his belly, or presses his hands against it ; he tosses about in bed, and is exceedingly restless ; and his suffering is so much increased in the night, that he is almost if not entirely deprived of sleep. Vomiting of acrid mucus or bile is not an unusual symptom, particularly when the fits of pain reach their height ; but there are no symptoms of fever. The pulse continues natural, unless in bad cases, when it ultimately becomes quick and weak. The countenance throughout the disease appears sallow, and expressive of acute suffering. It does not often happen that the first attack of painter's colic is either accompanied or followed by palsy of the limbs; but in subsequent attacks, the hands and arms, and sometimes the feet and legs, are paralyzed; and the right arm is more frequently affected in this manner than the left. The palsy affects the motion of the limbs only, and not the sense of feeling; and in many cases, the paralyzed parts become greatly emaciated. But although this is both a tedious and a painful disease, yet it rarely proves fatal. It lasts generally from eight to ten days, but sometimes much longer, and is very apt to return from re-exposure to its specific cause. The distinctions already noticed between common colic and inflammation of the bowels are also applicable to colic from lead.

Treatment.—The principal object in the treatment of lead colic is to evacuate the bowels; but this can seldom be effected until the spasmodic action is overcome. In mild cases, the bowels may sometimes be opened by means of purgatives alone; and it is therefore usual to commence with a dose of *castor oil*, which is to be repeated in the course of four hours with the addition of a drop of croton oil; and if after the expiration of four hours more, the bowels still remain unmoved, these remedies are to be again repeated. Either of the following purgative clysters may be given at the same time at intervals of three or four hours.

Decoction of linseed (linseed tea) a pint,
Oil of turpentine, half an ounce,
Castor oil, two ounces,
Epsom or common salt, half an ounce. Mix. To be used as an injection.

Barley-water or thin gruel, five ounces,
Infusion of senna leaves, four ounces,
Epsom salt, an ounce,
Olive oil, four ounces. Mix. To be given as a purgative injection.

If this treatment produce the desired effect, a copious discharge of hardened fœces, resembling the excrements of sheep or goats, takes place from the bowels, and the patient is in consequence relieved from his suffering. Mild diet afterwards, and gentle laxatives occasionally, soon complete the cure. But in the majority of cases, the bowels cannot be opened by the unaided action of purgatives, and in general after the administration of two or three doses, the stomach begins to reject them; the injections also are expelled without producing any good effect, while the violent twisting pain of the bowels is increased, and the patient, instead of being relieved, finds his sufferings much augmented. It therefore becomes necessary to give antispasmodics and purgatives alternately; and the best as well as the most powerful remedy of the former class is opium, or its preparation, morphine; but these remedies, to produce any good effect, must be given in large doses. If the spasms be severe and the patient suffer much, three or four grains of *opium*, or one grain of the *acetate or muriate of morphine*, may be given with perfect safety; and in the course of three hours the purgatives already mentioned should be repeated, or the following

Compound extract of colocynth, ten grains,
Calomel, five grains. Mix, and form into three pills. To be taken as a dose.

The patient will find much relief from sitting in a warm hip bath, or from warm fomentations applied to the belly, and also from rubbing in the liniment or ointment containing opium. (~~See third~~ on page 340 recipe below.) The disease seldom resists this treatment, the pain abates, and the bowels are freely opened; but in some severe cases, it may become necessary to give a second and still larger dose of opium or morphine after an interval of fifteen or twenty-four hours; and during that period, the administration of purgatives every four hours ought to be steadily persevered in; and it is advisable to vary them, since from peculiar habits of body or other causes, one purgative may be more suitable than another. Some patients have a great dislike to certain medicines, and have much difficulty in retaining them on the stomach; and, therefore, when there are several remedies of the same class, there is no necessity in such cases for taking that which would be the most disgusting.

Some practitioners give large doses of calomel, until the disease is subdued, or the mouth becomes affected; but this, to say the least of it, is a very harsh mode of treatment, and quite uncalled for; nor does it always bring relief.

Injections of the infusion of tobacco, and fomenting the belly with the decoction, is a mode of treatment so powerful and so uncertain in its action, that it cannot be used with safety unless in the presence of a medical man.

After the bowels have been freely opened and spasm has ceased, a little castor oil or lenitive electuary ought to be taken daily, with the intention of keeping up the regular action of the bowels, and thus preventing a relapse.

In the palsy of the wrists and hands, which so often follows this disease, the best local stimulants are electricity and rubbing the parts with compound camphor liniment; and the following mixture may be taken internally.

Aromatic sulphuric acid, (elixir of vitriol,) forty drops,
Quinine, eight grains,
Peppermint-water, eight ounces. Mix. A table-spoonful to be taken as a dose twice a day. (See *Palsy*.)

Every individual habitually exposed to the fumes of lead ought to pay great attention to personal cleanliness. He should wash his hands and face and change his coat every time he quits his work, bathe once or twice a week, or sponge his body every morning with cold or tepid water, avoid eating in an atmosphere impregnated with the vapor of lead, change his linen frequently, and of all things avoid intemperance in drinking spirits, for it is well known that an attack of lead colic is generally preceded by excess in drinking.

COLIC IN INFANTS.

Infantile colic sometimes comes on in consequence of the retention of the dark matter called *meconium*, which collects in the bowels during a month or two previous to the birth of the infant. It also arises from too early feeding, improper food, and from the state of the mother's or nurse's milk, which may be deranged in consequence of bad health, an improper manner of living, or from certain moral causes.

An infant affected with colic is very restless, screams frequently, and appears in great distress. The lower extremities are drawn up upon the belly, the bowels are constipated, there is generally puking, and the belly is either more or less distended.

Treatment.—Although colic is sometimes caused by *meconium* being retained and becoming acrid and irritating to the bowel, yet this seldom happens when the mother is able te suckle the infant; but when a nurse is employed for that purpose, it is by no means an uncommon occurrence. This is owing to the quality of the milk, which, when first secreted, is sufficiently laxative to carry off the *meconium*. It is, however, very improper to interfere with the bowels unless we are certain that it is really necessary to do so; and yet there is nothing more common than to find nurses forcing castor oil down the throats of infants within half an hour or an hour after they are born; indeed, this is frequently the first thing they are allowed to taste. The consequence is that griping and purging are very often brought on, then a little paregoric elixir is given to soothe the bowels. This of course produces costiveness, to relieve which the nurse deems another dose of castor oil, or perhaps a little calomel, necessary; and thus the poor infants are tormented in consequence of the absurd meddling of nurses, many of whom think that they are not doing their duty unless they are frequently employed in dosing infants with medicine and feeding them with thick gruel, arrow root, and other substances which at that early age their stomachs cannot possibly digest; flatulency necessarily follows; then come the symptoms already mentioned, indicative of colic.

The treatment to be adopted in such cases is very simple. The following injection is to be given as soon as possible.

> Warm water, a wine-glassful,
> Peppermint-water, two tea-spoons-ful,
> Castor oil, a tea-spoonful,
> Tincture of assafœtida, from ten to twenty drops. Mix.

This injection usually gives immediate relief; but if it fail in doing so, a small tea-spoonful of *Hollands* gin with a little sugar and warm water, or from eight to twelve drops of the *tincture of assafœtida*, or the same quantity of *sweet spirits of nitre* in a small quantity of water, should be given. The warm bath, and rubbing the belly with the following liniment, are to be resorted to if necessary.

> Camphor, a drachm, to be dissolved in
> Olive oil, an ounce and a half,
> Laudanum, a drachm. Mix.

This treatment rarely fails in relieving the little patient, who soon falls fast asleep. The following powder may be given some hours afterwards in sugar and water, or the bowels may be opened by means of a little manna dissolved in warm milk.

> Calcined magnesia, six or eight grains,
> Rhubarb, two grains,
> Anise seed, in powder, two grains. Mix.

COLOCYNTH, OR BITTER APPLE.

This plant is a native of various parts of Europe and Africa. The dried fruit, which is the only part of it used in medicine, is imported from the Levant. Colocynth is seldom used alone, on account of its violent purgative action; the preparation of it in common use is the *Compound Extract of Colocynth*, which is composed of the spirituous extract of colocynth, aloes, scammony, cardamom seeds, and castile soap. This compound acts chiefly on the large intestines, and is one of the best purgatives we possess. It is very generally employed to keep the bowels regular, and enters into the composition of nearly all the purgative pills used for that purpose. The dose is one, two or three pills, containing each five grains. The compound extract of colocynth is very often used, particularly in warm climates, in combination with calomel in the following form.

> Compound extract of colocynth, forty-eight grains.
> Calomel, twelve grains. To be well mixed and divided into twelve pills, of which one or two are to be taken as a dose at bed-time.

The following injection is often very serviceable in cases of obstinate constipation of the bowels and in colic.

Take of compound extract of colocynth, two scruples,
Soft soap, an ounce,
Water, a pint. Mix, and rub them together.

The compound extract of colocynth is a mild and effectual opening medicine, and is deservedly much esteemed.

CONSTIPATION.

There are few affections to which the body is liable of more frequent occurrence than constipation of the bowels.

A sedentary life, neglect of exercise, sleeping too much, lying too long in bed, long-continued trouble of mind, neglecting to obey the calls of nature, abuse of purgative medicine, excessive perspiration, and increased secretion of urine, also tend to constipate the bowels. But the most common of all the predisposing causes is improper food, which, reaching the bowels in an imperfectly digested state, (of which rapid eating is one cause,) is incapable of exciting them to a healthy and regular action. The same effect is also produced by excess in eating.

The usual symptoms arising from a constipated state of the bowels are, head-ache, which is confined in most cases to the forehead, loss of appetite, flushing, or a feeling of heat in the face from any slight cause, a sensation of weight in the belly and loins, foul tongue, and, in some people, languor and listlessness; in others, irritability of temper.

Habitual costiveness not only induces great and serious inconveniences, but, when long neglected, may give rise to various formidable diseases, which frequently prove fatal. The most common consequences of constipation are, giddiness, ringing in the ears, headache, tension of the bowels, the disorder called *whites*, fistula, stricture of the lower bowel, eruptions on the skin, and various nervous diseases, such as hysterics, St. Vitus's dance, and hypochondria. In children, it not unfrequently precedes water in the head. Straining at stool has been known to bring on apoplexy, and, in children and delicate females, spitting of blood.

Treatment.—There is nothing of more importance, as a remedial means in habitual costiveness, than regular exercise in the open air, more especially when taken before breakfast, and conjoined with early rising; it assists greatly in promoting the internal secretions, as well as the secretion from the skin; and, by giving regular and sufficient exercise to the muscles, is often sufficient of itself to restore the natural action of the bowels. It is also of great consequence to acquire a regular habit of evacuating the bowels daily at a certain hour, which, in general, is found to be most suitable and conducive to health shortly after breakfast; and, even when the bowels do not intimate the necessity of complying with this habit, they should, nevertheless, be solicited daily to discharge their contents. But, of all remedial means, a proper regulation of diet is one of the most essential, since, unless the quantity, as well as the quality of the food, is suited to the state of the digestive organs, and the habits and mode of life, it is not to be expected that the bowels will perform their functions in the same orderly manner that they naturally do in those whose habits are regular, and who adapt their diet to the wants of the system. The diet which generally agrees best with people is plain animal food, either roasted or boiled, taken in moderation, with a due proportion of vegetable substances, such as potatoes, rice, spinach, broccoli, carrots, and turnips. Porridge and cakes made from oat-meal, brown bread, bread made with wheat and rye flour in equal parts, or only a third of the latter, stewed prunes, various kinds of ripe fruit, and drinking malt liquor, have, with many people, the effect of keeping the bowels moderately open; but an opposite effect is produced by various substances difficult of digestion, as badly baked bread, and very white bread, (which frequently contains a proportion of alum,) pastry, heavy puddings, rich cakes, cheese, and all kinds of nuts.

When constipation comes on in people otherwise healthy, the fœcal matter is generally lodged, as has been already mentioned, in the lower bowels, and this is either owing to a want of muscular action in the bowels, or to deficiency of the mucous and other secretions necessary for the purpose of lubricating the fœces so as to facilitate their expulsion; or it may arise from both causes combined. In such cases, an injection of a pint of tepid water, either in conjunction with a table-spoonful of olive oil, or a dessert-spoonful of common oil, or of *Epsom salt*, will be found to relieve the bowels, and prevent the necessity of irritating the stomach and small intestines with strong purgatives; but if a prejudice exist against this method of opening the bowels, or in the event of its not answering the purpose, a little *castor oil*, Gregory's stomachic powder, (see page 278,) or one, two, or more of the following pills may be given at bed-time.

Take socotrine aloes and scammony in fine powder, of each thirty-five grains,
Ipecacuan powder, twelve grains,
Sulphate of iron, four grains,
Castile soap, twenty-four grains. Mix, and divide into twenty-four pills.

Take of compound extract of colocynth, forty grains,
Extract of henbane, twelve grains. Mix, and form into twelve pills.

Take of compound extract of colocynth, a scruple,
Powder of jalap, a scruple,
Castile soap, twelve grains,
Croton oil, three drops. Mix, and divide into twelve pills.

When constipation depends on torpor, or functional derangement of the liver, which is known by the dingy yellow or muddy appearance of the eyes, sallow countenance, furred tongue, difficult digestion, languor, and depression of the system, and by the pale or clay color of the evacuations, preparations of mercury are the most efficacious remedies.

Blue pill, from five to ten grains,
Compound extract of colocynth, the same quantity. Mix, and form into pills, to be taken as a dose at bed-time, and the black draught, (see page 269,) the following morning.

These remedies, in many cases, require to be followed up by small doses of blue pill.

Blue pill, twelve grains,
Extract of henbane, twelve grains,
Extract of gentian, twenty-four grains. Mix, and form into twelve pills.

One of these pills is to be taken in the morning, another at mid-day, and a third at bed-time, each to be washed down by two or three table-spoonsful of the infusion of calumba root. (See page 303.) This treatment continued during a week, or longer, according to circumstances, along with mild diet, and a moderate use of dry Sherry or Madeira wine, has generally an excellent effect.

If the bowels have been allowed to remain in a constipated state until a bearing down sensation at the lower bowel comes on, with frequent desire to go to stool, and perhaps occasional discharges of small hard fœcal masses, the following draught or electuary taken every four or five hours will answer better than strong purgatives, which might irritate the bowels and bring on inflammation.

Draught.—Castor oil, two or three tea-spoonsful beat up with the yelk of an egg.
Tincture of henbane, fifteen drops,
Peppermint water, two ounces. Mix.

Electuary.—Electuary of senna, two ounces,
Jalap, a drachm,
Extract of henbane, fifteen grains,
Ipecacuan in powder, six grains,
Syrup of ginger, an ounce. Mix. A tea-spoonful of this electuary to be given as a dose every four or five hours.

We remind the reader that in general the healthy action of the bowels may be effectually restored with little assistance from medicine, by following the directions previously given respecting exercise in the open air, diet, and the evacuations from the bowels.

CONVULSIONS.

Convulsion consists in an alternate and involuntary contraction and relaxation of the voluntary muscles; in a state of health we can govern the motions of certain muscles by our will; in a state of disease (convulsive) the will no longer governs the motions of these muscles, but they contract and become relaxed with more or less violence and rapidity, and in spite of the will. Hence, although convulsions are apparently a disorder of the muscular system, they are really a disorder of the nerves, which, on account of certain reasons to be presently noticed, no longer convey the commands of the will to the muscles.

Children are often seized with convulsions during apparent health, and without any warning symptoms; but in a majority of cases a certain change may be noticed in the countenance and habits of the little patient, which should put us on our guard, and make us suspect that some disorder of the nervous system is threatened. The face is alternately flushed and pale; the countenance brightens up for a time and then becomes dull or stupid; there is a dark circle round the eyelids, and the eyes are fixed or staring; the sleep is disturbed; the breathing irregular; the limbs become occasionally stiff, the fingers clenched, and the infant's head is sometimes thrown back from the breast, as if he were suddenly unable to swallow the milk. These warning symptoms indicate the approach of convulsions.

CONVULSIONS FROM DISEASE OF THE BRAIN OR SPINAL MARROW.

Convulsions often depend upon the presence of too much blood in the brain (*congestion*); upon inflammation within the head or spinal canal; and finally, on the existence of scrofulous tumors in the brain or the membranes which surround it.

Convulsions are more frequently excited by irritation or congestion of the brain in infants than in children over eighteen months of age. We may suspect them to arise from irritation when the infant is extremely fretful, and appears to be unable to bear light, sound, or any impression made upon his senses; when he frequently carries his hand to the head, or (if able to speak) when he complains of head-ache, and when the sleep is disturbed by starting, sudden fits of crying, &c. If the brain be much oppressed by blood, then the child is dull and very drowsy, instead of being excited; the pulse is slow, and the respiration is often broken by sighing; the face is commonly pale, but occasionally flushes up; the tongue is clean, and the bowels are constipated. When the fits have continued for some time, the child after each paroxysm falls into a state of stupor or complete insensibility. The treatment, in these cases, must be active, lest the irritation should pass into inflammation of the brain. Bleeding, purging, and the warm bath, are the chief means on which we have to rely. The child's hair should first be cut off, and a cold lotion be applied to the head, while a warm bath is being prepared.

If the child be strong, the face full, and the complexion healthy, as they often are in cases of this kind, a few ounces of blood may be drawn from the arm, or (in infants), one or two leeches may be applied to the temples. As soon as a warm bath (at 96 degrees) can be procured, the child is to be placed in it, sitting up, for about twelve or fifteen minutes, and while in the bath a stream of cold water may be allowed to fall upon the head from a jug, at about the height of two feet; by this latter means the head will be kept cool, and the blood prevented from flowing too quickly to the brain under the action of the bath. After the use of bleeding and the warm bath, free purging must be had recourse to; this may be effected by one or two grains of calomel with four to six grains of rhubarb, for a child not more than two years of age; and by calomel with scammony, or any other powerful cathartic, for older children. Should the convulsive fits recur, the warm bath and purgatives are to be repeated; a blister may be placed behind each ear, and if the child continue strong, one leech or two may be again applied to the temples; but, whenever a doubt exists, it will be always better to avoid taking blood from very young children.

CONVULSIONS FROM THE STATE OF THE BOWELS.

The whole of the inside of the stomach and bowels is furnished with innumerable nervous filaments, which render this portion of the body very sensible of any irritating or injurious substance. When any of these nervous filaments are irritated or injured the impression is conveyed to the brain or spinal marrow, and convulsive movements of the muscles may be the result, just in the same way as hysterical laughing, and even convulsions, may be occasioned by tickling the nervous filaments which are distributed to the soles of the feet. Convulsions of this class are excited by various causes, of which the following are the principal; retention of the *meconium;* the presence of irritating matters in the stomach or bowels; unwholesome milk, or the milk of a nurse who is given to drinking spirits, or subject to violent passions; errors of diet; long-continued bowel complaints; worms; the injudicious administration of laudanum, Godfrey's cordial, Dalby's carminative, or the use of stimulating fluids, gin, wine, &c. In many of these cases we can cure the disease by avoiding the cause of it; in many others we must remove the cause by medicines. Thus, when the bowels are irritated by the presence of meconium, they should be evacuated by mild doses of castor oil, or by a clyster of olive oil or soap-water. If we have reason to suspect that the nurse's milk is bad, another should be procured, or even spoon-feeding is better than the milk of a drunken, debauched nurse. When the belly is swollen, the bowels confined, and symptoms of disordered stomach or intestines appear, then an emetic of oxymel of squills or hippo wine should be administered, and the bowels afterwards cleared out with any purgative medicine that may be at hand. Frictions with flannel steeped in camphorated oil may be made over the belly. When the bowels have been well cleared out, doses of castor oil with a drachm or two of fennel-water, or a quarter of a drachm of the syrup of poppies, may be occasionally given, in order to soothe the general system of the child and dispel the tendency to convulsions. For the treatment of convulsive fits from worms we refer to the article "*Worms*."

CONVULSIONS DURING ERUPTIVE DISORDERS, DISEASES OF THE SKIN, OR OTHER COMPLAINTS.

Many eruptive diseases, such as measles, scarlatina, and small-pox, are ushered in by convulsive fits; generally speaking, these are not of a dangerous kind, and cease with the appearance of the eruption on the skin; but when they are attended by signs of too much blood in the head or come on during the course of hooping-cough or croup, then leeches to the temples, the warm bath, with cold effusion on the head, free purging and blisters or mustard poultices to the feet, will be found to be most serviceable. Convulsions which follow the disappearance of an old disease of the skin usually depend upon the same cause, and are to be treated in the same manner.

The preventive treatment of convulsions will naturally be suggested by a consideration of the causes which most commonly produce them. All errors of diet should be avoided; the head kept cool, the feet warm, and the bowels open. Whenever any signs of congestion of the blood in the head appear, they should be combated by active purging, cold lotions, and leeches.

CONVULSIONS OF CHILDREN.—*See page* 237.

COPAIVA.

The *balsam of copaiva* is obtained by making incisions in the trunk of a lofty tree (*Copaifera officinalis*) which grows in South America, and the West Indies. This balsam is not easily obtained in a pure state, being frequently adulterated with castor oil, and sometimes with rape oil; and there is no doubt that it is manufactured both in London and Paris to a very considerable extent. Copaiva was formerly employed as a remedy in disorders of the mucous membranes of the bowels and lungs; but *gonorrhœa*, and its sequence *gleet*, are now the only diseases in which it is used. The dose is from twenty to thirty drops or more, either taken on a little sugar or beat up with the yelk of an egg, or a little mucilage of gum arabic. The French use it enclosed in thin gelatinous capsules, by which means the disagreeable taste, and also the odor, to a certain extent, are concealed. (See *Gonorrhœa.*)

COPPER.

The only preparation of this metal in general use is the *sulphate of copper* or *blue vitriol*, which is principally used externally to destroy "proud flesh," and is sometimes applied to the inner surfaces of the eyelids in chronic ophthalmia. Dr. A. T. Thomson recommends a grain of blue vitriol dissolved in an ounce of distilled water, as an injection in gonorrhœa. It should be employed, he says, on the first appearance of the symptoms, and continued twice a day for a short time, after they have disappeared. It may be given in a dose of from ten to fifteen grains in three ounces of water, as an emetic in cases of poisoning, when tartar emetic and sulphate of zinc (white vitriol) have not had the effect of producing vomiting. In the West Indies we have used this remedy with the greatest advantage in chronic dysentery, in the following form.

Blue vitriol, or sulphate of copper, a quarter of a grain,
Acetate of morphine, the same quantity,
Extract of gentian, four grains. To be made into a pill, and taken in the morning. The dose to be repeated at bed-time. The dose of the sulphate of copper should be gradually increased to the extent of a grain to a grain and a half, and the morphine to the extent of half a grain.

CORNS.

This term is given to the circumscribed, horny-looking excrescences of the toes and feet, which are caused by wearing improperly made boots or shoes. Corns are for the most part situated on the outside of the little toes, on the soles of the feet, and between the toes; and in some individuals all the prominent parts of the toes to which undue pressure has been long applied, are invaded by them.

Treatment.—The first thing to be done is to remove the cause of corns by wearing boots and shoes neither too large nor too small, and constructed as nearly as possible to the shape of the foot, so as to obviate unequal pressure. If shoes be worn, they should come sufficiently high on the instep to prevent undue pressure on the toes, and the material of which they are made ought to be soft and pliable; without these precautions other means will be of no avail, at least as far as regards effecting a radical cure, whereas by attention to them alone, corns frequently disappear entirely, or at all events their progress is arrested.

There are several ways by which corns may be eradicated, provided, as we have just mentioned, that properly constructed boots and shoes are worn. The following are the best methods with which we are acquainted.

The *first method* consists in removing the pressure from the corn, by applying over the toe on which it is situated a piece of doe-skin spread with adhesive plaster, with a hole cut in the centre large enough for the corn to rest in; the pressure of the shoe is thus removed from it and thrown on the surrounding parts. If this be kept constantly applied and the prominent part of the corn cut occasionally with a sharp knife or razor, it will gradually disappear.

The *second method* is that of removing the corn entirely without breaking it; this however can only be practised by an expert person accustomed to the operation, who, with an instrument for the purpose, scrapes round the circumference of the corn, carefully and gradually detaching it, until at length he reaches the extreme point of the root, and in this manner it is completely extracted, without giving the least pain. The cavity is then filled with a little simple ointment, and the part covered with adhesive plaster.

The *third method*, which is very frequently practised, consists in destroying the corn by means of *lunar caustic*. The hard part of the corn is first to be cut away as much as possible without causing pain or making it bleed; the foot is then to be kept in warm water during a quarter of an hour or twenty minutes, and after drying it properly the lunar caustic is to be applied over the surface of the corn without using it too freely. The part is then to be covered with adhesive plaster, and at the expiration of ten days or a fortnight the dead scarf-skin generally comes away with the corn attached to it; if not, the caustic is to be re-applied. A few hours' rest are necessary after the caustic has been employed, hence the most convenient time to apply it is immediately before going to bed.

Sir Benjamin Brodie is of opinion that concentrated *nitric acid* or strong *aqua-fortis* is the best thing for destroying the soft corns which are usually seated between the toes. It is to be applied by means of a probe with a bit of lint attached to the end, and employed so as to penetrate into the substance of the corn without injuring the parts beneath.

The corns which form on the soles of the feet are exceedingly troublesome and not easily got rid of. Relief, to a certain extent, may be given by taking off the pressure from the corn, and throwing it on the surrounding parts, by means of the diachylon plaster, employed in the manner recommended for bunyons, or by wearing a felt sole in the shoe, with a hole in it corresponding to the corn.

Mr. Samuel Cooper recommends the following as a "successful composition" for corns.

Take of purified gum ammoniac, an ounce,
Yellow wax, the same quantity,
Acetate of copper, (verdigris,) three drachms. Melt the two first ingredients together and after removing them from the fire, add the verdigris.

The various plasters, ointments, &c., which are daily advertised as infallible cures, are either insignificant, inasmuch as they tend only to soften without eradicating corns, or they are possessed of acrid and stimulating properties, which sometimes produce severe and dangerous inflammation.

COW-ITCH, OR COWHAGE.

This is a creeping plant, which grows in great abundance in the East and West Indies. It bears pods covered with brownish-colored hairs, which, when allowed to touch the skin, occasion the most violent itching. An electuary made, at the time it is to be used, by mixing these hairs with molasses, jelly, or honey, is an excellent remedy for expelling worms. The dose for a child is one or two teaspoonsful, (according to the age,) which should be taken before breakfast and followed by an active purge of castor oil after the second or third dose. This remedy no doubt acts mechanically on the worms, and yet when given in large doses, does not produce griping or purging. We have used cow-itch in the West Indies in some hundreds of cases, and have never known any bad effect result from it, nor have we ever found it to fail in expelling the long round worms. It produces no effect on the tape worm and very little on the small worm of the lower bowel.—(See article "*Worms.*")

CREAM OF TARTAR.

Cream of tartar acts as an excellent diuretic in dropsy of the belly, not depending on diseased liver or other visceral obstructions, when taken to the extent of an ounce, dissolved in a pint and a half or two pints of water, in the course of the day. An excellent purgative in common use is cream of tartar and jalap, in the following proportions.

Cream of tartar, thirty grains,
Jalap, fifteen grains. Mix.

The solution of cream of tartar, known by the name of *imperial drink*, is a useful beverage in feverish affections.—(See page 260.)

The best laxative for those who are troubled with piles is composed of cream of tartar and sulphur, of each a drachm.

CROTON OIL.

The plant from which it is produced grows in Ceylon, the Malabar coast, China, and the neighboring countries. This oil is a powerful purgative in the dose of one or two drops, either made into a pill, with crumb of bread, or taken in a little castor oil; and two or three drops rubbed on the tongue act with equal certainty; hence its value in apoplexy attended with difficulty in swallowing, mania, tetanus, accompanied with locked jaw, and in other diseases, where remedies in more bulky doses could not be easily administered. When apoplexy is threatened, the prompt and powerfully revulsive action of this remedy may be the means of warding off the impending danger; and it has been often known to give relief in cases of obstinate costiveness and colic when other means had failed. It has been used with advantage to assist the action of other remedies in expelling tape-worm.

Croton oil rubbed in upon the skin produces an eruption of small pustules, and when used in this manner has been found in some cases preferable to the tartar emetic ointment as a counter-irritant.

Croton oil, two drachms,
Almond oil, an ounce. Mix.

The application of croton oil to the neck in croup has been found very beneficial; and in chronic inflammation of the windpipe, attended with loss of voice, cough, and a feeling of tightness at the throat, the following mixture rubbed in during half an hour or longer, twice a day, (the throat being afterwards covered with flannel,) has been employed with success.

Croton oil, a drachm,
Olive, or almond oil, two drachms. Mix.

Croton oil is said to be very irregular in its action; in some cases purging violently, and in others producing little or no effect; but this arises from its being so frequently adulterated with castor oil and other substances; indeed, it is seldom to be found pure in the shops.

CROUP.

The disease termed croup, although it occurs occasionally in the full-grown person, may be considered to belong to children. It consists in a peculiar inflammation of the windpipe, which gives rise to the production of a whitish membrane, somewhat similar to the lining of an egg-shell. Upon this inflammation, upon the presence of the white membrane in the air passages, and upon the spasmodic action which both are apt to produce, the symptoms of croup and its dangerous consequences mainly depend.

Croup occurs commonly in young children between the ages of two and six years. It is rarely met with in infants at the breast.

Symptoms.—Croup may attack a child suddenly, but it usually commences with all the appearance of common cough, and is not easily detected, even by the medical man, in its earliest stage. The child coughs, and has more or less fever, with hot and cold fits, flushed face, watery red eyes, and restlessness at night. The cough at this time, is occasionally hard and hollow, and the child shows signs of uneasiness about the throat by frequently carrying the hand to this part, and complaining of pain. The voice may also be hoarse; and when these symptoms exist no time should be lost in the application of appropriate remedies, for although they may be nothing more than common cough with irritation of the throat, yet they may be the first signs of an attack of croup, and it is infinitely better to have expended a little care, anxiety and medicine for nothing, than to allow a disease of the most fatal kind to gain ground and establish itself, from the want of proper attention. The symptoms just enumerated may continue for a few days or weeks without much change; but sooner or later the character of the cough suddenly alters, and assumes what is called the croupy sound. This change usually takes place in the night, and is so peculiar that when a person has once heard the croupy cough he can never mistake it again. It is a sharp dry, ringing cough, which is followed by a hissing inspiration, and is compared to the crowing of a cock or the barking of a young puppy. The fits of coughing are most frequent during the night, and soon produce a most unfavorable effect on the state of the little patient; the face is flushed, and often bathed in perspiration; the eyes watery; the skin burning hot; the pulse frequent and hard; the voice is hoarse; and the upper part of the windpipe is often tender to the touch. This is the first dangerous change in the character of the complaint, and when it has once taken place, the symptoms commonly proceed from bad to worse. During the early stage, the fits of coughing are not very frequent, and during their intervals the child may obtain a little rest; but they soon return with renewed severity. The croupy sound, hissing breathing, and suffocation, are now more evidently marked (*confirmed stage;*) the face is bloated; the pulse extremely quick, and the skin hot; each fit of coughing seems to threaten death by suffocating the child; and when the fit has passed over, he lies in a state of extreme anxiety and restlessness, with the head thrown back and all the muscles of respiration in full action, showing that nature is making violent but vain efforts to convey air in sufficient quantities to the interior of the chest. The fits of coughing are now sometimes followed by vomiting, and very often by the discharge from the windpipe of viscid phlegm or shreds of the white membrane which is formed inside; in some cases regular moulds of the air passages, resembling pieces of macaroni, are spit up. This gives a temporary relief, but the fits of suffocative coughing soon return, and reduce the patient to an extreme degree of weakness, (*collapsed stage.*) The difficulty of breathing is now permanent, and the little sufferer does not seem to obtain a moment's relief, but lies gasping for breath, with a sunken countenance and cold skin. The pulse is now very quick, small, and weak; the face bathed in a cold sweat, and pale, with lividity of the lips; the cough is less frequent, and is evidently failing with the strength of the child; the voice is almost inaudible; the patient becomes restless, often makes convulsive efforts as if to free his throat from some obstruction, and either perishes in convulsions, or falls into a state of lethargy, which gradually settles down into death.

Treatment.—Whenever, then, we have the least reason to dread the invasion of croup, that is, whenever the voice becomes hoarse, the cough ringing, and the breathing difficult during an attack of common catarrh, or when the croupy symptoms, already noticed, suddenly appear during the night, we must proceed without delay to combat the inflammation of the wind-pipe, which forms the principal feature of the disease. This is done by extracting blood, and administering emetics. Unless the child be very strong, plethoric, and brought up in the country, it will not be necessary to draw blood from a vein; but if the fever run high, and the child's constitution admit of it, a few ounces of blood may be extracted from the jugular vein, (see *Blood-letting*,) and, in very severe cases, the same quantity may again be taken away in a few hours. In most cases, however, it will be sufficient to apply leeches to the upper part of the chest, over the breast-bone. This part should be selected, because non-professional persons can easily stop the bleeding, when required, by pressure; whereas, if the leeches were applied to the throat, it might not be so easy a matter to check the flow of blood when enough had been obtained. As a general rule, it may be stated that from an ounce to an ounce and a half of blood may be extracted for each year of the patient's age.

Immediately after general bleeding, or the application of leeches, (or before their application, when it may be necessary to bring the leeches from a distance,) full vomiting should be excited by *tartar emetic*, or *ipecacuanha*. The former can be given more easily to children in the dose of one half a grain to a grain, concealed in milk sweetened with sugar. During the time employed in the administration of these means, a tepid bath should be prepared at a temperature of about 90 degrees, (Fahrenheit's thermometer,) and the child allowed to remain in it a quarter of an hour or twenty minutes. A dose of *calomel* and *James's powder* must then be given, from three to five grains of the former to two or three of the latter, according to the child's age, and this dose may be repeated every third hour, its action on the bowels being aided by castor oil, or any other mild purgative. These are the remedies which should be employed in the early stage of the complaint; but it should be borne in mind, that this stage often terminates in ten or twelve hours. In the second stage, when the croupy cough is well marked, and the fits of suffocation severe, local bleeding (if it have not been employed before) may still afford some relief, but should be had recourse to with very great caution, and with a sparing hand. Greater reliance is to be placed in the combined use of calomel and tartar emetic, which have the advantage of combating the inflammatory action without reducing too much the strength of the patient. From two to four grains of calomel for children below two years of age, and from four to eight grains for those above that age, may be given every two, three, or four hours, and, if the medicine act too freely on the bowels, its effects may be corrected by the addition of two or three grains of Dover's powder to each dose. While we give the calomel, we must also administer tartar emetic in the way recommended by Dr. Cheyne. Half a grain of tartar emetic, dissolved in a table-spoonful of water, is to be given to a child two or three years old every quarter of an hour, until sickness and vomiting are produced; and in two hours after the last act of vomiting, the same process is to be recommenced, and so repeated while the strength of the child lasts. It should be observed, that, either because the stomach soon gets accustomed to the medicine, or because more is borne in a state of disease than in one of health, it will often be difficult to excite vomiting, and the dose of the emetic may have to be carried to six or eight grains before any effect is produced. Irritation of the skin, in the neighborhood of the inflamed part, will also be of use at this time, but it will be better to apply it to the back of the neck than to the front of the throat. Blisters are not advisable; it will be found more convenient to apply a rag steeped in strong liquid ammonia, for a few minutes, to the nape of the neck, or to rub in the tartar emetic ointment, as before described, until a number of small pustules is produced.

When the above means have been tried without effect, it is probable that the inflammation has given rise to the formation of a whitish membrane in the air tubes, which obstructs the breathing, and helps to excite the suffocative fits which now constitute the chief danger. By carefully examining the matter vomited up, some of these membranous shreds may be discovered. Our object now is to promote the expulsion of the membrane, after having given remedies calculated to loosen it from the lining of the air tubes upon which it lies. The following medicines may be employed for this purpose.

Tincture of squills, one drachm,
Sub-borate of soda, fifteen grains,
Infusion of chamomile, one ounce. To be taken every third hour.

Ipecacuanha wine, two to three drachms,
Ammoniated tincture of valerian, fifteen drops,
Infusion of chamomile, one ounce. To be repeated every two or three hours, until vomiting be produced.

Another formula which may be employed with benefit in this stage of the disease is,

Ipecacuanha wine, two drachms,
Oxymel of squills, two ounces,
Sulphate of soda, half a drachm,
Decoction of senega, four ounces. Two or three large spoonsful to be taken every two hours, until nausea and vomiting are excited.

When these medicines fail to excite vomiting, their action may be aided by irritating the top of the throat with a feather, or some strong snuff may be blown into the nostrils, to occasion sneezing, which may help to dislodge the false membrane from the air tubes.

The bowels are to be kept open with calomel and jalap, and a blister placed behind the nape of the neck. In this form of the disease warm baths are particularly serviceable.

When children have been once attacked by croup, they are liable to have recurrences of the complaint under exposure to any of its exciting causes. Hence the child's throat should be kept well covered, the influence of cold damp air should be particularly avoided, and whenever any cough or hoarseness of the voice makes its appearance, recourse should be had at once to medical treatment. During the progress of croup, the child should not be permitted to touch any thing except the mildest fluids, barley water, &c.; but when the collapsed stage sets in, he may take sago, beef-tea, egg pudding, or any other light, nutritious matter. In the spasmodic form it will not be necessary to observe so strict a diet as in true croup.

CUBEBS.

The plant from which this species of pepper is obtained is a native of Java, the Mauritius, the island of Ceylon, and other eastern countries. Cubebs were first used medicinally in Europe in 1816, and are now in very general use in the treatment of gonorrhœa, which yields readily to this pepper when taken in the dose of a drachm (about a dessert-spoonful) thrice a day, in a small quantity of water, or in wine and water. (See *Gonorrhœa.*) Cubebs have also been known to give considerable relief in chronic catarrh of the bladder, in doses of ten or twelve grains three times daily.

DANDELION.

This is a very common and well-known plant; the only preparation directed in the pharmacopœia is the *extract of dandelion*, which is not supposed to possess any active medicinal property. It is sometimes given, on account of the bitter principle which it contains, as a tonic in indigestion, and, from its diuretic virtue, is occasionally administered in dropsical affections, along with more active remedies. This plant is said to have been of great service in jaundice and in chronic inflammation of the liver, and of the lining membrane of the stomach; but its virtues appear to be much overrated by some medical men. The dose of the extract of dandelion is half a drachm four times a day, in peppermint or cinnamon water.

DEADLY NIGHT-SHADE, OR BELLADONNA.

This plant grows in hedges, thickets, and shady places, and is frequently met with amongst old ruins. In the month of September it bears sweetish-tasted berries, of a purple color, which are powerfully narcotic, and from their resemblance to cherries, children are sometimes tempted to eat them, and death is not unfrequently the consequence. The symptoms arising from eating the berries are delirium, accompanied with violent laughter and various gestures, as if the individual were grasping at imaginary objects; the eyes are red, and appear as if they protruded from their orbits, and the pupils are dilated and immovable. These symptoms are soon followed, when the case terminates fatally, by loss of voice, difficulty in swallowing, and convulsions. This poison has the effect of paralyzing the stomach, so that emetics are rarely found to act; it is advisable, however, in the first instance, to give three grains of *tartar emetic*, or twenty-five to thirty grains of *sulphate of zinc*, (*white vitriol*,) or six grains of *sulphate of copper*, (*blue vitriol*,) in a little water; but the only way which can be trusted to of emptying the stomach is by means of the stomach-pump. The best antidotes are strong coffee and the effusion of cold water on the head and body.

We are indebted to the German physicians for our knowledge of the medicinal virtues of this plant, which, though of great value in the hands of experienced medical men is nevertheless of too dangerous a nature to admit of being used with safety as a popular remedy.

Belladonna was first used in the form of infusion as a fomentation, to soothe the pain of cancerous and other foul sores, and has since been employed internally in a similar manner to hemlock, henbane, and other narcotic remedies, as a palliative in cancer. The extract of belladonna rubbed over the eyebrows and eyelids, has the peculiar property of dilating the pupils of the eyes; hence it is generally used for that purpose before the operation for cataract is performed. In cases of blindness arising from opacity of the centre of the lens, a little of the infusion of the leaves of belladonna dropped into the eyes three or four times a day, by dilating the pupils, allows the sight to be restored for a time; and it has been stated that this practice may be continued for years. Professor Beer, the celebrated oculist of Vienna, recommends half a drachm of the extract, with an equal proportion of mercurial ointment, to be rubbed in upon the temple every night at bed-time in cases where there is deep-seated pain of the eye-ball; and the extract alone, applied in the form of plaster, often gives relief in cases of tic-douloureux and rheumatic pains. The belladonna plaster of the pharmacopœia applied under the loins, is often of great service in allaying the pain attending difficult menstruation. An ointment composed of a drachm of the extract of Belladonna mixed with seven drachms of lard, is an excellent remedy in piles, and when rubbed on the perineum, gives relief in chordee. belladonna has been used of late years as a remedy in hooping cough. Professor A. T. Thompson says, "I have ordered the extract in doses of one-eight of a grain to a child eight years of age, and gradually increased the dose to a quarter of a grain. Its power over the cough is extraordinary. It produces a state of the skin closely resembling scarlatina, accompanied with fever, suffused eye, dimness of sight, and frequently, though not always, head-ache. Whilst these symptoms continue, the cough remains absent, but it returns as soon as they disappear. By keeping the habit for a sufficient time under the influence of the remedy, the period of the disease has always been greatly shortened." Hahneman, Hufeland, and other German physicians, recommend belladonna to be given in the following manner as a preventive of scarlet fever.

Extract of Belladonna, three grains,

Cinnamon water, an ounce, Mix. Three drops of this solution are to be given twice a day to a child a year old, adding one drop for every year, until twelve be taken for a dose.

This defensive preparation has however been known to fail in several cases in which it has been tried where scarlatina was raging as an epidemic. The smallness of the dose, however, renders it perfectly harmless.

In administering belladonna, the precaution must be attended to, of commencing with small doses; half a grain of the extract, or a grain of the powder of the dried leaves gradually increased to three or four grains, or until slight giddiness, dimness of sight, and a sensation of dryness and heat of the mouth and throat are felt.

DELIRIUM TREMENS.

This disorder arises from excess in drinking spirituous liquors, or from the abuse of opium; rarely from other causes. It comes on generally after a debauch, or in drunkards, in consequence of giving up their accustomed stimulus too suddenly. In some cases delirium is the first symptom observed; but in general there are certain premonitory signs, indicative of its approach. The patient is restless, peevish, and cannot sleep sound; his manner becomes hurried and abrupt; and he appears low-spirited. After remaining some time, perhaps two or three days or a week in this state, his ideas become confused, he bustles about as if he had more business to do than he could manage, he is exceedingly restless, and there is an appearance of wildness in his countenance. The characteristic symptoms of the disease then begin to declare themselves; the hands, and sometimes the whole body, are in a constant state of tremor, the tongue is also tremulous, and there is a twitching motion of the tendons at the wrist. If the patient sleep it is only for a short time; he awakes suddenly, alarmed by some frightful dream. At length the mind becomes affected, he fancies that there is some mischief plotting against him, or that his affairs are going wrong, and is constantly talking about them. When the delirium is fully established he cannot sleep, and attempts frequently to get out of bed. If he escape from his apartment there is no difficulty in leading him back to bed, if he be spoken to quietly; but if thwarted he becomes exceedingly suspicious, accuses those near him of having some mischievous design against him, and struggles to get away. The hallucinations attending this disease are always of a desponding character; the patient fancies that he is attacked by robbers, and struggles as if he were defending himself, or he supposes that a swarm of bees are hovering round him, and he moves his arms as if he were driving them away.

It is of the utmost importance that delirium tremens should not be mistaken for inflammation of the brain, inasmuch as the treatment required for the latter would produce the worst effects in the former disease, which is to be distinguished from other affections of the brain by the absence of pain, the trembling of the hands and tongue, the starting of the tendons at the wrists, the peculiar character of the delirium, and the knowledge of the previous habits of the patient. On the other hand, a patient with inflammation of the brain has a strong full pulse, hot skin, flushed face, red eyes, dry and red tongue; he suffers from a distressing intolerance of light and sound; and the delirium is generally furious.

The length of time required by delirium tremens to run its course is very uncertain, but it generally terminates within a week, and is not a dangerous disease when judiciously treated.

Treatment.—Several theories have been formed relative to the nature of this affection, but there is only one opinion entertained by those who have had frequent opportunities of observing it, with regard to the treatment which ought to be adopted. The principal aim should be to procure sleep, and, for this purpose, *opium* has been found the most suitable remedy; indeed, it may be said to be the only medicine required in the treatment of the disease. Some practitioners give the opium in small and frequently repeated doses, others in much larger doses at longer intervals; if the case be mild, and the treatment commence early, a smaller quantity will be required than in cases where there is much irritability, and the disease has continued some time; in the former case, from fifteen to twenty drops of *laudanum*, or a grain of opium may be given every four hours; and in the latter, three grains of opium, or from fifty to sixty drops of laudanum, should be given regularly every six hours, until sound sleep be procured. If it happen that the patient, after sleeping a short time, awakes suddenly in a state of great alarm, the dose of laudanum or opium should be immediately repeated, for the patient cannot be considered out of danger until he has slept soundly during several hours. We have known patients to sleep from twelve to fifteen hours, and then awake almost well; but in general, after sleeping during a longer or shorter period, the tremulous motion of the hands and tongue may still be observed, and the patient complains of being weak; it is, therefore, advisable to continue the opium in smaller doses during at least twenty-four hours longer. If the bowels be constipated, which is seldom the case, two or three drachms of the tincture of rhubarb, or of senna, may be given. But active purging would be improper. This is a disease of debility, and there is, therefore, no necessity for starving the patient; but, in general, there is very little appetite. If he request to be allowed to drink brandy or gin and water, or whatever stimulus he has been in the habit of taking, it is better to give him a moderate quantity occasionally than to let him fret and be annoyed in consequence of refusing this indulgence. Patients have been known to become quite outrageous from not being allowed to drink spirits, and, after being indulged with a glass of brandy and water, preceded by a dose of opium, have fallen fast asleep perfectly satisfied; and, after sleeping eight or ten hours, have got up quite free from delirium; but there is no necessity for indulging the patient with spirits or wine unless under the circumstances we have just mentioned. Opium alone is quite sufficient to effect a cure.

It occasionally happens that stout plethoric individuals, when attacked with delirium tremens for the first time, have a quick full pulse, hot skin, flushed face, and other feverish symptoms; in such cases, besides giving opium in the manner already directed, we must administer tartar emetic as follows.

> Tartar emetic, three grains,
> Compound tincture of lavender, half an ounce,
> Water, a pint. Mix.

Two or three table-spoonsful of this mixture are to be given every hour, or oftener, in order to keep up a slight degree of nausea. Blood-letting should not be had recourse to in this disease under any circumstances, not even when it is associated with inflammation of the lungs, or any other organ. In the event of such a complication, which does not often take place, the lowering action of the tartar emetic will have the effect of moderating the inflammation, so as to allow it to be conducted to a safe termination. The last case of this disease that came under our notice proved fatal in consequence of blood-letting. The patient, a stout young man, lived at an obscure village, a considerable distance from the residence of the nearest medical man; his friends, finding him delirious, and incapable of sleeping, became alarmed, and sent during the night for the village blacksmith, who, supposing that he had "brain fever," bled him until he fainted. The medical man, who attended the following morning, found him in a state of exhaustion, from which he could not be roused by the most powerful stimulants; and when we saw him, he had low muttering delirium, convulsive movements of the limbs, and other bad symptoms, indicating the near approach of death. The brain and its membranes were carefully examined, but not the slightest trace of inflammation could be detected.

Soldiers and sailors are often attacked by this disease in warm climates, where we have met with several cases, in which it was accompanied by diarrhœa, or looseness of the bowels, a complication which is soon followed by great debility. The treatment here consists in giving chalk mixture, with laudanum, the latter remedy being always looked upon as our sheet-anchor.

[The following article has been furnished to the Editor by an experienced and scientific medical friend.

"Delirium tremens has been variously treated by different practitioners, and successful results have been claimed for modes almost diametrically opposed to each other. Some physicians rely almost wholly on opium; others, on spirituous liquors; others, on nauseants and emetics, using stimulants sparingly. We do not confine ourselves to any one plan of treatment, but endeavor to avoid, as much as possible, opium and alcohol, more particularly opium, as we believe it to be a remedy of very questionable efficacy in those cases attended with a quick full pulse, flushed face, more than a usual degree of heat of the head, and when the patient is violent, as it favors the supervention of difficulties more severe than the delirium itself, as coma, convulsions, paralysis, &c.; and this fact should be borne in mind in using it. The treatment we have usually adopted, and which has been uniformly successful with us, is as follows. In the first stage, which is characterized by depression of spirits, sighing, derangement of the stomach, tremulousness of the hands, slow pulse, anxiety, &c., we direct the patient *to be kept quiet*, and carefully watched; his fears are to be allayed as much as possible by kind and gentle treatment, and his spirits are to be kept up by cheerful and lively conversation. If there be much derangement of the stomach, or if there be reason to suppose that it contains indigested food, it is advisable to give an emetic of ipecac, followed by a cathartic of

Calomel, ten grains,
Powdered rhubarb, twenty grains,
Powdered gum camphor, ten to twenty grains, or
Carb. ammonia, ten grains.

After the operation of the emetic, the patient may drink plentifully of strong wormwood-tea; and he may take in addition, every two or four hours, as circumstances require, one or two tea-spoonsful of the aromatic ammoniated tincture of valerian. If there be an unusual degree of heat in the head, or if the arteries of the neck (carotids) beat strongly, cold applications may be used.

"It most commonly happens that the patient is not put under medical treatment till the *second stage* supervenes. This stage constitutes true delirium tremens. It is characterized by the following phenomena. Great restlessness, the patient moving about; heat in the head; cold clammy hands, which may or may not be tremulous; pulse usually full, and frequent; a peculiar wildness of the eyes, which are in constant motion, and never fixed upon any object; imagination and vision are both perverted, the patient believing himself haunted by all the demons which the wildest imagination can conjure up; or else he thinks his apartments filled with all the loathsome reptiles of the universe, as snakes, lizards, &c.; or he may suppose himself on the point of being murdered by his friends or enemies, and that it requires all possible vigilance on his part to prevent it; in fine, whatever his delusions may be, they inspire so great terror that, unless he be strictly watched, there is danger that he will destroy himself. His delusions may be of another kind. He may fancy himself commissioned to destroy his family, or some of his friends; and, in some cases, these delusions will take such strong hold of him that he will certainly effect his purpose, unless his attendants are as unremitting in their care of him as he is in his desire to accomplish his object.

"In the treatment of this stage, it is necessary that the patient's fears be soothed and quieted as much as possible; that the utmost *gentleness* be used towards him; and that he be allowed all liberty not incompatible with his safety. The remarks which we made with respect to the use of emetics and cathartics, in the first stage, are applicable to this. It is now of the utmost importance to allay the excited condition of the patient, and procure sleep. Unless he sleeps, he will not recover. For this purpose, we give a tea-spoonful of the following mixture every four or six hours.

Tincture of digitalis, one part,
Wine of antimony, one part.

Giving as a common drink wormwood-tea. The antimony and digitalis are to be continued till sleep is procured, which will usually be in a period of time varying from one to thirty hours. We have seen a patient in furious delirium go to sleep within an hour after taking a single dose; then, again, we have given from six to ten doses before procuring sleep. We have never seen it fail in a single instance in our own practice, and we have prescribed it in some thirty cases.

"Should it fail, and should the third stage of the disease come on, which is characterized by an increase of the preceding symptoms, with a great depression of the vital powers; pale and anxious countenance; pupils much contracted, with no sensibility to light; small and quick pulse; loaded tongue; cold clammy extremities; increased and gradually increasing tremulousness of the hands; great irritability of temper; violent motions, &c.; in this stage, we should resort to stimulants, giving a small glass of spirit, with from fifteen to forty drops of laudanum, every two or four hours, as circumstances may require, and applying mustard cataplasms to the stomach. In this stage, the warm bath will be found useful, and may be repeated.

"Purgatives must be used sparingly, as depletion of all kinds will be ill borne. Should it be necessary to move the bowels, stimulating injections may be used, as spirits of turpentine, with antispasmodics, as assafœtida, &c."]

DIABETES.

This disease usually commences slowly, and the general health often suffers materially before the nature of the disorder is discovered. The first symptoms experienced are indigestion, general debility, constipation of the bowels, thirst, and irregular, capricious, and sometimes voracious appetite. At length the patient accidentally notices that his urine is considerably augmented in quantity, and, from the time that this observation has been made, he finds that the quantity discharged gradually increases. As the disease proceeds, the symptoms already mentioned become more severe; the skin feels harsh and dry; there is a sensation of heat and weight at the stomach; alternate chills and flushes of heat are experienced, and the patient is very low-spirited. All the symptoms go on steadily increasing in severity; the urgent thirst and frequent desire to empty the bladder become very distressing, particularly during the night; there is a dull aching sensation across the loins, slight giddiness, and occasional head-ache; cough, and shortness of breathing, and entire loss of sexual desire. As the disease advances towards a fatal termination, the gums become red, swollen, and bleed from the slightest pressure, the taste is depraved, the tongue is foul, with red edges; the strength is much diminished, and the body emaciated; the appetite, which was previously voracious, gives way, the legs become dropsical, and the pulse is quick and weak.

The urine is of a pale straw color, sometimes insipid, but in the great majority of cases it has a sweetish taste and faint smell, somewhat resembling that of violets, and contains a considerable quantity of sugar. The quantity of urine voided varies from eight to twenty pints daily, and there are well authenticated cases on record, in which the average discharge was from forty to fifty pints a day. The weight of the urine when the disease is confirmed invariably exceeds that of the liquids drank, and is in some cases greater than both the food and drink consumed, even when the hunger and thirst are extreme. The quantity of sugar contained in the urine is much greater in some cases than in others, and it varies in the urine of the same individual at different times; an ounce of sugar has been extracted, in several cases, from each pound of urine.

The nature of diabetes is so little understood, that medical men have not yet been able to decide with regard to the part of the body in which it is seated. Some suppose that the kidneys are the primary seat of the disease, others that it depends on the state of the stomach or of the skin; and it has been imputed to a diseased state of the blood. Various causes have been assigned for this disease, such as exposure to cold when the body is in a state of perspiration, abuse of spirituous liquors, long-continued bodily and mental exertions, excess in venery, grief, and, in a word, whatever depresses the vital powers; but if these or other exhausting causes could of themselves bring on this disorder, it would certainly be of more frequent occurrence; there can be no doubt however that they act as exciting causes, when there is a disposition to the disease in the system.

Diabetes runs its course in some cases in a month or two, and continues in others during several years. It is generally complicated with pulmonary consumption or chronic bronchitis, and is so frequently fatal, that many medical men, though they admit that it may be much relieved, or even suspended for a time, are nevertheless of opinion that a radical cure cannot be effected.

Treatment.—Diabetes sometimes commences with a dull pain at the loins, and occasional pain and heat at the stomach, attended with a quick and rather full pulse, hot and dry skin, and other well-marked feverish symptoms; in such cases general blood-letting and cupping over the seat of the pain have produced the very best effects; but in general the disease comes on in a very insidious manner, and the period at which the abstraction of blood could be of service is past before the nature of the disorder is ascertained.

There is nothing of more importance in the treatment of diabetes than a properly regulated *diet*, and there is no other disease in which this is less under the control of the medical attendant, or of the friends of the patient; for the latter, constantly urged by the most insatiable appetite, seeks every opportunity of gratifying it, in spite of the repeated remonstrances of his friends. The diet should be liberal in quantity, and confined as much as possible to animal food, which has an astonishing effect in mitigating the disease; but unfortunately few patients have sufficient self-control to allow them to continue this diet alone. The craving for bread or other vegetable substances, and the disgust to animal food, becomes at last so great, that it is questionable whether or not any patient has ever been known to confine himself long to its exclusive use; in some cases it has been known to induce sickness at stomach and purging. The diet should consist of three meals of animal food, with a small proportion of bread or some other vegetable substance, in the course of twenty-four hours, and the quantity should be suited to the power of the digestive organs. The best kinds of animal food are plain roast or boiled beef and mutton, beef steaks and mutton chops. Some authors recommend fat pork, smoked beef, salt herrings, dried cod-fish, &c.; but in this disease, though the appetite is great, yet the stomach is weak and irritable, and not prepared for the reception of food which would be found difficult of digestion, even by the strongest stomachs. The most suitable drinks are water which has been boiled, and lime water, taken in moderate quantities; for unless the patient have resolution to curb the inordinate desire to eat and drink, which always attends this disease, he need not expect to derive much benefit from the use of medicine.

Various remedies have been repeatedly tried, but it appears doubtful whether or not any of them have ever had the effect of doing more than palliate or suspend the disease for a time, unless in cases where the strictest attention to regimen and diet has been steadily persevered in, not only during the existence of the disorder, but long after all its symptoms had entirely disappeared. *Opium* and the *preparations of iron* are the remedies which are at present principally relied upon; of the former, the dose at first should be a grain (or a quarter of a grain of the acetate of morphine) at bed-time, and the quantity gradually increased to six grains or more (or to two grains of morphine) in the course of twenty-four hours; and of the latter the dose should be ten drops of *tincture of steel*, or ten grains of *subcarbonate* or *rust of iron*, three times a day. We have found *tartar emetic* of great service, when given in small doses frequently repeated. One or two grains or more, according to the quantity which the stomach will bear, dissolved in the usual drink of the patient, and taken in the course of twenty-four hours, have the effect of determining to the skin, and of relieving to a considerable extent the constant desire to eat and drink, which is so distressing to the patient. Two or three pills, composed of equal parts of rhubarb and aloes, should be taken as often as they may be found necessary, in order to counteract the strong tendency to constipation, which always exists in this disease. But of all the numerous plans of treatment hitherto proposed, we believe that none will be found so successful as that of removing to a warm climate; and we are convinced that the constant action of the warm atmosphere of inter-tropical countries, by restoring the natural secretion from the skin, will be found to possess a greater influence over this affection than any other remedial means whatever. We base the advice which we now offer on the fact that, since 1829, out of six of our own patients with confirmed diabetes, five have recovered from residing in countries within the tropics. Three of these cases were complicated with chronic bronchitis, and the one which terminated fatally, with pulmonary consumption, which was in fact the cause of death; the discharge of saccharine urine having diminished considerably during some months prior to the decease of the unfortunate patient, who, not knowing the state of his lungs, flattered himself that he was rapidly recovering. One of these patients recovered at Rio Janeiro, another at the Mauritius; one died at Maderia, and the other three recovered in the West Indies. We do not mean to assert that living in a warm climate will alone effect a cure, since all these patients wore flannel next the skin, took opium in large, and tartar emetic in small doses; used the tepid bath, followed by frictions with rough towels over the whole body, and lived principally on animal food. One of them, a gentleman of strong mind, and possessed of great self-denial, lived almost entirely on animal food, and he recovered in a shorter time than any of the others.

Diabetic patients, among the lower classes, cannot command the necessary diet, nor are they able to follow the regimen required; the consequence is, that after lingering some time, they nearly all perish, and in this country, even under the best conducted treatment among the higher orders, it is supposed that not more than one out of nine or ten entirely recover.

DIARRHŒA.

FLUX, LOOSENESS OF THE BOWELS, PURGING.

This is a common and well-known disorder, characterized by more frequent and thinner evacuations from the bowels than natural, accompanied or not with griping pains in the belly, and occurring generally without fever. Diarrhœa is frequently a prelude to dysentery, and both these disorders are caused by a morbid state of the mucous or lining membrane of the bowels; in the former there is simply irritation or relaxation of the mucous membrane, in the latter there is inflammation, attended with constant pain and fever.

Diarrhœa arises, in the majority of cases, from errors in diet, and may take place from eating too much, from unwholesome food, or from a peculiarity of the patient's constitution, which allows him to be acted on by certain articles of diet which would produce no unpleasant effect on other people. Other not unfrequent causes are checked perspiration from exposure to cold, sitting with wet feet, drinking cold water, cider, beer, or other cold beverages, and taking ices when the body is overheated at the time; suppression of the menstrual or other evacuations, and increased or depraved secretion of bile. In some constitutions this affection comes on from sudden fright, surprise, anger, or any other strong mental emotion; and is also common in fever and measles, and generally accompanies the last stage of pulmonary consumption. Diarrhœa is frequently induced in warm climates by *malaria*, and is in all countries occasionally epidemic from causes the nature of which we know little or nothing.

Diarrhœa, from whatever cause it may proceed, is commonly announced by flatulency, slight distention and griping of the bowels, and sickness at stomach. In some cases the belly is considerably swollen, hot, and painful. The patient feels relieved after each evacuation, which is voided without the slightest straining. The stools vary from six or eight to twenty or more in number in the course of twenty-four hours, and are at first copious and appear as if a dose of salts had been taken, but afterwards scanty and watery, in some cases mixed with bile, and in others with mucus.

Treatment.—The first thing to be taken into consideration in directing the treatment of Diarrhœa, is the cause which has produced or may still keep it up.

When Diarrhœa arises from over-eating, from irritating or unwholesome food, or from constipation of the bowels, it is then an effort of nature to expel the offending matter, and ought not therefore to be checked abruptly by astringent remedies, which, though of great service when judiciously used, are often given indiscriminately in all cases of this disorder, which they frequently aggravate, or bring on other diseases of a more serious character. In many cases the efforts of nature are sufficient to restore the bowels to a healthy state, and in general there is very little occasion for the interference of art. In most cases a mild dose of castor oil, or the following mixture, is all that is necessary.

Rhubarb in powder, fifteen grains,
Henry's magnesia, a scruple,
Cinnamon water, an ounce and a half,
Compound tincture of lavender, half a drachm. Mix.

When purging proceeds from obstructed perspiration in consequence of exposure to cold, warm clothing, swathing the belly with flannel, the warm bath, or the hip bath, and sudorific remedies, should be had recourse to.

Dover's powder, fifteen grains,
James's powder, three grains. Mix. To be taken in a little jelly at bed-time.

Gum arabic, in powder, half an ounce to an ounce,
Warm water, a quart,
Purified nitre, thirty grains. Mix. To be drank in the course of the day.

If the diarrhœa continue obstinate, and no inflammatory symptoms be present, the following mixture may be taken.

Chalk mixture, six ounces,
Aromatic confection, a drachm,
Tincture of cinnamon, two drachms,
Laudanum, forty drops. Mix. Two table-spoonsful to be taken after every liquid stool.

If the above mixture fail in checking the purging, an astringent mixture should be taken, which seldom fails in arresting its progress.

Tincture of catechu, half an ounce to an ounce,
Aromatic confection, a drachm,
Chalk mixture, six ounces,
Laudanum, forty drops,
Syrup of ginger, half an ounce. Mix. One or two table-spoonsful to be taken after each loose stool.

When the evacuations present a bright yellow or greenish appearance, in consequence of an increased or depraved secretion of bile, a gentle laxative should be taken, which may be sufficient to carry it off; but not unfrequently a slight degree of tenderness or pain is felt on pressing with the hand under the ribs of the right side, indicating irritation or inflammation of the liver. In this case ten or twelve leeches are to be applied over the liver, and followed by warm fomentations. The diet should consist of a little rice and milk; and thirty grains of nitre are to be taken in the course of the day in linseed tea or barley-water, of which the patient may drink freely. If the irritation of the liver continue, the local bleeding by cupping or leeches should be had recourse to daily, until it be subdued, and then, if the looseness still persist, the following powders may be taken.

Dover's powder,
Compound chalk powder,
Mercury with chalk, of each a scruple. Mix, and divide into six powders, four of which are to be taken daily in a little jelly.

In this form of diarrhœa, which is very common in warm climates, and which, if not carefully attended to, often becomes chronic, or terminates in dysentery, we have found the infusion of calumba of great service after the irritation or inflammation of the liver had been considerably relieved by bleeding and low diet.

In epidemic diarrhœa the evacuations generally contain a large quantity of mucus, and sometimes consist of a thin watery fluid, with only a small proportion of feculent matter. The treatment here consists in low diet, such as a little sago, arrow-root, jelly, or chicken broth; in employing the warm hip bath, and in taking a powder, as follows, every three hours; and the patient should have his belly swathed with flannel.

Rhubarb, three grains,
Dover's powder, the same quantity. Mix.

If there be griping, the following injection will be of service.

Thin starch, new milk, or linseed tea, three ounces,
Laudanum, fifteen drops. Mix.

The principal object to be held in view in treating all the forms of diarrhœa, is to use mild measures at first; in fact, to interfere as little as possible with the efforts of nature, and to watch the patient carefully, so as to be able, in the event of inflammatory symptoms supervening, to adopt, without loss of time, the necessary means for the purpose of preventing the inflammatory action from becoming fully developed. If the belly becomes painful or tender on pressure, attended with restlessness, thirst, heat of skin, quick pulse, or griping pains on going to stool, there is every reason to suppose that the simple state of irritation of the lining membrane of the bowels is past, and that inflammation has commenced. In such cases the treatment must be prompt and decided, fifteen or twenty leeches are to be applied over the belly, and followed by warm fomentations; and it may be necessary to repeat the depletion at longer or shorter intervals, according to the urgency of the case, until the inflammation be overcome. The diet here is of the utmost importance; a little rice, arrow-root, or some other mild farinaceous substance, is all that should be taken.

When diarrhœa becomes chronic, it is often very difficult to subdue, since the remedies which are successful in one case are of no use in another; and, indeed, it is often necessary to try several of them before any good can be done. Various remedies are recommended in this stage of the affection, one of the best of which is, the acetate or sugar of lead, in conjunction with opium, as follows.

Acetate or sugar of lead, twenty-four grains,
Opium, six grains,
Mucilage, a sufficient quantity to form twenty-four pills. One to be taken as a dose, three times a day.

In prolonged cases, when the purging is kept up in consequence of relaxation of the lining membrane of the bowels, a wine-glassful of the *decoction of logwood*, taken three times daily, and continued regularly during a week or a fortnight often effects a cure when other remedies have failed. Kino is also a useful medicine in chronic diarrhœa; the dose is ten grains three times a day, in a little cinnamon water. While the patient is taking these or other astringent remedies, he should make frequent use of the warm hip bath, or general warm bathing, wear flannel next the skin, and take five or six grains of Dover's powder, or ten grains of nitre in some warm drink every night at bed-time.

Diarrhœa, whether recent or long-continued, should never be stopped suddenly; if this caution be not kept in recollection, and strong astringent remedies taken, the result may be, that inflammation may take place in the lungs or brain, or dropsy of the belly supervene, and the consequence may be of the most serious nature. While in the West Indies, in 1830, we had a patient under treatment for chronic diarrhœa, who not finding himself recovering so rapidly as he expected, ate at bed-time a considerable quantity of the fresh rind of the *pomegranate*, which is powerfully astringent. The diarrhœa was completely stopped before morning, but the consequence was that inflammation of the brain came on, attended with delirium, to such an extent, that it was found necessary to confine him to bed, and his life was in danger during several days.

There is nothing of more importance in the treatment of diarrhœa, than a properly regulated diet, which should be of a mild nature, and sparing in quantity. At first arrow-root, sago, a little ground rice pudding, and other light farinaceous substances, are the most suitable; and after some days, when the irritation is considerably abated, boiled rice, with milk, tender chicken, and chicken-broth, may be allowed. In long-continued cases, when there is considerable debility, and the looseness is owing to a want of tone, or to relaxation of the mucous membrane of the bowels, and where astringent remedies are indicated, food of a more nutritious quality should be taken in moderate quantities, and a glass or two of dry Sherry, or of old Madeira, may be taken with advantage.

In some chronic cases, a rigid diet, the occasional application of blisters over the belly, and the employing of half a dozen leeches round the anus every four or five days, have restored the patients to health after various astringent remedies and other means have been tried without producing any good effect.

Those who are subject to diarrhœa ought to be careful with regard to diet, which should consist of food easy of digestion; they should avoid eating undressed or indigestible vegetables, such as cucumbers, mushrooms, melons, salads, acid or too ripe fruits, particularly plums; also fat pork, high game, or any kind of animal food approaching to a state of putrescence, pastry, and various other articles of diet which are known to be injurious to persons with weak or irritable bowels; and in autumn, the season in which diarrhœa is most common, they should wear flannel next the skin, and guard against sudden exposure to cold or other causes which might obstruct perspiration.

DIARRHŒA, OR LOOSENESS OF THE BOWELS IN INFANTS.

This is one of the most common complaints of infants, and is sometimes accompanied with griping, which may be known by the child crying, and drawing up the thighs towards the belly. It is seldom attended with danger, and is in many cases salutary; but when severe, or too long continued, it should be checked gradually, and not abruptly, under any circumstances.

In treating this disorder we are guided, in a great measure, by the appearance and number of the evacuations. A healthy child at the breast has generally four or five stools in the course of twenty-four hours; the number, however, is considerably above this in many children, and under it in others, without being in the least injurious to their health.

In simple purging of infants, arising from acidity in the stomach and bowels, the evacuations are thin and watery, and sometimes frothy, or mixed with a little slimy mucus, and have a sour smell. In this case, the following mixture should be given.

> Henry's magnesia, a drachm,
> Mixture of gum-arabic, half an ounce,
> White sugar, a drachm,
> Laudanum, five drops,
> Cinnamon-water, diluted, an ounce and a half,
> Oil of anise, three or four drops. Mix.

Of this three tea-spoonsful are to be given, in the course of twenty-four hours, to an infant three months old, and then a drachm of *prepared chalk* is to be substituted for the magnesia, and the mixture given as before until the purging abate. While the child is under treatment, the nurse must not take purgative medicine, and she should be careful with regard to her diet, which ought not to consist of crude vegetables, or food difficult of digestion.

Purging is often caused by giving infants food of improper quality, or in too great quantity, or it may arise from the mother's milk being disordered from errors in diet, or from mental excitement. If the evacuations, in consequence of these or other causes, are watery, and of a yellow, brown, or greenish color, there is generally in such cases an excess or a depraved secretion of bile. The treatment here consists in using the warm bath and a mercurial preparation at bed-time. The following powder may be given to a child three months old.

> Mercury, with chalk, one grain,
> Dover's powder, half a grain,
> Aromatic powder, three grains. Mix. To be given in a little jelly.

This powder is to be repeated every night, and, during the day, two or three tea-spoonsful of chalk mixture may be given. If the above treatment do not produce the desired effect, and the infant become feverish, restless, and emaciated, and the stools are suddenly expelled from the bowels with considerable force, it will then be necessary to discontinue the chalk mixture, and to give a powder as above every five hours, the warm bath being used regularly night and morning. If the belly become hot and painful, one or two leeches should be applied over the painful spot, and then warm fomentations. Some practitioners prefer giving half a grain of calomel in place of the grain of mercury with chalk; but either plan of administering mercury may be adopted with the greatest advantage.

Looseness of the bowels not unfrequently comes on in consequence of too early weaning, nature not being prepared for the premature change from the mother's milk to common food; and it also arises from weaning too abruptly. In this case, it is obviously caused by depriving the infant of its natural aliment all at once, and substituting for it another not only difficult to regulate, but for which the delicate digestive organs of the child have not been prepared. In the former instance, the infant should be allowed to return to the breast; and in the latter, the mother's milk ought to be partially allowed, and the diet otherwise strictly attended to. To assist the bowels in regaining a healthy state, the following mixture may be given.

Aromatic confection, a drachm,
Syrup of white poppies, a drachm,
Cinnamon water and common water, of each an ounce. Mix. A tea-spoonful to be given three or four times a day.

When children suffer much from teething, they are almost sure to be affected with watery purging, which if not prolonged until the infant become emaciated, nor attended with pain, should not be stopped; but when very severe, means should be resorted to in order to keep it within due bounds; but they must be adopted with great caution, because if it be suppressed abruptly, irritation of the brain and convulsions may be the consequence, or water may form in the head and cause death.

If the infant become considerably emaciated, lose its appetite, and appear dull, while the belly remains soft and cool to the touch, it will then be advisable to administer an astringent mixture to moderate the purging.

Chalk mixture, two ounces,
Cinnamon water, one ounce,
Tincture of catechu, a drachm,
Laudanum, twelve drops. Mix. Two or three tea-spoonsful of this mixture to be given in the course of the day.

Six or seven grains of the following laxative powder, or a little manna dissolved in warm water, may be given every other day.

Henry's magnesia, two drachms and a half,
Rhubarb, in powder, half a drachm,
Ginger, in powder, six grains. Mix.

The little patient should be carefully watched, and if feverish symptoms ensue, and the belly become distended, hot, and painful, and the stools from being like turbid water become yellow or green or mixed with mucus, and tinged with blood, leeches, warm bathing, and the mercurial powders, in the manner above directed, must be resorted to.

DOVER'S POWDER.

Dover's Powder is composed of one grain of opium, one grain of ipecacuan, and eight grains of the sulphate of potash. This celebrated powder was discovered by Dr. Dover, a physician of considerable reputation in the reign of George II., and was long in general use before it received a place in the pharmacopœia. It is more to be depended upon as a sudorific than any other remedy of the same class, and is much used in rheumatism, general dropsy, catarrh, dysentery, and indeed whenever it is necessary to bring on profuse perspiration. Opium alone, in inflammatory diseases, would do mischief; whereas, when given in this combination, in cases where sweating is indicated, it often produces the very best effects. The patient should remain in bed while under the influence of this remedy, and as soon as perspiration begins to break out, he ought to drink freely of barley-water, toast and water flavored with lemon-peel, or any other mild beverage, not acidulated, in order to keep up the discharge from the skin. The dose is ten grains, and five grains more may be given at the expiration of an hour if necessary.

DROPSY.

Various names are given to this disorder, according to the parts in which the fluid is deposited; if in the general cellular substance, it is called *anasarca;* in the belly, *ascites;* in the chest, *hydrothorax;* in the head, *hydrocephalus;* and in the testicle, *hydrocele.*

Dropsy is either active or passive. *Active, or acute dropsy* may be general, in consequence of increased action of the heart induced by various causes, such as exposure to a cold, moist atmosphere, particularly when the body is in a state of perspiration from active exercise or long exposure to heat, suppression of the menses or other customary evacuations, sudden disappearance or repression of eruptive diseases, abuse of spirituous liquors, &c.; or it may be local, arising from irritation or inflammation of the parts where the fluid is deposited; for example, dropsy of the belly or chest may take place in consequence of increased action in the vessels of the serous membrane which lines these cavities.

Passive Dropsy arises in general from causes which impede the circulation of blood in the veins, such as various tumors pressing on the great blood vessels, ossification of the valves of the heart, &c. The blood being, from these or similar causes, retarded in its course, the vessels become distended, and at length relieve themselves by pouring out the watery part of the blood. This form of dropsy sometimes comes on from directly debilitating causes, such as repeated blood letting, or excessive loss of blood from other causes; inordinate discharges of every description; poor or relaxing diet; drinking immoderate quantities of watery fluids; living in low, damp situations; long continued chronic diseases, as pulmonary consumption, dysentery, &c., and various other debilitating causes. Dropsy, in fact, is generally a symptom or sequence of other disorders, and rarely a disease of itself, arising, in the great majority of cases, from organic disease of the heart, lungs, liver, kidneys, and other internal organs.

GENERAL DROPSY (*anasarca.*)

Is either acute or passive, and consists in the effusion of *serum*, or the watery part of the blood, into the cellular substance situated beneath the skin.

Passive general dropsy may arise from any of the debilitating causes above mentioned, but occurs most frequently from disease of the heart or some internal organ. Under these circumstances, the fluid is thrown out slowly; the face, or the feet and the ancles, are swollen at night; and the parts pit on pressure, which is a characteristic symptom of the affection. At the commencement of the disease, the swelling disappears in the morning; but after some time becomes more permanent, and gradually ascends higher until the whole body is affected. While the dropsy is gradually increasing, the face and eyelids become sallow, swollen and bloated; the breathing oppressed; and the pulse frequent, weak, and sometimes intermitting. There is considerable thirst, the urine is scanty and high-colored, the appetite greatly diminished, the bowels are constipated, and towards the termination of the disease, there is great debility, and the mental faculties are much impaired.

Acute general dropsy commonly arises from some cause capable of suddenly checking perspiration, or it comes on during convalescence from scarlet fever or measles. This form of dropsy is decidedly inflammatory, and may result from exposure to cold, wet, or any of the ordinary causes of inflammation. It is ushered in by shivering, full or hard pulse, head-ache, thirst, and heat of surface. These symptoms, in the course of twenty-four hours, are followed by dropsical swelling, which generally appears first in the face, and shortly afterwards extends to the trunk and extremities of the body. In most cases, there are well marked inflammatory symptoms accompanied with head-ache, a sensation of tightness about the chest, and difficulty of breathing; but sometimes there is very little general excitement, and the pulse may not rise above the natural standard. Dropsy, attended with inflammatory symptoms more or less acute, frequently follows scarlet fever, both in children and adults ; and the one disease may supervene upon the other in the course of a few days or weeks. Acute general dropsy is usually associated with inflammation of some internal organ ; but cases are occasionally met with in which no local disorder can be traced.

Treatment of general Dropsy. (*Anasarca.*) No remedy can be given with propriety in dropsy without previously ascertaining whether or not it co-exists or is kept up by disease of an internal organ. The passive or chronic form of the affection is very seldom independent of organic disease; but cases do occasionally occur in which it arises from living on poor or unwholesome food, and then, of course, the treatment ought to consist in a more generous diet, along with a moderate quantity of wine or porter. When it is connected with chlorosis, (green sickness,) ten drops of the tincture of steel are to be taken three times a day in a little water, or the following mixture.

Compound mixture of iron, (*Griffith's Mixture.*) eight ounces,
Spirit of nutmeg, eight drachms. Mix. Two table-spoonsful of this mixture to be taken as a dose once or twice a day.

When it occurs in hysterical females, the following mixture should be taken.

Compound infusion of gentian, eight ounces,
Sweet spirits of nitre,
Paregoric elixir, (English,) and
Compound tincture of cinnamon, of each an ounce. Mix. Two table-spoonsful of this mixture to be taken three times a day.

In all cases of dropsy from the above or other directly debilitating causes, not depending on organic disease, such as loss of blood, weakness induced by ague, protracted fevers, dysentery, and other diseases, a nutritious diet, tonics, and mild diuretics, should be given. A preparation of *iron*, as above, may be given ; a grain of *quinine* in Port wine, three times daily ; or one of the following mixtures.

Myrrh, in powder, half a drachm,
Decoction of Peruvian bark, six ounces,
Tincture of cascarilla, three drachms,
Liquor of the acetate of ammonia, (spirit of Mindererus,) two ounces. Two table-spoonsful of this mixture to be taken thrice a day.

Compound infusion of gentian, seven ounces,
Compound spirit of juniper, and
Tincture of orange peel, of each three drachms,
Elixir of vitriol, a drachm. Mix. Two table-spoonsful to be given as a dose thrice a day.

The following diuretic powders may also be taken.

Nitre, and
Cream of tartar, of each two drachms. Mix, and divide into twelve powders, three of which are to be taken in the course of the day, in a little of the infusion of gentian or in chamomile tea.

One or two table-spoonsful of the decoction of aloes, or a moderate dose of cream of tartar and jalap, (see *Cream of Tartar*,) may be taken occasionally to keep the bowels open.

We have already mentioned that dropsy is caused, in the great majority of cases, by disease of the heart or of some other internal organ; and, therefore, the maxim must always be kept in recollection, that until the cause is removed the effect must continue.

In every case of dropsy the treatment must be determined by the presence or absence of inflammatory action; in the former case, blood-letting and the means necessary to subdue inflammation are to be employed, in conjunction with diuretic and purgative remedies, to carry off the effused fluid; in the latter case, tonic or strengthening remedies, diuretics, and mild purgatives are to be given.

Treatment of acute general Dropsy.—In nearly all the cases of dropsy which come on suddenly, whether from undue exposure to cold, or as a sequence of scarlatina, the pulse will be found full and hard, and other inflammatory symptoms may be detected. The treatment pointed out in this form of dropsy is, of course, to subdue the inflammatory action, and this is done most effectually by blood-letting, and the regular administration of tartar emetic with nitre, (see page 292.) The following ointment is strongly recommended by the distinguished German physician, J. Frank.

Mercurial ointment, two drachms,
Powder of the leaves of foxglove, one drachm. Mix. About the size of a hazel-nut of this ointment to be well rubbed in over the region of the stomach twice or thrice a day.

Local bleeding, by cupping or leeches, and counter-irritation, by means of blisters or tartar emetic ointment, are to be employed if inflammation of the lungs or of any other organ be detected. After the inflammation has been in a great measure subdued, diuretic and purgative remedies should be administered, with the intention of removing the effused fluid. Cream of tartar, in half ounce doses, may be given freely, in order to open the bowels, and afterwards the following diuretic mixture.

Acetate of potass, half an ounce,
Sweet spirits of nitre, half an ounce,
Peppermint water, six ounces,
Laudanum, a drachm and a half,
Compound spirit of juniper, two drachms,
Syrup of squills, an ounce. Mix. A table-spoonful to be taken three or four times daily.

In passive, or chronic dropsy, which is usually attended with considerable debility, the diet should be nourishing, and, in quantity, suited to the power of the digestive organs; but, on the other hand, in acute dropsy, the patient must be strictly confined to low diet. It was formerly the custom to interdict dropsical patients from drinking; this, however, has been clearly shown to have been not only unnecessary, but injurious; the *imperial*, soda water, or any other mild drink, should be freely allowed; and those who have been long accustomed to drinking spirits, may be indulged with weak Hollands, or gin punch, if not contra-indicated by inflammatory symptoms.

It was a common practice formerly to give vent to the water by making scarifications in the legs in the form of the letter T, and mortification and death were frequently the consequences. Many medical men are now in the habit of puncturing the skin with a lancet, and even this plan is by no means unattended with danger, though it usually gives temporary relief, without producing any bad effects.

DROPSY OF THE BELLY. (*Ascites.*)

This is the most common of all kinds of dropsy, and may come on at any period of life. The causes which have been already enumerated, as capable of developing general dropsy, may also bring on this form of the disease, which, as in the former affection, may be either active or passive; but, in the great majority of cases, it comes on slowly, without inflammatory action, and is symptomatic of organic disorder of the abdominal viscera, more especially of the liver. Another not unfrequent cause is inflammation, either acute or chronic, of the *peritoneum*, or lining membrane of the belly.

The water accumulates first at the lower part of the belly, which gradually enlarges, and the swelling goes on increasing until the entire abdomen becomes very prominent, tense, and shining. The swelling may be observed to gravitate towards the side on which the patient leans; and if the left hand be placed on one side of the belly, and a smart tap be given to the opposite side with the right hand, the water may be felt fluctuating. There are in most cases considerable thirst, loss of appetite, and dry cough, and the urine is scanty and of a dark brown color. When the water has accumulated to a considerable extent, the breathing is oppressed, and the face and parts of the body not consecutively infiltrated become much emaciated. In some cases, the feet and ancles are swollen before any change is observed in the size of the belly; but in general the lower extremities are not affected until the abdominal dropsy has existed some time.

Dropsy, as we have already mentioned, is almost invariably a symptom of organic disorder, and, therefore, in order to direct the treatment on scientific principles, it is of the utmost importance that the organ affected should be known. In general, there are well-marked symptoms of visceral obstruction before dropsy makes its appearance, and, after it is considerably developed, the general appearance of the patient allows a sufficiently accurate opinion to be formed with regard to the organ which has given rise to the affusion. When the belly is much enlarged, and the lower extremities swollen, while the arms and upper parts of the body are emaciated, the face being at the same time thin, sharp, and of a sallow dingy color, it may be inferred that the liver is diseased, or, at all events, that the cause of the dropsy is situated in the belly; on the other hand, when the face is bloated, the lips swollen, so that the mouth remains partially open, and the eyes appear as if protruding from their orbits, there is every reason to suppose that the obstruction is in the chest, and that, most probably, the heart is diseased; and this opinion will be strengthened, if it be ascertained that the dropsical swelling commenced at the feet and ancles, and subsequently extended to the belly. The reverse of this takes place when dropsy arises from inflammation of the *peritoneum*, or from obstruction of the liver, or of any other abdominal organ; here the swelling of the lower extremities of the body is always a consecutive symptom.

There is another kind of dropsy of the belly, called Encysted Dropsy, in which the water is confined in a cyst, or membranous bag. In this case, the swelling is at first unequal and confined to a particular part, and, when the affection is farther advanced, the belly is never so uniformly distended as in the former variety, where the water is loose in the abdominal cavity. Encysted dropsy progresses slowly, is entirely local, and not attended with disorder of the general health.

Treatment of Dropsy of the Belly.—The treatment of dropsy in the belly is to be conducted on the principles applicable to that of general dropsy. When the dropsical effusion takes place suddenly, in consequence of undue exposure to cold, or from any of the ordinary causes which give rise to acute diseases, it will be found connected with inflammation of the membrane called the *peritoneum*, which lines the belly, and also envelopes all the organs contained in that cavity, more particularly of that portion of it which covers the liver. In this case, the pulse is firm and hard, and tenderness or pain is experienced in some part of the belly, most frequently at the right side, under the false ribs. The remedial means to be employed here are such as are generally resorted to for the purpose of subduing inflammation, the chief of which is general and local blood-letting, regulated according to the state of the pulse, and the degree of febrile excitement. The application of a large blister over the belly, the raw surface being afterwards kept discharging by means of savine ointment, is one of the most powerful remedial means we possess in all cases, whether acute or sub-acute, unconnected with organic disease. Internally, the following remedies, recommended by Sir Astley Cooper, should be given until the mouth become slightly affected by the mercury, and then the tincture of steel, or the tartarized iron, is to be given as a tonic.

Blue pill, two grains, or calomel, one grain,
Squills, three grains. Mix, and form into a pill, to be taken every night at bed-time.

Carbonate of ammonia, from seven to ten grains,
Sweet spirits of nitre, a drachm,
Tincture of foxglove, twenty drops,
Camphor mixture, an ounce and a half. Mix. The whole of this mixture to be given in the course of the day, and repeated daily.

It occasionally happens that abdominal dropsy comes on suddenly, without any marked excitement of the system ; general or local blood-letting is, nevertheless, not to be neglected, unless directly otherwise indicated by the state of the pulse, or other unequivocal symptoms of debility. Formerly dropsy was always looked upon as a disease of debility, and, consequently, depletion was never had recourse to ; but, now that the disorder is better understood, bleeding, purging, and other lowering means are employed in a large proportion of cases with the greatest advantage.

In dropsy of the belly supervening upon the scarlet fever or measles of children, the application of leeches over the belly, purging with cream of tartar or elaterium, and the careful administration of *foxglove*, is the treatment from which the greatest advantage may be expected. For a child six years of age, six leeches will be a sufficient number at a time, and, if the bleeding continue longer than necessary, the leech-bites should be touched with lunar caustic. The following powders are suited for the same age.

Extract of elaterium, one grain,
Calomel, twelve grains,
Aromatic powder, a scruple. Mix, and divide into twelve powders. One or two to be taken daily, until the bowels are freely opened.

Powder of squills, three grains,
Powder of foxglove, the same quantity,
Calomel, six grains,
Cinnamon, in powder, a scruple. Mix, and divide into twelve powders. One of these powders is to be given as a dose night and morning, and the effect of the foxglove carefully watched.

The remedy now considered to be the most efficacious in dropsy resulting from obstruction in the liver, spleen, or pancreas, unattended with increased vascular action, is *iodine*, which, in numerous cases, has had the effect of relieving the patient in a surprising manner when other means had failed.

Iodine, a grain.
Iodide (or hydriodate) of potass, eight grains,
Water, (distilled water is generally used,) a pint. Mix. To be taken in the course of the day.

Iodine, ten grains,
Iodide (or hydriodate) of potass, a drachm,
Lard, an ounce. About the size of a nut of this ointment is to be rubbed in over the belly night and morning.

There is one thing which ought always to be kept in recollection, that in the majority of cases of abdominal dropsy, accompanied with disease of the liver, the heart is affected at the same time, and therefore, where this complication exists, local bleeding, by cupping or leeches, and *foxglove*, should be employed. The latter remedy, by diminishing the heart's action, relieves the congestion of the liver, and at the same time, from its diuretic virtue, tends to carry off the effused fluid. By relieving the heart in this manner in the first instance, and afterwards employing iodine, as above directed, more benefit will accrue to the patient, than is likely to result from the practice so commonly resorted to, of giving mercury in all cases of dropsy connected with *liver complaint*, a term which is exceedingly vague, since in the common acceptation, it comprehends all the disorders of that organ, however opposite to each other they may be in their character.

A valuable popular remedy, well known in all European countries, is a decoction of the green tops of common broom, parsley, and the root of dandelion. This drink, when taken in large quantities, has frequently an excellent effect in carrying off the effused fluid.

It is of importance in every case to attend to the state of the bowels; neglect in this respect may readily cause an increase of dropsy; and constipation has been known to bring on a dropsical swelling of the legs in old people, and in those laboring under debility from previous diseases, or other causes, which has been removed by the use of opening medicine.

If the remedies employed have failed in producing any good effect, and the belly be painfully distended, accompanied with difficulty in breathing, it then becomes necessary to have recourse to *tapping*. This operation requires a surgeon.

DROPSY OF THE CHEST.

This affection frequently results from inflammation, either acute or chronic, of the *pleura*, or serous membrane which lines the cavity of the chest, and envelopes the organs contained in it; or it may take place from any of the causes which give rise to general dropsy, but chiefly from diseases of the heart and lungs. When the effusion is the consequence of inflammation of the pleura, the water is generally confined to one side of the chest, and is merely a symptom of pleurisy; but when it arises from organic disease of an internal organ, the water collects slowly in both sides of the chest, and constitutes, in connection with the original affection, a very formidable and dangerous disease.

When dropsy of the chest proceeds from disease of the heart, the first symptoms generally observed are, a swollen state of the eyelids in the morning, and of the feet and ancles at bed-time, accompanied with slight oppression of the chest and difficulty of breathing. The patient may be affected in this manner during a considerable length of time without suffering much inconvenience, until the water, which has been gradually accumulating, at last increases to such an extent that a train of very alarming symptoms is brought on. The face becomes much swollen and bloated; the lips assume a livid tint, approaching at times to a deep purple color; the breathing is greatly oppressed; the patient starts in his sleep, and cannot lie in bed without having his head and shoulders raised with additional pillows; and towards the termination of the disease, the sensation of suffocation is so distressing on lying down that he is compelled to sleep sitting in a chair. The difficulty of breathing is much increased by going up-stairs, or by any ordinary exercise; the pulse is generally irregular and intermitting; and the feeling of anxiety is at times very distressing, and strongly depicted on the countenance. To these symptoms are generally added palpitations of the heart and a troublesome, dry cough.

When water collects in the chest in consequence of bronchitis or of inflammation of the lungs, the difficulty of breathing, and of lying in the horizontal position, is the same as in the former case; but the effusion is seldom to the same extent, and is not attended with palpitations of the heart and intermitting pulse. Although the above symptoms generally accompany water in the chest, yet they may arise from organic disorders of the heart and lungs, independent of dropsy; and there is no doubt that prior to the discovery of the stethoscope, diseases of these organs were frequently mistaken for this affection.

Treatment.—Water on the chest is in most cases connected with general dropsy, and the same treatment is applicable to both affections. This species of dropsy is commonly met with in individuals of debilitated, worn-out constitutions, and is frequently a disease of advanced life; blood-letting is therefore seldom required. The remedies which give most relief are foxglove, nitre, and cream of tartar, in conjunction with quinine, tartarized iron, or other tonics.

ACUTE DROPSY OF THE BRAIN,

Is a very frequent and fatal disease among children. It consists in an inflammation of the membranes which surround the brain or line its central cavities; the dropsy (or effusion of fluid into the cavities) being nothing more than an accidental occurrence towards the close of the disease, nearly in the same way as dropsy of the belly may follow disease of the liver, or dropsy of the chest may attend a disease of the heart.

Causes.—It is often difficult to assign any cause for this complaint, because it frequently attacks robust children in the midst of apparent health; but we know from experience, that it has been produced by the following causes; blows upon the head, exposure of the head to a hot sun, the sudden removal of some eruption on the head, irritation of the brain occasioned by teething, or by derangement of the bowels, and, finally, the disturbance of the blood-circulation in the brain, which often takes place in the course of hooping-cough, measles, scarlet fever, or small-pox. But of all the exciting causes of this fatal complaint, none is more frequent than scrofula. In a great number of cases, it depends on a true scrofulous inflammation of the brain or its membranes. This explains the insidious nature of the complaint, its prevalence in certain families, the hereditary tendency to it, and its fatal termination; for we have every reason to fear that one species of this malady is just as fatal amongst children, as pulmonary consumption is amongst grown-up people.

To understand the nature and cause of the *premonitory* symptoms we should state, that it has been shown by Dr. Hennis Green that acute dropsy of the brain is often preceded, for months or years, by a slow *scrofulous* inflammation of the membranes of the brain. The existence then of this scrofulous inflammation of the brain, or in other words, the *premonitory stage* of acute dropsy in the head, is indicated by the following signs. The child loses its natural liveliness of temper, and becomes dull and morose; the sleep is disturbed, and the little patient often drowsy during the day; he complains, every now and then, of headache; the bowels are usually costive, and occasional vomiting, with accesses of fever and tenderness of the belly, are noticed; the gait of the child is sometimes very peculiar during this stage, he staggers when walking, stumbles without any cause, or may drag one foot after him; squinting and convulsive movements are sometimes observed, with a bending in of the thumbs, and curving of the toes towards the soles of the feet. These symptoms may last, as we have said, for several months or years; they are frequently mistaken for infantile remittent fever; but at length, severe headache, with vomiting, constipation, and stupor, supervenes, and the slow disease becomes all at once converted into the acute malady.

Acute dropsy of the brain almost invariably proves fatal when it has passed the *first* stage without having been relieved; our great anxiety should, therefore, be to detect the disease in its most early stages, and not to confound it with other complaints of children, to which it may bear some resemblance. The symptoms of the *first* stage of acute dropsy of the brain should be *distinguished* from those of the typhus fever, from the commencement of eruptive disorders, and from the peculiar head symptoms which sometimes accompany exhaustion of the vital powers in young children.

Treatment.—We cannot impress too strongly on the minds of parents a knowledge of the fact, that acute dropsy of the brain is really an *inflammatory* disease, and that our only hope of curing it depends on the early and prompt use of active measures. But here a distinction of much practical importance must be drawn. The disease sometimes attacks robust children, in the midst of excellent health. In a majority of cases, however, it affects weakly children of a scrofulous constitution, who have suffered for some time under the slow scrofulous inflammation of the brain which we have already noticed, and which constitutes the *premonitory* stage of acute dropsy of the brain. Now, although the treatment must be directed in all cases, against the inflammatory condition of the brain, yet it must be modified very considerably according to the particular case which we may have to deal with. When the patient is strong, of healthy constitution, and apparently free from scrofulous taint, we must attack the disease at once, by blood-letting, purgatives, mercury, and the constant application of cold to the head. From a child above four years of age, four to eight ounces of blood should be drawn from the arm, and if a very decided effect be not produced, the blood-letting must be repeated two or three times, until that stage of the complaint arrives which is marked by palsy. If the patient be much reduced by the first bleeding, then leeches (four to eight, according to the child's age) should be applied to the temples or behind the ears; for younger children we must content ourselves with the local abstraction of blood by leeches. Having relieved the inflammatory congestion of blood within the head, the next object of the attendant must be to to act powerfully on the bowels by means of purgative medicines. Very active remedies are required for this purpose, because, as we have already mentioned, obstinate constipation is one of the most characteristic symptoms of the complaint. Twenty grains of calomel, with an equal quantity of jalap, or the compound scammony powder, may be divided into four parts, one of which may be given every three hours, until the bowels are fully opened; the action of the purgative should be assisted by the *black draught*, (see page 269,) or by a clyster. Should the calomel and scammony, or any other strong purgative fail to evacuate the bowels, we have no hesitation in recommending the use of still more powerful medicines, such as croton oil or elaterium. These must be given with caution, and their use abandoned if they seem to irritate the intestines too much. From an eighth to a quarter of a drop of croton oil, or one-eighth of a grain of the extract of elaterium, may be given every two or three hours until the bowels are completely evacuated, after which two or three stools a day should, if possible, be procured by saline purgatives.

Of internal remedies, the only one upon which much dependence can be placed is mercury. Very young children may take the mercury and chalk, in doses of from one grain to three, every three hours; to older children we may give three grains of calomel, with one-sixth of a grain of tartar emetic, every three hours, and the mercury must be continued for several days, until a decided impression be made upon the disease. Some practitioners advise us to rub in the mercurial ointment (a scruple to a drachm during the day) over the arms, legs, or belly, in order to render the action of that substance more quick and energetic. As soon as the leeches have ceased to bleed, the head must be shaven, and cold lotions should be applied to the head, or a stream of cold water be allowed to flow constantly on the crown of the head from the height of two or three inches. This may be easily done, by placing a small tub of water at the head of the bed, and conducting the water from it by a strip of tow or linen. Ice-bags may be applied instead of cold water, but their use requires great caution. After the abstraction of blood and free purging, some persons prefer blistering the crown of the head to the employment of cold. There is no objection to this practice, which has often been beneficial. A large blister may be placed over the crown of the head, and, when the skin has broken, the raw surface may be dressed twice a day with mild mercurial ointment. As the irritation from teething is a frequent exciting cause of water in the head, it will always be prudent to examine the child's mouth, and to divide the gums freely, if we see any appearance of redness or swelling over a tooth which is approaching the surface. It is hardly necessary to mention that, during our treatment, the child should be kept in the most perfect state of quiet in a dark room, and that every cause of disturbance, &c., should be cautiously removed. No food should be given during the first stage, and the drink should consist of barley-water, infusion of mallows, toast and water, &c., in which a few grains of nitre may be dissolved.

In the second stage of water in the head, we must have recourse to the same means, but they are to be employed more cautiously, and with a more sparing hand. A few leeches to the temples, purgatives, and cold lotions to the head, are still the principal remedies. The calomel is to be continued; and, to quiet the irritation which now prevails, it may be mixed with a few grains of James's powder; it is at this stage, also, that blisters to the nape of the neck, or on the inside of the legs, may be had recourse to with advantage.

In the last stage of acute water in the head, little else can be done than to mitigate the patient's sufferings. If the appetite continue, some light food may be allowed, and three or four grains of Dover's powder, with an equal quantity of mercury and chalk, are to be administered three times a day; the action of the bowels is to be solicited by mild saline purgatives, and we may endeavor to excite the skin or kidneys by one of the following.

Tincture of digitalis, thirty drops,
Infusion of valerian, two ounces,
Water, six ounces. Mix. An ounce to be taken every three hours.

Liquor of the acetate of ammonia, three ounces,
Syrup of poppies, half an ounce,
Tincture of squills, half a drachm. A tea-spoonful to be taken every two hours.

CHRONIC DROPSY OF THE BRAIN.

Chronic dropsy of the brain consists in the slow collection of a clear fluid in the cavities of the brain, generally accompanied by gradual enlargement of the head. This disease may either occur in the child before it is born, or may come on very soon after birth. In the first case, it is usually attended by such changes in the brain itself as render it impossible for the child to live; in the second case, the head enlarges slowly, or even retains its natural size, and some small hope remains of obtaining a cure; hence, we shall confine ourselves to giving an account of this latter form.

The causes which excite chronic dropsy of the brain in children are very obscure. It is said to occur most frequently in the children of scrofulous parents, as a consequence of fright experienced during pregnancy; as the effect of depressing passions, drunkenness, &c., on the part of the mother; it may also be produced in the infant after birth by improper food, teething, spirituous liquors, affections of the bowels, or other complaints, which reduce the strength.

Symptoms.—Chronic dropsy of the brain sometimes comes on in a very insidious manner, and often escapes our notice at an early stage. When the natural articulations of the head are open, and the skull much enlarged in size, with a sensation of fluctuation at the anterior part of the crown of the head, there can be no mistake about the nature of the disease; but when the skull retains its natural shape and size, or enlarges very slowly, and when the child's health is not much deranged, it is not an easy matter to discover the nature of the complaint, although it is of the utmost importance that we should be acquainted with its existence as soon as possible. The early symptoms, then, of chronic dropsy of the brain are, an unusual peevishness and perversity of temper, dulness, and an inclination to sleep; irregular appetite, with constipation of the bowels and scanty urine; if the child be able to walk about, it will often be observed that the legs are weak and small in proportion to the rest of the body, while the belly is large and tense. The senses of hearing and seeing are at first acute, but soon become dull, and are more or less injured; the child cannot articulate words distinctly; the tongue seems to be getting too large for the mouth, and the mental faculties are also weakened. These latter symptoms should always excite our attention to the state of the head in young children; the head should be carefully measured with a tape, and if it be found to have increased very sensibly in a short time, we may be almost certain that the child labors under chronic dropsy of the brain.

As the disease advances the symptoms become more clear. The mental and bodily powers are more or less injured; the memory is lost, and the power of speech much diminished; a copious saliva flows from the mouth; the child is unable to support himself on his legs, and the head begins to hang on one side; the pupils are dilated, the sight lost, and the eyes frequently affected with squinting; the bowels are still irregular, and the contents of the stomach are often vomited up.

In the *third stage* of the disease the head becomes so enlarged that the child is no longer able to support it; he lies in a state of stupidity, and does not notice what passes around him; the senses are almost completely destroyed; the power of moving is lost, the evacuations are passed without the patient's being conscious of them; in this state he lies for a considerable time, when he is cut off by convulsions, or sinks into profound insensibility, which soon terminates in death.

Treatment.—Chronic dropsy of the brain is an extremely fatal disease, but even over it the power of medicine has often triumphed. Our first object must be to remove any irritation which may exist about the head, by leeches and mild purgatives; but these must not be carried far; one or two applications of leeches (at the early stage of the disease) will be sufficient. In order to remove the tendency which exists in the brain to the formation of a fluid within its cavities, various remedies are employed. One of the safest courses to pursue is to administer mercury with chalk for some time, until the mercury begins to act on the constitution of the patient. It may be given alone in the dose of one or two grains (to an infant) night and morning, or combined with a purgative, in the following manner.

Mercury, with chalk, one scruple,
Powdered rhubarb, thirty grains. Mix, and divide into ten powders; one, two, or three powders to be given gradually, according to the child's age.

The head should be kept cool, the hair may be cut off, and if there exist any signs of congestion of the brain, it will be prudent to apply cold lotions to the crown of the head. The action of the mercury will be aided by occasional doses of castor oil, or any other mild laxative, or by a clyster, containing from one to four drachms (according to the age of the child) of oil of turpentine, which may be given twice a week. During this course of medicine the child must take light and moderately nutritious food; *stimulating tepid* baths are also useful during this stage of the disease; the child may be placed in one three times a week, and kept in the bath from ten to twenty minutes. Six drachms of the sulphuret of potass may be dissolved in the bath, or it may be prepared by adding one ounce of nitro-muriatic acid to each gallon of water, until the mixture present the taste of vinegar. The child's head may be frequently washed with the latter solution, and a blister may be occasionally placed on the sides of the head, behind the ears, or on the nape of the neck. By the assiduous use of these means for several weeks, or even months, the disease may sometimes be checked; but it more frequently continues its progress, and the head gradually becomes larger. When this is the case but little hope remains, yet children have recovered, either when compression has been used, or when the fluid has been drawn off by making a small opening into the skull. For the purpose of compression, the head may be firmly bound with a linen bandage, two inches wide, and wound several times round the head, or with strips of common sticking-plaster. The operation of giving issue to the fluid by means of a small instrument called a trocar, should never be undertaken by any but a medical man.

DYSENTERY.

In treating of dysentery, the division into acute and chronic may be adopted, though the disease presents many different forms and complications.

ACUTE DYSENTERY.

Acute dysentery is usually preceded by a disordered state of the stomach and bowels, as indicated by nausea, vomiting, loss of appetite, flatulence, and constipation, or the bowels may have been relaxed for some time previous. It commences with frequent evacuations, accompanied by severe griping pains, great desire to strain while at stool, and a burning sensation at the *rectum* and *anus;* there are frequent chills, followed by flushes of heat; the pulse is quick, or perhaps not much affected; the stools at first may be copious and feculent, and contain pieces of hardened fæces, but they soon become scanty, and consist chiefly of mucous matter tinged with blood; a dull, uneasy sensation is felt in the belly, which is relieved after each evacuation; the tongue is furred; and there is considerable thirst. These are the most prominent symptoms of the disease, as it occurs in its mildest forms; but in its more severe states all the symptoms are aggravated; the calls to stool are very frequent and distressing, and sometimes accompanied with cramps in the thighs and legs; the abdominal pain is more constant, and increased on pressure with the hand, though often merely a feeling of heat is complained of, except when a motion is about to be passed; the tongue is thickly coated, and the appetite gone, while the thirst becomes urgent, the patient preferring cold water, each draught of which is invariably followed by severe griping; the urine is high-colored, passed in small quantities, and often with great pain and difficulty; the skin is hot and dry, or perhaps only feels hot over the abdomen, the extremities being cold, though sometimes there may be free perspiration. With the advance of the disease, the strength gives way, there is despondency, rapid emaciation ensues, and the straining is occasionally so violent that a portion of the gut descends beyond the *anus*, greatly augmenting the suffering. As a fatal termination approaches, the abdomen becomes swelled and tender to the touch; the tongue dry and glazed, or covered with a dry, brown fur; the motions are passed in bed, the patient being unable to get out to reach the close-stool; the extremities of the body become cold; and delirium, hiccup, and cold clammy perspirations, are the forerunners of death.

The character of the evacuations varies much, both as regards appearance and quantity; sometimes they are copious and watery, containing shreds of matter like the washings of beef, or they are scanty, and of a dark brown or greenish color, with streaks of blood; at other times, after violent straining, only a small quantity of slimy mucus is passed. The odor, in all cases, is peculiar, but sometimes it is extremely offensive, particularly in the last stage; the motions may then be composed of pure blood, or a dark fluid, mixed with feculent matter, and occasionally small whitish masses, resembling fat, are discharged.

The disease, in its worst form, may terminate in a few days, though generally its duration is from two to five weeks. The symptoms may be considered favorable, when the griping pain and straining at stool diminish, and the motions are less frequent and more healthy in their appearance, while a gentle perspiration breaks out over the whole body, with abatement of the febrile excitement. It may be remarked that changes for the better will sometimes take place, resembling remissions; these may last for twelve or twenty hours, or longer, and be followed by a return of all the bad symptoms.

In warm climates, dysentery is witnessed in its most intense forms, and is very frequently complicated with great derangement of the biliary organs, or disease of the liver. With most of the symptoms of the first or most common variety, the tongue has a yellow coating, or a white covering over its surface, and appears swollen or larger than natural; there is nausea, and bilious vomiting, occasional chills, hot, dry skin, and quick, irritable pulse; the burning sensation in the rectum, and straining at stool, are very severe; the evacuations may be copious, yellow-colored, or of a dark brown color and uniform consistence; and sometimes they are frothy, and have a greenish, mixed appearance, with streaks of blood. The stools at the commencement, and even through the course of the disorder, may be little, if at all tinged with blood, though usually in the last stage they are mixed with dark, bloody matter. A dull, heavy, uneasy feeling is experienced in the right side, increased by pressing with the fingers under the ribs, the pain often stretching to the right shoulder, where there may be a constant aching sensation; there is sometimes a feeling of oppression at the chest; the patient is troubled with a harassing, irritating cough; and in the last stage the tongue is red, smooth, or dark-colored and dry. The first symptoms of dysentery, where the liver has been long diseased, are frequently a sensation of fulness and uneasiness at the stomach and right side, copious discharges of billious matter, with pain of belly and griping.

CHRONIC DYSENTERY.

In chronic dysentery the pulse is but little disturbed, except towards evening, when it may be quickened and accompanied with slight feverish symptoms; the evacuations are much less frequent than in the acute states, and are seldom attended with much straining, though in general there is a griping or twisting sensation about the navel before each motion, which is entirely relieved after leaving the close-stool. There is not often pain or pressure over the belly, (which may be swelled and hard, or flatter than usual,) though sometimes there is a heavy feeling, or sensation of heat and soreness, as the patient may express it. The stools vary greatly, even in the same patient, at different times; they may be copious and of a dark brown color, or white, like clay diffused in water; hence the disease has been called *white flux*; or there is feculent matter intimately mingled with blood; sometimes there is a bloody mucus mixed with a substance resembling matter, (pus,) or the evacuations have a marbled and greenish appearance.

Causes.—Dysentery prevails chiefly in autumn and the beginning of winter, during cold moist weather, following great heat or long-continued drought; or it may be induced by high ranges of temperature, succeeding to moist and very wet weather. An attack may be brought on by exposure to cold and wet, or to the dews of night, particularly after fatigue; by wearing damp clothing, by scanty and unwholesome food or drink, eating acid or unripe fruits, the use of water contaminated with impurities, breathing air rendered impure by many persons being crowded together, as in camps, vessels, prisons, &c., and then the disease is likely to assume the typhoid and malignant forms, and may become highly contagious; by constipation and the accumulation of morbid biliary secretions, the use of intoxicating liquors in excess, very rich stimulating diet, exhalations from the soil and from marshes, as well as putrid animal exhalations and epidemic states of the atmosphere. In hot countries the disease is frequently associated with worms, particularly in the dark races, who are peculiarly subject to bowel complaints.

Chronic dysentery differs only in degree from the acute form, and arises from the same causes.

Treatment.—It is of the utmost consequence that no time be lost in resorting to the necessary treatment, as acute dysentery will be much more protracted and dangerous if neglected during the first few days.

Blood-letting will be required when the abdominal pain is severe, the skin warm, and the pulse quick and full; the quantity to be taken must be regulated by the age, strength, and constitution of the patient, and severity of the attack; but a good general rule is to allow the blood to flow from the arm until the pain is relieved or faintness comes on, *the patient being in the erect position.* In the milder cases, when there is very little or no general excitement, and not much pain complained of, local bleeding, by the application of leeches to the belly, or by cupping, will be sufficient; and either of these means of abstracting blood may be had recourse to, if the pain continue after bleeding from the arm. When the leeches drop off, or after cupping, hot fomentations are to be applied, or large emollient poultices.

If the tongue be foul, or the attack do not begin with severe retching and vomiting, the treatment may be commenced by administering an emetic of twenty-five or thirty grains of ipecacuan. After its action, or should an emetic not be necessary, half an ounce to two ounces of castor-oil, with twenty drops of laudanum, may be given. When the bowels have been cleared out by the oil, which will probably be in eight or ten hours, one of the following pills should be given every fourth or sixth hour.

Take of opium, six grains,
Ipecacuan, twenty-four grains,
Calomel, twelve grains,
Mucilage, or syrup, a sufficient quantity. Mix, and divide into twelve pills.

The griping and pain of belly will often be much relieved by rubbing turpentine over the abdomen, and applying hot fomentations immediately after; but if the repeated use of the turpentine fail in affording relief, it will then be necessary to apply a large blister. Warm baths, once or twice a day, will also be found very useful in alleviating pain and inducing perspiration.

The great desire to strain at stool should not be indulged in, as the pain and irritation are thereby greatly increased; this unpleasant symptom, as well as the burning sensation in the rectum and anus, will frequently be relieved by administering an injection of arrowroot, in small quantity, with fifteen or twenty drops of laudanum; and after each evacuation the patient will find ease by sitting over the steam of hot water, or applying hot fomentations to the parts.

Gentle opening medicine should be given every third or fourth morning; but in very few instances, if ever, will it be prudent or necessary to direct strong purgatives to be taken, the effect of which would only tend to increase the inflammation of the mucous or lining membrane of the intestinal canal, which in general constitutes the disease. The dose of castor-oil may be repeated, or a tea-spoonful of Henry's calcined magnesia, with twenty-six grains of rhubarb, may be given, or two drachms of Epsom salts and thirty grains of magnesia, in a glass of barley-water, assisting the operation of the medicine by emollient injections, containing a table-spoonful or two of olive or castor-oil.

As dysentery appears in its most violent forms in warm climates, the treatment must be energetic in proportion, though the same in principle as that already recommended. When the abdominal pain, fever, and other inflammatory symptoms run high, the bleeding from the arm must be decisive, and repeated until these symptoms are removed or abated; nor should local depletion be neglected; and since the disease in hot climates is generally preceded by looseness of the bowels, purgatives are even less demanded than in this country.

In dysentery, connected with disease of the liver, calomel may be used with more freedom. After depletion, and an emetic, if required, the following may be taken.

Calomel, eight grains,
Ipecacuan, three grains,
Opium, one grain. Mix, and every six hours afterwards one of the pills, (described in the previous recipe,) with twice the quantity of calomel, and mild purges occasionally, are to be administered.

Dysentery, within the tropics, is often extremely insidious in its commencement; looseness of the bowels, and slight griping pains, may exist for weeks, unheeded by the patient, until exhaustion of strength, and some aggravation of the symptoms, compel him to take to bed; and, though the attack has been apparently very mild, yet the delay which has taken place in commencing the treatment may lead to a fatal termination, whatever means be employed. We cannot, therefore, point out in too strong terms the necessity of attending at once to the slightest derangement of the bowels in tropical climates, since a gentle purgative, followed at night by fifteen grains of Dover's powder, or a pill, composed of two grains of opium and two grains of ipecacuan, repeated for a few nights, and the occasional use of the warm bath, will frequently put a stop to those symptoms which, otherwise, might have ended in danger or destruction to life.

In the low, or typhoid form of the disease, the treatment above advised will be applicable, with the exception of blood-letting, which should not be practised; leeches, however, may be applied over the abdomen, if there be pain on pressure. In the more dangerous or malignant forms, when there is extreme depression of the vital powers, the strength must be supported. Two grains of camphor may be added to each of the pills, (described in the second preceding recipe,) or the following, given every six hours.

Mercury, with chalk, four grains,
Ipecacuan, one grain,
Camphor, two grains,
Opium, one grain. Mix. To be made into two pills, or taken in a little jelly.

Warm baths, turpentine, fomentations, and injections are to be had recourse to in the manner already directed.

When vomiting is a troublesome symptom, apply a mustard poultice over the stomach, or let the turpentine fomentation be used; and medicine should be administered in the form of pill, as more likely to remain on the stomach.

Flatulent distension of the abdomen will often be relieved by injections, containing each two drachms of turpentine.

An injection of infusion of ipecacuan root, of the following strength, administered twice a day, or oftener, we have known to be very serviceable in the dysentery of the West-Indies.

Ipecacuan root, one ounce; to be well bruised, and a quart of boiling water poured over it; then allow it to remain near the fire for eight or ten hours; the injection to be composed of half a pint of this infusion, to which, occasionally, fifteen or twenty drops of laudanum may be added.

Hiccup may be generally considered a very dangerous symptom, unless when it occurs early in the attack; fifteen grains of carbonate of soda, with ten drops of laudanum, may then sometimes remove it.

Since the action of medicine varies greatly in different individuals, from peculiarity of constitution, or other causes, the doses require to be regulated accordingly; sometimes a small quantity of opium will act very powerfully, and, at other times, large doses must be given to produce any effect. In the treatment of dysentery, therefore, the action of the opium must be watched, and when it produces great drowsiness or constant sleep, it must be left off altogether for a time, or the dose must be diminished; but if, on the contrary, the pain be not relieved, or sleep induced by the ordinary doses, the quantity must be gradually increased. These remarks will also apply to ipecacuan; sometimes a very small quantity, even a grain or two, will cause nausea and vomiting; while, in other instances, it may be given in large doses, without sickness or vomiting being excited.

Astringent and tonic medicines are not to be used in the acute stage; but during convalescence, or after all the inflammatory symptoms have been subdued, and an exhausting discharge from the bowels continues, they will be found very useful.

Prepared chalk,
Gum-arabic, in powder, and
Sugar, of each half an ounce,
Cinnamon water, eight ounces,
Syrup of poppies, half an ounce,
Tincture of catechu, three drachms. Mix. Two table-spoonsful to be taken as a dose every six hours.

Gum-arabic, two drachms,
Sugar, half an ounce,
Laudanum, two drachms,
Tincture of kino, or of catechu, three drachms,
Peppermint water, eight ounces. Mix. A table-spoonful to be taken three or four times a day.

As tonic mixtures, either of the following may be used.

Peruvian bark, (cinchona,) six drachms; to be infused in a pint of water for eight hours, and strained; then add
Wine of ipecacuan, three drachms,
Laudanum, one drachm. Mix. A wine-glassful three or four times in twenty-four hours.

Infusion of bark, (as above,) a pint,
Quinine, ten grains,
Elixir of vitriol, half a drachm. Mix. A wine-glassful twice a day.

During the period of convalescence, and for a long time after, the causes which gave rise to the attack should be carefully avoided, and no indiscretion committed in diet, drink, or exposure, as there is very often a tendency to relapse in this disease, even from the slightest causes. Wearing flannel next the skin will be found a most valuable protection from the effects of cold and vicissitudes of temperature, and is even more useful in hot than in temperate countries.

Treatment of Chronic Dysentery.—The treatment of acute dysentery will apply to the chronic form, with but slight modification. General blood-letting is rarely necessary, but, so long as abdominal pain remains, the abstraction of blood locally, by leeches or cupping, will be beneficial; repeated blistering over the abdomen should also be resorted to, or the tartar emetic ointment may be used; renewing the application as soon as the pustular eruption begins to dry up. A grain of opium, and two grains of ipecacuan, formed into a pill, may be taken night and morning; and, if the liver be in a torpid state, and there be a deficiency of bile, as indicated by whitish clay-colored stools, mild mercurial medicine should be combined with opiates.

Mercury, with chalk, three grains,
Dover's powder, eight grains. Mix.

Blue pill, three grains,
Opium, one grain,
Ipecacuan, one grain. Mix, and form into a pill.

Either of these to be taken night and morning, and occasionally a gentle purge of castor oil, magnesia, and rhubarb, or confection of senna, with cream of tartar. The combination of nitric acid and opium is extremely useful in many cases of dysentery, and may be employed if the above prescriptions have failed.

Diluted nitric acid, half an ounce,
Laudanum, a drachm,
Water, a pint. Two table-spoonsful, as a dose, three or four times in twenty-four hours.

When the discharge continues, and the strength is, at the same time, failing, tonic medicines are to be taken.

Peruvian bark, (cinchona,) and
Gentian root, of each, half an ounce,
Rhubarb root, two drachms,
Water, two pints; to be boiled for half an hour, and strained through fine linen.

A table-spoonful or two of this infusion to be taken twice or three times a day, while the powder is continued night and morning. The sulphate of zinc is also a very valuable tonic and astringent.

Sulphate of zinc, twelve grains,
Extract of gentian, two scruples,
Opium, two grains. Mix, with syrup or mucilage, and divide into twelve pills. One to be taken twice a day or oftener, with half a wine-glassful of the decoction of bark.

But the remedy of this class, from which we have derived the greatest advantage, is the sulphate of copper or blue vitriol, which has been used in the southern states upwards of half a century, in the chronic form of the disease.

Sulphate of copper, six grains,
Opium, four grains. To be made into twelve pills, with a crumb of bread and mucilage. One, two, or three to be taken daily; increasing the number gradually, or augmenting the quantity of the sulphate in each.

It must be remembered that the powerful astringent remedies above prescribed, so far from being serviceable, will prove injurious if given while inflammatory action of the mucous membrane still exists, which will be known by abdominal pain, increased on pressure, with straining and griping at stool. It is only in those cases where the inflammation has been subdued and a debilitating discharge from the bowels continues, that the sulphate of copper or zinc should be administered. Injections are not to be forgotten during the treatment. These may consist of a weak infusion of ipecacuan-root twice a day, or of linseed-tea or barley-water; and if there be much straining, a few drops of laudanum may be added. From half a drachm to a drachm of chloride of lime in barley-water, or in the ipecacuan infusion, forms an excellent injection in many cases of acute as well as chronic dysentery.

It is absolutely necessary in this disease, but more especially in the chronic form, that the warm or rather tepid bath should be frequently used, in order to keep the skin clean, and correct as much as possible the peculiar odor that emanates from it, which would otherwise become intolerable to the patient's attendants.

With regard to regimen, the patient must be particularly guarded, for medicine can be but of little avail, if he be induced to satisfy those morbid cravings which are so frequently a symptom of this form of the disease. The diet should be mild, easy of digestion, and unstimulating, being chiefly composed of farinaceous substances, as rice, bread, sago, arrow-root, &c., with milk. The drink also must be mild and demulcent, unless in cases attended with much debility; and, where there are no inflammatory symptoms, Port wine in moderation, may then be allowed, with water, or thin arrow-root, which is perhaps the best method of taking it; and those who have been in the habit of using spirits may take weak brandy and water.

INFLAMMATION OF THE EAR.

Inflammation of the ear is confined to the lining membrane of the tube which leads to the *tympanum* or drum of the ear, or it may be situated beyond the drum, in the deeply seated parts of the internal ear. In the former case the affection is commonly called *ear-ache*, which though accompanied with acute pain and other unpleasant symptoms, is unattended with danger; in the latter the inflammation is sometimes very severe, and runs on to suppuration and subsequent destruction of the lining membrane, small bones, and other parts of the structure of the internal ear.

Common ear-ache, which is generally the result of exposure to a current of air, is attended with ringing or buzzing noises, and impaired hearing, and when the pain is very severe there are slight feverish symptoms; but it seldom lasts beyond two or three days, and usually terminates without any discharge of matter from the ear, though sometimes matter exudes from the lining membrane of the passage leading to the drum, during several days or weeks, and ceases gradually, without leaving deafness or any other bad effect.

Deep-seated Inflammation of the Ear is a disorder of a more serious character; in this case the pain is very acute, and the sensation of tension and heat in the ear, accompanied with ringing, clanging, whistling, and various other sounds, is very distressing to the patient; and the slightest noise or movement of the ear is almost intolerable. There is always more or less deafness; the pain extends to the face and side of the head, and frequently the head-ache is intense. The skin is hot, the pulse quick and hard, and the appetite gone; there is likewise thirst, restlessness, sometimes delirium during the night, and in a word the usual symptoms of inflammatory fever.

There is still another species of ear-ache, which comes on suddenly at regular or irregular intervals, without occasioning constitutional excitement. This form of the affection is purely nervous.

One of the most common causes is exposure of the head to currents of air, and it is not unfrequently brought on in children by hardened wax or foreign bodies in the ear, as peas, cherry-stones, worms, insects, &c., and the injurious habit of picking the ears, is a very common cause of this painful disorder.

Treatment.—In ordinary cases of ear-ache the treatment consists in the frequent application of warm fomentations of the decoction of linseed or marshmallow, and poultices of linseed meal during the night; in opening the bowels freely by means of calomel and jalap, and in filling the ear with cotton wetted with laudanum and almond oil in equal proportions. If the affection be not relieved by these means, a more active plan of treatment must be adopted. Five or six leeches are to be applied behind the ear every six or eight hours; and in the event of the general inflammatory symptoms running high, it will be advisable to take blood from the arm. The abstraction of blood may be followed, if necessary, by the application of a blister to the nape of the neck. In addition to this treatment, the mixture of tartar emetic with nitre, in doses suited to the age of the patient and severity of the inflammation, may be given in order to moderate the constitutional excitement; and the bowels should be kept freely open by saline purgatives.

The most active treatment sometimes fails in preventing suppuration, and the discharge of fetid matter often continues for months, or even many years, in spite of every means used to check it. As soon as the matter which has been pent up in the cavity of the drum makes its exit, the constitutional symptoms cease, and the pain abates. All that can be done afterwards is to prevent the matter from remaining in the deep-seated cavities of the ear until it becomes acrid and irritating; to obviate this, warm water or milk and water should be frequently injected, with the intention of removing the offending matter. Cleansing the ear in this manner gives great relief to the patient, and in some cases is sufficient to allow the lining membrane of the ear to recover its natural state, but in others the discharge continues, becomes chronic, and requires astringent injections.

Sulphate of zinc, (white vitriol,) six grains,
Rose-water, twelve ounces. Mix.

Goulard's water, and
Rose-water, of each half a pint. Mix.

A little of either of these lotions (tepid) is to be gently injected into the ear three or four times a day, and their strength should be gradually increased. A seton placed in the nape of the neck, or the repeated application of blisters behind the ear, may be found serviceable in protracted cases. Change of air, regular exercise, sea-bathing, a mild dry diet, abstinence, as much as possible, from all kinds of liquids, and the use of tonic remedies to restore the general health, are the means indicated in all cases of long-continued running from the ear. The most suitable tonics are quinine and preparations of iron, and the decoction of sarsaparilla has been found serviceable in many cases.

Laudanum dropped into the ear frequently relieves *nervous ear-ache*, and a return of the affection may be prevented by attending to the state of the bowels, and taking quinine or carbonate of iron, in small doses, twice or thrice a day, during three weeks or a month.

EFFERVESCING DRAUGHTS.

Effervescing draughts are much used in fevers and inflammatory diseases, in order to quench thirst, check vomiting, moderate the heat of the surface of the body, and cause gentle perspiration. The one generally used is made as follows.

Take of subcarbonate of potash, or of soda, a scruple,
Syrup of orange peel, a drachm. Mix, in a wine-glassful of water, and then add a table-spoonful of lemon juice, or fifteen grains of citric or tartaric acid, in powder, dissolved in a little water.

The above may be swallowed while in a state of effervescence, or the alkaline solution may be first taken, and the acid immediately afterwards, so that the effervescence may take place in the stomach. In fever it is a common practice to add five grains of *nitre* to this draught, with the intention of increasing the determination to the skin.

A mild and agreeable effervescing purgative draught is made from the patent *Seidlitz powders*. These consist of two different powders; the one contained in the white paper consists of two drachms of *tartarized soda*, (*Rochelle salt*,) and two scruples of *carbonate of soda;* that in the blue paper, of thirty-five grains of *tartaric or citric acid*. The contents of the white paper are to be dissolved in half a pint of spring water, to which those of the blue paper are to be added. The draught is to be taken in a state of effervescence.

ELATERIUM.

Elaterium, or the dried juice of the *wild cucumber*, is the most powerful of all purgative remedies. It is principally used in dropsy, from the action it possesses of discharging through the bowels the water which has accumulated in the cavities of the body, or in the cellular substance under the skin. (See *Dropsy*.) When properly prepared, its action is as regular and certain as that of any other remedy. The dose is the eighth or the quarter of a grain, twice or thrice in twenty-four hours, which should be continued until copious evacuations are procured. In dropsy it is frequently used in the following form.

Take of the extract of elaterium, one grain,
Sweet spirits of nitre, two ounces,
Tincture of squills, and
Oxymel of colchicum, (or meadow saffron,) of each half an ounce,
Syrup of buckthorn, an ounce. Mix. The dose is a tea-spoonful three or four times a day.

It has been used with advantage in gout and acute rheumatism, in combination with other purgatives, as follows.

Take of the extract of elaterium, ten grains,
Compound extract of colocynth, two drachms,
Jalap, and
Castile soap, of each a drachm,
Oil of juniper, a sufficient quantity to make a mass, to be divided into fifty pills: two or three a dose.

EPILEPSY, OR FALLING SICKNESS.

In the great majority of cases the fits of epilepsy come on without any previous indication of their approach; but sometimes the following premonitory symptoms are experienced. Head-ache, giddiness, ringing in the ears, flushed face, low spirits, irritability of temper, the fancied appearance of certain objects before the eyes, and in some cases dilatation of the pupils, announce the approach of an attack. These sensations continue some time, perhaps a day or two, before the fit comes on; but in other patients the warning symptoms are of short duration, and of a different description. A feeling of pain, heat, cold, or tingling, comes on suddenly, in one of the toes or fingers, or in a particular part of the back or belly, then rises gradually through the stomach and heart, until it reach the head, when the patient immediately falls to the ground, as if struck with lightning. But, in ordinary cases, at the moment when the patient least expects it, perhaps when conversing with his friends at table, he utters a loud unnatural scream, and falls down bereft of sense and voluntary motion, and violent convulsions instantly follow. In some cases, however, the convulsive movements precede the fall;

particular motions or gesticulations of the limbs take place, or the head is drawn backwards or turned gradually round towards one of the shoulders, by a spasmodic action of the muscles of the neck, which appears very distressing; but in general, the piercing shriek, the fall, and the convulsive movements, follow each other with the rapidity of lightning. The muscles of the trunk and extremities of the body are violently agitated, and the patient is severely shaken; the limbs are alternately extended and flexed, the toes are curved inwards, the thumbs are firmly grasped in the palms of the hands, and it has been remarked that, in many cases, the muscles of one side of the body are more severely convulsed than those of the other. The convulsive action of the muscles of respiration causes the breathing to be at first slow and difficult, but after some time it becomes quick, irregular, and occasionally stertorous. The muscles of the belly and the bladder are acted on in a similar manner, so that in some patients the fæces and urine are expelled involuntarily. The face is swollen and red, or of a purple color; the veins of the temples and neck are enlarged; the face is drawn to the right or to the left, or the head may be drawn backwards or downwards on the chest. Sometimes the eyelids are closed, at other times wide open; the eyes are fixed and staring, or they roll in their orbits, the pupils remaining dilated or contracted, but always immovable. The face is violently distorted, the patient gnashes his teeth, and thrusts out his tongue, which is often severely injured; foam flows from the mouth, and is not unfrequently bloody, from the wounds inflicted on the tongue. The action of the heart is strong, tumultuous, and irregular; and the pulse is quick, small, and at times scarcely perceptible.

It seldom happens that the attack continues longer than a few minutes, but in some cases the patient becomes immovable for a short time, and is again suddenly convulsed. Sometimes a series of attacks and remissions follow each other in this manner during half an hour, an hour, or even considerably longer. In general, however, the convulsions gradually cease; perspiration breaks out on the forehead, neck, and breast; the breathing becomes natural, and is occasionally attended with sighing; the face loses its livid color, and appears pale. The patient now remains for some time in a sort of stupor, and is then restored to a slight degree of consciousness; he appears very drowsy and overcome with fatigue, and soon falls into a deep sleep. While in this state, the perspiration breaks out freely over the whole body, the breathing becomes natural, the pulse full, soft, and slow; and after sleeping profoundly during several hours, he awakes slowly, without retaining the slightest recollection of what has taken place. He may recover his senses immediately on awaking, but in most cases the power of voluntary motion, sensation, and consciousness, return slowly, and a feeling of languor, weakness, and weight, or oppression in the head, with pain, or a sensation of soreness about the chest and limbs, is experienced for some time after.

When the fits recur frequently, and the complaint has been of long continuance, the memory fails, the intellect becomes impaired, the countenance assumes a vacant appearance peculiar to epileptic patients, and at last a state of idiotcy is induced; but when the attacks appear at long intervals, without being immoderately severe, their influence on the general health and intellect is scarcely, if at all, perceptible. In fact, when confined within due bounds, epilepsy is not incompatible with the development of the most powerful intellect. Many celebrated men, of all ages, military, political, and literary, have been affected with this disease; Julius Cæsar, Mahomet, Petrarch, Rousseau, and Bonaparte, were epileptic.

Causes.—Idiots, and people of weak minds, are very subject to epilepsy. The hereditary influence of this disease is generally admitted; and it appears to be well understood that people of scrofulous habit of body labor under it more frequently than others. It is said to be more common in the lower, than in the middle and upper classes of society.

The most frequent exciting cause is terror or sudden fright. For example, how often it happens that a nurse makes a sudden noise behind a child in order to stop hiccup, and that the infant, in consequence, falls instantly into a fit of epilepsy, which recurs from time to time throughout life. Sudden fits of passion, disappointment, distress of mind, and excess in venery, are the causes which rank next to terror in producing this disease.

Treatment.—Little more can be done during a fit of epilepsy than to prevent the patient from hurting himself. When the tongue is thrust out and fixed between the jaws, it ought, of course, to be carefully returned, and then a napkin or handkerchief firmly rolled up, or a piece of Indian rubber, placed between the teeth. The head and shoulders should be raised, and the dress loosened, particularly the neckcloth or stays. The forehead and hands ought to be sprinkled with cold water, and the struggles of the patient restrained as much as possible. If there be much determination of blood to the head, it may be necessary to open a vein at the arm, in order to prevent a fit of apoplexy. This step, however, is seldom required, and not easily accomplished, on account of the convulsive movements of the patient. The safest means of relieving congestion of blood in the brain is by pouring cold water on the head, and this may be resorted to with advantage in every case in which the head is hot, and the pulsation of the carotid arteries strong. Putting common salt in the mouth has been of service in some cases; and placing a piece of cold metal in the hands, or a large key between the shoulders, is stated to have had the effect, in some instances, of arresting the fits. When the fits are preceded by the peculiar sensation above alluded to, of a cold fluid rising from the toes or fingers to the head, a ligature firmly applied round the extremities sometimes wards off the attacks; indeed, some epileptic people wear ligatures on the limbs constantly for this purpose. It is improper to apply aromatic vinegar, sal-volatile, or other pungent substances to the nostrils, and no attempt should be made to make the patient swallow.

It is only during the intervals of the fits that a radical cure can be attempted. Our efforts to effect this should be directed to remove the irritation of distant organs, or parts on which the disease may depend; and treatment conducted on this principle is more rational, and more likely to be attended with permanent success than if purely specific, or, in other words, intended to act directly on the disease itself.

When there are symptoms indicating an undue determination of blood to the head, or a diseased action in the brain, the patient, if plethoric, should be bled from the arm, or cupping at the nape of the neck may be frequently resorted to. The head ought to be shaven, and bathed daily, or twice a day, with cold water, and a seton kept in the back of the neck may be attended with the greatest benefit. To this treatment should be added low diet, and the frequent use of purgative remedies.

If epilepsy be caused or kept up from irritation produced by worms in the bowels, *spirits of turpentine*, in half ounce doses, or other remedies possessed of the power of destroying or carrying them off, should be administered. If it arise from teething, the gums should be freely scarified, and the bowels carefully attended to. (See *Teething*.) If from imperfect or painful menstruation, the warm hip bath, aloetic purges, and the tincture of steel are the proper remedies. If it depend on a disordered state of the stomach, liver, or other organs, the object is to restore them to a healthy state; but for the means of attaining such object, we must refer our readers to the different parts of this work in which they are particularly noticed.

The *oxide of zinc* ranks among the first of these supposed specific remedies.

Oxide of zinc, half a drachm,

Extract of liquorice, a sufficient quantity to make sixty pills, of which two are to be taken as a dose, night and morning, increasing the quantity every two days, by the addition of a pill.

Oxide of zinc, and
Extract of henbane, of each a grain,
Powder of valerian-root, half a drachm. Mix. To be taken as a dose night and morning. (In obstinate cases, half a grain of ammoniated copper may be added to each dose.)

These pills are to be continued regularly, until the patient complain of sickness at stomach, and then the dose, instead of being increased, should be gradually diminished. This remedy may be given with perfect safety, to the extent of ten to twenty grains daily. When the disease is confirmed, and recurs frequently, the *oxide of zinc* may be continued every day during six months, or even a year; but when milder, this medicine need not be given longer than fifteen days of every month.

A remedy, much used of late years, and which has been strongly recommended, is the *nitrate of silver*, or *lunar caustic*, in small doses; but it has been clearly shown, that unless continued regularly during several months, or even longer, it produces no good effect, and then it has frequently caused a purple or slate-colored appearance of the skin, which has continued throughout life; and it also appears, that whatever good effect it has produced, has been at the expense of the lining membrane of the stomach and bowels, which has not unfrequently been found, after death, inflamed, ulcerated, or even perforated.

There are no remedies on which so much reliance can be placed as on well-directed *regimen*. The diet, in all cases, should be mild and sparing; and wine, and every kind of stimulating drink, entirely abstained from. In full-blooded individuals, animal food must be completely given up; but those who are thin and pale may be allowed a moderate quantity of chicken or tender mutton or beef once a day; care, however, must be taken, not to embarrass the stomach with a greater quantity of food, though even of the mildest description, than can be easily digested. There ought to be fixed hours for meals, and the intervals between them should not be too long. Strong tea and coffee are improper, and not more than a teacupful of any kind of drink should be taken at a time. Regular exercise, *on foot*, is of the greatest service, but the patient must avoid fatiguing himself by walking too far at one time, nor should exercise be taken too soon after meals. Early rising, and a moderate indulgence in sleep, are as beneficial as the opposite conditions would be injurious. Sleep should never be prolonged beyond seven hours. Epileptic patients must avoid going into close rooms, theatres, and other crowded places of public amusement, and they will find the pure air and tranquillity of a country life more suitable than the noise and bustle of a large town. Wearing flannel next the skin, and worsted stockings, are indispensable. The tepid bath should be used frequently, and while in the bath the head should be kept cool, by the application of towels dipped in cold water. The hair ought to be closely cut, and the head bathed regularly every morning with cold water, or the shower bath may be used, if it otherwise agree with the patient.

Every means should be adopted to keep the mind cheerful, and all strong mental emotions are to be particularly guarded against.

When the attacks are of frequent occurrence, the patient must be carefully watched, and a piece of Indian rubber, or a wedge-shaped piece of soft wood, should be always ready to place between the teeth, in order to prevent him from biting his tongue. It is scarcely necessary to mention, that he ought to avoid all dangerous situations; such as going near the edge of a precipice, sitting on the top of a coach, &c., and not walk near water, nor sit near the fire, unless it be completely protected by a strong wire fire-screen. An indulgence in venereal pleasures might prove fatal to an epileptic person.

EPSOM SALT, OR SULPHATE OF MAGNESIA.

Epsom salt is a well-known and very excellent purgative. In the dose of from two tea-spoonsful to an ounce, dissolved in half a pint of warm water, and taken when tepid, it acts freely, without griping. To prevent this salt from causing sickness at stomach, it may be taken in an infusion of orange-peel, or in any other aromatic or bitter infusion, to which two tea-spoonsful of *tincture of rhubarb* may be added. It quickens considerably the action of the *infusion of senna leaves;* hence it is frequently given in the form of the *black draught.*

Oxalic acid has a strong resemblance to Epsom salt, and has frequently been mistaken for it; the former, however, may easily be known by its acid taste, when mixed with water, and by changing the color of blue paper to red. The antidotes against oxalic acid are powdered chalk or magnesia, followed by hot brandy and water, with small doses of laudanum.

ERGOT OF RYE.

This substance is principally used during labor, in order to assist in expelling the child; and there can be no doubt that it exerts a strong influence over the womb, when given in suitable doses, and in the cases in which its use is indicated; under other circumstances it would produce the very worst effects, and is only, therefore, of value in the hands of a physician of experience.

The ergot of rye is now well ascertained to be one of the most efficacious remedies in arresting the alarming discharges of blood from the womb, commonly called *floodings*; also in checking excessive menstruation; in gonorrhœa, the whites, and in all mucous discharges. But its most certain property is the power which it possesses of causing the womb to contract, and thereby expelling the child, and also the after-birth, in cases where it has been too long retained.

The average dose of the ergot, in powder, during labor, is twenty-four grains, in a little water, or with the addition of a glass of Sherry wine, which enables it to sit easier on the stomach; and it may be necessary to repeat the dose three or four times, at intervals of two or three hours. In cases of flooding, a drachm may be divided into six or eight doses, and given at longer or shorter intervals, according to the circumstances of the case. In whites, and other mucous discharges, the dose is from five to ten grains, three or four times a day; or twenty grains may be boiled, in eight ounces of water, and taken in the course of two days. The *tincture* is made by macerating two ounces of the ergot in a pint of proof spirit, for ten days. The dose, in cases of tedious labor or flooding, is two or three tea-spoonsful every twenty minutes. The *infusion*, in common use, is made with half a drachm of the ergot to half a pint of boiling water, and one half administered at a time.

The ergot of rye must be kept in a dry place; if exposed to moisture it becomes useless; the greater part of that found in the shops is completely inert.

ERYSIPELAS, ROSE, OR ST. ANTHONY'S FIRE.

Erysipelas is a peculiar inflammation of the skin, attended with fever, and frequently accompanied by elevations of the scarf-skin, resembling blisters. Sometimes it is a mild disorder, confined to a small portion of the skin, (*simple Erysipelas*;) sometimes the inflammation extends deeper than the skin, (*phlegmonous Erysipelas;*) while, in other cases it attacks the face, extends to the head, and is attended with very great danger to life.

Simple Erysipelas is generally ushered in by febrile symptoms, such as shivering, head-ache, hot skin, quick pulse, sickness at stomach, or vomiting; pains about the loins, and lassitude; but many of these symptoms are absent when the disease is to be very mild in its nature. In the part which is about to be attacked, the patient often experiences a feeling of heat, itching, or weight. On the second or third day the inflammation makes its appearance, and is attended with the ordinary signs, viz. redness, heat, pain, and a certain degree of swelling. The color of the inflamed part is commonly deep rose, of a shining aspect, and soon spreads uniformly over the surface; it disappears under pressure made by the finger, and immediately returns again when the pressure is removed. The pain is of a pungent, burning kind, and is often attended with itching, or a pricking sensation; it extends all over the inflamed surface; the swelling is not considerable, unless the disease be very severe; it is uniformly spread over the inflamed part, and is more easily detected by the finger than by the eye. About the third or fourth day blisters of various sizes sometimes appear on the inflamed skin, but in other cases the inflammatory symptoms begin to subside on the fourth and fifth days, and soon terminate, without any accident, in a separation of the scarf-skin or cuticle from the true skin underneath.

Phlegmonous Erysipelas is a more severe form of the complaint, which attacks the structures underneath the skin as well as the skin itself. It generally occurs in young, strong persons, and affects the limbs more frequently than any other part of the body. In phlegmonous erysipelas the fever is much more violent, and the pain more severe than in the former species; the swelling of the inflamed parts is more manifest, harder, and does not gradually disappear in the surrounding skin, but has more the feel of a tumor. When the disease has continued for four or five days, it may subside and disappear, as in cases of *simple* erysipelas; but it more frequently happens that, while the fever diminishes with the local pain and redness, the swelling of the part does not diminish in proportion; it becomes soft, continues to retain the impression of the finger, and in a few days matter is formed between the muscles and underneath the skin. In still more severe cases, the matter extends along the cellular tissue, in the direction of the muscles, and destroys the adjacent parts, which are discharged in dirty-looking shreds of mortified substance mixed with pus; and this discharge may continue for weeks, until it completely exhausts the patient.

Simple erysipelas usually terminates on the third or fourth day; when blisters form it may continue for eight, ten, or even fifteen days; and in cases of a severe kind, where matter forms, or the parts become mortified, the disease may last for several months. Erysipelas is commonly a mild disease, and terminates without any accident; but when attended by copious discharge of matter, or mortification of the cellular substance, it often ends in death. There is also much danger to be apprehended when it suddenly leaves any part (as the face, scalp, &c.) to attack the brain; or when it occurs in old persons of broken-down constitution, in drunkards, &c., or after severe injuries.

Causes.—Erysipelas is sometimes an epidemic malady, and prevails extensively in hospitals or crowded establishments. It frequently depends on some derangement of the digestive organs, a circumstance which is explained by the well known sympathy between the skin and mucous lining membrane of the stomach and bowels; in other cases, it is manifestly excited by some wound or injury of the skin. Finally, erysipelas prevails during the spring and autumn, and under certain conditions of the atmosphere, which favor its production.

Treatment.—Simple Erysipelas generally yields to mild remedies. When it is confined to a small portion of the skin, nothing more will be required than to keep the part perfectly quiet, and administer any mild purgative medicine once a day. But if the inflammation run high, and be attended with some fever, it will be necessary to commence the treatment by giving an *emetic*, and then acting upon the bowels by smart *purgatives*. When the heat and tension of the skin are great, a few *leeches* may be applied to the swollen part, and warm fomentations afterwards used. When the erysipelas has a tendency to spread from one part to another, great benefit will be derived by drawing a moistened piece of *lunar caustic* two or three times around the inflamed surface so as to bound the part completely; the caustic, when used in this way, often excites a kind of inflammation in the healthy skin, which prevents the spreading of the erysipelatous affection.

Phlegmonous Erysipelas, or that species which extends to the deep parts underneath the skin, generally requires a more active treatment. When the febrile attack is severe, and the patient young or of vigorous constitution, blood should be drawn from the arm to the extent of sixteen or twenty ounces, particularly if the erysipelas be seated in the face or scalp. Sometimes it may be necessary to repeat the bleeding, but this should only be done in cases of extreme danger, lest we reduce the patient's strength too much, and disable him from offering resistance to the suppuration or mortification which may afterwards come on. After the bleeding an *emetic*, composed of twenty-four grains of *ipecacuanha*, should be given; and when the face or head are attacked, the same dose should be repeated thrice a day, until a decided impression is made on the disease; or constant nausea, with occasional vomiting, may be kept up. If the bowels are not freely acted upon with ease, they are to be opened by *calomel* and *jalap*, the extract of colocynth, (six to ten grains,) or any other strong purgative medicine. The patient should abstain entirely from animal food; his drink should be cooling, and gentle perspiration may be excited by adding twenty grains of *nitre*, and one quarter of a grain of *tartar emetic* to each pint of cold fluid which the patient drinks. Should any symptoms of inflammation of the brain come on, they must be immediately attacked in the manner already described. (See *Brain, Inflammation of.*) It must be well understood, that these active measures are only suited for the first stage of phlegmonous erysipelas, when it occurs in strong and healthy persons.

When the inflammation proceeds, in spite of treatment, and ends in the formation of matter, a different course is to be pursued; incisions are to be made with a knife into the diseased parts, so as to give free vent to the matter, and the flow of blood and pus should be promoted by warm fomentations or poultices. When the matter and shreds of mortified cellular substance have been thus freely discharged, and the parts show an inclination to heal up, (which may be known by the diminished quantity of the matter and the contraction of the wound,) the healing may be assisted by carefully bandaging the limb or part, so as to keep up an even pressure. During the latter part of the treatment, the patient's strength must be supported by a nourishing diet, porter, and even wine, when the vital powers are extremely exhausted. The form of erysipelas which has been just described, often occurs in old people; in persons worn down by disease, in drunkards, and in those who have undergone privations of every kind. Notwithstanding the inflammatory nature of the disease, we must not employ blood-letting in cases of this description. If the patient have been accustomed to drink, he must be allowed to take small quantities of his usual cordial; the debilitated powers of the constitution are to be supported by a generous diet; the bowels are to be kept regular, by administering six or eight grains of *jalap*, daily, with three or four of the *carbonate of ammonia*, or by the following draught.

Camphor mixture, four ounces,
Carbonate of ammonia, four grains,
Compound tincture of rhubarb, half an ounce.

Should the suppuration be very abundant, and mortification have proceeded to any extent, then a liberal use of the remedies recommended under the head of mortification, (see *Mortification,*) must be had recourse to. As a local application, in cases of this kind, we may employ a lotion composed of one drachm of *acetate of lead*, and one drachm of *carbonate of ammonia*, dissolved in a pint of water. Various other applications, such as flour, &c. have been recommended for erysipelas, in all its stages; but none seems to possess any greater efficacy than tepid water, applied with lint, covered by a piece of oiled silk.

INFLAMMATION OF THE EYE.

The eye is subject to a great variety of affections, and several forms of inflammatory disease ; it will, however, be necessary for us to mention only the most common disorders. These are acute and chronic inflammations of the eye, purulent inflammation, and finally, the low or scrofulous inflammation.

ACUTE INFLAMMATION OF THE EYE.

Acute ophthalmia, (first form,) is easily recognized by the following symptoms. Pain in the globe of the eye, with a sensation of sand or small particles between the eye-lids ; redness of the white of the eye, which is often of a bright scarlet color, but occasionally presents a dull red tinge ; head-ache, uneasiness on exposure to light ; discharge of tears or of mucous fluid from the membrane which covers the eye and eye-lid, &c. These symptoms are not usually attended with any fever or disturbance of the general health ; but when the inflammation runs very high, it may produce some febrile heat of skin and quickness of pulse. This is by far the most common disease of the eye in grown-up persons, and is generally caused by exposure of the face to cold and wet, by accidents, &c. It sometimes, also, prevails epidemically, and attacks numbers of people at the same time, and in the same place. The seat of this inflammation is the *conjunctiva*, or fine lining membrane of the eye-ball and eye-lids, which is continued over these parts from the skin.

Sometimes the inflammation attacks more deep-seated parts, (second form,) and then it is connected with the fibrous coat of the eye. This affection is not so readily detected as the former one, because the inflamed parts are more concealed from view ; it may be known by the severe pain, augmented towards evening and during the night, and extending along the eyebrows to the temples or cheeks ; by the dimness of sight which always accompanies it, and particularly by the band of inflamed vessels which run in straight lines towards the edge of the cornea, where they form a circle of a dull red or pinkish appearance. Both eyes are seldom attacked by this form at once, yet it is generally attended by some fever ; dry, hot skin ; furred tongue, derangement of the digestive organs, and disturbance of the general health.

In many cases of acute ophthalmia, the superficial and deep-seated structures of the eye are attacked at the same time, (third form,) the surface of the eye is red, from collection of blood in the vessels of the conjunctiva, and underneath them may be seen the circular band of pink vessels which surrounds the cornea, and has its seat in the sclerotic or fibrous coat of the eye-ball. This form of the disease is more severe than either of the preceding varieties, and often gives rise to an ulcer of the cornea, or, what is still worse, to a collection of matter in the substance of the cornea itself. It attacks old people much more frequently than adults or children.

Ophthalmia is often a mild disease, and easily checked by remedies; but sometimes the inflammation of the eye runs high, and continues for several days or weeks; hence a very great variety in the duration or degree of this affection in different cases. When the inflammation has been neglected from the commencement, or improperly treated, many bad effects are apt to follow. Thus the lining membrane of the eye-lids, (particularly the upper one,) may become rough, and by rubbing on the cornea, occasion a dulness of that part, which materially interferes with the clearness of sight. In other cases, when the deep-seated parts of the eye are affected, the inflammation extends to the cornea, an ulcer forms and heals up leaving a dull spot, like a little cloud, behind it; or matter may form in the substance of the cornea, and the destruction of the internal parts go on until the eye-ball burst, the humors of the eye are discharged, and the power of vision is more or less completely destroyed.

Treatment.—Acute ophthalmy is a purely inflammatory affection, which generally yields easily to proper remedies. In the *first form* of this disease, if the pain, redness, and febrile symptoms be severe, it may be necessary to apply *leeches* to the temples, or even draw twelve or sixteen ounces of blood from the arm; but, in a very great majority of cases, the following local treatment will be sufficient to relieve the symptoms, and speedily bring about a cure. Four grains of *nitrate of silver* (*lunar caustic*) are to be dissolved in an ounce of spring water, or in rose-water; and a drop of this solution is to be applied two or three times a day, by means of a camel's-hair brush, to the surface of the eye. By this application the symptoms are usually relieved for a few hours, when they return again, and are again assuaged by the same means. During the day the following tepid eye-wash should be constantly applied over the eye-lids, by means of some lint or linen rag, completely covered by a piece of oiled silk.

Corrosive sublimate, one grain,
Muriate of ammonia, six grains,
Wine of opium, two drachms,
Water, eight ounces.

Corrosive sublimate, one half grain,
Vinous tincture of opium, one drachm,
Rose-water, four ounces.

Or, instead of lotions, the eye-ball may be frequently syringed with a weak solution of *alum*, (two grains to the ounce,) or *vinegar* and water; at night the edges of the eye-lids are to be smeared with a small portion of *citrine ointment*, or the following *red precipitate ointment*.

Red precipitate, twelve grains,

Fresh butter, (that is, butter not salted,) one ounce. Reduce the precipitate to a very fine powder, and mix it carefully with the butter.

Sometimes this ointment will produce a great deal of irritation, when the strength should be reduced by adding half an ounce of pure butter, or by diminishing the mercury to eight grains. At the commencement of the disease the bowels should be cleared out by two or three active purges; and, during the treatment, an occasional dose of *Epsom salts*, with the *liquor of the acetate of ammonia*, should be given, so as to produce two evacuations, at least, every day.

In the *second* and *third* varieties of ophthalmy, where the deep-seated textures of the eye are involved, the treatment must be of a more active kind. The best practitioners advise the abstraction of blood (ten to twenty ounces) from the arm, according to the strength of the patient, and the severity of the disease. After general bleeding, it will be necessary to apply leeches to the temples, or over the eye-brows, and to repeat them two or three times, until the pain and inflammatory condition of the eye be manifestly relieved. Dr. Mackenzie and Mr. Lawrence both recommend the use of *calomel and opium*, after blood-letting. Four grains of calomel, with half a grain of opium, may be given every night, until the mouth is affected by the mercury; or, if the patient be not strong, five grains of *mercury and chalk*, with ten grains of *Dover's powder*, should be administered twice a day. To allay the distressing pain, the eye-ball may be frequently fomented with a warm decoction of poppy-heads; or, if no relief be obtained from this, the forehead and temples should be rubbed with an ounce of warm *laudanum*, containing one drachm of the *extract of belladonna*. Laxative medicines must be given during the course of the disease, and a tendency to perspiration excited by warm drinks, and by placing the feet every night in a tub of warm water, rendered stimulant by some powdered mustard or ashes. To remove the conjunctival inflammation which accompanies the *third form* of ophthalmy, a solution of *nitrate of silver* (two or three grains to the ounce of water) should be dropped into the eye, once a day, and the *red precipitate* ointment is to be smeared along the edges of the eye-lids, at bed-time. We have already mentioned that, during the progress of acute ophthalmia, an ulcer may form on the cornea, or matter may be thrown out in its substance. Some surgeons advise us to evacuate this matter by the lancet, but it will be more prudent for persons who have not received a medical education, to leave the case to nature, which often effects a cure beyond our most sanguine expectations. The safest way of treating *ulcer* of the cornea, is to touch it once a day with a camel's hair pencil, moistened in a solution of *lunar caustic*, (six grains to the ounce of water.) The specks on the cornea, which frequently remain after the ulcer is healed up, often disappear of their own accord, but the process may be hastened by the use of a stimulating fluid, (two grains of lunar caustic to the ounce of water,) or by blowing into the eye with a quill, a small portion of a fine powder, composed of thirty grains of *red precipitate*, and half an ounce of white sugar.

PURULENT INFLAMMATION OF THE EYE.

Under this head may be included the Egyptian ophthalmy, gonorrhœal ophthalmy, and the purulent ophthalmy of new-born children. The disease is essentially the same as the one which we have just described, differing from it only in being much more severe, and being excited by the application of some contagious matter to the eye-ball. The inflammatory symptoms in purulent ophthalmy are always violent; the inflammation soon extends over the lining membrane of the eye-lids, and terminates, within a very short time, in a copious discharge of yellow matter, (*pus*,) whence the name *purulent* ophthalmy is derived. The eye-lids soon begin to swell, in this form of the disease, and completely close over the eye-ball, so as to render it very difficult to examine the state of the eye. This is particularly the case in the purulent ophthalmy of infants. From the rapid and severe nature of the inflammation, the membrane of the conjunctiva soon becomes thickened, and is raised up from the eye-ball by a net-work of vessels, distended with red blood, or spots of extravasated blood may be seen underneath the lining membrane of the eye. The secretion of purulent matter may go on for ten or fourteen days, or even longer, after which the discharge becomes more thin; the blood-red appearance of the eye-ball diminishes, the swollen state of the eye-lids gradually subsides, and with it the discharge of pus, until the disease at length entirely disappears. But, in many cases, the inflammation extends to the deep parts of the eye; the cornea bursts, and vision is not only lost, but the patient's countenance is disfigured, by the more or less complete destruction of the eye-ball, and closure of the eye-lid over it.

In the early stage of purulent ophthalmy, the constitution is not much disturbed; but we must not be deceived by this fallacious appearance; as the disease advances and extends to the deep parts of the eye, it is attended by severe pain in the eye-ball, coming on in paroxysms; frequent pulse, and loss of sleep at night; but the skin is seldom hot, nor do the general symptoms bear any proportion to the severity of the local disease.

Gonorrhœal Ophthalmy arises from the contact of gonorrhœal matter with the eye, and is exactly similar in its course and symptoms to common purulent inflammation of the organ. It is a very severe disease, and often destroys the sight, beyond recovery, within forty-eight hours. Out of fourteen cases related by Mr. Lawrence, complete loss of sight took place in nine; while in the remaining five, the power of vision was partially injured by the consequences of deep-seated inflammation.

The purulent ophthalmy of infants is generally caused during the birth of the child, by the application to the infant's eye of some matter, which proceeds from the genital parts of its mother. About the third day after birth, the child's eye-lids are observed to be glued together by thick matter; soon afterwards yellow pus, in great quantities, flows from between the eye-lids, which are very much swollen, and of a bright red color; the eyes are very sensible to light, and in order to avoid its irritation, the child keeps the eye-lids constantly shut, and offers the most obstinate resistance when we endeavor to separate them. As the disease goes on, the whole surface of the eye is covered with a net-work of bright red vessels, concealed, however, by a thick coat of matter, and if active measures have not been adopted, the eye-ball bursts, or sight is very considerably damaged, within ten or twelve days.

Treatment.—The principles of treatment for purulent ophthalmy, are the same as for severe inflammation of the eye; we shall, therefore, only add here, certain directions, which are rendered necesssary by the peculiar nature of the inflammation. General and local blood-letting, the use of purgatives and sudorifics, as before described, will serve to diminish the inflammation; but it can only be subdued by local treatment. A most important point is to clean away the yellow matter, frequently and completely, from the surface of the eye, by injecting with a syringe the tepid solution of *corrosive sublimate*, (see page 414.) The best lotion which can be used, is a solution of *lunar caustic*, (four grains in an ounce of water.) When the pain is considerable, the eye must be frequently fomented with a warm decoction of poppy-heads, and the eye-lids may be prevented from sticking together by the use of *red precipitate* or *citrine* ointment. From the commencement of the disease, it will be proper to apply blisters behind the ears, or to the nape of the neck.

As there is some reason to believe that the purulent ophthalmy of infants is contracted from the application of certain matters to the eye during its birth, it will always be prudent to wash the child's eye carefully with tepid water, as soon as it is removed from the mother. In the very early stages of the disease, it may be necessary to apply one or two leeches to the temples; but most cases, unless they have gone too far before we see them, can be cured without blood-letting, by carefully cleaning the eye; by the constant use of the *lunar caustic* lotion, as above directed, by blisters behind the ears, and by occasional doses of castor-oil, or calomel and rhubarb.

Scrofulous Ophthalmy is a slow inflammation of the eye, which may continue for months or years, in persons of a scrofulous constitution. It is generally attended by some change in the cornea, which injures the sight. The treatment must, in the first instance, be directed to the improvement of the general health, (see *Scrofula.*) When there is much pain, a few leeches may be applied to the temples, and irritation should be constantly kept up behind the ears, on the temples or neck, by means of blisters or the tartar emetic ointment. When the acute symptoms have been thus relieved, the *wine of opium* may be applied once a day to the eye, or a small portion (not larger than a split pea) of the *red precipitate ointment*, (see recipe next preceding,) may be introduced daily between the lids, and then spread over the eye-ball, by gently rubbing the upper eyelid over the surface of the eye.

Chronic Ophthalmy.—It often happens that after the acute symptoms have been subdued, the disease continues in a milder, yet obstinate form; this is termed *chronic* ophthalmy. The remedies most suited for this condition of the eye, are astringent or stimulating lotions, blisters, gentle purgatives, and when the constitution is weakened, mild tonic medicines. Various astringent lotions may be employed; the *wine of opium*, either pure, or reduced by adding one drachm of water to two drachms of the wine, is very generally used. The following lotions may also be used with advantage.

Powdered alum, two, to four or six grains,
Water, one ounce.

Sulphate of zinc, two grains,
Solution of acetate of lead, four drops,
Camphorated spirit of wine, twelve drops,
Water, one ounce. To be applied frequently to the eyes, by means of a syringe, or linen rag, dipped in the lotion.

Some practitioners advise the use of *blue pill*, as an alterative; the tonic which is most generally employed is the *sulphate of quinine.* During the treatment of chronic ophthalmy, the bowels are to be kept open by gentle laxatives, such as Epsom salts, occasional doses of rhubarb, with carbonate of potass, (five grains,) and when the tongue is foul, and the digestive organs deranged, it will be useful to administer, occasionally, an emetic of *ipecacuanha*, (twenty to thirty grains.)

FAINTING OR SWOONING.

Fainting is, for the most part, a symptom of some other affection, rather than a disease in itself. It often accompanies disease of the heart, and may be brought on by any very painful disorder; by loss of blood, excessive discharges or evacuations; debility, however induced, and by sudden and violent mental emotions. Females and delicate people are most subject to fainting; in the former it is often brought on by wearing stays too tightly laced, and by sitting with the back to the fire during meals. Some people, from peculiarity of habit, swoon on seeing blood or any disagreeable object; in others, the same effect is produced by pungent or disgusting smells.

Fainting, in connexion with hysterical affections, is never attended with danger; but when it arises from obstruction in the heart or great blood-vessels, at the commencement, or during the course of fevers, or from extreme debility, it is to be viewed in a more serious light, and its source should be ascertained. This affection, in fact, is only to be dreaded when the cause which gives rise to it is of a dangerous nature. A common fainting fit is usually of very little consequence, and often occurs in people otherwise in good health.

Treatment.—Nature alone, in ordinary cases, is able to effect restoration in a few minutes, if the patient be placed in the horizontal position, which is the first thing to be done to arrest the fit. Removing the patient to a cooler apartment, or exposing him to a current of cold air, sprinkling cold water on the face and hands, rubbing the left side of the chest with *eau de cologne*, or any other stimulating fluid, and applying *hartshorn* or *aromatic vinegar* to the nostrils, are the simple means usually resorted to for the purpose of rousing the individual. Internally, a little brandy and water, or a tea-spoonful of *æther*, may be given as soon as he is able to swallow.

In severe and protracted fainting-fits, consequent on flooding after delivery, it becomes absolutely necessary to administer brandy or wine, and laudanum, in small and frequently repeated doses, in order to restore animation, and prevent the recurrence of the fits. Fainting, in such cases, is not unattended with danger, and the frequent renewal of the fits might soon prove fatal; the dread, therefore, of increasing the flooding by the stimulating action of these remedies on the system, ought not to prevent their use, since it is obvious that to prevent the patient sinking from exhaustion, her strength should be supported at all hazards.

FLOODING.

By flooding we here understand those sudden and copious discharges of blood from the womb, which take place soon after the birth of the child. Flooding may occur under two different circumstances, which it is of importance to distinguish; either the after-birth (*placenta*) remains in the womb, and is the cause of the bleeding, or the after-birth has been expelled, and the flooding depends on want of proper contraction in the womb, to close up the open mouths of its vessels.

In the first case, that is, when the after-birth remains in the womb, we can only stop the bleeding by removing the after-birth. This operation, however, must not be attempted without due consideration. When the woman has been reduced by the loss of blood to a very dangerous state, shown by the constant fainting, absence of the pulse, and coldness of the skin, it would be improper to remove the clots of blood in the genital parts, or disturb the patient in any way, lest the bleeding return, and quench the feeble spark of life which remains. But when the patient has rallied under the use of small quantities of brandy and other cordials, or when the flooding has not been extremely copious, then an effort may be made to remove the after-birth. This is to be done by *very gently* pulling the navel-string, or by rubbing the lower part of the belly with the hand; by pouring cold water on the belly, and by giving the *ergot of rye;* three or four tea-spoonsful of the tincture, or half a drachm of the powdered ergot, may be administered every twenty minutes, during *one* hour, until the desired effect is produced. Should these remedies fail, a silk pocket handkerchief should be passed into the vagina, and gradually pushed up against the womb, until the genital parts are completely filled; this done, medical assistance must be immediately sought, for the only way of stopping the bleeding effectually is to pass the hand into the womb, and bring away the after-birth.

Flooding may occur, however, even when the after-birth has been entirely expelled. Here we must endeavor to make the womb contract, by rubbing the lower part of the belly smartly with the hand; by applying very cold cloths over the same part; or by placing a firm pad over the womb, and then binding it round the body with a linen or flannel bandage, as tightly as the woman can bear it with comfort. The *ergot of rye* must be given at the same time, in the doses which we have just mentioned.

In some cases the flooding is internal; that is, the blood continues to be discharged into the hollow of the womb, where it collects in large quantities, and does not find its way out through the genital parts. This is a very dangerous form of flooding, because, as there is no external appearance of blood, it might easily be supposed that the woman was not suffering from the disease. The existence of internal flooding may be suspected when the womb can be distinctly felt rising for some height at the bottom of the belly; and when, at the same time, the patient complains of ringing in the ears, giddiness, and an inclination to vomit. If the face now become suddenly pale, the pulse sink, the skin become cold, and the woman frequently faint, no time is to be lost; the means before described are to be employed, and should they fail, the hand must be passed up into the womb, in order to remove the clots of blood, and excite the womb to contract upon it.

As a general precaution during the treatment of flooding, we should mention that the patient must be kept perfectly quiet, in a cool room, and that she should never be suddenly raised from the lying posture, or be permitted to make any bodily exertion whatever.

The management of the patient, after flooding has ceased, requires very great care and caution. When the loss of blood has been excessive, the woman is reduced to the lowest state; complains of a constant feeling of sinking, and is extremely restless and depressed in spirits. Notwithstanding her desire to change posture, she must be kept at rest; forty drops of *laudanum*, or two grains of *opium*, are to be given, and, if necessary, repeated in the course of an hour. When a little sleep has been thus procured, some light nourishment may be allowed, such as beef-tea or jelly, given in small quantities and frequently repeated; and when the stomach begins to recover itself, the diet may be cautiously improved. Should the bowels be confined, the following draught will be found useful.

Rhubarb, ten grains,
Sulphate of potass, half a drachm,
Peppermint water, ten drachms. Make a draught; to be repeated in four hours, if necessary

Diarrhœa, or looseness of bowels, may be checked by the *chalk mixture, with opium*, or any other mild astringent.

One of the most frequent and distressing effects of severe flooding is *head-ache*, which often lasts for several weeks, in spite of our efforts to relieve it. The head-ache, in this instance, depends upon loss of blood, and should never be treated by leeches. Mild nourishment, evaporating lotions, (spirit of sulphuric æther, one ounce; water, one ounce; mix,) and *Fowler's solution of arsenic*, (six drops thrice a day,) are the means which we have found most serviceable in this affection.

FOXGLOVE. (*Digitalis.*)

Foxglove is one of the most beautiful and useful of our indigenous plants. It grows on sandy and gravelly banks, in woods and uncultivated places, and flowers in June and July.

Foxglove is directly sedative, and possesses the peculiar power of depressing the circulation of the blood; when given in full doses, it reduces the pulse from seventy-five to forty-five or forty beats in a minute, rendering it at the same time feeble, and frequently intermitting. If given in too large doses, it produces giddiness, dimness of sight, nausea, faintness; and then vomiting, swooning, convulsions, stupor, and death.

From the influence which this remedy exerts in lowering the action of the heart, it is of great service in enlargement, and other affections of that organ attended with increased action; and is used on the same principle at the commencement of pulmonary consumption, in spitting of blood, bleeding from the nose, and in excessive discharges of the menstrual fluid.

In dropsy, there is no diuretic medicine so powerful and certain in its action as foxglove, more especially in dropsy of the chest; and it is much used in all inflammatory affections, after the circulation has been to a certain extent diminished by blood-letting.

Though there are few remedies of more value, when judiciously used, than this, yet it is by no means well adapted for popular use, since, from the irregularity of its action, and the difficulty in finding the preparations of the shops always of an uniform strength, it requires to be used with much caution, and with strict attention to the rules laid down for its administration. In a practical point of view, the principal thing to be attended to in administering digitalis is to watch its action carefully, and, as soon as the pulse begins to fall, or any of the lowering symptoms already noticed manifest themselves, the remedy must either be discontinued entirely for a short time, or given in diminished doses. From neglect in not attending to the state of the patient, while under the influence of foxglove, its lowering action may be induced to such an extent as to require the use of warm brandy and water, æther, laudanum, ammonia, or other strong stimulants, in small and frequently repeated doses.

The *powder* of foxglove should be kept in opaque bottles, and ought not to be used if deprived of the green color and peculiar odor of the fresh plant. The dose is one grain every five or six hours, or oftener, until it begin to act on the system, and then the quantity must be gradually diminished, or given at longer intervals. The dose of the *tincture* is ten drops, gradually increased to thirty, three times a day; and of the *infusion*, one or two table-spoonsful may be taken twice a day in a little cold water.

GAMBOGE.

Gamboge is a gum resin, brought principally from China. The species of the tree from which it is produced is not yet accurately ascertained.

This substance is powerfully purgative, and was formerly much used to expel the tape-worm. It causes watery evacuations, and is, therefore, sometimes given in dropsy along with cream of tartar, or in combination with the sulphate of potash.

The dose, when taken alone, is from two to six grains, mixed with a little syrup or honey, and a few grains of powdered cinnamon. Gamboge is usually taken in the following form. "Gamboge, powdered, a scruple; aloes, powdered, a scruple and a half; ginger, powdered, half a scruple; Castile soap, two scruples. Mix well together, and divide into five grain pills." These are the *compound gamboge pills* of the London pharmacopœia, which, in doses of from two to four, act very effectually in opening the bowels.

GENTIAN.

This plant grows in great abundance in Switzerland and Germany; its root is highly esteemed throughout Europe, as one of the most powerful and most useful of the bitter tonics. This remedy is very serviceable in indigestion, in general debility, and also in tedious convalescence, particularly in those cases in which the patients have a pale and waxy appearance of countenance, with loss of appetite, slow digestion, weak pulse, and a tendency to swelling of the ancles at bed-time. In scrofulous cases, where strengthening medicines are indicated, there is no better tonic than gentian.

The dose of the *infusion of gentian* is two table-spoonsful, or a wine-glassful, twice a day. Of the *extract*, ten grains to half a drachm, twice or thrice a day. Of the *tincture*, a tea-spoonful in a little cold water. These preparations form the basis of nearly all stomachic or tonic remedies.

GLAUBER'S SALT. (*Sulphate of Soda.*)

It is a mild and sure purgative, in doses of from two drachms to an ounce and a half, and was formerly much in use, but at present Epsom salts are almost invariably preferred.

GONORRHŒA, (*or Clap.*)

Gonorrhœa consists in a discharge of yellow matter from the genital parts of the male or female, excited, in all cases, by the application of a contagious material from one individual to another. In males the discharge comes from the inside of the urethra or passage to the bladder; in females, from any part of the membrane which lines the genital parts. The infectious matter which excites gonorrhœa is generally communicated during unclean coition; but it has been proved, beyond all doubt, that a discharge exactly similar to that of gonorrhœa may, under certain circumstances, be produced by connexion with a woman whose genital parts are perfectly sound. Gonorrhœa may commence at any time, after impure connexion, but usually begins from the third to the seventh day, by an itching at the orifice of the urethra, which, if examined, appears to be unusually red and a little swollen. Soon afterwards a slight running takes place from the urethra, of a whitish fluid, and this gradually increases in quantity, while at the same time it becomes more thick, until at last thick yellow matter issues from the canal. The disease is now fully established, and gives rise to pain during the passage of the urine, (*scalding;*) sometimes this pain is extremely severe, but, in other cases, the patient scarcely feels any uneasiness of the kind during the whole course of the disease. In ordinary cases of gonorrhœa the peculiar inflammation of the urethra, which constitutes the disease, does not extend up the passage beyond two inches from its orifice; when the inflammation is acute, or passes further up, the scalding is very severe, the under surface of the urinary passage becomes hard, feels like a cord, and is very painful to the touch; the stream of urine is diminished from the swelling of the parts which surround the urinary passage, and blood is often discharged with the urine, from the bursting of small inflamed blood-vessels. The patient should not be alarmed at this mixture of blood in his urine, even when the quantity of blood is pretty considerable. When the inflammation or irritation extends from the urinary passage to the spongy substance which surrounds it, a very painful affection of the genital organ, called *chordee*, is excited; and when the irritation reaches the bladder, the patient cannot retain his urine for a moment, but is compelled to empty the bladder as soon as ever the desire to make water is felt; if he attempt to keep in the urine, an intolerable pain is produced in the bladder, and in the extremity of the genital organ, exactly similar to what happens during a fit of the stone.

Gonorrhœa is often attended with two unpleasant consequences, which arise from the irritation extending to the glands in the groin, or to the testicles. In the first case a hard painful swelling (*sympathetic bubo*) appears in one of the groins; in the second case, the inflammation extends along the seminal ducts down to the testicle, which becomes swollen and extremely painful to the touch, (*swelled testicle.*)

When a proper attention is not paid to cleanliness during the course of gonorrhœa, or the extremity of the genital organ is unusually irritable, the discharge of matter is apt to produce small sores on the *nut*, or end of the penis, and to cause inflammation of the foreskin; if this state be neglected, the foreskin sometimes swells to such a degree, that it cannot be drawn back over the nut, or, what is still more dangerous, when the foreskin has been drawn back, it contracts, like a tight cord, round the end of the genital organ, cannot be pulled forward, and sometimes gives rise to mortification of the part.

We have as yet described gonorrhœa only as it exists in men; when women are affected, the disease is generally more mild, and not so apt to irritate the bladder, or to produce swelling in the glands of the groin. The pain is commonly slight, and soon disappears; the scalding, also, is more frequently absent altogether, and the running soon terminates in a discharge of matter which bears a close resemblance to the whites, or *fluor albus.*

The time during which a gonorrhœa lasts is extremely variable; if left to itself, the inflammation usually subsides in four or five weeks, and turns into a chronic discharge (*gleet*) of slimy mucus from the urinary passage, without any pain, scalding, or unpleasant symptom; but it will always be prudent to endeavor to cut short the disease, not so much on account of any danger attending it, as of the disagreeable consequences to which it often gives rise.

Treatment.—Gonorrhœa may often be prevented by certain attentions to cleanliness after connexion; and whenever any suspicion exists, the parts should be carefully washed immediately after *coitus*, with soap and water, or still better, with a strong solution of alum, (a piece as large as a walnut, in a wine-glassful of water,) this latter substance possesses the valuable property of completely destroying all morbid animal secretions. A small quantity of the alum solution should be injected with a syringe between the lips of the urinary passage, (but not sent up higher than an inch,) in all cases where we have reason to fear that an impure connexion may have taken place. When the running is completely established, we must endeavor to alter the peculiar inflammation of the urinary passage upon which it depends; this may be done by the use of external and internal remedies. If the pain and inflammation be very severe, it will be necessary to subdue them by applying *six or eight leeches* along the lower part of the urethra; by covering the organ with lint moistened in *Goulard's lotion;* by opening the bowels with *castor-oil;* and by compelling the patient to drink large quantities of mild diluent fluids, such as linseed tea, or a decoction of marshmallow. When the inflammation has been brought down by these means, or when it has been moderate from the commencement, we may begin to give, at once, either *cubebs*, or the *balsam of copaiva.* A drachm of the powdered *cubebs* may be administered thrice a day, in a wine-glassful of wine and water. The patient should abstain as much as possible from drinks during its administration. When *copaiva* is employed, from twenty to thirty drops may be given three times a day, on a bit of sugar, (see *Copaiva*,) or in the following manner, as recommended by Sir A. Cooper.

Balsam of copaiva, one ounce,
Mucilage of gum arabic, one ounce,
Camphor mixture, four ounces. A table-spoonful to be taken night and morning.

To conceal the unpleasant taste of the balsam, it may be rubbed up with magnesia into a kind of soap, and then made into pills; the dose then being from twelve to twenty grains. Sir A. Cooper has found advantage in combining the cubebs and copaiva together, thus,

Balsam of copaiva, one ounce,
Powdered cubebs, two drachms,
Mucilage of gum arabic, one ounce,
Camphor mixture, four ounces. A table-spoonful twice or three times a day.

The *copaiva* or *cubebs* may be continued for eight or ten days, beyond which it would be useless to employ them, if they do not produce any good effects. We must, then, have recourse to injections, which are to be thrown into the urinary passage by means of a small syringe. People have often a dislike to use injections, lest the fluid pass up into the bladder. There is no fear that this will happen. The sides of the urinary passage lie in close contact with one another, and fluid cannot be driven into the bladder with the ordinary syringe; besides, we should remember that in no case is it necessary to push the injection with force; if it pass for a couple of inches into the urinary canal this will be sufficient. The following substances may be used for injections.

Sulphate of zinc, six grains,
Goulard water, four ounces.

Sulphate of copper, (blue vitriol,) one grain,
Rose-water, two ounces.

Nitrate of silver, five grains,
Water one ounce.

The fluid is to be injected two or three times a day into the orifice of the urinary passage; one injection may be substituted for another, and the strength may be gradually increased by adding half a grain, or even a grain, of each substance to the water. As a general rule, it will be prudent not to commence injections before the disease has lasted for ten or twelve days; but, under urgent circumstances, it may sometimes be cut short by injecting the *nitrate of silver*, (ten grains to the ounce,) as soon as the pain and scalding are discovered. Mr. Thomas Evans, of London, has assured us, that he is in the habit of completely stopping gonorrhœa, in its first stage, by making the patient inject any mild fluid, as cold water, rose-water, or a weak solution of alum, (two grains to the ounce,) constantly during the day. The patient must lie in bed, and throw up the fluid every *fifteen* minutes, or *half hour* at least. The constant injections prevent the gonorrhœal inflammation from gaining ground, and the disease is stopped within twenty-four hours. Gonorrhœa in women may be safely treated with the same injections from the beginning; the quantity of each substance used must, however, be doubled.

We have now to describe the treatment applicable to the different accidents which may arise during the course of gonorrhœa. Severe inflammation must be subdued by leeches, purgatives, and cold lotions. When the matter accumulates underneath the foreskin, the parts should be washed two or three times a day in tepid water, and if there be any small sores about the root of the foreskin, these should be dressed with a small quantity of *zinc ointment* on a piece of lint. If the bleeding from the urinary passage be copious, it may be arrested by ice-cold lotions to the genital organ and cooling drinks. The *chordee*, and painful erections, which almost always attend severe gonorrhœa, may be relieved by the following draught, taken before going to bed.

Extract of hemlock, five grains,
Liquor of potash, twenty drops,
Camphor mixture, four ounces.

Or a pill, containing one grain and a half of *opium*, with five of *camphor*, may be taken at bed-time, and repeated, if necessary, in the morning. It has also been found beneficial to rub the under surface of the genital organ with an ointment composed of equal parts of fresh *belladonna* leaves (powdered) and lard. When the effects of the chordee are long in going off, we must rub in a small quantity of the *camphorated mercurial ointment* every night, along the surface or sides of the genital organ. When the irritation extends to the bladder, and gives rise to a frequent desire of making water, with pain, a draught containing six grains of the extracts of *hyosciamus*, or of *hemlock*, in four ounces of *camphor mixture*, must be taken at night; or two grains of *opium* may be taken in pill, and an ounce of *castor-oil* administered in the morning, to prevent costiveness. When the glands in the groin begin to swell and are painful, six to ten *leeches* should be applied to the painful part; the patient should endeavor to keep as quiet as possible, and should constantly apply cold *Goulard water* to the swelling, with lint covered by oiled silk. The extension of the inflammation to the testicle produces a very painful affection; the testicle swells, the skin which covers it becomes red, and a constant pain shoots up from the testicle to the groin. This complaint may often be prevented by wearing a *suspensory* bandage to support the testicle, from the commencement of the gonorrhœa; but when it has seized on the part, we should at once apply ten to twenty *leeches* to the surface of the inflamed testicle, and repeat the leeches a second time if the pain continue unabated. The bowels must be freely acted on by *calomel* and *jalap*, or the *extract of colocynth*, followed by the *black draught*, in the morning. The testicles must be supported by a suspensory bandage or a silk handkerchief, and a lotion composed of *Goulard water*, or one ounce of spirits of wine, in five ounces of water, should be constantly applied to the inflamed parts. To relieve the pain at night, which is sometimes very severe, fifteen grains of *Dover's powder* may be given, with two grains of *calomel*, after the inflammation has been brought down by leeches and purging.

GLEET.

When gonorrhœa has continued for some time, and the pain has completely disappeared, the discharge gradually loses its yellow color, becomes greenish, and finally clear; the constant running of this clear discharge from the urinary passage is called a *gleet;* but any excess of diet, &c., is apt to bring back again the greenish or even yellowish running. Gleet is not attended with much personal inconvenience, and is often neglected on this account, and allowed to continue for many months or years. When it has lasted for a long time, it is frequently difficult to cure it by any treatment which we may adopt. Sir A. Cooper recommends the *balsam of copaiva* in the following manner.

Balsam of copaiva, one drachm,
Spirit of nitric æther, two drachms,
Mucilage of gum-arabic, one ounce,
Camphor mixture, four ounces. A table-spoonful to be taken two or three times a day.

The powdered *cubebs* may also be tried, in the dose of two drachms, three times a day. Either of these medicines should be continued for two or three weeks; but they often fail to check the running, and we must have recourse to injections, which, after all, are the most sure and efficacious remedies. On grain of *corrosive sublimate*, dissolved in twelve ounces of water, makes an excellent injection to begin with, and the strength may be gradually increased to two grains; or any of the fluids before mentioned, (page 426,) may be used. When they produce a sense of smarting along the urinary passage, they are strong enough. The injection should be thrown up twice or thrice a day. Some benefit will also be derived from frequently bathing the genital organs with cold water; and when the patient is weak, or of feeble constitution, change of air, together with a course of *steel* medicines, (ten drops of tincture of steel, or ten grains of the rust of iron, thrice a day,) may be had recourse to.

GOUT.

We shall make only two divisions of gout, the regular, or acute; and the irregular, or chronic gout.

REGULAR, OR ACUTE GOUT.

An attack of gout is invariably preceded by certain symptoms, which, though not observed in every case, always take place in a more or less marked manner. These premonitory symptoms vary greatly in different individuals, but are, in all cases, connected with a deranged state of the digestive organs; the tongue is foul, or much redder than natural; there is heartburn, sometimes belching of sour fluid, and perhaps vomiting; the patient feels sleepy and uncomfortable after eating, is frequently low-spirited, and sleeps badly. The feet are sometimes very cold, at other times distressingly hot; a pricking, darting, or numb sensation is felt occasionally in the legs and feet, particularly in the foot which is about to be attacked; and, some hours previous to the paroxysm, there are generally flushes of heat alternating with shivering. Indeed, a long train of warning symptoms might be easily enumerated, but they are all so irregular, and vary so much in different individuals, that we see no necessity for noticing them further. It is worthy of remark, however, that every person subject to gout experiences some particular sensation or symptom which serves to announce the approach of an attack.

At length, the first paroxysm declares itself, as in asthma, about two or three o'clock in the morning. The patient awakes suddenly, with a violent throbbing pain, generally at the ball of one of the great toes, though sometimes at the heel, instep, or ancle. The pain goes on increasing, accompanied with a sensation of burning heat, weight, and stiffness of the part, and severe shooting pains in the limb. This local suffering is at first attended with rigors or shivering, which is soon replaced by fever and great restlessness. In mild cases, the pain, after a few hours, abates a little, and gentle perspiration breaks out; but, in general, it continues without any amelioration until about midnight, and then begins to diminish until towards two or three o'clock in the morning, when the patient falls asleep, after twenty-four hours' severe suffering. On awaking, he finds the part very tender, red, shining, and swollen, with considerable distension of the veins of the foot. The following night, the pain and fever are renewed, and again relieved in the morning; this goes on regularly during a longer or shorter period, each paroxysm being less severe than the preceding one; until, at last, the attack terminates entirely. The part remains swelled for some days afterwards; there is severe itching, and the skin falls off in scales; the patient then feels better, in every respect, than before the attack.

The first attacks of gout seldom continue beyond three or four days, and are confined to one foot; but when the disease has gone on for some time, the inflammation, when declining in one foot, suddenly attacks the other, and frequently the fingers, wrists, or knees. Then the acute gnawing pain, the shivering, and subsequent fever; the swelling and redness of the part, and all the symptoms, as above described, recommence. At the expiration of three or four days, the pain is again relieved; but the attack does not end here. A similar fit supervenes, affecting the same or another joint, or, perhaps, several parts simultaneously, accompanied with the same series of symptoms, and continuing during the same length of time. Hence, to complete an attack of gout, three or four consecutive fits are required, each taking three, four, or five days to run its course. Fifteen days may be considered as the average duration of an attack of gout, but it frequently continues much longer.

The time which may elapse between the attacks is very uncertain; twelve months, or even several years, may intervene between the first and second attack, but the interval is often much shorter; this depends in a great measure on the constitutional tendency and manner of living of the patient.

When the disease has become confirmed, the attacks occur more frequently, are more severe, continue longer, extend to several joints, and affect, to a certain extent, in some individuals, almost every joint of the body, until at last the constitution gives way, and the patient is rendered miserable.

One of the most constant phenomena connected with gout, is the passing of high-colored urine during the attack, frequently containing particles of sand or gravel; but when the feverish symptoms have abated, the sediment acquires a white color, and resembles chalk or magnesia.

IRREGULAR, OR CHRONIC GOUT.

Chronic gout is generally the consequence of several attacks of the acute form, or it may appear as a primary affection. In both cases the difference which exists between it and acute gout, consists in the pain being less severe, the feverish symptoms milder, or entirely absent, and the attacks of much longer duration, continuing in some cases several months, in others all the year round, with the exception of two or three of the summer months. But, in general, before gout becomes chronic, several of the joints have been affected ; from the feet it has passed to the ancles, fingers, wrists, knees, &c. In this state of the disease several joints are seized in succession during the same attack ; but when it wanders in this manner from one part to another, it rarely happens that the pain keeps up its original intensity.

The pain in chronic gout is constant, but not nearly so severe as in the acute form. At times, however, it becomes considerably increased, particularly after meals, during the early part of the night, and when the patient changes the position of the affected parts ; it is also aggravated by changes of temperature and fits of anger. Under these or other circumstances, the suffering occasionally becomes acute in the very extreme. Even persons otherwise robust, and possessed of the greatest fortitude, are driven almost to a state of madness by the violence of the pain. In such cases a fainting fit is not an extraordinary occurrence

After acute gout the joints soon resume their usual strength and freedom of motion, but in the chronic form they remain stiff, swollen, and not unfrequently deformed. In some cases, especially in those who have been long subject to gout, a substance resembling soft mortar, or plaster of Paris, in a half liquid state, is deposited about the small joints ; and when this matter becomes hard, it is commonly called *chalk stone*. These chalky concretions may be formed immediately under the skin, or within the joints. They are often the source of great pain, sometimes cause inflammation, and the formation of matter, along with which they are occasionally discharged. Chalk stones were discovered by Dr. Wollaston to be composed of urate of soda.

One of the most remarkable and peculiar phenomena of gout, is the facility with which it moves from one part to another. After attacking several of the joints in succession, it may be suddenly transferred to the stomach, bowels, brain, heart, kidneys, or in fact to any internal organ or part. This is distinguished by the term *retrocedent gout*. If gout change its seat from a joint to the stomach, or any other organ, during an acute paroxysm, the internal affection will also be acute; but if the gout be chronic, the internal disorder will be less severe and longer continued. When gout is thus transferred, the stomach and bowels are the parts most frequently attacked; the former with pain, spasm, sickness, and vomiting; the latter, either alone or in conjunction with the stomach, with violent colic, or acute inflammation. Gouty people, however, are too apt to attribute every internal disorder, whether functional or inflammatory, to the influence of gout; though it by no means follows that the numerous derangements to which they are subject are characteristic of this disease, merely because they co-exist or follow it. In fact, the translation of gout from the joints to internal parts, is not nearly of such frequent occurrence as is generally supposed; and this ought always to be kept in recollection, in order to avoid errors in treatment.

Causes.—That a predisposition to gout is transmitted from parents to their children, is a fact not to be doubted; and when hereditary disposition exists, there is every reason to believe that the disease is more ready to declare itself than under other circumstances; but the cases in which it occurs without the more powerful influence of intemperance and idleness, are very rare indeed. Gouty people attribute the disease to this predisposition, as if it were the only cause; but we know that there is nothing more natural, than that the son should acquire the same indolent and luxurious habits as his gouty father, and that there is nothing more likely to happen, than that the influence of those habits on the system, particularly when associated with hereditary disposition, should bring on the same disease. But if the son be placed in a different position in life; if, from reverse of fortune, he be compelled to toil daily, in order to gain a scanty maintenance, he may at least rest assured, that, whatever misfortunes and sufferings he may have to labor under, gout is not likely to be one of the number.

The influence of age is more clearly shown than that of predisposition entailed on offspring. It was stated by Hippocrates, and has been remarked from his time downwards, that gout rarely if ever occurs before the age of puberty. The first attack may take place at any period of life, from twenty-five to fifty; but when the predisposition is strong, and the habits of the individual intemperate, it may declare itself much earlier.

Women are most frequently attacked by gout after the entire cessation of the menstrual discharge; but at no period of life are they so subject to it as men. The late Professor Gregory stated the proportion as one to fifty in England, and one to a hundred in Scotland. This relative exemption is no doubt owing to their temperate habits, and the periodical discharges, by which the system relieves itself.

One of the causes to which gout has been attributed by many authors, both ancient and modern, is over-indulgence in drinking wine; and there can be no doubt that this habit has a strong tendency to bring it on. Observation has also shown that the habitual use of claret, champagne, and Port, is more likely to produce this effect, than indulgence in other wines, and malt liquor and cider more than spirits.

Treatment of Regular or Acute Gout.—The treatment rests on the same base as that of other inflammatory diseases, and ought to be conducted on the same principles. If the attack be severe, the patient robust, of a full habit of body, and sanguine temperament; if the surface of the body be hot, and the pulse strong and hard, blood should be taken freely from the arm, and the bowels cleared out by active purgatives; five grains of *calomel*, with ten grains of the *compound extract of colocynth*, in pills, should be taken, and followed, in the course of three or four hours, by the *black draught*, and these or other purgative remedies are to be repeated until the bowels are freely evacuated. To soothe the pain and promote perspiration, three or four grains of the extract of henbane, or a quarter of a grain or more of acetate of morphine, with four or five grains of James's powder, may be taken night and morning. Recourse should also be had to *colchicum* or *meadow saffron*, a medicine possessed of great power in subduing the attacks of this disease. The tincture of the seeds of colchicum is to be given in doses of twenty drops, in a little water, three times a day; but even in these small doses it sometimes purges severely. There is no occasion, however, for administering it in larger doses than are found sufficient to keep the bowels gently open; the object is to obtain and keep up its soothing and depressing action on the system; and when judiciously used, and the doses regulated according to the strength of the patient and the urgency of the case, it has an admirable effect in mitigating the patient's suffering and cutting short the attack.

In cases where the local suffering is great, and the constitutional symptoms do not authorize general blood-letting, the application of fifteen or twenty leeches to the joint, is often of great service. Considerable relief has frequently been experienced from the application of cold water to the parts. The patient, however, should by no means sit with his feet immersed in a pail of cold water; since many cases have occurred, in which this practice has had the effect of driving the disease inwards on the heart, brain, or stomach, and death has been the result. Sir C. Scudamore recommends a lotion composed of one part of *alcohol* and three of *camphor mixture*, made lukewarm, (from 75 to 85 degrees of Fahrenheit,) to be constantly applied to the affected part, by means of several folds of fine soft linen. During the night a compress made of strips of linen, moistened with the lotion, may be placed over the parts and covered with a piece of oiled silk. If necessary, a cradle may be applied over the limb, in order to protect it from the weight of the bed-clothes.

As long as feverish symptoms are present, the diet should consist of farinaceous substances, as sago, arrow-root, and panada; or chicken broth, with toasted bread, may be allowed; and the drink should be restricted to barley-water, tepid whey, weak black tea, or any other mild beverage.

The patient should take moderate exercise as soon as the attack is over, and he will find advantage from friction of the parts with the hand, or with a flesh brush, or rubbing them with salt and water, camphorated spirits, or some other stimulating application.

Treatment of Irregular, or Chronic Gout.—The treatment of chronic gout differs only in degree from that of the acute form. General blood-letting is not required; but local bleeding, by means of leeches, will be found serviceable in the more severe cases. The *tincture*, or *wine of colchicum*, is to be taken in small and frequently repeated doses, and the bowels are to be kept open by the occasional use of an *infusion of senna leaves*, containing a little *Epsom salts*, and a scruple of the *sub-carbonate of soda*. A moderate quantity of tender animal food may be taken; this, however, must depend, in a great measure, on the patient's usual mode of living; and, in most cases, a glass or two of sound Sherry or Madeira wine may be allowed. If the patient has been accustomed to live high, and his constitution be much weakened; if he feel languid and feeble, while the pulse is soft and weak, and the gout imperfectly developed, it would be improper to retrench abruptly. In this case, nourishing diet and wine are indicated, and ought to be taken liberally until he recover strength, and the disease declare itself more decidedly. But in ordinary cases, the patient ought never to forget that, while the attack continues, any excess in eating and drinking, or exposure to cold and damp, may suddenly give rise to some severe internal disorder which may place his life in jeopardy.

If, during an attack of gout, the inflammation suddenly leave the joint, and fix itself in the stomach, bowels, brain, or any other internal part, blood-letting, both general and local, and the usual means necessary to subdue inflammatory action, must be had recourse to without delay; while, at the same time, the feet are to be placed in hot water containing mustard, or enveloped in mustard poultices, or blisters may be applied to the ancles or calves of the legs, in order, if possible, to bring back the disease to the joints. Sometimes the internal disorder, instead of being of an inflammatory character, is nervous or spasmodic; the stomach or bowels, for example, may be suddenly seized with violent pain, attended with the most oppressive sickness; here the treatment consists in the administration of strong stimulants; hot brandy and water, or the following draught, may be given, and repeated in the course of half an hour, or at such intervals as may be deemed necessary, according to the urgency of the case.

Æther, half a drachm to a drachm,
Laudanum, the same quantity,
Camphor mixture, four ounces. Mix.

If this remedy do not produce the desired effect, the following draught may be administered.

Castor oil,
Oil of turpentine, and
Tincture of rhubarb, of each a table-spoonful,
Cinnamon water, a wine-glassful.

It is of great importance, in such cases, to ascertain whether the internal affection is of an inflammatory or spasmodic nature, since the treatment required for the former case is directly of an opposite description from that which is necessary for the latter. It may be inferred that the disorder is spasmodic from the absence of feverish symptoms, from the pain not being increased on pressing with the hand over the affected organ, and from the temperature of the skin covering the part where the pain is felt not being greater than natural.

Prevention of Gout.—The most important part of the preventive treatment is a proper regulation of the diet, which ought to consist of tender well boiled vegetables, stale bread, fruit, eggs, fish, and a moderate allowance of plainly dressed beef or mutton once a day. Rich and highly seasoned dishes, heavy puddings, pastry, salads, pickles, salmon, &c., are to be avoided. No general rule, however, can be laid down; the particular articles of diet must vary in different individuals, and the quantity of food to be allowed must depend, in a great measure, on the extent of daily exercise made use of. A very spare diet should be rigidly adhered to by full-blooded persons, who have a strong hereditary disposition to the disease; but in general this is not necessary. The maxim should be, not to eat more meat, or drink more wine than is really necessary; to regulate the quantity and quality of food so as not to injure the health, always keeping in recollection that people in general, and gouty people particularly, eat more than is good for them; more, in fact, than is consistent with the due performance of all the functions of the body; that is to say, with perfect health.

The preventive agent ranking next in importance to a well-regulated diet, is exercise. But exercise, in order to produce the desired effect, must be regular and sufficiently active. Walking is to be preferred, if the state of the feet will admit of it, otherwise active exercise on horseback should be employed. Much benefit may also be derived from friction of the limbs with rough towels, or a flesh-brush, night and morning. Flannel should be worn next the skin; cold, wet, and sudden changes of temperature, are to be avoided; the feet must be carefully kept warm, particularly during the night, and the patient should retire to rest at an early hour, in order to insure early rising in the morning, than which there is nothing more conducive to health.

The principles already laid down, show the necessity of guarding against a change from a very active to a sedentary life, and from low to high living; indeed, the reverse of these changes, if adopted suddenly, are not without risk. In fine, all the usual rules for the preservation of health ought to be particularly attended to by gouty people. Nearly all that can be said on the subject is comprehended in the old Scotch saying, that "any man might cure himself of gout by living on a sixpence a day, and working for it."

GUAIAC.

The substance called guaiac exudes from a tree, native of the West Indies, the wood of which is well known under the name of *lignum vitæ*. It is possessed of moderately stimulating and sudorific properties, and is given to promote perspiration in some forms of gout, chronic rheumatism, and in certain affections of the skin, but is rarely trusted to alone. In the West Indies it is much used in the treatment of syphilis and yaws.

The dose of gum guaiac is ten or twenty grains, mixed with a little mucilage of gum Arabic, or made into pills; the *ammoniated tincture* may be taken in doses of from thirty drops to a drachm and a half, twice or thrice a day, with yelk of egg, or a little mucilage; if given, by mistake, in water, it becomes white and thick.

GUM AMMONIAC.

Gum ammoniac is the produce of an umbelliferous plant, which grows in Persia. This gum-resin is seldom used alone, but is found useful as an expectorant in the chronic cough of old persons, and in some forms of asthma. In the cough which attends hysterical, dyspeptic, and hypochondriacal affections, it is said to be a serviceable remedy. Ammoniac ought not to be given in consumption, nor when inflammatory symptoms are present. Externally it is used to reduce indolent tumors.

The dose of gum ammoniac is from ten to thirty grains.

GUM ARABIC.

Gum Arabic is obtained from a genus of plants called *Mimosa*, or *Acacia*.

When dissolved in water, it is in common use as a demulcent drink, and enters into the composition of many of the mixtures, jujube, and other lozenges, used to allay coughing. It is also sometimes employed in strangury, and at the commencement of gonorrhœa. *Gum-water* is much used by the French in irritation and inflammation of the stomach and bowels; but there is no evidence to show that it possesses any advantage over linseed-tea, barley-water, and similar demulcent drinks. Gum Arabic may be taken in any quantity; indeed, the negroes of some parts of Africa subsist on it in seasons of scarcity. Dissolved in twice its quantity of water, it is called *mucilage*, which is much used to render oils, balsams, and resinous substances diffusible in water, and serves to give consistence to medicines made into pills.

GUM-BOIL.

A gum-boil sometimes arises from exposure to cold, but is caused in the majority of cases, by the irritation of a spoiled tooth. Inflammation of the gum generally goes on to suppuration, to promote which, warm fomentations and poultices are frequently applied externally, but they appear to be of very little service. The treatment consists in cutting into the abscess as soon as there is reason to suppose that the smallest quantity of matter has formed. Afterwards the mouth may be washed occasionally with an astringent lotion composed of *tincture of galls* and water, or of twenty or twenty-five grains of *sulphate of zinc*, (*white vitriol*,) dissolved in half a pint of *rose-water*. When the pain and inflammation have entirely subsided, the decayed tooth should be extracted, or filled by the dentist.

HEAD-ACHE.

Head-ache frequently occurs as a symptom of other diseases, more particularly of fevers and inflammatory disorders; indeed, there are few affections in which it does not attend, either as an occasional or essential symptom. Head-ache, however, does not always depend on other disorders, it is frequently an essential disease; hence, in directing the treatment, it is of importance to ascertain whether it exists as an independent disorder, that is to say, as an affection of the brain itself, or is merely sympathetic of a deranged state of the digestive or other organs.

We intend here to confine ourselves to those forms of the affection which are most frequently met with.

BILIOUS, OR SICK HEAD-ACHE.

This is regarded as the most common form of head-ache. The inhabitants of large towns, who are accustomed to lead a sedentary life, people of nervous temperament, whose stomachs are weak, irritable, and liable to be deranged from slight causes, are most subject to bilious head-ache, which may arise from eating a little more than usual, indulging in too many articles of food at one meal, fasting longer than usual, abuse of intoxicating liquors, the excessive use of tea or any other kind of fluid, worms, constipation of the bowels, and from excessive discharge of bile into the bowels, or accumulation of it in the gall-bladder and ducts. A strong predisposition to head-ache is induced by anxiety, the close pursuit and hurry of business, intense study, and, in a word, long-continued mental excitement of whatever description. When the mind is too actively engaged, the stomach suffers in consequence, becomes weak, and incapable of digesting the usual quantity of food, or particular articles of diet which, under other circumstances, would have given no uneasiness. Here we see the intimate connexion existing between the brain and stomach ; in the first instance the mental excitement deranges the stomach and causes indigestion, the brain is consequently re-acted upon, and sympathetic head-ache is the result. Although, in general, this affection arises from a deranged state of the stomach and bowels, yet there can be no doubt that the brain is occasionally the primary seat of the disorder, and the indigestion only a sympathetic or secondary affection.

Head-ache arising from errors in diet, seldom continues longer than twenty-four hours ; but when habitual, it often occurs without any obvious cause, and may continue two or three days, or even longer.

Sick head-ache commences on awaking in the morning with a dull uneasy sensation in the head, which soon terminates in an acute pain of one of the temples, sometimes extending to the eye of the same side, or to the whole forehead. Sickness at stomach commonly follows, and sometimes vomiting of half-digested food, mixed with bile. When the contents of the stomach are discharged, the head-ache is usually of short duration ; but if vomiting do not take place, the pain increases and continues until the patient fall asleep the following night. When derangement of the biliary organs gives rise to head-ache, the pain is, in most cases, seated in the right side of the head; the cheeks are slightly flushed, and the sides of the nose have a yellowish tint. In protracted cases there is disinclination for bodily or mental exertion, accompanied with a sensation of languor or debility; nausea is not unusual, but vomiting seldom takes place; slight giddiness is experienced at times, the tongue is foul and its edges are red, the feet and hands are cold and damp, and there is slight cough.

Treatment.—If sick head-ache arise from an overloaded state of the stomach, an emetic, consisting of from twenty to thirty grains of *ipecacuan*, may be given in a little warm water, and followed by copious draughts of *camomile tea*. When the sickness is over, two tea-spoonsful of *Gregory's mixture*, or an ounce of the *compound tincture of rhubarb*, may be given to open the bowels. When the nausea or uneasiness at stomach is slight, the laxative medicine will generally give relief, without the aid of an emetic; but it may be necessary to repeat the dose, in order to open the bowels freely.

When head-ache arises from a deranged state of the biliary organs, a *blue pill*, or half a grain of *calomel*, should be taken at bed-time, and repeated every night, or every alternate night, until the head-ache be overcome, and the action of the liver improved. The *infusion of calumba root* will also be found a very useful remedy in such cases, and may be taken to the extent of two or three table-spoonsful, three or four times daily; care being taken, at the same time, to keep the bowels gently open by the occasional use of one or two tea-spoonsful of the *confection of senna*, or any mild laxative medicine which the patient may be in the habit of taking.

In the more protracted cases of this form of head-ache, the patient is not so likely to derive relief from medicine, as from a moderate and well-regulated diet, conjoined with regular exercise in the open air. Mental discipline is also of importance, since we know that this affection, as well as disorders of the digestive organs, is in numerous cases the effect of long-continued excitement of the mind.

HEAD-ACHE FROM CONGESTION, OR DETERMINATION OF BLOOD TO THE HEAD.

Head-ache from congestion, or excess of blood in the head, is often the consequence of the continued or repeated determination of blood to the brain; it sometimes follows fevers and other disorders, and may arise from certain affections of the heart and lungs, or from liver complaints, excess in drinking intoxicating liquors, long-continued mental excitement, wearing tight neck-cloths, or stays too tightly laced, &c.

The symptoms are a dull pain and sensation of weight in the head, giddiness, ringing, buzzing, or other noises in the ears, a feeling of general oppression, and feeble pulse. The pain may be confined to the forehead, or a particular part of it, or the whole head may be affected. Delicate females, affected with obstruction of the menses, are very subject to this kind of head-ache; in such, the face is pale, but in full-blooded people, who have passed the middle period of life, and have been in the habit of living freely, the countenance is bloated, and the eyes appear red and heavy.

Head-ache from increased determination of blood to the head, generally occurs in plethoric people, who are accustomed to free living, lying too long in bed, and who do not take sufficient exercise. It is a common complaint in young unmarried females of full habit of body and florid countenance, and is sometimes caused by obstruction of the menses, suppression of the discharge from piles, and undue exposure to the sun. Rheumatism may also give rise to this form of head-ache.

In robust people the pulse is strong or oppressed, the head is hot, there is a sensation of throbbing or beating in the ears, the face is more or less flushed, and the eyes are red and heavy. The pain is exceedingly severe, and frequently attended with a pulsative sensation in the head; there is a feeling of languor and oppression, and the bowels are constipated.

In *rheumatic head-ache*, the patient, in addition to these symptoms, is affected with pain and tenderness of the scalp, and sometimes the pain extends to the face, or down one side of the neck to the shoulder.

Treatment.—Congestive head-ache must be treated according to the age and constitution of the patient; and the means to be resorted to must depend on the circumstances connected with each case.

When the patient is plethoric, and has been accustomed to live well, frequent cupping at the nape of the neck, pouring cold water on the head, bathing the feet in hot water, containing powdered mustard, and the free use of purgative medicine, are the means to be adopted. In protracted cases, a seton placed in the nape of the neck, is a remedy from which relief may be expected. To the above are to be conjoined, moderation in eating and drinking, regular exercise, and the frequent use of the shower-bath.

This treatment, in a less active manner, is to be resorted to when the affection occurs in delicate and irritable people. Local bleeding, by *leeches* or *cupping*, is only necessary in some cases, but the head should be sponged frequently with cold water, containing *eau de cologne* or lavender-water; and warm purgatives, such as *tincture of rhubarb, or pills of myrrh and aloes*, should be taken occasionally.

When this form of head-ache occurs in chlorotic females, a preparation of iron ought to be used in addition to the above treatment. (See *Menstrual Discharge.*)

When head-ache is attended with increased determination of blood to the head, active means should be adopted, in order to prevent inflammation of the brain or apoplexy. If the constant application of cold water to the head, and cupping the nape of the neck, have not the effect of relieving the patient, blood should be taken from the arm. The frequent exhibition of active purgatives and low diet are also suitable.

In rheumatic head-ache, which is frequently an exceedingly painful and very tedious complaint, we have given the following powders with the greatest advantage when other means had failed.

Gum guaiac, half a drachm,
Golden sulphuret of antimony, two grains,
Calomel, one grain,
Extract of aconite, four grains,
Refined sugar, a scruple. Mix. To be divided into two powders. One to be taken in the morning and the other at bed-time, in a little jelly.

These powders are to be repeated during eight or ten days, or longer, if necessary.

NERVOUS HEAD-ACHE.

This variety of head-ache occurs most frequently in females, more especially in those who are hysterical, and in hypochondriacal persons. It may arise from various causes, such as anxiety and trouble of mind acting on those who lead a sedentary life; intemperance in eating and drinking; not eating a sufficient qantity of food, or living on diet of bad quality; excess in venery, long watching, suppression of habitual discharges; *malaria*, or the effluvia from decaying vegetable matter. It may also be caused by a decayed tooth; and sometimes appears to be hereditary.

Nervous head-ache generally commences suddenly. It may attack one of the eye-brows, the temple, or the orbit; or one half of the head may be affected. The pain is dull, lancinating, or throbbing, sometimes exceedingly acute, and aggravated by noise or a strong light. There are no feverish symptoms, nor is the temperature of the head greater than natural. Some patients are restless and irritable; others are languid, and almost constantly yawning.

This affection, like ague, is often intermittent, and may come on daily, every other day, once a week, or monthly; but, in the majority of cases, the attacks recur at irregular intervals. The pain continues three or four hours, a day, or even considerably longer, but in general it goes off during the night.

Nervous head-ache seldom occurs in young people, or in those who are far advanced in life.

Treatment.—During the attack, the following pills and draught may be found useful; but, in many cases, the pain cannot be checked nor alleviated by any remedial means.

Camphor, fifteen grains,
Extract of henbane, fifteen grains, or acetate of morphia, three grains,
Extract of liquorice, or conserve of roses, a sufficient quantity to form twelve pills. Two to be taken every five or six hours, or at shorter intervals, if the pain be very severe.

Peppermint water, two ounces,
Tincture of valerian, (compound,) and
Compound tincture of lavender, (red lavender.) of each a drachm,
Sub-carbonate of soda, fifteen grains. Mix. To be taken shortly after the pills.

Instead of the preceding remedies, the following draught may be taken.

Camphor mixture, two ounces,
Compound spirit of sulphuric æther, (Hoffman's anodyne liquor,) a drachm,
Laudanum, thirty drops. Mix.

The *extract of aconite*, well rubbed in over the part affected, sometimes gives considerable relief; and a grain of the *salt of aconite*, (*aconitina*,) mixed with a drachm of *lard*, applied in the same manner, has of late years been employed with advantage.

Various remedies have been used to prevent the recurrence of the attacks, the principal of which are sulphate of quinine, and preparations of iron and of arsenic. If the attack come on at regular intervals, as in ague, the bowels are first to be freely evacuated, and afterwards kept gently open by means of the *compound rhubarb pills*, or *pills of myrrh and aloes;* and then the *sulphate of quinine* is to be administered regularly, in the manner directed at page 261. If this remedy fail, *Fowler's solution of arsenic* should be taken, as directed at page 261.

When this affection occurs in chlorotic females, where there is constitutional debility, and in those who have been weakened by frequent miscarriages, confinement in close rooms, mental anxiety, want of exercise in the open air, and other exhausting causes, the following tonic mixture should be used regularly during three or four weeks.

Infusion of calumba, three ounces,
Tincture of steel, thirty drops,
Tincture of calumba, two drachms. Mix. To be taken in two doses in the course of the day.

In all cases, a mild nutritious diet, with a little wine, exercise in the open air, and a proper regulation of the mind, will greatly assist the action of the medicine.

DISEASES OF THE HEART.

INFLAMMATION OF THE HEART.

This disease may be caused by blows upon the chest, or by the extension of inflammation from surrounding parts; but the public should be well aware that its most frequent cause is *rheumatism.* It is now fully proved, that persons liable to acute rheumatism are very frequently attacked by inflammation of the heart; so much so, indeed, is this the case, that a celebrated physician thinks that *one* out of every *three* rheumatic patients labors under an inflammatory affection of the heart.

Symptoms.—Inflammation of the heart is not shown by any very clear or positive symptoms. The heart, in fact, seems to bear inflammation without suffering much, a circumstance which we must regard as very providential, otherwise life would be suddenly cut short, or existence rendered miserable. The symptoms of inflammation of the heart will vary much, according to the severity and extent of the disease; the principal signs by which it may be recognized are, fever, with pain about the region of the heart; the pain generally shoots through the chest to the back, underneath the shoulder-blade, and is much increased when we press the fingers over the heart, or push up the contents of the belly towards the point of the heart. The breathing is hurried, and a dry cough torments the patient, who is unable to lie on the left side. The beating of the heart is generally strong, and extends over a considerable part of the chest; the pulse is full, and gives a bounding feel under the finger. As the disease advances, the palpitation of the heart is less evident, because fluid has now been poured out into the fibrous bag, or *pericardium*, but the anxiety and difficulty of breathing increase. If the region of the heart be carefully examined, a puffiness or swelling will be perceived between the ribs; the pulse becomes quick, weak, and fluttering; the features are contracted; the face gets swollen or livid, and the patient is cut off in a few days, or may linger on for two or three weeks.

In very many cases inflammation of the heart is not attended with such evident symptoms, but we may suspect its existence if the patient, after having suffered under rheumatic fever, complains of a load or fulness about the heart, with dull pain, restlessness, anxiety, and occasional palpitation.

Treatment.—To subdue an inflammatory disease of the heart, the most active measures should be employed without a moment's delay. When the fever runs high, the pain is severe, and the anxiety very distressing, the patient should be immediately bled, until a sense of faintness is produced; after which, from fifteen to thirty leeches are to be applied over the region of the heart, and again put on, if the pain and palpitation are not considerably reduced. After general and local bleeding, which must be regulated according to the patient's strength and the severity of the disease, we must give tartar emetic, in the way recommended at page 292; and the bowels should be acted upon, twice a day, by either of the two first pills described on page 347, assisted by a *black-draught*, (see page 269,) or by a clyster composed of an ounce of Glauber's salts, dissolved in a pint of warm water. The patient should abstain from all food, and take any cool drink, to each quart of which may be added four scruples of the *supertartrate*, or two scruples of the *nitrate of potash*. The above measures are intended to check the inflammation, but it can rarely be subdued entirely by them; we must therefore have recourse to *mercury*, as soon as the violence of the disorder has been mitigated; five grains of *calomel* or ten grains of *blue pill*, should be given thrice a day, until the gums begin to show that the medicine has taken effect. When pain and restlessness continue in a late stage of the disease, the pain may be alleviated by two or three *blisters* applied over the heart in quick succession, and for the restless state of the patient, which is often very distressing, we may give a draught containing twenty drops of *tincture of hyosciamus*, with the same quantity of *tincture of digitalis*, in four ounces of water.

When the inflammation continues for many weeks after its violence has been completely subdued, or when it has been of an obscure and slow nature from the commencement, the treatment may be of a less active kind, but it must be pursued with great perseverance, and for many weeks, or even months, before a cure can be obtained. Six or eight *leeches* must be occasionally applied over the region of the heart, and in the intervals one or two *blisters* may be applied, or the skin irritated with the *tartar emetic* ointment, (p. 266.) The patient should take, at bed-time, five grains of the *extract of hyosciamus*, to procure rest, (or even ten or fifteen grains if necessary,) and the bowels should be kept regular by any mild laxative, as five grains of *blue pill*, or of the *compound colocynth pill*, administered two or three times a week.

ENLARGEMENT OF THE HEART.

It is a well-known fact, that when a muscle is much used, it gradually increases in bulk and strength. The same principle applies to the heart, which is merely a hollow muscle; whenever any obstruction exists to the free passage of blood from the heart, or whenever the organ is excited to violent efforts, either through mental emotions or bodily actions, (as running, rowing, &c.) the muscular substance of the heart may gradually increase in bulk, until it becomes three times as large as it should be. The symptoms of *enlarged heart* are usually very decided. The first sign is a constant palpitation; the organ beats powerfully against the ribs, and its pulsation is felt over a large portion of the chest. This palpitation may continue for some time without any other symptom, but other effects are sooner or later felt; the face becomes florid and afterwards purplish; the patient often complains of a "rushing of blood to the head," ringing in the ears, &c.; there is a dry, hacking cough, with fits of suffocation, from congestion of blood in the lungs; and from the same reason, the patient is sometimes seized with a violent spitting of blood, because some of the blood-vessels in the lungs have been burst by the violent pumping action of the heart; as the enlargement of the heart becomes greater, the palpitation seems to abate, because the heart has less room to beat in its fibrous bag; but the suffocation increases, the extremities become infiltrated with fluid, and the patient either dies of dropsy in some cavity, or is cut off by a fit of apoplexy, or by spitting of blood.

Treatment.—The treatment of enlargement of the heart is to be conducted upon principles which are very easily understood. The heart is too strong; we must therefore endeavor to lessen its force, and to avoid any excitement which may bring it into action. The patient must observe a very strict diet, eat nothing but white meats in small quantities, and abstain totally from beer, porter, wine, or spirituous drinks. Any exercise which is taken should be of the very easiest kind. To diminish the force of the heart, four, six, or eight ounces of blood must be taken from the arm every four or six weeks, (according to the patient's strength,) until the palpitation and suffocation are relieved; and when blood-letting has been carried as far as prudence will admit, the bowels must be moved two or three times a day by Epsom salts. When symptoms of dropsy have come on, or it appears that the patient will not bear the loss of blood, elaterium should be given, so as to produce three or four watery stools in the twenty-four hours. The dropsical effusion will also be relieved by the constant use of remedies which increase the discharge of urine. (See *Dropsy*.)

The patient must, in all cases, make up his mind to pursue this treatment steadily, until the disease has been completely subdued; and after a cure, to avoid all violent exercise, mental emotions, or other causes which are calculated to increase in any way the action of the heart.

NERVOUS DISEASE OF THE HEART.

The heart is very subject to disturbance of its action, not depending on organic disease, but on certain impressions conveyed to it from distant parts through the nervous system. The only symptom of this nervous disturbance to which we need allude is *palpitation.* It is of great importance to distinguish *nervous palpitations* of the heart, from palpitations which depend on derangements of the heart's structure, (*organic*,) because the former, although they excite considerable anxiety and alarm in the patient's mind, are completely under the control of medical treatment. *Nervous* palpitation may be distinguished from *organic* palpitation by the following circumstances. Nervous palpitation is apt to come on more particularly when the patient is lying awake in bed, at the beginning of the night. It is not rendered worse by moderate exercise, but is rather relieved by it; whereas, *organic* palpitation is necessarily increased by any corporeal exertion, however slight. Nervous palpitation is often accompanied by other nervous symptoms, and whenever the latter are increased, the palpitation becomes increased with them. Finally, in nervous palpitation, there is generally some *intermission*, that is to say, the patient is free from it at certain times, during which the pulse and heart beat quite naturally, while in *organic* palpitation, there is hardly ever any cessation of this distressing symptom, because the diseased structure upon which it depends is *constantly* irritating the heart, and compelling it to act with violence.

Nervous palpitation commonly occurs in men of nervous temperament, who have been rendered more irritable by the too free use of ardent spirits, by excessive venery, long study, or the depressing passions. It often attacks persons who are much addicted to smoking tobacco, or have frequently suffered from indigestion. In women this affection generally depends on green-sickness, (*chlorosis*,) or hysteria; it may also be connected with excessive loss of blood.

Treatment.—As nervous palpitation is merely a symptom of some other disorder, its treatment must be subordinate to that of the disease upon which it depends; to prevent repetition, therefore, we would refer our readers to the articles on indigestion, green-sickness, hysterics, and nervous disorders, &c. The first point in the treatment will naturally be to remove, if possible, the cause of the symptom. Excesses of all kinds must be avoided; the patient should take gentle exercise in the open air, and regulate his diet with great attention. When the palpitation seems to depend on a very irritable and nervous temperament, change of air, sea-bathing, and the enjoyment of rational amusements, will have much effect in quieting the heart's action; after which a course of mineral waters may be tried with advantage. When the palpitation is very distressing at night, it may be necessary to give some medicine which will quiet the patient, and afford him relief, until the other remedies that we are employing have time to produce some effect. From one to two grains of the *acetate of morphia*, may be given in a pill, with crumb of bread; or the following draught may be taken two or three times a day, according to necessity.

Tincture of hyosciamus, half a drachm,
Spirit of nitric æther, half a drachm,
Syrup of orange peel, one drachm,
Camphor mixture, ten drachms.

HEARTBURN, OR WATER-BRASH.

Heartburn, though not attended with danger, is often very difficult of cure. It occurs most frequently among poor people, is seldom met with before the age of puberty, and not often in old people. Females are more subject to it than males, and some women suffer from it only during pregnancy. It is often caused by eating fat or oily substances, cheese, or some particular article of food which disagrees with the stomach, and in general is merely a symptom of indigestion. It may arise from exposure to cold, sitting with wet feet, or from any sudden mental emotion; and in some individuals it cannot be traced to any cause.

The symptoms are a burning sensation, attended with a feeling of constriction at the stomach, which, after continuing some time, is followed by frequent belching of a thin fluid, sometimes exceedingly sour, at other times insipid. The attack may come on at any period of the day, and may continue during several hours. In some people it comes on daily for weeks or months; in others it occurs only occasionally, in consequence of indulging in some article of diet difficult of digestion. Heartburn sometimes accompanies organic disease of the stomach or liver.

Treatment.—When heartburn comes on only occasionally, it may be relieved by means of a tea-spoonful of *carbonate of soda*, or the same quantity of *magnesia*, taken in a little water; but when it recurs frequently, and becomes very troublesome, more active treatment should be resorted to. In some cases, however, it is protracted through a period of many months, uninfluenced by any medical treatment which may be adopted. The *subnitrate of bismuth*, in conjunction with the *extract of henbane*, taken as directed at page

279, is the remedy which we are in the habit of prescribing, and is, perhaps, the best that can be used in this complaint. Dr. Baillie recommended a drachm of the *compound tincture of benzoin*, mixed with *mucilage of gum arabic* and water; but he was of opinion that no remedy possessed much influence in subduing heartburn. Two eminent physicians, Cullen and Mason Good, have spoken in high terms of the internal use of *castile soap*, which may be taken in combination with *rhubarb* as follows.

Castile soap, two drachms,
Rhubarb, and
Ipecacuan, in powder, of each two scruples. Mix with mucilage, and divide into forty pills; two of which may be taken twice a day.

The state of the bowels must continue to be an object of attention as long as this affection exists. The most suitable laxatives are those which produce a feeling of warmth in the stomach, as Gregory's powder, or any of the following forms of opening medicine.

Peppermint or cinnamon-water, two ounces.
Rhubarb, fifteen grains,
Carbonate of ammonia, five grains,
Tincture of ginger, or of cardamoms, twenty drops. Mix. To be taken as a dose, and repeated, if necessary, in the course of the day.

Compound decoction of aloes, an ounce,
Compound tincture of rhubarb, two drachms,
Carbonate of soda, fifteen grains. Mix. To be taken as a dose.

Aloes, three drachms,
Mastich, and
Conserve of red roses, of each a drachm,
Extract of ox-gall, a drachm and a half. Mix well, and divide into a hundred pills; two or three of which are to be taken every day after dinner.

These dinner pills are called *Frank's Grains of Health*, and have been long in very general use.

The diet should consist of plain animal food. Farinaceous substances likely to ferment should be very sparingly used. Weak brandy and water will be found, in most cases, preferable to wine or malt liquor. (See *Indigestion*.)

HECTIC FEVER.

In this species of fever the patient is attacked daily, between five and six o'clock in the afternoon, with rigors or shivering, which continues from a quarter of an hour to an hour, and is followed by quick pulse, hot skin, thirst, and restlessness. Delirium is not a symptom of this affection, and head-ache only occasionally occurs. Profuse sweating breaks out about ten or eleven o'clock, which relieves the patient, who then falls asleep, and on awaking, about five or six in the morning, finds himself bathed in perspiration. There is also another attack about noon, which is slight, and sometimes not attended with shivering. Indeed, hectic fever, when it has continued some time, and is completely formed, never ceases entirely, inasmuch as the pulse beats at least ten strokes in a minute more than it would do in a state of health; and, in this respect differs from ague, in which there is a complete intermission.

The pulse is always quick, varying from a hundred to a hundred and twenty, and sometimes it reaches a hundred and forty. "Almost from the first appearance of the hectic, the urine is high colored, and deposits a copious branny red sediment, which hardly ever falls close to the bottom of the vessel." The appetite is at first very little or not at all impaired, but gradually gives way as the patient's strength diminishes; the tongue is red and clean; the face is pale in the morning, but, towards evening, when the feverish symptoms commence, a circumscribed redness appears on the cheeks, called *hectic flush;* and the white of the eyes has a delicate pearly tint.

The patient becomes weak and emaciated, the cheeks are hollow and sunken; the face is long and thin, and the eyes appear sunk in their orbits. Purging comes on at last, and this, with the excessive perspiration during the night, rapidly reduces the patient's strength, and he dies completely exhausted. (See *Pulmonary Consumption.*)

Hectic fever may arise from irritation or slow inflammation of any part or structure of the body, associated with debility, or, as it is sometimes termed, a broken-down constitution; or it may be caused by the fluids of the body becoming corrupted in consequence of the absorption of morbid matter, (pus.)

Treatment.—Hectic fever being generally, if not invariably symptomatic of some other disorder, the means of cure must, of course, have direct reference to the morbid state of the organ or part with which the fever is associated. We must, therefore, refer the reader to treatment directed for the diseases on which it depends.

HEMLOCK.

This is a well known indigenous plant, found growing in ditches, on the banks of rivers, and in waste places. It flowers in July and early in August, and is distinguished from plants which resemble it in appearance by the spotted stem.

The extract of hemlock, taken in moderate doses, acts on the system in a similar manner to henbane and aconite; and, like those remedies, is also narcotic and sedative, without producing any stimulant effect.

The diseases in which it is principally employed are cancer, syphilis, scrofula, rheumatism, and inflammatory or spasmodic affections of the urinary organs. It has also an excellent effect in allaying the cough at the commencement of pulmonary consumption; and if judiciously used, may have the effect of retarding the progress of that disease for years.

HENBANE. (*Hyosciamus.*)

All parts of this plant are poisonous, and accidents have frequently occurred from mistaking its root for that of parsnip, to which it has a strong resemblance.

Great advantage is to be derived from it, as a narcotic, in cancer, and other painful disorders. Its value as a narcotic is now well established, and, next to opium, it is considered the most useful remedy of this class. Indeed, in many cases, it has a great advantage over opium, inasmuch as it possesses no stimulating principle; or, in other words, is directly sedative and narcotic. Hence in all inflammatory affections, where it is found necessary to administer an anodyne or soporific, this remedy will have the effect of tranquillizing the patient, without producing the least excitement; whereas opium, on the contrary, from its stimulating action, would tend to increase the restlessness, and aggravate the inflammation. Henbane has also the advantage of being divested of the constipating property which opium possesses, and has a tendency rather to open the bowels than otherwise. It seldom produces head-ache, which opium very frequently does.

We have already had occasion to mention the benefit to be derived from this remedy in relieving indigestion arising from irritability or functional derangement of the stomach.

A poultice made with the fresh leaves of henbane, or a watery solution of the extract, is often very serviceable in allaying the pain of irritable ulcers, or of scrofulous and cancerous sores.

The dose of the extract, in chronic disorders, should not be less at first than two grains three times a day, which may be gradually increased to five or six grains. When intended as a soporific, in acute affections, the dose may be from five to ten grains at bed-time. The dose of the tincture is from twenty drops to a drachm. The effects of an over-dose of henbane are similar to those produced by aconite. It ought to be remarked that the extracts of henbane, aconite, and hemlock, commonly found in the shops, are often inert, and may be taken in almost any quantity; hence many practitioners prefer the tinctures of these plants, as preparations more to be depended upon.

HICCUP.

This affection usually arises from eating a too full meal or highly seasoned food, drinking cold fluids, wind, acidity, and similar causes, particularly when the stomach is predisposed to it from debility. When arising from simple causes of this description, it is of little consequence, and seldom continues long; but when it comes on in a far advanced stage of fevers, and internal inflammatory diseases, a fatal termination may soon be expected.

Treatment.—In ordinary cases hiccup ceases of its own accord, or may easily be checked by drinking a little cold water; by a sudden excitement of some degree of surprise, fear, or any other strong mental emotion; by swallowing a small quantity of vinegar, lemon juice, or any other strong acid; and when it occurs after a full meal, every body knows that a little brandy generally puts a stop to it.

When hiccup is symptomatic, the treatment must depend entirely on the nature of the disease under which the patient is laboring.

Opium, *henbane*, and similar narcotic medicines, are generally administered to palliate the distressing hiccup, which so frequently comes on when fevers and inflammatory diseases are about to terminate fatally.

HOOPING-COUGH, OR CHIN-COUGH.

This disease sometimes attacks children suddenly, and without giving any warning; but it generally happens that the child suffers under common cough for a week or two before the convulsive fits of coughing begin to show themselves. The first circumstance noticed about the child is, that the fit of coughing is more protracted than it was wont to be; there is a kind of hitch in the cough, which is peculiar, and this soon passes into the regular fit of hooping-cough. The fits of coughing succeed each other more or less rapidly, and are continued for a longer or shorter time, according to the severity of the disease, until they terminate in vomiting, or the spitting up of a thick frothy mucus from the lungs. When the convulsive efforts, during a fit of hooping-cough, are mild, the child suffers but little from the attack, and soon returns to his ordinary amusements; but if the fit be severe, the blood is often driven to the head with such violence, that it rushes from the nose or ears, or renders the eyes completely blood-shot, from rupture of small vessels in the white of the eye; these circumstances should not cause alarm, for they are not attended with any immediate danger. The number of fits is extremely variable in different cases; sometimes the child will have only three or four during the day ; at other times they come on as often as every quarter of an hour, and are particularly annoying during the night. The convulsive coughing may last for three or four weeks, or even longer, when it begins to decline; the fit gets less violent; the mucus is spit up from the lungs in greater quantity, and the disease gradually wears itself out in five or six weeks.

Such is hooping-cough in its simple and mild form; but in many cases the disease, either from its violence, or from certain tendencies of the patient to disease of the head or chest, becomes attended with very great danger to life. The danger is, in general, proportioned to the tender age of the infant, its constitutional powers, and the organ which may be attacked during the course of hooping-cough. Thus infants are more liable to be cut off by this disease than children; weakly children run greater risks than those who are strong; and much greater danger is to be apprehended when the head is attacked, than when the lungs only become involved in the consequences of the disease.

Treatment.—We have just observed that hooping-cough may be *simple* or complicated with some affection of the head or chest. *Simple* hooping-cough does not require any active treatment; it will generally wear itself out in five or six weeks, and many medical men are decidedly of opinion that remedies have very little effect in cutting it short. During the first stage the treatment applicable to common cough, (see *Bronchitis*,) will be sufficient; the only precaution necessary is to watch the state of the head and lungs; and if any symptoms of congestion about these organs appear, to apply a few leeches at once, either to the temples or over the breast-bone. When the convulsive stage or hooping begins, we may change our plan to the following one, which will generally be found safe and efficacious. An *emetic* of tartar emetic, or of ipecacuanha wine, is to be given every second or third day, and the bowels should be acted on mildly, three times a week, by small doses of calomel and rhubarb, castor oil, or any other laxative. The emetic will have the effect of facilitating expectoration in a very great degree, and thus preventing any tendency to an affection of the chest; if the cough be extremely violent, the emetic may be given daily, for three or four days running, and then discontinued for a couple of days, when it is to be resumed. Either of the following may be used.

Tartar emetic, two grains,
Syrup, two drachms,
Water, four ounces. Mix. A table-spoonful to be taken every ten minutes, until vomiting is produced.

Ipecacuanha wine, half an ounce,

Syrup, two drachms,
Water, four ounces. A table-spoonful to be taken, as above, until the full effect is produced.

When the emetics have been employed for a week, it will be proper to combine them with some antispasmodic remedy, or to give a diaphoretic mixture, as follows.

Ipecacuanha wine, five drops,
Carbonate of soda, two grains,
Syrup of poppies, half a drachm,
Water, one ounce.

This mixture is to be given every six hours, for several days, the bowels being kept open by a few grains of mercury and chalk, at night. It is suited for children under two years of age.

When the violence of the cough has subsided a little, we must have recourse to some mild tonic, with tincture of belladonna.

Infusion of calumba, two drachms,
Tincture of belladonna, ten drops,
Infusion of valerian, one drachm. Mix. To be taken twice a day.

The extract of belladonna is also frequently used during this stage with the greatest benefit. To begin, one-eighth of a grain may be given twice a day, and the dose gradually increased, until one or even two grains are taken during the course of the day. When the patient is much reduced by the disease, or is naturally feeble, one-half of a grain of oxide of zinc may be added to an equal quantity of the belladonna for a dose. During the use of these remedies the diet of the child should be light, and exposure of the person to cold or damp air must be avoided. As we have already mentioned, however, little danger will accrue unless the head or chest become involved in the disease.

In the convulsive stage of hooping-cough, it has frequently been the practice to apply irritating embrocations or ointments along the spine or over the chest. The *tartar emetic ointment* was, at one time, much used in this way; but we are of opinion that it should never be employed on children, for it often produces great irritation, or even sores, which are extremely difficult to heal up. It will be more prudent and safe to rub the following liniments over the chest or spine until the skin gets red.

Strong solution of ammonia, half an ounce,
Oil of turpentine, half an ounce,
Olive oil, one ounce.

When hooping-cough has been cured, or has subsided of itself, the fits sometimes recur after an interval of a few weeks. Nothing is better suited for such cases than change of air, from crowded unwholesome towns, to the pure and refreshing atmosphere of the country. This beneficial change, together with attention to diet, exercise, and the use of mild tonics, will often ward off the danger of pulmonary consumption, to which delicate children are very liable after protracted hooping-cough.

HYDROPHOBIA.

Hydrophobia arises from a morbid poison, introduced into the system by the bite of a rabid animal. The animals that most frequently communicate this disease are the dog, cat, fox, and wolf; but whether it originates spontaneously in those animals, or is always transmitted from one to another, is unknown. Hydrophobia is always communicated through the medium of the saliva; but it does not appear that this is capable of producing the disease without a wound having been inflicted, or the skin abraded. Some cases, however, are on record, which would lead us to believe that the poison may find its way into the system through the mucous membrane of the lips, without abrasion of surface. The great majority of people bitten by mad dogs are not attacked by hydrophobia; indeed, Doctor Hamilton is of opinion that at an average not more than one person out of twenty-five of those bitten, becomes affected with the disease; and this may be in a great measure accounted for by the saliva being wiped from the teeth in passing through the clothes; hence the disease occurs most frequently from wounds inflicted on the face and hands.

The length of time which may elapse from the date of the bite of a rabid animal to the commencement of hydrophobia is very uncertain; but, in general, it declares itself after thirty or forty days; though the poison has been known to remain in the system in a latent state during eighteen months, and even longer. The bitten part heals in the course of a few days like any other simple wound; but, when the disease commences, the cicatrix or scar becomes painful, red or livid, and swollen; in some cases it re-opens, and discharges a thin reddish-colored fluid. This, however, is not always the case; symptoms of hydrophobia may commence without the part presenting the slightest change in appearance, or being in the least degree painful. The disease is ushered in by slight shivering, head-ache, general uneasiness, and loss of appetite; by the sleep being disturbed by frightful dreams, and by extreme restlessness, agitation, and other symptoms of an excited or altered state of the nervous system; at length, the patient accidentally discovers that the sight of water, or any shining substance, distresses him; and, on attempting to drink, he is suddenly seized with a general and involuntary shivering.

The circumstance of the bite is now brought to his recollection, associated with the idea of hydrophobia, which strikes him with horror; a distressing sensation of heat and constriction at the throat is soon experienced, attended with urgent thirst; he appears exceedingly anxious and alarmed; the throat is frequently seized with violent spasms threatening immediate suffocation, and the whole body is agitated. The spasms, after some time, extend to other parts of the body, and the fits become more violent, and occur more frequently. The saliva increases in quantity, becomes viscid, and is sometimes suddenly thrown out from the mouth. Thick mucus also collects in the throat and air passages, and, in attempting to bring it up, harsh sounds are uttered, which have been supposed to resemble the peculiar growling of a dog in a similar state. The breathing is oppressed from slight causes, such as the motion of the air caused by opening a door; the slightest noise, and the sight, or even the sound of water greatly increase the suffering. The miserable patient, however, cannot refrain from attempting to quench the urgent thirst which continually torments him; he musters resolution, and, with a determined effort, raises the water suddenly to his mouth; but, before he can drink, is seized with a violent spasmodic fit, and the vessel is dashed from his lips; thus, like another Tantalus, with the water within his reach, he is doomed to suffer from the most intolerable thirst.

Feverish symptoms are always present from the time that the disease is fairly constituted; and frequent bilious vomiting, with much difficulty of breathing, adds greatly to the patient's distress; the feeling of debility, also, which has been complained of from the commencement, is much increased towards the termination of the disease. Delirium seldom occurs, but there is great irritability both of body and mind; while anxiety, distress, and occasionally fury are strongly depicted in the countenance. Sometimes, when in a fit of passion, the patient will even attempt to bite or spit at those near him, but he appears to be perfectly conscious of what he has done, and as soon as the paroxysm is over is ready to apologize for his conduct. In some cases, though the pulse is very quick, yet the skin remains cool; and though blood has frequently been drawn from the arm, it has not in any case presented the buff-colored crust indicative of inflammation.

The unfortunate sufferer is at last either carried off by a convulsive fit, or is worn out by repeated paroxysms, and sinks completely exhausted. The duration of the disease varies from thirty hours to five or six days. The average period is two days.

Treatment.—The real nature of hydrophobia is totally unknown, and we are equally ignorant of any method of treatment from which the least chance of success might be expected. Blood-letting, mercury, tartar emetic, opium, arsenic, ammonia, tobacco, and a variety of other means, have been tried in vain; in fact, there is not a well-authenticated case on record of any one having recovered from this disease.

Opium, in large doses, is the only remedy that has been found to produce any very decided effect in alleviating the terrible suffering which the miserable patient is destined to undergo.

Various plans have been adopted to prevent the saliva of a rabid animal from acting on the system, but the one on which the greatest reliance ought to be placed, is to cut out the bitten part as soon as possible after the injury has been inflicted; this, though a harsh means, is the most effectual hitherto tried; but, in order to insure success, the operation must be effectually performed, by the removal of every part which the dog's teeth may have touched. If any delay be likely to occur before the part can be removed, the individual should suck the saliva from the wound, (if it has been inflicted on a part which renders this step practicable,) and then immediately spit out the fluid he has withdrawn, and carefully wash his mouth. This simple method of preventing the absorption of the morbid saliva naturally occurs to every one; a mother never hesitates to put it in practice when her child is the sufferer, and many lives have been saved in consequence. We do not believe that any risk is incurred from adopting this measure, provided the mouth be repeatedly and carefully washed; and the best thing for this purpose, is *a saturated solution of alum;* or salt and water may be used, if alum be not at hand. The wound should also be well washed with the solution of alum, which may have the effect of preventing the poisonous saliva from contaminating the system, since we know that it possesses the property of destroying all morbid animal secretions.

Another simple mode of removing the poisonous saliva, is by cupping, by means of a common wine-glass; this is a very easy process; in order to exhaust the air, a piece of paper, moistened with spirit, and then lighted, is to be put into the glass, which is to be immediately applied over the part. These means, however, are not intended to exclude the use of the knife, or burning the part with caustic, and therefore surgical assistance should be procured as soon as possible. Whatever plan may have been resorted to with the intention of removing the saliva, the patient should be careful to keep the part discharging matter during six weeks or a month at least, by the application of an ointment composed of *basilicon* and *Spanish-flies*, or *savine ointment* may be used for this purpose.

In concluding this subject, it may not be considered unnecessary to give a short description of the appearance which a dog presents, when in a rabid state. He at first appears dull and sullen, avoids the light, prefers solitude, and has an aversion to food; he snarls at the sight of a stranger, and may endeavor to bite him. He recognizes his master, and fawns as usual on those whom he knows, but is peevish, irritable, and apt to snap or bite suddenly, without any provocation. After two or three days, if not confined, he quits his master's house, and runs along panting, with the tongue hanging from his mouth. His ears and tail droop, he appears much dejected, and his eyes are red and watery. He stops occasionally and gnaws at stones, bits of wood, &c., and attempts to bite every person he meets, but does not go out of his way to attack any one. He does not bark, but makes a peculiar growling noise, almost amounting to howling. Foam appears at his mouth, he is seized from time to time with sudden fits of fury, and bites every animal within his reach, particularly his own species. Two or three days after leaving home, he is observed to be palsied behind, and to carry his head near to the ground; he becomes at last completely exhausted, and dies.

HYPOCHONDRIA, VAPORS, OR LOW SPIRITS.

A person affected with this singular disorder is said to be hipped. It presents itself under such a variety of forms, and the symptoms vary so much in different individuals, that many pages might be filled in attempting to describe it. The opinions of physicians also differ widely with regard to the source and true nature of hypochondria; some suppose it to be an affection of the brain, a species of mania; while others maintain that it is a disorder of the nervous system, arising from a deranged state of the digestive organs.

Hypochondria is not a disorder of young people; old maids, and bachelors advanced in life, are generally the unfortunate subjects of it. Agricultural laborers, and those who are actively employed, are very seldom troubled with hypochondria; but the idle, the dissipated, and those who are constitutionally nervous and timid, among the higher classes of society, are very subject to it. Sedentary habits, particularly when connected with intense study, or long-continued attention to abstruse subjects, tend strongly to bring on this disease; hence it has been a common disorder of literary men in all ages. Aristotle assures us that all the great men of his time were melancholic or hypochondriac.

A hypochondriacal patient often says that he is tired of life, and wishes that death would come to relieve him from his suffering; and yet his conduct shows how very desirous he is of living, and how much he dreads death. He consults every medical man of his neighborhood, and is perhaps in communication with several of them at the same time; but not believing that they pay sufficient attention to the Protean forms which his disorder assumes, he never follows out the treatment prescribed by any of them. He reads every medical book which comes in his way, and leaves no description of fashionable quackery untried. He has recourse to *animal magnetism*, and as long as he is impressed with the idea that it will be the means of cure, he fancies that it does him good; but getting tired of this, he consults the *Homœopathists*, and soon loses confidence in their minute doses. A variety of empiric remedies are resorted to; but, instead of finding a specific for his numerous ailments, his digestive organs become materially affected from the quantity of medicine he has taken. The healthy appearance which he has probably hitherto retained now begins to leave him, and the consequences might soon be of a serious nature, unless he see the necessity of following the advice of the celebrated Italian physician Baglivi. "Although, at first sight," he says, "Hypochondriasis may appear a destructive and incurable disease, yet the patients may generally be very easily cured, not by taking great quantities of medicine, but by the cheerful discourse of friends, the innocent pleasures of a country life, frequent exercise on horseback, and by following the mode of living pointed out by a wise physician."

HYSTERICS.

Hysteria has, in many respects, a close resemblance to epilepsy, and is supposed by some physicians to be a species of that disease. Several well-marked symptoms, however, distinguish these disorders from each other. In Hysteria the face is not nearly so much distorted, nor does it ever acquire a livid color, as in epilepsy; and in the former affection the patient generally hears what is said to her, and seldom becomes entirely insensible; froth does not appear at the mouth, there is no grinding of the teeth, nor is the tongue ever injured; the breathing is not stertorous or snoring, and the hands remain open.

A paroxysm or fit of hysteria is generally announced by head-ache, restlessness, cramps, coldness of the feet, yawning, and sometimes by immoderate fits of laughing, or crying and laughter alternately. The patient experiences a peculiar sensation, as if a ball were moving about with a rumbling noise in the belly. This, after some time, rises to the stomach, and thence to the throat, where it fixes itself, causing a most intolerable feeling of choking or strangulation. The breathing now becomes hurried, the heart palpitates; giddiness, sickness at stomach, and dimness of sight, follow. The patient then falls down, seized with convulsions; she screams, perhaps tears her hair, and beats her breast; her body is writhed to and fro, and the limbs assume a variety of postures. The convulsive movements are not constant; a succession of fits take place, with longer or shorter intervals between them. Sometimes the urine is discharged involuntarily; and during the absence of the convulsions, the patient laughs wildly, cries, or screams; and sometimes a distressing hiccup comes on. The abdominal muscles may be irregularly contracted, or the belly may be drawn inwards towards the spine, or is tense, and distended with air; the veins of the neck are greatly distended, and the carotid arteries beat with unusual violence. In delicate females the face is pale and flushed alternately; in the more robust it is flushed, and appears fuller than usual. The patient having remained in this state during a longer or shorter period, often for twenty-four hours, and sometimes considerably longer, at length begins to recover gradually. The spasms abate, wind is freely discharged from the stomach; there is frequent sighing or sobbing; she complains of severe head-ache, with a feeling of soreness over the whole body and limbs, and lies in a languid and listless state for some time before she is able to rise. The recovery, in some cases, is sudden, and accompanied with a loud fit of laughing or immoderate crying; and there is often a copious discharge of pale urine.

This disease imitates so many others, and assumes such a variety of symptoms, that a concise description fails in conveying an adequate idea of it; but we do not see any necessity for giving a minute account of all its various forms and relations, because, however formidable in appearance, it is never attended with danger.

A point, however, of considerable importance with regard to hysteria, is the difficulty of distinguishing it from other diseases; indeed, it has such a near resemblance, in many respects, to hypochondria in males, that medical men are often embarrassed by the variety of symptoms which occur in hysterical females; and in many cases considerable experience and judgment are required in order to be able to discriminate between functional or even organic disorders, and the endless variety of forms which this affection presents. An hysterical female sometimes complains of great pain and tenderness of the belly, and even screams if it be touched; she may have head-ache at the same time, and remain in bed during several days; but the pulse continues tranquil, and the skin is not hotter than natural. Many girls, however, have been bled repeatedly while in this state, under the idea that some inflammatory action was going on.

Pain about the region of the heart, accompanied with palpitations and occasional fainting fits, constitute another form which hysteria assumes, and may at first lead any one, ignorant of the use of the stethoscope, to suppose that organic disease of the heart existed.

Causes.—Females, from fifteen to thirty years of age, are most liable to hysteria, and it is generally observed in those of a highly nervous temperament, with spare habit of body; or in plethoric and fat persons, with soft and relaxed muscles, who are subject to irregularities of the menstrual discharge.

The most common exciting causes, are disappointed love, jealousy, undue excitement, ungratified desires, and all powerful mental emotions, which act strongly on the nervous system, and tend to induce disorders of menstruation. Hysteria, in fact, depends almost entirely on the education, social position in life, mode of living, and moral training of females; many, from having been over-indulged when children, become irritable, wayward, capricious, and, in a word, are so self-willed, that the slightest disappointment or opposition brings on a paroxysm. Sydenham remarked long ago, that, "Upon the least occasion they indulge terror, anger, jealousy, distrust, and other hateful passions; and abhor joy, and hope, and cheerfulness, which, if they accidentally arise, as they seldom do, quickly fly away, and yet disturb the mind as much as the depressing passions do; so that they observe no mean in any thing, and are constant only to inconstancy. They love the same persons extravagantly at one time, and soon after hate them without a cause; this instant they propose doing one thing, and the next change their mind, and enter upon something contrary to it, but without finding it. So unsettled are their minds, that they are never at rest." People, in general, are not much inclined to sympathize with hysterical females, however formidable or alarming the fits may appear, because it is well known that this affection is in a great measure under their own control, and, in fact, in nine cases out of ten, the paroxysm is the result of a fit of bad temper, or of some excitement which could not have arisen in a well-regulated mind.

Strong religious feeling, acting on delicate or weak-minded females, is another fruitful source of hysteria; and, in such cases, it is readily communicated from imitation and sympathy.

Treatment.—Two indications are to be attended to in the treatment of hysteria; the first is to shorten or moderate the violence of the paroxysm, the other to prevent the return of the fits.

When the fit is slight, the application of cold water to the head and neck, putting salt in the mouth, and *sal volatile*, or *aromatic vinegar*, to the nostrils, are the means commonly put in practice, and sometimes with advantage; but, at all events, in mild cases, the fit may be allowed with perfect safety to run its course. When the paroxysm is severe, the first thing to be done is to prevent the patient from receiving injury by the violence of her struggles. She should be placed in bed in a well-aired apartment, her shoulders ought to be raised, and her dress loosened. If she be capable of swallowing, a tea-cupful of cold water, or the following draught may be given.

Camphor mixture, two ounces,
Sal volatile, (aromatic spirit of ammonia,) a tea-spoonful. Mix.

Or a tea-spoonful of *æther* may be given, in a little cold water. Should the face be flushed and the head hot, cloths moistened with æther are to be placed on the forehead, or wet towels or pieces of linen may be applied to the same part.

If the convulsions be severe, and the patient unable to swallow, clysters may be found very serviceable.

Barley water, eight ounces,
Rectified oil of turpentine, an ounce,
Olive oil, an ounce. Mix, as an injection.

An injection of cold spring water has been found very useful in allaying the violent muscular agitations. The assafœtida injection has been recommended; but, though one of the best things that can be used in flatulent colic, it does not appear to possess any advantage here over the injections above mentioned, and is besides an exceedingly disgusting remedy.

Dr. Conolly mentions, that he has frequently known the fit prevented by the prompt administration of half a drachm of the *powder of ipecacuan.* Blood-letting is seldom necessary, and only where there is great determination of blood to the head; and in these cases the feet are to be put in warm water, containing powdered mustard, or mustard cataplasms may be employed. But it often happens that all the remedial means resorted to, fail in either mitigating or shortening the fits.

Treatment during the intervals.—In order to effect a radical cure of this affection, attention must be paid to the general health of the patient, and to the state of the digestive organs and womb. If the habit of body be full and plethoric, low diet and exercise are proper; but if the patient be delicate and her stomach debilitated, tonic remedies, such as small and repeated doses of *quinine*, *preparations of iron*, and the *infusion of quassia* and *calumba*, are the most suitable remedies.

Should the disease be connected, which it very frequently is, with disorders of menstruation, we must refer the reader to a subsequent part of the work.

Valerian, castor, assafœtida, galbanum, and other remedies termed antispasmodic, are in very general use in the treatment of hysteria, but we cannot say that we have ever known any permanent benefit derived from them; and we believe that medicine, to have any decided effect in this disorder, must be directed towards improving the state of the digestive and uterine functions.

It is not, however, to be supposed that much benefit can be derived from any description of medical treatment, as long as the moral and physical causes of the affection are kept up. If, instead of a pampered mode of living and stimulating diet; going to bed late at night, and rising at a late hour in the morning, the too frequent attendance at balls, parties, and public places of amusement; and the various debilitating causes which induce that susceptible state of the nervous system, which is so closely allied to this affection —the fair sufferers could command resolution to retire to rest at an early hour, in order to insure early rising in the morning, and take regular exercise on foot or on horseback, in pure air,—the general health and the function of the digestive organs would soon be so much improved as to render highly-seasoned dishes, wine, strong tea, coffee, and other stimulants unnecessary; and if at the same time they would endeavor to acquire a degree of self-control, sufficient to enable them to prevent their tempers being ruffled by the various sources of irritation to which every one must be subject, we are convinced that less would be heard of hysterics and assafœtida. An able and experienced German author, speaking of the effects of ease and luxurious habits in aggravating this disease, says, that the wives of merchants are subject to hysteria in prosperous times, but when reverse of fortune comes they *have no time to be ill.*

The mind should, as much as possible, be kept easy, cheerful, and occupied with agreeable pursuits; the body should be sponged daily with tepid or cold salt and water; or the shower-bath or sea-bathing may be had recourse to. The state of the digestive organs should be carefully noticed, and it is of equal importance to maintain a healthy state of the uterine functions. Hippocrates, more than two thousand years ago, remarked, that the best cure for hysteria is to marry and bear children.

ILIAC PASSION.

Iliac passion, or Ileus, consists of excessive vomiting, with obstinate constipation of the bowels. This dangerous disease may commence suddenly and terminate fatally in the course of four or five days; but cases of this description are, fortunately, very rare. It usually commences with acute griping pain, obstinate constipation of the bowels, retraction of the navel, and the usual symptoms of severe colic, which not being relieved by any mode of treatment, a still more distressing state supervenes. The patient is racked with violent pain; the belly becomes swollen, and tender to the touch; the pulse is weak, small, and quick; the thirst is urgent; the face appears anxious, and shrunk; fæcal matter is vomited; cold sweats, hiccup, and frequent fainting fits follow; and death generally puts an end to the patient's misery. In some cases, acute pain is felt at a particular part of the abdomen, accompanied with heat of skin, quick pulse, thirst, and the ordinary symptoms of inflammation; in others, there are no symptoms of fever; in the latter case, life may be prolonged a considerable length of time.

Causes.—Ileus may arise from various causes, the principal of which are ruptures; one portion of the bowels passing within another, and becoming entangled; contraction, or stricture of the bowel; obstruction from cancerous or other morbid growths; bands formed by false membranes, strangulating or compressing a portion of gut; paralysis, or torpor of the bowels, arising from hardened fæces, impacted in some part of the intestinal canal; or it may be a symptom of inflammation of the bowels.

Treatment.—In every case, the first thing to be done is to ascertain whether or not the disease is the result of hernia or rupture. A hernial tumor is sometimes so small that the patient is ignorant of its existence, or may not consider it worthy of notice; and females are often ashamed or unwilling to admit that they have any complaint of this nature. We ought not, therefore, to rest satisfied with the statement of the patient, but should examine the parts subject to rupture with the greatest care. The necessity of procuring the best professional assistance at an early stage of the disease, in order to avoid intense suffering and death, is absolute.

Another essential point to be attended to, before having recourse to any remedial means, is to ascertain whether or not the disease is accompanied by inflammation, the signs of which are, a constant, acute, and burning pain in the belly, which is distended, tense, hot, and acutely sensible to the slightest pressure; urgent thirst, and high colored urine. In this case, instead of giving opiates and strong purgatives, which would soon destroy the patient, recourse must be had to general and local blood-letting, and the means usually adopted to subdue inflammation of the bowels, of which the ileus may be only a symptom; and will then, of course, be removed along with the inflammation.

If the disease do not depend on hernia, and if no inflammatory symptoms be present, it then becomes advisable to administer purgatives and opiates. Dr. Hufeland recommends a table-spoonful of recently expressed *linseed oil* to be taken every hour; and he also states, that he has known several patients relieved by the following mixture.

Almond oil, and
Epsom salts, of each one ounce,
Purified extract of aloes, ten grains,
Extract of henbane, a scruple,
Water, eight ounces. Mix. Two table-spoonsful every two hours. The bottle to be shaken before the medicine is used.

If the above remedies do not act on the bowels, *castor oil*, or *croton oil*, should be taken in the manner directed at page 342. A large dose of *calomel*, (from eight to fifteen grains,) with two grains of *opium*, or eight grains of the *extract of henbane*, will sometimes allay the irritability of the stomach, and open the bowels. The vomiting, however, is in some cases so incessant that all remedies are rejected; here the principal reliance must be placed on warm emollient and stimulant clysters, (see page 342;) and the hot turpentine fomentation ought to be applied over the belly as long as the patient can bear it. If the bowels be not moved by the above injections, they should be repeated, with the addition of four grains of *tartar emetic*.

If the disease resist all these remedies, the patient should be bled from the arm, even if no inflammatory symptoms exist; and afterwards a pill may be given, every three or four hours, containing four grains of *calomel* and one grain of *opium*, or half a grain of *muriate of morphia;* and, in the event of the pills being rejected by the stomach, clysters of starch should be administered, each containing fifty or sixty drops of *laudanum*.

INDIGESTION.

There are few individuals who have not experienced oftener than once in the course of their lives, the affection known under the name of indigestion, (*dyspepsia*,) and indeed when we consider the delicacy and complexity of the apparatus by which digestion is effected; the important duty which the stomach has to perform; its numerous sympathies and connexions with other organs; the almost incessant exercise of its functions; and the frequent irritation to which it is exposed from errors in diet, and the stimulating action of wine, spirits, and other exciting liquors; we need not be surprised that this affection is so common; but, on the contrary, have reason to be astonished that the digestive organs are capable of resisting, to the extent that they generally do, the various debilitating and exciting causes to which they are so frequently subjected.

Accidental attacks of indigestion are of very frequent occurrence, and arise for the most part from overloading the stomach with food, and indulging too freely in wine, spirits, or other intoxicating liquors. The principal symptoms are, a sense of fulness, weight, and uneasiness at stomach; foul tongue, a bitter taste in the mouth, nausea, loss of appetite, with a particular aversion to fat or oily substances, and sweet or insipid articles of diet; flatulency, sick head-ache, and sometimes heartburn. In such cases a gentle emetic of *ipecacuanha*, a draught of warm *chamomile tea*, or irritating the throat with a feather, in order to rid the stomach of the aliment with which it is overcharged; followed by a mild dose of *tincture of rhubarb*, *Gregory's stomachic powder*, or some other gentle laxative; and spare diet for a few days, so as to allow the weakened stomach to recover its tone—are the simple means to be resorted to for the purpose of restoring the healthy functions of the digestive organs. Other causes, however, besides repletion, may give rise to an accidental fit of indigestion. Of these we may enumerate articles of food difficult of digestion; certain circumstances occurring shortly after a meal, as exposure to extreme heat or cold, the use of ices, and strong mental excitement; eating quickly after long fasting; constipation of the bowels; accumulation of bile or mucus in the stomach, &c. In all cases of this description, when the disorder can be easily traced to some accidental cause, the above treatment, if no inflammatory or feverish symptoms be present, will soon restore the stomach and bowels to a healthy state.

The chronic form of indigestion depending on debility, or functional derangement of the stomach, commences slowly, and often advances to a considerable extent without particularly attracting the patient's attention. The symptoms that indicate the approach of this insidious disorder are numerous, but we shall only notice those which most frequently present themselves—the sleep is disturbed, and the patient is restless during the night, but in the morning he sleeps heavily, beyond his usual hour of rising, and awakes unrefreshed, with a bitter taste in his mouth. He has very little appetite for breakfast, and can only relish savory articles of food; during the day he feels languid, and sometimes drowsy, particularly after meals; and has little inclination for exercise or mental exertion. After some time a sensation of dryness in the throat begins to be felt in the morning, attended with expectoration of gray-colored phlegm, and sometimes with slight sore throat. As the disease advances the appetite becomes more impaired, nausea and inclination to vomit are occasionally experienced; an unpleasant sensation of heat is sometimes felt at the stomach during the day; the disinclination to exercise and mental occupation increases, and there is drowsiness after dinner. These symptoms are followed by a dull, heavy pain in the head; and a feeling of weight at the stomach, with flatulency and heartburn after eating. When this form of indigestion becomes confirmed, the face is pale, the eyes appear dull and heavy; the mouth feels clammy; the tongue is flabby, pale, or whitish, and more or less furred; there is a constant sense of fulness and distension in the belly, and the bowels are irregular, the evacuations being scanty and particularly fetid, or copious and frequently containing bile and portions of half digested food; the urine is clear, copious, and, after standing some time, deposits a reddish sediment indicating acidity in the stomach and bowels; or it may become turbid, and deposit a whitish substance, showing an alkaline state of the contents of the stomach; the temperature of the body is lower than natural, the feet are often cold, and the pulse is soft and weak. When the disorder is of long continuance, other organs of the body become sympathetically affected; in some cases there is a troublesome dry cough, or there may be palpitation of the heart, and intermitting pulse, which lead the patient, now low-spirited and timid, to suppose that his heart is diseased, and this idea preys upon his mind and tends to aggravate all the symptoms. The mental powers, particularly of application and memory, become impaired along with the general health and strength. The patient may remain in this state a considerable length of time, and then gradually recover, or the inflammatory form of indigestion about to be described supervenes.

Causes.—The state of functional derangement on which this form of indigestion depends, may be occasioned by impaired organic nervous power of the stomach, depraved or deficient secretion of the gastric juice, diminished absorbing power of the stomach, rendering the digestion of fluids slow and difficult; a diminution of its muscular power, causing the mixture of the food with the gastric juice to be retarded or rendered imperfect. One or more of these deranged states may exist, independent of, or associated with, disorders of the intestines, liver, or some other organ; indeed the stomach participates in the suffering of every other part of the body, and the majority of diseases are accompanied, even from their commencement, with symptoms of indigestion. Hence the necessity of ascertaining, before adopting remedial means, whether this affection is primary or symptomatic of disorders of other organs or parts.

We have now to notice the *exciting causes*, the most important of which are the following; habitual inattention to diet, both as regards the quality and quantity of food; irregularity in the times of eating; drinking large quantities of tea, and other relaxing fluids; and the habitual use of malt liquor.

Want of exercise is another fruitful source of this disorder; hence it is frequently met with, not only in the indolent and luxurious, but also among industrious artisans, who are habitually employed in sedentary occupations. Literary men particularly suffer from this cause, conjoined with over exertion of the brain. Want of pure air, and the impeded admission of light into the dwellings of the poor, exercise a powerful influence in producing that depressed state of constitution which predisposes not only to indigestion but to scrofulous affections, consumption, and typhus. Hence the inhabitants of the metropolis and other large cities, who reside in narrow streets and lanes, and live in obscure, ill-ventilated houses and cellars, are very subject to these disorders, and the artisans of our large manufacturing towns, who breathe a vitiated atmosphere, impregnated with a thousand impurities, and who seldom have it in their power to inhale the pure air of heaven, or enjoy the free light of day, suffer greatly from disorders of the digestive organs. Depression of spirits, and languor after bodily exertion, are the never failing consequences; a craving for intoxicating liquors follows, which few are able to resist, and this pernicious indulgence, though it causes them to forget their miseries for a time, is sure to aggravate their ailments, while at the same time it gradually breaks down their constitutions; so that when overtaken by typhus, or any other acute disease, their vital energies soon become so prostrated as to render the most judicious remedial means but too frequently of no avail.

Frequent and long exposure to a cold moist atmosphere, anxiety, grief, disappointment, and all the depressing passions, tend strongly to bring on indigestion; and it may be traced in many cases to immoderate discharges from the body, such as flooding, frequent blood-letting, the disorder called the whites, (*leucorrhœa,*) excessive loss of blood from piles, and protracted suckling. This last seldom fails, in not only weakening the stomach, and producing a variety of unpleasant symptoms, but exhausts the strength, and predisposes the body to the invasion of more serious disorders.

Indigestion from functional derangement of the stomach is most frequently met with among people of relaxed constitutions, with languid circulation, soft flesh, pale skin, and who are subject to cold feet and hands.

Treatment.—Accidental attacks of indigestion generally arise from repletion of the stomach, or from eating articles of food difficult of digestion; and the treatment, as we have already mentioned, consists in gentle emetics, laxatives, and abstinence; but when the disorder is confirmed, emetics are seldom required, and if taken, unnecessarily, tend to aggravate the symptoms. Some people, however, when they feel uneasy after a full meal, have recourse to emetics, or adopt the plan already noticed, of irritating the throat by a feather, or with the finger, in order to produce vomiting; but this is a very injurious habit, and though it give temporary relief, yet, if persisted in, may ultimately induce some organic disorder of the stomach. Another pernicious custom is the habitual use of laxatives. Ordinary doses of these medicines soon lose their effect, and even large doses of strong purgatives ultimately fail to act on the bowels; and the patient, after seeing the inutility, and experiencing the bad effects of this practice, at last finds the necessity of seeking relief from the more natural means of exercise and a properly regulated diet. Mild laxatives are no doubt occasionally necessary, and in the article on constipation are several formulæ suited to various habits and deranged states of the digestive organs. Dr. Todd recommends the following pills as the best adapted to this form of indigestion:

Socotrine aloes,
Rhubarb, and
Gum guaiac, of each a scruple,
Ipecacuan, four grains. Mix and form into twelve pills—one or two to be taken occasionally when necessary.

Various bitter, astringent, and aromatic remedies, are used, to correct the weakened and relaxed state of the stomach, which results from the debilitating causes above mentioned; but these tonic remedies, though useful in many cases, frequently fail in producing any good effect, even when the symptoms appear to indicate their use; and as they all possess heating and stimulating properties, invariably do harm in the form of indigestion, depending on irritation or chronic inflammation of the stomach, characterized by furred tongue with red edges and point, thirst, tenderness or pain at the stomach after eating, or on pressing on it with the hand, and feverish symptoms.

The tonics commonly used are, the *infusion of chamomile flowers, calumba, gentian, and cascarilla; the elixir of vitriol, (aromatic sulphuric acid,) diluted nitric acid, and the tincture of steel.* These remedies may be taken, as directed in other parts of the work, or the subjoined formulæ may be used:

Compound infusion of gentian, an ounce and a half,
Orange-flower water, three ounces,
Diluted nitric acid, forty drops,
Syrup, two drachms. Mix. To be taken in the course of the day, and continued during a fortnight or three weeks; or

Infusion of calumba, seven ounces and a half,
Subcarbonate of soda, half a drachm,

Tincture of henbane, two drachms. Tincture of orange-peel, two drachms and a half. Mix. One or two table-spoonsful to be taken three times a day; or

Decoction of bark, four ounces,
Carbonate of ammonia, twelve grains,
Tincture of cascarilla, four drachms,
Syrup of orange-peel, three drachms. Mix. To be taken in the course of the day.

But the remedies which we have found to be the most serviceable, are the *extract of henbane*, followed by quinine.

When indigestion is associated with torpor of the liver, the evacuations from the bowels being of a white or clay color, while the eyes and complexion have a yellowish tinge, a blue pill should be given every second night, followed by a *Seidlitz powder*, or a small dose of *Epsom salts* in the morning, and continued until the discharge resumes a natural appearance. But unless there be reason to suppose that the liver is not doing its duty properly, recourse should not be had to mercurial preparations. They render the patient weak, nervous, and constantly susceptible of cold; and induce, in many people, a state of morbid irritability, which allows the system to be acted upon by various exciting and depressing causes, that in the usual state of health would have no effect. If indigestion be connected with impaired or obstructed menstruation, *preparations of iron*, and *pills of myrrh and aloes*, are to be used. (See *Menstruation, disorders of.*) If eruptions appear on the skin, the *compound decoction of sarsaparilla* will be found the most serviceable remedy. When it is complicated with piles, gravel, or affections of the kidneys, the treatment appropriate to these cases must of course be resorted to.

But medical means are not likely to be of much service in indigestion without the strictest attention to regimen and diet; and it ought to be strongly impressed upon the patient that his health is, in a great measure, in his own hands, and that unless he has the resolution to avoid the causes on which the disease depends, the aid of the physician will be of but little avail. Many people, however, have it not in their power to adopt appropriate means for the removal of this tedious and obstinate disorder; and, under these circumstances, it becomes necessary to alleviate the symptoms by administering medicines to assist the digestive process. But the dyspeptic patient ought ever to bear in mind, that temperance and exercise are the chief means not only of preventing, but of curing indigestion, and are indispensable in every form of the disorder.

A proper regulation of the diet is, probably, the most essential point; and the patient ought not only to avoid excess in eating, but must carefully abstain from articles of diet which he has found to disagree with him. The meals should be regulated according to the occupation, habits of life, and peculiarities of constitution of the individual; for it is not to be supposed that the same kinds of food will be suitable in all cases.

As a general rule, it may be observed, that exercise should not be carried so far as to cause much fatigue, but may safely be continued until gentle perspiration is produced. Neither the body nor mind should be actively exercised until at least two hours after dinner. Dr. Cullen, speaking of the advantages to be derived from exercise, says, "As a bodily exercise, I can say that walking has good effects. I have always thought it necessary to continue other amusements or business; and there are several instances of persons, who have long labored under weakness of the stomach, being cured by watching the concerns of their farm, which obliges them to be much in the open air, and in constant gentle exertion. I have cured weak stomachs by engaging the persons in the study of botany, and particularly in the investigation of our native plants, and in other gentle and long-continued amusements."

Personal cleanliness should be strictly attended to. The patient ought to sponge his body every morning with salt and water, or vinegar and water, and afterwards rub the skin well with a coarse towel. The warm bath will, in most cases, be found serviceable; and, in some constitutions, bathing in the open sea is attended with much benefit. Friction of the body with a flesh-brush or hair-glove is useful in all cases.

INDIGESTION FROM IRRITATION, OR CHRONIC INFLAMMATION OF THE STOMACH.

At the commencement of this form of indigestion the appetite is generally impaired, but, in some cases, very little affected; or it may be morbidly increased. Slight feverish symptoms come on in the evening; the pulse becomes sharp; the heat of the skin is increased; the palms of the hands, and soles of the feet are hot, and thirst is present. The tongue is furred or loaded at its root, and the edges and point are red, or it may be clean and preternaturally red; the lips are red and dry, and the mouth and throat are dry on awaking in the morning; the bowels are generally constipated, and the evacuations are dry and scanty; the urine is rather scanty and high colored; the sleep is not sound, the patient is disturbed by disagreeable dreams, and, on rising in the morning, feels unrefreshed, languid, and irritable. A gnawing sensation, resembling that produced by hunger, is sometimes felt at the stomach, and is relieved by eating, but generally returns in the course of about two hours, accompanied with a sensation of fulness or distention. The patient may continue in this state for many months, or even years, without experiencing much pain at the stomach; but, as the disease gains ground, a sensation of heat is felt after eating, and there is tenderness or pain on pressing with the hand over the stomach. The process of digestion is now slow and painful, a feeling of weight and oppression is experienced at the stomach after eating, with general uneasiness, flushing of the face, pulsating head-ache, quickened pulse, and other symptoms of general excitement. Heartburn, or belching of sour or bitter fluid, and flatulency, are also symptoms of very frequent occurrence.

In the more advanced stages of this affection, a burning pain is frequently felt at the pit of the stomach, sometimes attended with nausea; there is considerable thirst; the tongue is of a dark red color, or resembles raw meat; or it may be smooth, glossy, or chapped; and, in long continued cases, not unfrequently acquires a fissured or lobulated appearance. The taste is saltish, resembling that of blood, and a scalding sensation is sometimes felt at the point of the tongue. The throat is red, sometimes painful, and little vesicles, or ulcerations, occasionally form in the mouth and throat. The skin is rough and dry, except during the night, when the patient not unfrequently awakes, bathed in perspiration. The pain at the stomach is increased after eating, and often extends to the left shoulder and back. Some patients are occasionally much troubled with palpitations, or strong beating of the heart, others again have violent throbbing of the abdominal aorta, or great arterial trunk of the belly. The temperature of the trunk of the body is rather greater than natural, but the extremities are generally cold, except occasionally, when the soles of the feet and palms of the hands become exceedingly hot and dry; and the patient is susceptible of the slightest change of temperature. The pulse is small, and rather quicker than natural, and is always considerably accelerated, and sharper, after eating. The countenance is sallow; the body gradually becomes emaciated, and the patient is fretful, low-spirited, and constantly thinking of his ailments. At this advanced stage of the disease, many patients are much troubled with head-ache and dry cough, which are always increased by the use of stimulating food or drink.

The patient, after suffering an indefinite length of time, with a greater or less number of the symptoms above mentioned, at length recovers, or, if the disease be neglected, acute inflammation of the stomach, or vomiting of blood may follow; or the bowels, liver, or spleen may become affected, and diarrhœa, dysentery, or dropsy may be the result.

Causes.—The inflammatory form of indigestion arises, in most cases, from the habitual use of intoxicating liquors, and stimulating diet; these causes, more especially the former, excite and irritate the stomach, bowels, and liver, and render this form of the disorder by far the most common. The abuse of spirituous liquors keeps the mucous or lining membrane of the stomach in a constant state of excitement, varying from simple irritation, with an overcharged state of the blood-vessels, to confirmed chronic inflammation. Drinking cold fluid when the body is perspiring after violent exercise; the use of strong irritating purgatives, and other stimulating medicines; the repulsion of cutaneous eruptions; the suppression of accustomed evacuations, as the menses, the whites, the discharge from piles, &c., are the most frequent of the *occasional* causes.

Treatment.—Search for and remove the exciting cause on which this disease depends; without this indispensable precaution, no advantageous result is likely to be obtained from remedial means. If the disease be caused by excess in eating and drinking, these pernicious habits must be discontinued, and low diet strictly enjoined; under these conditions, the efforts of nature, unaided by medical treatment, are often, in mild cases, sufficient to effect a cure. *In the more severe cases*, where there is much tenderness or pain on pressing with the hand over the stomach, the diet should be confined entirely to farinaceous food, such as arrow-root, sago, gruel, rice, &c.; and cold lemonade, barley water, or similar cooling and demulcent beverages, are to be used as common drink. From six to ten *leeches*, according to the age and strength of the patient, should be applied to the pit of the stomach, and repeated as often as the pain and tenderness return. The bowels are to be regulated by clysters of warm water, or by gentle laxative medicines, such as *magnesia*, *rhubarb*, the *confection of senna*, or *castor oil*. Counter irritation, produced by the *tartar emetic ointment*, (page 266) if persisted in sufficiently, will be found very serviceable; or a large plaster, composed of seven parts of the *compound pitch plaster*, with one part of the *plaster of Spanish flies*, may be applied over the stomach. To allay irritation of the stomach, narcotic remedies will be found in many cases very beneficial; and perhaps the best remedy that can be used for this purpose is the *extract of henbane*. In addition to these means, the tepid bath (at about 95 to 98 degrees of heat) should be used daily, or every other day. Repose, both of body and mind, are necessary, as long as pain or tenderness is felt at the stomach; but, as the inflammation subsides, gentle exercise in the open air will be proper, and the diet may be made gradually more nutritious; at first a little beef tea, chicken, or veal broth should be taken, and afterwards a small quantity of solid animal food may be used once a day. No precise rule, however, can be laid down with regard to the quality or even quantity of aliment, which ought to be taken; the patient should observe carefully the different kinds of food which agree best with his stomach, and should avoid extreme abstinence, as well as eating more than is really necessary, because if carried too far, abstinence would become a source of irritation to the stomach and would prove not less injurious than the opposite extreme.

INFLUENZA.

Influenza, or epidemic catarrh, has generally been observed to commence suddenly, with chills or shivering, alternating with flushes of heat, loss of appetite, great lassitude, and debility. These symptoms are soon followed by pain and a sensation of weight in the forehead, sneezing, a copious discharge of thin acrid fluid from the nostrils, a sensation of rawness along the course of the windpipe, hoarseness, and dry cough. To these are conjoined anxiety and a feeling of oppression about the chest; pain in the back and knees, and shooting pains in different parts of the body and limbs; quick and weak pulse, and moist tongue, covered with white mucus.

The abruptness of the attack, the extraordinary debility, the severe head-ache, accompanied with giddiness, and the flying pains in the back, knees, and various parts of the body, distinguish this affection from common catarrh. (See *Cold in the Head and Bronchitis*).

The duration of influenza varies from three or four days to a fortnight; but, in aged and delicate people, it frequently leaves considerable debility and susceptibility to cold for many months. It seldom continues longer in any place than six weeks, and generally, towards the termination of the epidemic, the symptoms are mild and differ little from those of a common cold.

Treatment.—When influenza appears in a mild form, scarcely any medicine is required. Rest, demulcent drinks, and abstinence from animal food and stimulating liquors for a few days, are sufficient to remove the disease; but in the more severe cases an emetic is found useful at the beginning, followed by mild laxatives. In many cases there is a considerable degree of irritation of the mucous membrane of the stomach and bowels, which is always increased by active purgatives and stimulating food and drink. Blood-letting is almost invariably found to be injurious, and also opiates at the commencement of the disease, while feverish symptoms are present. The most efficacious remedies are small and repeated doses of *ipecacuan* and *James's powder*, a grain of each three or four times a day or oftener; but not carried so far as to produce sickness at stomach. These medicines, when judiciously administered, according to the urgency of the case and constitution of the patient, keep up a slight degree of perspiration, assist the expectoration, soothe the cough, and tend to correct the irritation of the lining membrane of the alimentary canal. When the feverish symptoms are removed, the *almond emulsion*, with the *acetate of morphine*, are very serviceable in relieving the cough. A moderate but nutritious diet, with a glass or two of wine, is necessary to counteract the debility which, after the disease has existed some time, is in many cases very distressing. In protracted cases, where the strength is much exhausted, small doses of *quinine*, the *infusion of calumba*, *decoction of Peruvian bark*, or other tonic remedies, are required. (See the formulæ in the article on indigestion, pages 468 and 469.) Cool, well aired apartments, cooling drinks, and a moderate quantity of bed-clothes are serviceable, while hot drinks, warm rooms, and a stimulating mode of treatment, aggravate the symptoms.

We have had already occasion to notice, in the article on asthma, the excellent effect which sponging the body every morning with cold water, containing a portion of salt or vinegar, has in preventing catarrhal complaints, even where a strong disposition to them has already manifested itself. Daily ablution with cold water is strongly recommended by nearly all the best authors on these affections, and several distinguished medical men speak of the advantage which they have personally derived from it. Sir Astley Cooper makes the following observation with regard to this practice.

"The methods by which I preserve my own health, are temperance, early rising, and sponging the body every morning with cold water, immediately after getting out of bed, a practice which I have adopted for thirty years; and though I go from the hot theatre into the squares of the hospital, in the severest winter nights, with merely silk stockings on my legs, yet I scarcely ever have a cold. Should it happen that I feel indisposed, my never failing remedy is one grain of calomel combined with four grains of cathartic extract, which I take at night; with a basin of hot tea about two hours before I rise the following morning, in order to excite a free perspiration, and my indisposition soon subsides."

IODINE.

Iodine is obtained from the ash or cinder called *kelp*, which is procured from burning sea-weeds (*algæ*.)

Iodine is principally valued for the extraordinary power it possesses in promoting absorption; hence it is employed in Derbyshire-neck, (bronchocele,) chronic enlargements of the liver, spleen, testicles, uterus, &c. In various scrofulous affections, it is the most efficacious remedy we possess. It is now extensively used in combination with various other substances. The iodide of iron, in the dose of one or two grains, three times a day, is of great service in obstruction of the menstrual discharge, and the iodide or hydriodate of potash, in the dose of two or three grains three or four times a day, is much employed in rheumatism, in secondary venereal affections, as eruptions on the skin, nodes, &c.; and also to promote the absorption of the liquid secreted into the chest in consequence of pleurisy. As there is apt to be in both these preparations some free iodine, the chief cause of the unpleasant symptoms which they are sometimes said to produce, it is well to direct the patient to eat a bit of bread or biscuit after each dose; the starch of this combining with the free iodine, removes its injurious property, and with this simple precaution, the nervous symptoms so commonly ascribed to iodine may be prevented.

Iodine has been employed with great success in the irritable spreading ulcers which occur in persons whose constitutions have been enfeebled by dissipation and other depressing causes.

The iodide of potash is frequently used externally in the form of ointment. The Dublin pharmacopœia orders a scruple of the iodide to be mixed with an ounce of lard. Ioduretted baths are strongly recommended in the treatment of scrofulous affections.

The dose of the tincture of iodine is ten drops a day, in syrup and water, to be gradually increased to sixty. The preparation of this remedy generally preferred is the hydriodate of potash. Whatever preparation of iodine is employed, the dose should be small at first and gradually increased, according to the circumstances of the case. When it produces irritation of the stomach or bowels, it should be discontinued for a few days, and then given in smaller doses.

IPECACUAN.

Ipecacuan is well known as a mild and efficacious emetic; for this purpose it is given in powder, in the dose of from fifteen to thirty grains, mixed with a little warm water; or ten grains of it may be administered, combined with one grain of tartar emetic. The *wine of ipecacuan*, commonly called *hippo wine*, is well adapted for the diseases of children, where emetics are desirable. The dose is one or two tea-spoonsful, repeated at intervals of a quarter of an hour, until vomiting is produced.

Ipecacuanha lozenges generally contain each from a quarter to a half a grain of the powdered root, and are much used to promote expectoration in chronic affections of the lungs.

Ipecacuan combined with opium, forms the celebrated sudorific remedy called *Dover's powder.*

IRON.

Iron, so indispensable to the welfare and happiness of mankind, is, as the great chemist Fourcroy states, perhaps the only metal possessed of medicinal properties, which has no poisonous quality. Indeed, there are few remedial agents of more importance than the preparations of iron. The salts of iron are deservedly considered to be invaluable, in the various chronic affections occurring in connexion with that state of the body called, in medical language, *anæmia*, in which the blood is deficient in quantity, and probably altered in quality. The symptoms which indicate this condition of the system, are a soft, flabby state of the flesh, pale countenance, a peculiarly pallid appearance of the lips, general debility, loss of appetite, occasional palpitation of the heart and shortness of breathing on any sudden bodily exertion. This state is most frequently met with in females, and generally in those who are affected with obstruction of the menses (*chlorosis.*) The diseases in which the preparations of iron have been found most serviceable are scrofula, rickets, dropsy, menstrual disorders, and various nervous affections, as epilepsy, St. Vitus's dance, hysterics, asthma, and *tic douloureux.*

In persons of a full habit of body, with florid countenance, in those who have a tendency to inflammatory diseases or apoplexy, and in all cases of chronic inflammation, iron is not admissible in any form.

The subcarbonate, or prepared rust of iron, has been frequently given in tic douloureux, and other nervous diseases, to the extent of an ounce in the course of twenty-four hours; but though such doses may be given with impunity, it does not appear to be really necessary, under any circumstances, to exceed three drachms a day; and indeed, in most cases where this remedy is indicated, scruple doses, if continued for a sufficient length of time, will be followed by all the good effects which iron is capable of producing. The method generally adopted is to commence with ten grains three times a day, increasing the dose gradually to the extent of a drachm. In obstinate cases of chlorosis, and in the discharge from the vagina, called the whites, it is often advisable to administer drachm doses for a considerable length of time.

The tincture of the muriate of iron, or *tincture of steel*, as it is usually termed, is a very agreeable and convenient form of admintering iron. The ordinary dose is from ten to thirty drops, three times a day, in cold water, or conjoined with an infusion of quassia, gentian, or orange peel; or it may be given once a day, in a glass of soda water. This is considered the most suitable preparation in indigestion, arising from functional derangement or weakness of stomach; but iron, and all other tonic remedies, are improper when the alimentary canal is in an irritable condition. In retention of urine, from spasm at the neck of the bladder, the tincture of steel, in small doses frequently repeated, is an excellent remedy; ten drops to be taken every ten minutes, until some relief is afforded.

The sulphate of iron (green vitriol) produces sickness at stomach when used in full doses, and should therefore be taken at first in the dose of half a grain, three times a day. It may be used in the following form with great advantage, as a substitute for waters impregnated with iron.

Sulphate of iron, half a drachm,
White sugar, a drachm and a half. Mix, and divide into twelve powders.

Bicarbonate of soda, half a drachm,
White sugar, a drachm and a half. To be also mixed, and divided into twelve powders, one of each to be dissolved separately in water, and taken in a state of effervescence.

ITCH.

The face is the only part which it does not attack. Its immediate cause is the presence of an insect, *acarus scabiei*, which is not situated in the vesicle itself, but at the termination of a small reddish furrow with which it communicates.

Tailors, old clothes men, sempstresses, and the medical attendants and servants of hospitals, are most frequently affected with this filthy disease. In grown-up people, from ten to twenty days elapse between the infection and the breaking out of the eruption; in chidren it appears at an earlier period, generally from four to six days.

Treatment.—The itch never gets well without treatment. The remedy generally resorted to is sulphur, which seldom, if ever, fails in curing the disorder. The *sulphur ointment* of the shops, or the flour of sulphur mixed with butter or lard, rubbed in five or six times on the parts affected, effectually destroys the *acarus*. This, however, though a certain, is a very disagreeable method of cure, and is therefore at present in a great measure superseded, by the use of the hydriodate or iodide of potash, which has the effect, according to the experiments of M. Albin Gras, of killing the acarus in a shorter time than any thing else. The best manner of using this remedy is in the form of ointment.

Hydriodate of potash, half a drachm,
Lard, an ounce. Mix. To be rubbed on the affected parts.

The following formula, used in friction night and morning, has the effect of curing the itch in less than a week, and does not possess the offensive smell of the common sulphur ointment.

Yellow soap, an ounce,
Common salt, half an ounce,
Sulphur, half an ounce,
Alcohol, a drachm,
Vinegar, two drachms,
Chloride of lime, half a drachm. Mix. This quantity is sufficient for four frictions.

Rags dipped in melted sulphur, while burning, evolve a vapor (sulphurous acid gas) which possesses the power of disinfecting the woollen clothes of patients, if sufficiently exposed to its action.

JALAP.

The powder of jalap is a certain purgative, and seldom gripes unless when taken in large doses. It acts without producing nausea, or debilitating the stomach, is a safe remedy in all chronic disorders, and when combined with calomel is the purgative in common use at the commencement of fevers. When reduced to a fine powder, by rubbing in a mortar with a little sugar, and then combined with two or three grains of calomel, it constitutes an excellent remedy in the bowel complaints of children, particularly when the bowels are infested with worms. Given with cream of tartar, it is much used for the purpose of carrying off water in dropsy. (See *Cream of Tartar.*)

The dose for a child five years of age is five grains, adding a grain for every year in young people. The average dose for an adult is from a scruple to twenty-five grains.

JAMES'S POWDER.

The *antimonial powder* of the pharmacopœia is an imitation of this empiric remedy, and both these preparations of antimony are used to promote perspiration in inflammatory diseases and fever; but the tartrate of antimony (tartar emetic) in small doses is now generally preferred, because it acts with a greater degree of certainty than any other antimonial. The ordinary dose of James's powder, or of the antimonial powder, is from five to ten grains, mixed with a little jelly; but it has been frequently given in much larger doses without producing any perceptible effect.

JAUNDICE.

Jaundice is characterized by a yellow color of the eyes, skin, and urine; and by the white or clay-colored appearance of the evacuations from the bowels.

The circumstances which impede the passage of the bile into the bowels, and consequently produce jaundice, are various. The obstruction may arise from gall stones in the biliary ducts—from the bile being preternaturally thickened—from enlargements of neighboring parts—from accumulation of mucus in the duodenum plugging up the orifice of the duct—or, from inflammation of the liver or duodenum, or of the gall ducts themselves. But jaundice often arises under circumstances which do not admit of any explanation of the immediate cause of the obstruction; for example, it occasionally arises suddenly from violent mental emotions, as intense grief, terror, or a violent fit of rage; sometimes again it makes its appearance slowly, in consequence of long-continued domestic grief, jealousy, or disappointed ambition; it may also be brought on in consequence of the pain and shock given to the nervous system from falls, blows on the head, or any other part; from the reduction of a dislocation, the amputation of a limb, or the enduring of any other severe surgical operation; from the bite or sting of venomous animals, &c. The nature of several of the varieties of Jaundice is still little known; cases often occur in which the treatment is on this account rendered very uncertain. Indeed it is often necessary to trust almost entirely to the efforts of nature for the removal of the disorder.

The yellow color is first observed in the eyes, it then extends to the face, neck, and upper part of the chest, and at last the whole skin becomes imbued with it—troublesome itching, or a tingling sensation of the surface of the body, usually accompanies the discoloration of the skin. The urine at first is clear, and of a yellowish tint, but as the disease advances it acquires a saffron color, and ultimately becomes dark green, or of a mahogany color, and deposits a thick slimy sediment. The urine, even when it has acquired a very dark color, tinges the linen of a bright yellow. In general there is a great tendency to constipation of the bowels, the evacuations are scanty, clay-colored, or white, and voided with difficulty. To these symptoms are added great depression of spirits, watchfulness, a bitter taste in the mouth, furred and yellow tongue, nausea or vomiting, loss of appetite, thirst, and sometimes shivering, copious perspiration, or dry skin, and perhaps pain at the stomach. To some jaundiced patients all objects appear of a yellow color, but this is by no means a common symptom of the disease.

Treatment.—Our knowledge is very imperfect with regard to many phenomena connected with jaundice, and until the advance of science throw light on these obscure points, the treatment must be confined chiefly to controlling or removing the symptoms.

Gall stones are always formed in the gall-bladder, and as long as they remain there are not attended with pain, or any inconvenience, but when they find their way into the gall ducts, particularly if their size happen to be large, they cause jaundice, and the most excruciating pain; the latter is not constant, but recurs in violent paroxysms, and is said to be more severe than that which results from the most acute inflammation. The pain may come on several days in succession, and continue several hours each time; it is attended with occasional shivering, and profuse perspiration, but not with feverish symptoms. When the paroxysm continues long, it induces extreme lassitude and exhaustion. As soon as the stone escapes from the duct into the bowels, the urgent symptoms cease, and recovery soon follows; sometimes, however, it falls back into the duct, and in this case, though the patient is likewise relieved from his suffering, he has reason to anticipate a recurrence of the disorder at some future period.

The treatment in this species of jaundice consists in alleviating the pain by means of opiates. Fifty drops of *laudanum*, the third of a grain of the *acetate of morphia*, or twenty drops of *Battley's opiate*, should be given and repeated at the expiration of an hour, or after a longer interval, according to the urgency of the case. A warm bath may be of considerable service, and the patient should remain in it until a slight degree of faintness is produced. After two or more doses of the anodyne medicine have been taken, a dose of *castor oil* is to be administered, and the bowels are to be kept gently open, throughout the disorder, by mild doses of the same, or of some other purgative. If the bowels be obstinately constipated, which is not unfrequently the case, five grains of *calomel*, with ten or fifteen grains of the *compound extract of colocynth*, should be administered, and the dose repeated as often as may be found necessary. Emetics are seldom required in any form of jaundice, and when it arises from gall stones they cannot be administered with safety. Warm fomentations, applied constantly over the pit of the stomach, may afford some relief, and effervescing draughts may be given to allay vomiting. If the patient be of a robust habit of body, and the pain very severe, it will be advisable to take from twelve to sixteen ounces of blood from the arm. But our chief reliance is to be placed on opium, or the preparations of it above mentioned; and the dose is to be repeated at fitting intervals, according to the urgency of the symptoms, until the pain is relieved. A point of great importance in the treatment of this affection is to guard against inflammation, which sometimes supervenes from the irritation produced by the stone in passing through the duct. If, therefore, the pain become constant, and be increased by pressing with the hand over the pit of the stomach, while the pulse is observed to be fuller and stronger, no time should be lost in resorting to general and local bleeding, warm fomentations, and saline draughts.

Persons who are subject to indigestion from accumulation of mucus in the stomach and duodenum, are sometimes attacked with jaundice, in consequence of the extremity of the gall-duct which opens into the intestine being closed up by a thick layer of viscid mucus. In this case the tongue is covered with white mucus; the bowels are constipated, and the usual symptoms of indigestion are present; but there is neither pain nor feverish symptoms. This form of the disease yields readily to active purgatives; six or eight grains of *calomel* at bed-time, and a smart dose of the *black draught*, the following morning, will, in general, remove the cause of the disease; and exercise in the open air, a properly regulated diet, and a dose of *tincture of rhubarb*, one or two *compound rhubarb pills*, or any other warm purgative, taken occasionally, will soon restore the patient to health, and prevent a relapse.

If jaundice be accompanied with pain or tenderness at the pit of the stomach, and nausea, or vomiting, with aggravation of the pain three or four hours after eating, there is reason to apprehend that inflammation of the lining membrane of the duodenum, extended to the gall-duct, is the cause of the disease. Here the treatment consists in subduing the inflammation, by means more or less active, according to the urgency of the symptoms. Eight, ten, or more, *leeches*, according to the circumstances of the case, are to be applied over the pit of the stomach, followed by warm fomentations; and they are to be repeated daily until the pain and tenderness are removed; mild doses of the finest *castor oil* are then to be administered, and afterwards the *tartar emetic ointment* is to be rubbed over the stomach. As long as there is the slightest tendency to inflammation, active purgatives would be improper; and the patient must be confined to low diet and demulcent drinks.

It is better, if there be no pain or feverish symptoms, to allow nature to effect the cure, than to administer active remedies, which might produce injurious effects, more especially when we are aware that this is not a dangerous disorder under ordinary circumstances.

KIDNEYS, DISEASES OF.

A fit of the gravel is caused by the descent of gritty particles like sand, or of small stones, (*renal calculi,*) from the kidney, along the ureter to the bladder. Small stones sometimes reach the bladder without occasioning much pain or uneasiness, but in general they give rise to very distressing symptoms. The patient is suddenly seized with severe pain, in the region of the kidney, extending along the ureter to the bladder, and even to the point of the penis, and generally accompaniep with great tenderness at the part of the belly corresponding with the portion of the ureter in which the stone is arrested in its progress. There is also a dull pain, or sensation of numbness, at the inside of the thigh, and sometimes of the leg, of the side affected, with painful retraction of the testicle. The urine is passed in small quantity, tinged with blood, or mixed with clots, and there is frequent vomiting, with violent sickness at stomach, and extreme anxiety. The duration of this affection is variable, and depends on the resistence offered to the passage of the stone towards the bladder; as soon, however, as it gets into that organ, the symptoms cease in the same abrupt manner in which they commence. In general, after a longer or shorter time, the stone, with perhaps a considerable quantity of gravelly particles, passes out of the body along with the urine; but sometimes the painful symptoms above described are only a prelude to a disorder of a much more serious nature. The stone, instead of being discharged along with the urine, remains in the bladder, gradually increases in size, and occasions frequent attacks of the most excruciating pain, from which the patient has no means of escaping, except that of submitting to a formidable surgical operation.

Treatment.—The treatment of this affection should be chiefly directed to two points.

1. To mitigate the pain.
2. To facilitate the progress of the stone from the kidney to the bladder.

The bowels are in the first place to be freely opened by means of *castor oil*, *calomel*, and *jalap*, or some other active purgative; but if there be much nausea and vomiting, it will be better to administer an *enema*, (injection to the bowels,) containing castor oil and common salt. *Opium*, which may be regarded as our sheet-anchor in this affection, is then to be given in the dose of a grain to two grains, and repeated every two or three hours, or at longer or shorter intervals, according to the urgency of the symptoms. When the stomach is very irritable, the best way of administering this remedy is in the form of clyster ; a drachm of *laudanum*, with half a tea-cupful of thin starch, may be injected every two or three hours, or at longer intervals, according to the effect which it produces ; or a *suppository*, containing two grains of solid opium, may be used. In whatever manner or form opium is exhibited in this distressing disorder, it has the effect of soothing the pain, tends greatly to relieve spasm, and consequently favors the descent of the stone into the bladder. The warm bath should be employed, and afterwards warm fomentations are to be applied over the abdomen and loin of the side affected. The pain is sometimes so severe, that the perspiration is seen to drop from the patient, and even fainting fits, or convulsions, may be brought on. Great languor and debility necessarily follow this extreme suffering, care must therefore be taken to give wine, brandy and water, and other stimulants, in quantities suited to the degree of exhaustion. Stimulating diuretic remedies are not to be given, but the patient may drink freely of linseed tea, decoction of marsh-mallow, or other demulcent drinks.

INFLAMMATION OF THE KIDNEYS

May arise from exposure to cold and wet ; strains of the back and loins ; blows and falls ; hard riding ; over-doses of Spanish flies, copavia, corrosive sublimate, or other acrid substances ; or it may proceed from inflammation of the bladder, the inflammatory action being transmitted along the ureter to the kidney ; but by far the most frequent cause is gravel lodged in the kidneys, or in the ureters. It is seldom met with until after the middle period of life, and occurs most frequently in gouty habits, and in those subject to gravel and indigestion.

Inflammation of the kidneys is in no other way to be distinguished from the disorder above described, than by the pulse being full and hard, the tongue foul, the thirst urgent, the skin hot and dry, and in a word, by the presence of the usual symptoms of inflammatory fever. But, though these affections closely resemble each other, it is nevertheless of the greatest importance to distinguish clearly between them, because the treatment necessary for the one would be highly injurious to the other.

In general it is necessary to take blood from the arm to the extent of ten or twelve ounces. After depletion, the patient is to be placed in a warm bath, and afterwards large warm poultices are to be applied over the loins. The bowels are to be kept open by occasional doses of *castor oil*, or a little *rhubarb and magnesia*. The patient must remain in bed, and be confined to low diet and demulcent drinks. If further depletion be found necessary, from ten to fifteen *leeches* may be applied over the loin, or *cupping* may be resorted to; and the local bleeding is to be repeated until the pulse becomes soft and less frequent, and the skin cool. If the disease be caused by gravel, the pain may continue even after the inflammation has been removed; in this case *opium* should be administered as in a fit of the gravel. The patient must still be carefully watched, and if inflammatory action recommence, the same means must be again employed in order to subdue it; and the *extract of henbane*, in doses of three grains is to be substituted for the opium. Blisters are unsuitable.

Those who have once suffered from inflammation of the kidneys, or from a fit of the gravel, are very liable to be again attacked with these complaints; but the risk of a recurrence may be greatly diminished by adopting suitable regimen and diet. The latter should be mild and easy of digestion, all stimulating liquors abstained from, exposure to cold and wet carefully avoided, and moderate but regular exercise to be taken in the open air.

In chronic or protracted cases it will be advisable to employ leeches, or cupping from time to time, according to circumstances; a seton may be placed in the loins, or a large strengthening plaster may be applied. Mild laxatives are to be taken when the bowels require to be opened. Much benefit may be derived from the infusion of *buchu leaves*, or from the decoction of *pareira brava*, with the addition of a little carbonate of soda; the tepid bath occasionally may also be used with advantage.

KREOSOTE.

Kreosote has been found useful in checking spitting of blood from the lungs, and in cases of sickness and vomiting dependent on pregnancy, or connected with nervous and hysterical symptoms; it has also been recommended as a preventive of sea-sickness. The dose is one drop three or four times a day, formed into a pill with liquorice powder and mucilage, or given in camphor mixture, and may be gradually increased to eight drops.

A small portion of lint, or soft linen rag, moistened with kreosote, placed in the hollow of a decayed tooth, has an astonishingly rapid effect in allaying the pain, and is deservedly considered the best local application yet discovered for tooth-ache.

LEAD.

The acetate or sugar of lead is the only preparation of this metal used internally; from its astringent and sedative properties it is considered a powerful remedy in checking profuse bleeding from the lungs, womb, and other internal organs; we have given it repeatedly in urgent cases of hæmorrhage, to the extent of ten grains, in the course of twenty-four hours, mixed with a little distilled vinegar; two or three drops of Battley's opiate are usually given with each dose. It has been also used with great advantage, combined with opium, in cases of chronic dysentery and diarrhœa. Twelve grains to a scruple of it dissolved in a pint of water, with the addition of a little vinegar, are used externally as a lotion to inflamed surfaces; and three grains to an ounce of water form a good injection in gonorrhœa. Goulard water, which is made by mixing a drachm and a half of extract of lead with a pint of water, and a table-spoonful of spirit, is much employed as an application in superficial inflammation.

LIME.

Lime-water is prepared in the following manner: "Take of lime half a pound; water twelve pints. Upon the lime, first slacked with a little of the water, pour the remainder of the water, and shake them together. Then immediately cover the vessel, and set it by for three hours; afterwards keep the solution with the remaining lime, in stopped glass bottles, and when it is to be used, take from the clear solution." Lime-water is useful in indigestion, attended with acidity at stomach, is sometimes taken in protracted cases of purging, (diarrhœa,) and in the last stages of dysentery. The dose is one or two pints daily, in milk—ten ounces of it contain only four grains and a half of lime.

Lime-water is employed as an injection in *leucorrhœa*, (whites,) and is applied as a lotion to indolent ulcers.

The chloride of lime, well known under the name of *Labarracque's disinfecting fluid*, has a powerful effect in decomposing and rendering harmless the putrid effluvia arising either from diseased or decomposing animal matter, and as a disinfecting agent stands unequalled. Hence it is extensively employed for the purpose of purifying sick rooms, the wards of hospitals, crowded ships, the cells of gaols, and in a word wherever it is necessary to destroy infectious effluvia, or to correct offensive odors.

A weak solution of the chloride of lime is much used as a lotion for cancerous or other foul sores.

LIVER COMPLAINTS.

ACUTE INFLAMMATION OF THE LIVER.

Inflammation may attack the substance of the liver, or may be confined to the peritoneal membrane, with which it is covered; but in the great majority of cases, both these structures are affected at the same time. The disease commences with a sense of chilliness, or shivering, followed by hot and dry skin, full and hard pulse, thirst, nausea, and, generally, bilious vomiting. The tongue is white, or coated with yellow fur, and the patient complains of a bitter taste in the mouth, the bowels are generally constipated, though sometimes there is bilious purging; the urine is scanty, high colored, and deposits a copious brick-colored sediment. Indeed the general symptoms can scarcely be distinguished from those of bilious fever. When the inflammation is deep seated, and confined to the substance of the liver, the pain is dull; but when it extends to the surface of the organ, or is seated in the peritoneal covering, the pain is then acute, and augmented by coughing, drawing in a full breath, lying on the sound side, or by pressing with the hand under the ribs at the right side, either in front or behind, towards the spine. When to the above symptoms are added jaundice, pain at the top of the right shoulder, and swelling at the region of the liver, this cannot be mistaken for any other disease; but these signs, even in the most severe cases, are sometimes entirely absent.

Acute inflammation of the liver, when not neglected at the beginning, generally ends favorably between the seventh and twelfth day from the commencement of the disease, and is usually followed by bilious purging, a copious sediment in the urine, severe itching of the skin, or bleeding from the nose.

When the inflammation terminates in the formation of an abscess, which is not an uncommon occurrence in warm climates, the pain becomes more acute, and is accompanied with a sensation of throbbing; there is a troublesome dry cough, and, in many cases, hurried breathing, the pulse, though still full, becomes softer, the palms of the hands are distressingly hot, the sleep is disturbed, fits of shivering, alternating with profuse perspiration, are experienced; and all these symptoms are aggravated towards night. In some cases, as soon as the matter begins to form, all the feverish symptoms abate, and the pain gradually diminishes, but the swelling continues, and the chills or shivering alternating with perspiration never fail to be experienced. This termination is generally fatal, either in consequence of the matter remaining confined in the liver, or by the abscess bursting into the cavity of the belly. But it sometimes happens that the abscess points externally, and the aid of the surgeon is required to give vent to the matter; or it bursts spontaneously, and the patient recovers. Sometimes again, the matter escapes from the body through other channels, and the patient is thus rescued from death.

CHRONIC INFLAMMATION OF THE LIVER

Is frequently met with in temperate climates, and is much more common in inter-tropical countries than the acute form of the disease. It is sometimes a sequence of the latter; but in most cases it comes on gradually, and is at first scarcely noticed by the patient. Pain in the region of the liver is the principal symptom in the chronic as well as in acute form of the disease; in the former, it is dull, heavy, and increased by pressing with the hand over the part, by going quickly up stairs, riding on horseback, and, in fine, by any kind of active exercise; it is also aggravated by lying on the left side, or by any excess in eating or drinking, and, in some cases, may not be felt during many months, unless under the above or similar circumstances. Cough is only an occasional symptom when the inflammation is acute, whereas the chronic form of the disease is almost invariably accompanied with a short dry cough; and quick walking, or any unusual exercise, brings on hurried and difficult breathing, and, perhaps, a fluttering sensation at the heart. The skin and eyes acquire a slightly yellow tinge, the evacuations from the bowels have occasionally a white or clay-colored appearance, indicating a deficiency of the biliary secretion; while, at the same time, the urine is scanty, high colored, and deposits a copious sediment; and, when the disease is of long standing, the liver is generally observed to be unnaturally large. The symptoms, however, are sometimes so obscure, that the only indication of the disease observed by the patient is a dull pain or an uneasy sensation under the ribs at the right side. In many cases, the first symptoms noticed are a yellowish color of the skin and of the whites of the eyes; the unnatural appearance of the evacuations from the bowels above mentioned, and the saffron-colored urine depositing a brick-dust-like sediment. If the right side be examined, the liver will probably be found slightly enlarged, and tender when pressed upon; but when not touched, the patient only experiences an uneasy sensation of weight at the part, and is unable to sleep when lying on the left side.

Treatment.—If the patient be young, strong, and full-blooded, or if the disease have arisen from raising a heavy weight, from falls, blows, or other external injuries, and, indeed, in all cases where the pain is severe, and the inflammatory fever high, blood should be drawn freely from the arm to the extent of at least thirty ounces. The next step to be taken in this, as in all inflammatory affections, is to clear out the bowels; and much depends on the early administration of purgatives, especially in the more severe forms of the disease, so frequently met with in warm climates. The medicines generally used for this purpose are, from five to ten grains of *calomel*, either combined with a scruple of *jalap*, or followed by an infusion of *senna leaves*, with *Epsom or Rochelle salts.* The region of the liver is to be covered with *warm poultices* of linseed meal, marsh-mallows, or bread and milk; or chamomile flowers steeped in hot water and wrapped in flannel, may be used; and, four or five hours after the bleeding, from thirty to forty leeches are to be applied over the seat of the pain. As a powerful auxiliary to these means, a table-spoonful of the following mixture should be given every two hours, or at shorter intervals, if a slight degree of nausea be not produced.

Tartar emetic, four grains,
Tincture of henbane, two drachms,
Water, six ounces. Mix.

The bilious vomiting, which is often a troublesome symptom at the onset of the disease, is generally arrested by blood-letting; otherwise the above mixture would be injudicious. In warm climates, the disease sometimes advances rapidly, and the fate of the patient is decided in the course of a few days; the inflammation must, therefore, be closely watched, and, if the above means produce only a temporarily good effect, the lancet should be again employed, and the blood allowed to flow from a large orifice, until a degree of faintness indicate that a decided impression has been made upon the system. The local bleeding is to be also repeated. These energetic measures are to be used, in order to check the violence of the disease within the first twenty-four hours; beyond that period, general bleeding is comparatively of little advantage. The subsequent treatment consists in the frequent application of leeches to the most painful part of the side, the occasional administration of mild purgatives, assisted by emollient injections, together with the tartar emetic mixture, the depressing action of which has an excellent effect in subduing inflammation. The number of leeches to be employed, and the frequency of their repetition, must depend on the obstinacy of the inflammation, and the strength of the patient. When, by these means, the symptoms are considerably abated, tepid baths may be employed with great advantage, the water being kept at the same regular temperature, and the patient should remain in it at least an hour each time. On the fourth or fifth day of the disease, it is advisable to have recourse to counter-irritation either by the application of a *large blister*, or by rubbing in the *tartar emetic ointment.* Sir George Ballingall recommends a succession of blisters rather than keeping the part discharging in the usual manner by stimulating ointments. The diet should be thin, light, and of the mildest description, as arrow-root, sago, toasted bread dissolved in boiling water, or weak chicken broth, and given in small quantities. The drink must be of the same bland nature, as water in which toasted bread has been boiled, barley water, clear whey, &c.

When the remedies employed produce the desired effect, the feverish symptoms abate, the tenderness, sense of weight, and painful tension under the false ribs diminish, and the swelling subsides. If, on the other hand, the inflammation terminate in the formation of an abscess, which sometimes takes place in spite of the most judicious treatment, the swelling and sense of weight continue, the face is occasionally flushed, frequent shiverings take place, and the other symptoms already mentioned, as indicative of the occurrence of this dangerous accident, are experienced. All that can then be done is to support the patient's strength by a more generous diet, with a moderate quantity of wine, and small doses of quinine, or the infusion of calumba root; and if the abscess point externally, it should be opened early. This operation, however formidable it may appear, is generally successful; the matter continues to flow from the wound during several weeks; at length, the discharge gradually ceases, and the part heals. But if the patient be advanced in life, or greatly emaciated, or if his constitution be much impaired by long-continued habits of intemperance, the chance of recovery is, of course, greatly diminished.

In the *treatment of Chronic Inflammation of the Liver*, we never have occasion to resort to general blood-letting; but local bleeding, by the application of ten or twelve leeches to the region of the liver, every third or fourth day, is in most instances necessary, and should be continued until the pain and tenderness are considerably relieved. Counter-irritation is then to be employed, either by the repeated application of blisters, or by rubbing in the tartar emetic ointment; in long protracted cases, the insertion of a seton, or the application of an issue, has been found advantageous. The bowels are to be carefully regulated by mild laxatives, such as one or two grains of *calomel* at bed-time, followed in the morning by a small quantity of the infusion of *senna leaves* with *Rochelle salts*, or gentle doses of *lenitive electuary*. If the patient be not relieved by these means, it will be advisable to have recourse to minute and frequently repeated doses of mercury. Half a grain of blue pill, combined with a grain of the extract of henbane, should be given three times a day, during a longer or shorter period, as the case may require. In the chronic form of the disease, we cannot expect to do much in a short time, and must therefore steadily persevere with the above measures, until the patient is restored to health. It is in most cases necessary to continue these minute alterative doses of blue pill for a considerable length of time, sometimes several months; but in this manner we secure all the beneficial effects of mercury, in a mild and gentle way, whereas in large doses it excites the liver, and produces a degree of irritation of the system which is decidedly injurious.

A foot-bath composed of three gallons of water, at the temperature of 96°, mixed with two ounces of nitric acid, and one ounce of muriatic acid, used every night for half an hour, at bed-time, is strongly recommended by several distinguished East Indian medical men; and sponging the body with a wash of the same nature has also been found serviceable.

CHRONIC PAIN AT THE RIGHT SIDE.

Many persons are affected with pain at the region of the liver, which becomes, at times, exceedingly severe, without being accompanied by symptoms of general excitement or swelling. It generally occurs in females, but whether it be of a purely nervous character, or the effect of partial congestion, is not known. This affection, though sometimes very distressing, is not attended with danger. In some instances, after continuing several years, and obstinately resisting every method of treatment, it has gone off entirely without any perceptible cause. It is more frequently removed by a course of the rust of iron, with aloetic purgatives, and regular exercise in the open air, than by local bleeding and mercury.

Torpor of the Liver, or deficiency of the biliary secretion, is indicated by the evacuations from the bowels being more or less whitish or clay-colored, by languor and depression of spirits, capricious appetite, impaired digestion, languid pulse, a sluggish state of the bowels, and sometimes giddiness or head-ache; there may be also a yellowish tinge of the eyes and skin.

A *blue pill*, or a grain or two of *calomel*, either alone, or combined with from three to five grains of the *extract of henbane*, every night at bed-time, followed in the morning by an infusion of senna leaves with salts, are the remedies usually employed to restore the healthy function of the liver.

LUNAR CAUSTIC.

Lunar caustic, or nitrate of silver, has been used internally, in the dose of a quarter of a grain made into a pill with bread-crumb, given three times a day, gradually increased to five grains, in cases of epilepsy, St. Vitus'-dance, angina pectoris, and indigestion; but it does not appear to have been attended with much success, and in many cases has produced the effect of imparting a permanent purple or slate color to the skin. Externally a solution of from five to ten grains in an ounce of water, has been used with much benefit in cases of irritable ulcers. The mode of applying it is by means of a bit of lint, fixed to the end of a probe, or with a hair pencil. A weaker solution is an excellent application in purulent ophthalmy, and is sometimes used as an injection in chronic gonorrhœa. It is employed as a caustic to destroy chancres on their first appearance, and in strictures of the uretha it is frequently applied at the end of a bougie, with great advantage. Applied round the inflamed surface in erysipelas, it often has the effect of arresting the progress of the disease.

LUNGS, INFLAMMATION OF.

Inflammation of the lungs, (*Pneumonia*,) like all other inflammatory diseases, is generally ushered in by the usual symptoms of fever. The patient is first attacked with a fit of shivering, which is soon followed by hot skin, flushed face, quick pulse, and the characteristic symptoms of the disease, namely, pain, more or less severe in some part of the chest, quickened and oppressed breathing, with cough and reddish-colored expectoration. When the substance of the lungs only is inflamed, the pain is dull and heavy, or there is a sensation of heat and weight in the chest, without pain; but in the great majority of cases the pleura, or membrane which envelopes the lungs, is also affected, and then a fixed pain, more or less severe, is experienced at a particular part of the chest, which is increased by coughing or attempting to take in a full breath. Difficulty of breathing is a constant symptom, and is more or less urgent according to the extent or intensity of the inflammation. The respirations in a healthy person vary in number from sixteen to twenty in a minute, but in this disease they are increased to thirty, or even to forty, within the same time. When both sides of the chest are affected, and the inflammation is severe, the anxiety, oppression of the chest, and difficulty of breathing, are exceedingly distressing, and the patient feels as if he were about to be stifled; but in ordinary cases only one lung is affected, and the symptoms are then less urgent. The patient finds the difficulty of breathing increased by lying on the sound side, and therefore remains on the side affected, or on the back, with the shoulders well elevated; the latter is the attitude generally preferred under all circumstances. The expectoration is at first scanty, and composed of a little thin frothy mucus, but in the course of a day or two becomes more copious, exceedingly viscid, and assumes a yellow, reddish, or rusty color, according to the quantity of blood with which it is mixed. The more severe the inflammation is, the more coherent and high-colored is the expectoration, which becomes, when the disease is at its height, so remarkably tenacious, that it adheres to the sides of the vessel even when inverted and shaken in that position. The pulse, in most cases, is quick and sharp, sometimes hard; there is a peculiarly hot, dry, or parched feeling of the whole surface of the body, the urine is scanty, and very high-colored, and with these are conjoined the other symptoms of fever, namely, thirst, loss of appetite, furred tongue, head-ache, pain in the loins and extremities, and weakness. Sometimes the brain becomes affected in the course of the disease, causing delirium; or the stomach, giving rise to nausea, and, perhaps, vomiting; and not unfrequently the fever, instead of being inflammatory, is of the typhoid form.

The symptoms, in favorable cases, begin to decline about the fourth day; this change is indicated by the skin becoming more cool and moist; by the cough, which was previously short and dry, becoming loose and less painful; by the expectoration being more abundant, less viscid, and gradually changing from the reddish or rusty tint, to a yellowish color; these signs of amelioration being accompanied with a corresponding diminution of the feverish symptoms. Some critical evacuation also usually takes place, such as perspiration, a copious deposit of red or white sediment in the urine, or purging; the first is generally understood to be the most common. The average duration of the disease is from eight to twelve days, but sometimes it is prolonged for a fortnight or three weeks, and followed by tedious convalescence, which is liable to be interrupted by a relapse from any slight cause.

The symptoms which mark an unfavorable termination, are a small, jerking, and rapid pulse, the expectoration being much diminished, or altogether suppressed, great frequency of respiration, and a livid appearance of the countenance. Lethargy and delirium also indicate extreme danger.

The symptoms which particularly characterize inflammation of the lungs, are the peculiarly pungent heat of the skin at the commencement of the disease, and, when further advanced, the orange-red or rusty color of the expectoration, arising from the intimate admixture of blood with the secretion from the bronchial membrane; and its great tenacity, which, as we have already mentioned, does not allow it to be detached from the receiving vessel, even when we turn it upside down.

Cold is undoubtedly the most common exciting cause of inflammation of the lungs. This is clearly shown by its prevailing to a much greater extent in winter and spring, than in summer, by its frequent occurrence in cold climates, and rare appearance in inter-tropical countries. Sudden transitions from a warm to a cold temperature, or from a cold to a warm atmosphere, produce common cold, (catarrh,) sore throat, or bronchitis, more frequently than this disease, which generally arises from long-continued exposure to cold; hence, masons, carpenters, watchmen, sailors, soldiers during a campaign, and all persons whose occupations are carried on out of doors, are more subject to it than those who lead a sedentary life.

Treatment.—There is no disease more under management by any remedy, than inflammation of the lungs is by bleeding, if resorted to at the commencement of the disease, and carried to the proper extent. In this disease there can be no doubt that more harm is generally done by not bleeding the patient sufficiently, than by carrying depletion too far. The quantity of blood to be taken at one time must depend on the period and severity of the disease, and on the age and strength of the patient. The plan generally adopted is to allow the blood to flow from a large orifice, *the patient being in a sitting position*, until he feel sick at stomach, slightly giddy, and on the verge of fainting. The quantity to be withdrawn in order to produce this effect varies from eighteen to forty ounces. Immediately after the bleeding, two table-spoonsful of the *tartar emetic mixture* are to be given and repeated regularly every two hours. Tartar emetic possesses a powerful influence in subduing inflammation, and ranks next to blood-letting in controlling this disease. When both these remedies are freely resorted to at the commencement of the disorder, the further developement of the inflammation is often prevented, and the patient soon recovers. But, if these means produce only a temporary effect, and the hurried breathing, heat of skin, and hard or full pulse, become again urgent, venesection is to be had recourse to a second time, on the same or on the following day. In this as in all other inflammatory diseases, the blood, when allowed to rest and coagulate, presents a leather-looking surface termed the buffy coat, which is more or less tough and thick according to the intensity of the inflammation. Sometimes it is a quarter of an inch thick, and appears as if drawn from the sides towards the centre, giving it a cup-like form. This cupped and buffed appearance of the blood indicates a high degree of inflammatory action, and the necessity of copious and repeated blood-letting. But when the coagulated part of the blood presents only a thin buffy crust, and is at the same time loose in consistence, while its surface is flat; and if a considerable quantity of blood have been already withdrawn, it will be better to trust to the lowering action of the tartar emetic, than to carry the depletion further. The circumstances, then, which guide us in forming a judgment of the extent to which blood-letting should be carried, and in regulating its repetition, are the appearance of the blood, and the state of the symptoms. The buffed and cupped appearance of the blood, and the continuance or recurrence of the pain, and difficulty of breathing, indicate the necessity of repeating the bleeding, at longer or shorter intervals, according to the urgency of the symptoms.

But, though bleeding, purging with calomel and jalap, and tartar emetic, when properly used within the first few hours, have frequently the effect of completely arresting the progress of the disease, yet it ought to be remembered, that when the inflammation is confirmed, the disease will run its course in spite of the most active treatment. Our remedies are therefore to be directed not to remove the disease at once, but to control, and conduct it to a safe termination. Hence, if we were to push the bleeding and other lowering means too far, under the idea of being able to cut short the disease, the pulse would become quick, weak, and faltering, and a state of debility would be induced which might destroy the patient; whereas, on the other hand, we must be careful to repeat the blood-letting when indicated by the circumstances above-mentioned, and to persevere steadily in administering the solution of tartar emetic, in order to prevent the inflammation extending, or terminating in suppuration or mortification.

The first or second dose of the tartar emetic mixture sometimes induces vomiting, after which it may be given regularly without the patient experiencing any further uneasiness at stomach; at other times it acts freely on the bowels during the first five or six hours. But the object in administering this remedy is not to cause vomiting or purging, but to keep up constantly the sedative and lowering action which renders it so valuable an auxiliary to bleeding.

Counter-irritation is improper while the skin continues hot and dry, and the pulse hard; but on the third or fourth day of the disease, when the inflammatory action has been considerably subdued, a large blister may be applied over the side affected, with considerable advantage.

When the tartar emetic mixture does not act upon the bowels, they may be relieved daily by a gentle dose of *castor oil*, or the *black draught*.

No kind of solid food is to be allowed during the inflammatory stages of the disease; and the liquids taken should be mucilaginous or demulcent, as barley-water, linseed-tea, &c., and only a small quantity allowed at a time. A large draught of any kind of liquid has generally the effect of increasing the difficulty of breathing, and would probably cause vomiting, if given during the administration of tartar emetic. Talking and moving the body should be avoided as much as possible.

During convalescence the diet ought to be confined to light farinaceous food, and chicken broth. In returning to animal food the patient must be careful to take only a small quantity at first, gradually increasing it, until his ordinary diet can be resumed with safety. Tonic medicines are very seldom necessary, and cannot be administered under any circumstances without the greatest caution. In fact remedies of this class, and stimulating diet, are the causes which most frequently induce a relapse.

We have already mentioned that a person who has once suffered from this disease is very liable to be attacked by it again. Hence the necessity of guarding against the exciting causes by wearing warm clothing, living temperately, and avoiding all excessive bodily efforts. To counteract the tendency to a recurrence of the affection, the chest should be sponged every morning with salt and water, at first tepid, and afterwards cold, and followed by friction with a rough towel. In some cases, though every precaution is used, the disease comes on several winters in succession. Under such circumstances, removing to a warm climate is the best measure that could be adopted.

Sailors, in consequence of long watching, and exposure to cold and wet during bad weather in the spring and winter months, are frequently attacked with inflammation of the lungs, and the number of them who fall victims to it is perhaps greater than from any other disease; and yet there is scarcely any other more under the control of proper treatment. Even in our coasting vessels this affection often advances beyond the reach of treatment before medical assistance can be procured. If the risk from opening a vein at the arm were much greater than it is, it would not be nearly equal to that which must of necessity arise from the disease, when left uncontrolled; but the operation is so simple, that by adopting the few precautions mentioned under the head of blood-letting, it may be performed by any one with perfect safety. We would therefore impress forcibly upon the minds of responsible persons, whether on board of ship, or under other circumstances, where medical assistance cannot be obtained, that, whenever an individual is attacked with severe pain in one or both sides of the chest, accompanied by fever, and difficult or hurried breathing, there should be no hesitation to draw blood freely from the arm, and to repeat the operation any number of times until the symptoms are relieved.

MAGNESIA.

This substance, from the property it possesses of neutralizing the acid which forms in the stomach, is much used to relieve heartburn. Calcined magnesia is in common use as a purgative, in the dose of a tea-spoonful. From the mildness of its action, it is more especially useful in cases of piles, stricture of the rectum, &c.; and being also insipid, is well adapted for children. It diminishes the secretion of lithic* acid by the kidneys, and is therefore a useful remedy in *red* gravel, in doses of from twenty to thirty grains twice a day.

Magnesia is the best antidote in cases of poisoning by the mineral acids.

MANNA.

The dose is from one to two ounces, but it is not to be depended upon as a purgative for adults, hence, it is generally used in combination with the infusion of senna leaves, the bitter taste of which it tends in a great measure to conceal. From the mildness of its operation it is well suited for children, in the dose of from ten to sixty grains given in whey.

MEASLES.

Measles generally occurs as an epidemic malady amongst children, but it may attack only a few individuals in a locality, or may affect adults as well as those of tender years.

The symptoms which show that a child is about to be attacked by measles are commonly significant enough. The little patient complains of general heaviness, the eyes are red and watery, and a thin fluid often runs from the nose as from persons affected with a cold in the head; the patient also sneezes frequently. More or less fever now sets in, accompanied in many cases by a very hoarse barking cough, which has often been mistaken for a symptom of croup; the stomach rejects food; the child complains of pains in the limbs or back, and, if very young, is often attacked by slight convulsions, while older children are, in many cases, delirious at night. Nothing can be more various than the intensity of these premonitory signs; sometimes the eruption makes its appearance with so little disturbance of the general health, that the patient is not even confined to bed; but in other cases the fever runs extremely high, and great alarm would be excited did we not know that it was the forerunner of an eruptive disease. Towards the end of the third, or beginning of the fourth day, (but in some cases as late as a week,)

* "Pertaining to the stone in the bladder. *Lithic acid,* generally called *uric* acid, forms the most common variety of *urinary calculus.*" See Webster's Dictionary, word "*Lithic.*"—Ed.

small red spots, resembling flea-bites, make their appearance about the face, and then extend over the neck, chest, belly and limbs. The spots are at first separated from one another, but they soon join and form clusters of a horse-shoe shape and dusky red color.

The appearance of the eruption, however, does not, as in the case of small-pox, bring with it much alleviation of the symptoms. The fever, cough and hoarseness continue, or are more severe, and in many instances the whole face is swollen, and the patient complains of violent head-ache, with difficulty of breathing.

About the third or fourth day after the appearance of the eruption, the redness on the face begins to diminish, and it subsides on other parts of the body in the same order as that in which it commenced. When the eruption has completely passed away, the scarf-skin comes off in small mealy scales, and some patients, at this time, experience a most intolerable degree of itching. Finally, about the ninth day the skin is completely free from any sign of the eruptive affection.

Such is the course of measles in its mild or benignant degree; but in many cases, the disease does not hold this favorable course. Two things are chiefly to be apprehended during its progress; first, the appearance of nervous, or what were anciently called putrid symptoms; and second, the occurrence of inflammation of the lungs, by which a very great number of children affected with measles are cut off.

Although, generally speaking, measles is a mild complaint, yet during certain epidemics it assumes a most dangerous character, and destroys an immense number of children. The symptoms of the malignant form are, at the commencement, great prostration of strength, anxiety, and tendency to sleep; vomiting and looseness of the bowels; hæmorrhages from the nose, stomach, or bowels; violent delirium and convulsive tremor of the limbs, or general convulsions. The eruption breaks out on the second day, and the fever, with all its attendant symptoms, is aggravated; the eruption rapidly declines or assumes a livid hue, and is mixed with the blue fever-spots; the delirium now becomes more violent; the convulsions are frequent, and the patient commonly sinks in a state of complete insensibility. This highly dangerous and fatal form is, however, rare, and seldom occurs except during certain epidemics. But children are peculiarly liable to inflammation of the lungs during the decline of the eruption, or within a few days after its disappearance. This occurrence is indicated by a change of color in the face and lips, which assume a purplish hue; the skin becomes very hot and dry; the respiration is oppressed and quick, often rising to sixty or seventy in the minute; the nostrils dilate at each inspiration, and the pulse is excessively quick. The child may or may not cough, but we should never forget that young children may labor under a very severe degree of inflammation of the lungs, without either coughing or spitting up any mucus from the chest. Inflammation of the lungs thus attending measles, often lays the foundation of consumption, by which the patients are carried off many months, or even years after the cure of the original disease.

In some cases, the eruption suddenly disappears from the face and body. The sudden subsidence of the eruption is, in itself, a matter of little consequence; it becomes, however, one of much importance, because it generally depends on, or at least is connected with, an inflammatory condition of the lung, intestines, brain, or some other internal organ.

Treatment.—In an ordinary attack of measles, we have little more to do than keep the child in bed, administer any mild laxative medicine, so as to keep the bowels open, and give cooling drinks. The disease must run its course; and, unless untoward accidents arise, the patient will, generally speaking, get well through the aid of nature in twelve or fifteen days.

The chief attention should be directed to the prevention or cure of any inflammatory affections which may occur during the progress of the complaint. The delirium and convulsive motions which often exist before the appearance of the eruption need not excite any alarm, unless the former be attended with other symptoms of inflammation of the brain, and the latter be very severe or general. When they do occur, they are to be treated in the manner which has already been described under the articles Brain and Convulsions. The earliest symptoms of inflammation of the lungs must be combated by local or general bleeding, according to the age and strength of the patient; (see *Lungs, Inflammation of;*) but we should remember that children, while laboring under eruptive diseases, will not bear blood-letting so well as under other circumstances. Blisters to the chest, mustard poultices to the feet, and the tartar emetic mixture will be of great utility when bleeding or the abstraction of blood by leeches has been previously had recourse to.

Towards the decline of the complaint, some children suffer much from diarrhœa, or looseness of the bowels. We should not check this salutary discharge, unless it reduce the strength of the little patient, or continue for more than three or four days. We may then employ a starch clyster, containing six to ten drops of *laudanum*, or give occasionally two ounces of the *chalk mixture*, with twenty to thirty drops of the tincture of *catechu*, (see *Diarrhœa.*)

When the eruption suddenly disappears, we must not conclude that this is necessarily a sign of weakness, and commence at once with wine or other stimulating fluids. On the contrary, it will be more prudent to endeavor to ascertain whether this may not depend, as has already been mentioned, upon some internal inflammation; but if the disappearance seem to be connected with a general state of weakness, or to have occurred without any apparent cause, then we may give small quantities of wine and water, but with very great caution, or administer the *carbonate of ammonia* in the following manner.

Sub-carbonate of ammonia, six grains,
Camphor, three grains,
White sugar, three scruples. Divide into three powders; one to be taken every second hour.

The child should also be placed in a warm bath, but not kept there more than six minutes, for fear of exhausting the strength; and we may endeavor to bring back the eruption on those parts of the body from which it has disappeared, by blisters or mustard poultices applied for a short time.

The malignant form of measles is unfortunately but little under the control of medicine. Active purgatives must in no case be administered; a few grains of *calomel* (two or three) however, may be given during the day, with a mixture composed as follows.

Sub-carbonate of ammonia, twelve grains,
Aromatic confection, half a drachm,
Camphor mixture, six ounces. An ounce every three hours.

Or when the nervous symptoms are very severe, we may let the child have small quantities of wine and water every two or three hours, with a draught composed of

Infusion of cusparia, two ounces,
Compound spirit of ammonia, ten drops.

It must be confessed, however, that all our efforts will too often fail in arresting the progress of this form of the disease; happily, it is now of rare occurrence.

During the stage of convalescence from measles, attention should be paid to the child's diet, and particular care must be taken to prevent exposure to damp, cold air, &c.

MENSTRUATION.

The periodical discharge of females termed menstruation, indicates the power of procreation, and when regular, and in due quantity, serves not only as a sign of health, but as a powerful means of preserving it. This discharge appears intended to relieve the system of the blood which is destined for the support of the fœtus during pregnancy, as well as for the secretion of milk, the natural aliment of the child during the first months of its existence; and has also the effect of stimulating the womb, and fitting it for conception. If, therefore, the superabundant blood which is intended by nature to be discharged through the medium of the womb, be retained in the system, it must accumulate in other important organs, or tend to deprave the whole mass of blood in circulation, and thus induce local disease, or general derangement of the health; and if, on the other hand, the discharge be much greater, or occur more frequently than natural, the body will be weakened, and the health otherwise injured. Hence, from the great influence which menstruation must necessarily exercise over the whole system, it is obvious that perfect health cannot be maintained, while there is any irregularity, or disorder, of this important function.

A delicate and luxurious manner of living, early excitement of the imagination, want of suitable exercise in the open air, sleeping upon down beds, late rising, and in a word, mismanagement or neglect of the moral or physical education of girls, tend strongly to induce precocious menstruation. The non-appearance of the discharge before the age of seventeen or even later, is more desirable than its premature occurrence; the latter, however, is not to be considered as a disease in itself, although it generally indicates a feeble constitution.

Young women are often late in menstruation, and this sometimes becomes a source of much anxiety to parents; but although it be delayed considerably beyond the fourteenth year, there is no occasion for alarm as long as the usual signs of puberty are absent. In this case we are not authorized to adopt means for the purpose of hastening menstruation, nor should we be justified in attempting to remove the various ailments to which girls are subject at this period of life, by administering remedies to bring on the menstrual flux. But on the other hand, when, at the usual age of puberty, pain is experienced from time to time at the loins, and in the abdomen, with an unusual development, or painful sensation of tension, of the breasts, a periodical swelling at the lower part of the belly, and other symptoms indicating that the system is making fruitless attempts to establish menstruation, it then becomes necessary to adopt means to aid the efforts of nature, in order to prevent the serious consequences which might result from retention of this salutary evacuation. But we are not to interfere more than is really necessary. When medical aid is really required, the remedies to be employed must depend greatly upon circumstances. If the girl be full blooded, and of a robust constitution, and if at the period when the symptoms above enumerated are experienced, she complain of head-ache, while at the same time the pulse is full, the face flushed, and other symptoms are present, indicating an excess of action, it will be advisable to take a few ounces of blood from the arm, or from one of the veins at the ancle, or by the application of six or eight *leeches* to the groin or round the genitals. The bowels should be mildly acted on by cooling purgatives, as *Seidlitz powders*, *Epsom salts*, &c., every second or third day; and the diet must be mild and carefully regulated, animal food being sparingly used, and stimulants of every description entirely abstained from.

An opposite state of the system, approaching to chlorosis, (green sickness,) occurs much more frequently, than the plethoric state above described. In this case the patient becomes pale, languid, emaciated, loses strength, and is easily fatigued, the pulse is feeble, the bowels are constipated, and she complains of being unable to keep her feet warm. The treatment indicated in the last case was to lower the plethoric patient to a state favorable to menstruation; here, on the contrary, we must endeavor to raise the patient to the same state by tonic and strengthening remedies. Of this class of medicines, preparations of iron hold the first rank in all menstrual disorders. From ten to fifteen drops of the *tincture of steel* in a little water, or from ten to twenty grains of the *subcarbonate*, or *prepared rust of iron*, mixed with jelly, should be taken regularly three times a day, and the bowels are to be kept open by the following pills.

Aloes, two scruples.
Rhubarb, half a drachm,
Myrrh, half a drachm,
Extract of chamomile, a drachm,
Syrup, a sufficient quantity. Mix, and form into forty pills, two or three or more to be taken, when necessary, at bed-time.

At the monthly periods, which are announced by the symptoms above mentioned, two, three, or four *leeches*, may be applied daily, for three or four days, as above directed, or to the inside of the thighs. The abstraction of small quantities of blood in this manner, has a powerful effect in exciting the action of the womb, and for this purpose the hip-bath should also be frequently used; the water at first ought to be about the temperature of a hundred degrees of Fahrenheit's thermometer, and afterwards gradually increased until it be as hot as the patient can bear.

The strength must be supported by generous diet and port wine; frequent friction of the lower extremities with the flesh brush or horse-hair glove is serviceable; and instead of depressing the girl's spirits by confining her to the house, and treating her as if she were laboring under a serious illness, she ought to be allowed to enjoy the benefit of change of air to the sea-coast, plenty of exercise in the open air, particularly on horseback, dancing, the society of agreeable companions, and every care should be bestowed to render her cheerful and happy,—these constitute the natural and most effectual means of giving vigor to the system, and bringing on healthy menstruation.

In general the duration and quantity of the first discharges are not to the same extent as when menstruation is fully established; and it often happens that two or three months elapse between the first and second discharge, and sometimes the menses do not appear at regular periods, until the expiration of a year or two.

It is of the greatest importance that young women should be instructed *early* by their female friends in the management of themselves during menstruation. Exposure to cold, dancing, and all kinds of active exercise, food difficult of digestion, bathing, medicines, particularly emetics and purgatives, mental excitement, and other causes which might check the discharge, ought to be carefully avoided at this period.

CHLOROSIS.

A characteristic symptom of chlorosis is a pale yellowish green complexion, hence it is commonly called *green-sickness.*

Chlorosis is always a chronic disorder, and commences slowly. The patient is at first languid and listless, disinclined to amuse herself as usual, and is easily fatigued by ordinary mental or bodily occupation; her face gradually becomes pale, and the skin assumes a sallow appearance, the bowels are constipated, she loses her appetite, and has sometimes an unnatural craving for certain articles of food, the tongue is white, the breath fetid, and if menstruation has been already established, the discharge loses its red color, and diminishes in quantity, until it no longer appears.

In the confirmed state of the disease there is often considerable emaciation, the flesh loses its firmness, the lips, tongue, gums, and inside of the mouth, are unnaturally pale or whitish, slight swelling in the eyelids and face is observed in the morning, this wears off during the day, and at night the feet, or ancles, are swollen above the edges of the shoes; the urine is pale and limpid, the belly is frequently enlarged from flatulency, particularly after eating; there is sometimes nausea, or vomiting in the morning, heartburn, and other symptoms of indigestion. The appetite is, in many cases, morbidly capricious. Sometimes there is a craving desire to eat pickles, chalk, lime, pipe-clay, cinders, &c. The shortness of breathing, which in the first stage was only slight, is now exceedingly oppressive, and accompanied with palpitation of the heart on ascending the stairs, attempting to walk quickly, &c. The pulse is feeble and small, there is great difficulty in keeping the feet warm; sometimes there is cough, periodical head-ache, and a variety of nervous or hysterical symptoms.

Causes.—Females of the lymphatic temperament, and of weak constitution, are most frequently attacked with chlorosis. It is developed under various debilitating causes, as frequent exposure to a cold moist atmosphere, watery or poor diet, more especially when conjoined with fatigue and long watching, the various depressing passions, as grief, unrequited love, &c.

This disease seldom proves fatal, but, when left to itself, or badly treated, it may be prolonged during many months, or even years, and may leave traces of its injurious effects on the constitution in after life.

Treatment.—The blood of chlorotic patients is always in a depraved state; the fibrine, or coagulable part, and the red particles, are deficient, while the serous, or watery part, predominates. The principal indication, therefore, is to restore the blood to a healthy state, and the most powerful remedies for this purpose are preparations of iron. The sub-carbonate, or prepared rust of iron, as already directed, may be given, the dose being gradually increased to the extent of a drachm a day, or the effervescing draughts containing the sulphate of iron. The bowels are to be kept open and the diet and regimen directed in retention of the menses, are also applicable to chlorosis.* In many cases the good effects of this treatment are observed in the course of a few days, and the patient recovers entirely in five or six weeks; but it is frequently necessary to continue the iron during a longer period.

When our remedies begin to have the desired effect, the dull,

* Dr. Blundell gives the following instructions with regard to diet. "Allow the patient four meals a day; breakfast at eight or nine o'clock, dinner at one or two, tea at five, and supper at nine or ten. Half an hour before breakfast the patient must take a table-spoonful of unbruised mustard-seed. For breakfast, black tea and milk, in equal parts, with stale bread and fresh butter, or dry toast, with a thin slice of fat bacon, toasted before the fire, not fried, or a new-laid egg may be taken instead. Two hours before dinner all the drink wanted must be taken; ginger-beer, table-beer, or toast and water, are to be preferred. Half an hour before dinner the mustard-seed must be repeated, to increase the flow of the gastric secretion. At dinner the boiled meats are to be preferred to roast, the white meats, including fish, to be preferred to the red; the food taken must be well done, and the inside will be found better than the outside; potatoes are to be preferred to every other vegetable. The food should be well masticated, and eaten slowly. Good cayenne pepper must be taken with the dinner. Not a drop of any kind of drink should be taken. If pastry be eaten, it should be boiled. After dinner, oranges or figs may be allowed. The tea to be similar to the breakfast. The supper must be in the form of a light dinner, or what is better, a slice of bread and butter. On going to bed, a table-spoonful of spirit may be taken, with some spice, mixed with three or four table-spoonsful of hot water. I prefer the Geneva, as it contains the juniper."

languid expression of the eyes disappears, while the dark-colored circle beneath them becomes gradually less apparent, the complexion improves, and the skin becomes less sallow; the strength increases, the appetite returns, the head-ache, restlessness during the night, the palpitation of the heart, the occasional sickness at stomach, heartburn, and other nervous symptoms wear off, the shortness of breathing and tightness across the chest are less troublesome, the pulse is stronger and less frequent, the puffed appearance of the face in the morning, and swelling of the ancles at night, are no longer observed, and the disposition is more cheerful. The treatment however, is not to be discontinued because these favorable symptoms are manifested; the iron must be regularly administered, the dose being gradually diminished until menstruation is established, or re-appears in those who have already menstruated and the general health is entirely restored.

SUPPRESSION OF THE MENSES.

Females in the full enjoyment of health may have the discharge arrested suddenly, from exposure to cold, sudden fright, or any strong mental emotion. In this case there are head-ache, pain in the limbs, back and loins, full frequent pulse, and other symptoms of fever. If the patient be of a full plethoric habit of body, blood should be drawn from the arm. The local abstraction of blood by the application of six, eight, or more *leeches* round the genital organs, and to the inside of the thighs, is preferable in ordinary cases. The slipper bath is to be used as early as possible, or the patient may sit with the lower part of her body immersed in a tub of water, at the temperature of one hundred degrees, during twenty minutes or half an hour, and after being carefully wiped dry, she is to be well wrapped up and placed in a warm bed. Two or three of the *pills of rhubarb and aloes*, are to be taken every three or four hours, until the bowels are freely opened; and, to promote perspiration, four grains of *James's powder*, with eight or ten of *Dover's powder*, are to be given every six hours, until three or more doses are taken. This treatment conjoined with light nourishing diet, or abstinence, if the feverish symptoms run high, seldom fails to bring back the discharge. But if the patient be neglected, or if the treatment adopted fail to produce the desired effect, the menses may not appear at the next expected period, and the suppression becomes chronic. In many cases, again, the obstruction is the result of general bad health, and comes on slowly; the discharge either gradually diminishing in quantity, or appearing at unusually protracted intervals, until at length it ceases entirely. The health for the first month or two may not suffer materially, but the important function of menstruation cannot be long suspended without producing a series of morbid symptoms. The balance of the circulation may be deranged, and determination of blood to different organs may take place, and give rise to hæmorrhage (discharge of blood) from the lungs, stomach, bowels, or nose. The latter occurs most frequently, and is a salutary effort of nature to relieve the patient. The digestive organs frequently suffer, the tongue becomes foul, the appetite impaired, and the bowels constipated, or otherwise disordered. The lower part of the abdomen is at times swollen and painful, and the breasts are sometimes tense and tender, or painful when pressed upon. Many women are troubled with various nervous diseases, as hysterics, spasms, &c., while the menses are obstructed, and recover entirely when the healthy function of the womb is restored.

In the treatment of chronic suppression of the menses, we must, in the first instance, endeavor to restore the general health. If there be a greater inclination to sleep than is compatible with health, lassitude, occasional giddiness, and a sensation of fulness or weight in the head, full pulse, an overcharged state of the veins, a more or less turgid appearance of the countenance, suffusion of the eyes, slight palpitation of the heart, and other symptoms indicating plethora, or repletion of the blood vessels, the patient should be bled from the arm; and if there be determination, or too great a flow of blood to the lungs, head, or any other organ, local bleeding, by the application of leeches or cupping, as often as may be necessary, is indicated. The bowels are to be kept freely open by *Epsom salts*, *Seidlitz powders*, or any other cooling purgative salt, and spare diet, abstinence from wine or malt liquor, early rising, and regular exercise in the open air, must be strictly enjoined. When by these, or other means suited to the circumstances of the case, the system is sufficiently lowered, and the general health improved, the menstrual flux will probably return without the assistance of remedies which are understood to exercise a specific influence on the womb; but if the discharge fail to appear, we must then have recourse to *preparations of iron*, and at the period when the patient feels as if she were about to be unwell, five or six *leeches* should be applied to the upper part of the inside of the thighs, and round the genital organs every night, for three or four nights in succession; the hip-bath, and the application of *chamomile flowers*, steeped in hot water and wrapped in flannel, to the lower part of the belly, are also to be repeatedly employed. The repeated application of mustard poultices to the breasts, has been known to bring back the menses after they had been a long time suppressed. But it must be kept in mind that these remedies are *only to be used at the periods when the menses ought to appear, or when they seem disposed to flow*, and if there be no symptoms to indicate these periods, they should be employed during three or four days every month, for four or five months in succession, or longer, if necessary, the regimen and diet as above directed being strictly followed during the intervals.

No one is justified in administering remedies with the intention of bringing back the menses, without being satisfied that the suppression is not the result of pregnancy. To neglect this precaution, or to mistake the natural for a morbid suspension of the discharge, might lead to the most serious consequences. It should also be borne in mind, that suppression of the menses is more frequently the effect of other diseases, than a disease of itself; when merely symptomatic the principal indication is to remove the disorder on which it depends; but at the same time we should not neglect to use the necessary means to restore the healthy functions of the womb, because the absence of the menstrual discharge always increases any disorder with which it may be complicated. In all cases of this description, however, it would be improper to use medicines internally, with the intention of stimulating the womb, inasmuch as this effect cannot be produced without at the same time exciting the diseased organ on which the suppression depends; and we must therefore trust to diet, leeching, the warm hip-bath, and other local means above prescribed, conjoined with treatment suited to the principal disease.

PAINFUL MENSTRUATION.

This is a very common disorder, and is a source of great suffering to many women. Two or three days before the discharge appears, the patient complains of pain in the back, loins and lower part of the belly, irritation of stomach, constipation of the bowels, general uneasiness and irritability of temper. The latter symptom, however, is not constant. The discharge comes away at first in drops, accompanied with increased suffering. The pain extends from the loins and lower part of the abdomen to the hips and thighs. The belly may be swollen from flatulency. Sometimes there is considerable pain and difficulty in voiding urine, or it is altogether suppressed during the first day, or at the time the symptoms are most urgent. The pain is not constant, is much more severe at one time than another, and generally ceases with the discharge, which is nearly always scanty, although it may continue to flow three or four days, or even longer. At the commencement of the disorder, the patient may experience pain only during the first day of the discharge, but the suffering gradually becomes more severe, and of longer duration, until at last, from eight to fifteen days of every month are passed in this manner; the general health, spirits and vigor decline, and after many years of unceasing bodily or mental distress, at one period suffering acute pain, at another dreading its approach, the constant irritation of the system which has been unavoidably kept up, frequently induces consumption, organic disease of the womb, or some other fatal disorder, and the patient is carried off.

Treatment.—If there be pain, or tendernes, on pressing with the hand over the lower part of the belly, ten or twelve leeches may be applied over the womb; but, as this affection seldom occurs in robust or plethoric women, bleeding cannot be carried far, or frequently repeated, without proving injurious. The warm hip-bath, should be employed three or four times daily; this has considerable effect in increasing the discharge, and mitigating the pain; and the bowels are to be kept open by mild laxatives. Five grains of the extract, or a drachm of the *tincture of henbane*, may be taken every six hours, or oftener, according to the effect produced. This remedy, in some cases, has an excellent effect in soothing the pain, but in general it is found necessary to administer *opium* in the dose of one or two grains, every four or five hours, or at longer intervals, according to the circumstances of each particular case, or three grains may be passed up the rectum. (See *Suppository*.) When symptoms of hysteria are present, *assafœtida* should be combined with the opium, and if the belly be much distended, an enema (injection to the bowels) of a solution of the former remedy, seldom fails in removing the flatulence.

The sub-carbonate, or some other preparation of iron, should be given during the intervals. If the patient be of scrofulous habit of body, the *iodide of iron* is to be preferred; the dose of this at first should not exceed two grains, twice a day, but may be gradually increased according to its effects; if it produce slight nausea, giddiness, and head-ache, the dose should be diminished, or the medicine altogether discontinued for a time.

IMMODERATE FLOW OF THE MENSES.

Healthy women menstruate every twenty-eight days; the discharge continues from three to four days, and the quantity lost is usually about five or six ounces. But with some women the discharge is naturally scanty, in others profuse; so that we are not to judge by the quantity of fluid lost, but by the effects produced. The symptoms induced by excessive menstruation are, a feeble or intermittent pulse, cold extremities, weak respiration, general weakness of the system, loss of appetite, depression of spirits, &c. Some or all of these symptoms, in a more or less urgent degree, may arise from the too frequent recurrence of the discharge, from its continuing too long (eight days or more) at each monthly period, or from an immoderate flow within the usual time. The healthy menstruous fluid is a peculiar secretion from the womb, and not pure blood; but in this disease, the discharge is not only in excess, but is also nearly always mixed with clots of blood.

Immoderate flowing of the menses cannot last long without the patient experiencing a variety of symptoms arising from deficiency of blood in the system. She gradually loses strength, and becomes exceedingly languid; the breathing is hurried on any ordinary exertion; the face is pale and contracted, or may appear bloated and fuller than natural, and there is a livid circle round the eyes; the appetite is greatly impaired; the bowels are constipated; and, at night, the feet and ancles are swollen. Symptoms indicating a deficiency of blood in the brain are often superadded to these; headache, giddiness, and ringing in the ears are complained of; there is considerable nervous irritability, the patient being disturbed by the slightest noise; the pulse is quick, weak, and easily excited, and palpitation or fluttering at the heart is brought on by slight exertion.

Causes.—The chief predisposing causes of the *first variety* are, over-feeding, eating rich and highly-seasoned dishes, drinking wine, porter, &c., want of sufficient exercise, late hours, hot rooms, and the various causes which tend to induce a plethoric state of the system.

The predisposing causes of the *second variety* are, insufficient or poor watery diet, frequent abortions, whites, sedentary habits, want of pure air, mental anxiety, and all circumstances which depress the vital powers. The *occasional* exciting causes are, long-continued dancing, exposure to cold, excessive venereal indulgence, constipation of the bowels, &c. Married women, from thirty to forty-five years of age, are most subject to this complaint. It seldom occurs in young unmarried women.

Treatment.—When profuse menstruation takes place in full plethoric constitutions, the first object, in regard to the treament, is to reduce the fulness of habit, and counteract the determination of blood to the womb. Where we see all the signs of the system being overcharged with blood when the pulse is full and strong, the skin hot and dry, with considerable thirst, and other symptoms of general excitement, accompanied with pain at the loins, and a feeling of fulness and throbbing, with a sensation of heat and weight at the lower part of the abdomen, the first step to be taken is to draw blood from the arm to the extent of ten or twelve ounces, or from twelve to fifteen *leeches* may be applied to the lower part of the belly, and round the parts of generation. In ordinary cases, the system can be sufficiently reduced, without these depleting measures, by a rigidly abstemious diet, keeping the bowels open by repeated small doses of *Rochelle or Epsom salts*, and the daily use of *nitre*, to the extent of forty or fifty grains, in barley water, or any other mild beverage, together with suitable exercise, and avoiding the predisposing causes above mentioned. Dr. Blundell says, "Stimulants must be avoided, more particularly port wine, which women are very apt to resort to either on account of its flavor, or with the hope of deriving benefit from its astringent qualities."

A very different mode of treatment should be adopted when there is no feverish excitement, and the woman is pale and weak. In this species of the disorder, we must endeavor to increase the strength, and improve the general health; remedies being at the same time employed to strengthen the womb itself, by giving tone to its secreting vessels.

During the intervals of the discharge, the diet should be nourishing and easy of digestion, but not stimulating; soup, gruel, and all kinds of watery diet being carefully abstained from. A moderate quantity of port wine, claret, or porter may be allowed. The body ought to be well covered with flannel, and peculiar care taken to keep the feet warm; exercise in the open air, without fatiguing the patient, is not to be neglected; and rubbing the limbs with the flesh-brush, or horse-hair glove, will be found very serviceable, and is the best substitute for bodily exercise. The employment of the cold hip-bath, with common salt dissolved in it, is very desirable in all cases; and the shower-bath, at first a little tepid, and afterwards cold as the patient can bear, will be found advantageous when its use is not rendered inexpedient by an extreme state of debility. The best tonics are, the *sulphate of zinc and quinine*. Either of these remedies may be given in the dose of one or two grains, in the form of pills, three times a day.

As long as the discharge continues, the patient must remain perfectly quiet in bed, in a cool well-aired room; she should lie on a mattress in preference to a feather-bed, and her head and shoulders should be low. Cloths, sprinkled with, or dipped in cold vinegar and water, are to be applied over the abdomen and genitals, and round the loins and hips. The utmost attention must be paid to change the cloths frequently, because, if allowed to remain long, instead of being of service, they would then act as a warm fomentation, and *tend to increase* the discharge. If the application of cold in this manner do not produce the desired effect, and if the loss of blood be so great as to place the woman's life in jeopardy, we must then have recourse to plugging the vagina by introducing a sponge, or a silk or cambric handkerchief. The plug should be left in the vigina for several hours, if the patient can bear it, so as to allow clots to form and close up the mouths of the bleeding vessels. If the discharged blood be pent up in the vagina longer than twenty-four hours, it becomes offensive, and acts as a source of irritation; the plug therefore should not be allowed under any circumstances to remain beyond that period, and when removed, great care should be taken to withdraw it gently, in order to prevent a renewal of the discharge. A bit of ice, wrapped in cambric, and passed up the vagina, has often an excellent effect. Cold water thrown into the bowels (rectum) with a syringe three or four times a day, is also serviceable.

The most powerful internal remedies for checking the discharge are the acetate or sugar of lead, and opium.

Acetate, or sugar of lead, six grains,
Vinegar, two drachms,
Laudanum, one drachm,
Water, six ounces. Mix. Three table-spoonsful to be taken every three or four hours, till the discharge is restrained. Or,

Acetate of lead, six grains,
Extract of gentian, twelve grains,
Extract of opium, two grains. Mix, and form into six pills; one to be taken every three or four hours.

Dr. Blundell advises the acetate of lead to be discontinued, whether the discharge be diminished or not, after half a drachm or two scruples have been taken.

When the loss of blood has brought on extreme weakness, restlessness, and irritability, forty drops of *laudanum*, or two grains of *opium*, often quiet the patient, and produce refreshing sleep; the dose may be repeated in the course of a few hours, if necessary. Small quantities of nourishment, as beef-tea, eggs beat up, with tea, &c. must be given from time to time, in order to support the patient's strength.

In all long-continued cases the necessary steps must be taken to ascertain whether the disorder depend on ulceration, polypous tumors, or any organic disease of the womb.

CESSATION OF THE MONTHLY DISCHARGE.

The cessation of the menses being a natural process, and not a disease in itself, we may safely leave nature to accomplish this salutary change in the system, and should carefully avoid interfering, unless symptoms occur to authorize the employment of remedial measures.* The treatment in ordinary cases consists in attention to

* The late Dr. Macintosh, of Edinburgh, points out in forcible language the folly of resorting to quack medicines, at this period. He says, women usually become apprehen-

diet, which should be light, nourishing, and easy of digestion; in regular exercise in the open air, care being taken to avoid exposure to cold or damp; in wearing warm clothing, and paying great attention to keep the feet warm; in the occasional administration of *castor oil*, or any other mild medicine, if the state of the bowels require the aid of laxatives; and in keeping the mind tranquil. If the woman be robust, and of a plethoric habit of body, if the pulse be full and hard, and other symptoms present indicating that the system is loaded with blood, bleeding to the extent of twelve or fifteen ounces, repeated as often as may be found necessary, will be required, together with spare diet, saline purgatives, and nitre with barley-water. If there be determination of blood to the head, indicated by giddiness, flushing of the face, throbbing of the carotid and temporal arteries, cupping at the back of the neck should be had recourse to; and, if the local bleeding should not entirely remove the head symptoms, it will be advisable to place a seton in the nape of the neck. If pain, heat, and fulness be experienced in any organ or part of the body, local bleeding, by cupping or leeches, cooling purgatives, and low diet, constitute the practice usually adopted in such cases. If indigestion, flatulency, hysterical affections, liver complaints, piles, or any of the various disorders to which women are said to be more particularly liable at this period, be manifested, we must, in order to avoid repetition, refer the reader to the different parts of this work where these disorders are noticed.

Various symptoms occasionally occur which lead women to believe themselves pregnant; besides the absence of the discharge at the usual monthly periods, the breasts become enlarged, tender and sometimes painful, the belly is gradually distended from flatulence collected in the bowels, and there is sickness, and sometimes vomiting in the morning; but these symptoms may easily be relieved by means of the usual remedies for expelling flatulence, viz. purgatives and active exercise.

MERCURY.

BLUE PILL AND CALOMEL,

In small and frequently repeated doses, are the preparations princi-

sive of themselves, and despond; and, whether they suffer or not, many have recourse to quack medicines, which are constantly advertized, and which they take, to endeavor either to prolong the discharge, or to ward off disease. It cannot be too generally made known that many females suffer from this imprudent conduct, and create diseases, which in all probability never would have assailed them, had they taken proper medical advice. Dr. Denman, one of the wisest and most conscientious men that ever adorned the profession, states, that he "hardly recollects an instance in which such medicines did not do mischief."

pally employed in various chronic disorders, in order to check or alter diseased action; hence they are called alteratives, and from the influence which they exercise on all the secreting organs of the body, certainly constitute the most effective remedies of this class.

CORROSIVE SUBLIMATE

Is seldom used internally. A useful gargle for syphilitic sores in the throat is composed of three or four grains of this mercurial dissolved in a pound of barley-water, with the addition of two ounces of honey of roses; and one grain to three or four ounces of water forms a serviceable lotion for ulcerations, or specks on the cornea or anterior part of the globe of the eye.

PLUMBER'S PILL,

Which is composed of one grain of calomel, one grain of the golden sulphuret of antimony, and two grains of gum-guaiac, has been long celebrated as an alterative remedy in a variety of diseases, especially chronic affections of the skin, chronic rheumatism, and syphilitic eruptions; it is also of great service in the cure of obstinate ulcers, connected with general derangement of the health.

MERCURY WITH CHALK

Is the mildest preparation of mercury; hence it is often used in many of the complaints of children. It acts less on the stomach and bowels than other mercurials, and is therefore frequently prescribed when calomel and blue pill cannot be borne. The dose for an adult is from five grains to a scruple.

MERCURIAL OINTMENT

Rubbed into the skin produces the same effect on the system as other preparations of mercury taken internally; hence this is the most eligible method of inducing salivation when the digestive organs are too irritable to bear calomel or blue pill. Half a drachm to a drachm, rubbed in night and morning on the inside of the thighs, is the quantity used; but when it is necessary to produce a speedy effect, the same quantity may be employed every hour. The warm bath occasionally, favors the absorption of the mercury. This ointment is also used as a dressing to syphilitic sores, to destroy insects on the skin, and, combined with camphor, (by way of friction,) to reduce various kinds of chronic tumors.

MILK ABSCESS.

Inflammation may attack both the breasts at the same time; but is generally confined to one only, and it often happens that after one is healed the other becomes inflamed. The acute form of this affection usually commences three or four days after delivery; the breast becomes hot, painful, swollen, hard, and red at particular parts, or over its whole surface. The local symptoms are accompanied with fever, which is more or less severe according to the extent and intensity of the inflammation. Sometimes the pain becomes excruciating, and is increased by the slightest movement; the patient is deprived of sleep; the whole breast is enlarged, and the swelling and pain even extend to the arm-pit. In some cases, the breast acquires a lobulated or knotted appearance, as if there were several distinct tumors. [This disease requires *prompt* treatment, lest an abscess form, producing a "broken breast."]

Treatment.—The first indication is to prevent the inflammation terminating in the formation of matter. But the means usually employed for this purpose are not likely to be successful unless resorted to at a very early stage; and in numerous instances, in spite of the most active remedies, suppuration cannot be prevented. If the woman be robust, twelve or fifteen ounces of blood should be taken from the arm, but if she be of a delicate and irritable constitution, local bleeding, by the application of ten or twelve leeches to the part, should be had recourse to. The bowels ought to be freely acted upon by repeated doses of *Epsom salts*, *Seidlitz powders*, or any other cooling saline purgative. Low diet is to be strictly enjoined; and the breasts are to be drawn at proper intervals by means of the breast glass or pump, this operation being performed as gently as possible. When the leeches have fallen off, the breast should be kept cool, by the constant use of one of the following lotions.

Sal ammoniac, (muriate of ammonia,) half an ounce,
Vinegar, and
Rectified spirit of wine, of each a pound. Mix.

Sal ammoniac, an ounce,
Spirit of rosemary, a pound. Mix. (*Justamond.*)

Mindererus's spirit, (solution of the acetate of ammonia,)
Rectified spirit of wine, and
Water, of each four ounces. Mix.

If cold applications increase the patient's suffering, warm linseed or bread poultices, are to be substituted, or the well-known popular mode of applying warmth, called by nurses 'bowling the breast,' may be employed. A wooden bowl, well heated by immersion in boiling water, is to be wiped dry, and the breast, being properly protected by flannel, is then to be placed in it, and supported by a suitable bandage. The dish retains the heat a considerable time, and thus an equal degree of warmth is constantly applied, under the soothing influence of which, the milk often flows copiously, to the great relief of the patient.

To moderate the feverish symptoms, and alleviate the pain, the subjoined draught may be given every four hours.

Mindererus' spirit, three drachms,
Solution of the acetate of morphine, (page 518,) from five to eight drops,
Water, sweetened with a little sugar, two ounces. Mix.

The treatment, then, consists in repeated leeching, purging,—means which must never be neglected—and the employment of cold or warm applications to the part, according to the feelings of the patient. If these means fail, and we are unable to prevent the formation of matter, throbbing of the part commences, and the pain and swelling diminish. Fomentations of decoction of poppy-heads, marshmallows, or linseed; and warm poultices are then to be applied, and continued until matter can be felt fluctuating. The general rule is to evacuate the matter with a lancet; but Sir Astly Cooper, whose practical instructions must ever be considered of the greatest value, makes the following observation. "If the abscess be quick in its progress, if it be placed on the anterior surface of the breast, and if the sufferings which it occasions are not excessively severe, it is best to leave it to its natural course. But if, on the contrary, the abscess in its commencement, be very deeply placed, if its progress be tedious, if the local sufferings be excessively severe, if there be a high degree of irritative fever, and the patient suffer from profuse perspiration and want of rest, much time is saved and pain avoided by discharging the matter with a lancet."

As soon as the matter is evacuated, a *tent*, or small piece of lint, or soft linen rag, is to be placed in the wound, in order to prevent it from healing before the cavity has filled up from the bottom. Without this precaution, the opening would soon close, matter would again accumulate, and become the source of further suffering. The matter at first has a strong smell, and some time afterwards it comes away mixed with milk. Poultices should be applied over the tent; and after a few days, when the cavity is nearly filled up, the latter may be withdrawn, the poultices discontinued, and any simple dressing applied until the part is entirely healed.

MILK FEVER.

It frequently happens that women are affected, on the third day after delivery, with headache and feverish symptoms, generally preceded by slight shivering, or a sensation of chilliness; the skin becomes hot, the pulse full and quick, the tongue dry, with considerable thirst, and the breasts are turgid, and tender or painful.

To counteract this state of febrile excitement, the child ought to be applied to the breasts at an early period after delivery, and this should be done repeatedly until the milk begins to flow. On the third morning, a mild dose of castor oil, (half an ounce,) lenitive electuary, or rhubarb and magnesia, should be taken: but cooling saline purgatives are to be preferred if there be a tendency to fever.

Rhubarb, ten grains,
Sulphate of potash, a drachm,
Peppermint water, an ounce,
Water, an ounce. Mix.

To be given as a dose, and repeated, if necessary, at the expiration of four hours.

If the breasts become much distended with milk, and if relief be not afforded by frequently putting the child to them, it will then be advisable to draw off two or three spoonsful of the milk by means of a breast-glass or pump.

To subdue the feverish symptoms, two scruples or more of nitre dissolved in barley water may be given in the course of the day; the bowels are to be pretty freely acted upon by laxative draughts, as above directed, and low diet must be strictly enjoined.

MINDERERUS' SPIRIT.

Mindererus' spirit, or solution of the acetate of ammonia, is much employed as a sudorific, *i.e.* a medicine producing sweat. It promotes perspiration, without quickening the circulation, or increasing the heat of the body; hence it is given in fever, acute rheumatism, and other inflammatory disorders, where stimulating sudorifics are inadmissible. The dose is one or two table-spoonsful every two or three hours, warm barley water, or some other mild beverage, being taken freely to promote its operation. It is usually taken in combination with nitre and the preparations of antimony.

MISCARRIAGE.

The expulsion of the child from the womb at any time between the seventh month and the full term of utero-gestation, is called *premature labor;* and when the fœtus is expelled before the seventh month, the process is called *miscarriage* or *abortion.* In the latter case, the fœtus is either already dead, or its different organs are not sufficiently developed to admit of life being sustained.

So many circumstances in life act as occasional causes of miscarriage, that the limits of this work will only allow us to notice some of the principal of them, among which may be mentioned, various mental emotions, as sudden fright, anger, joy, disappointment, and distress of mind from whatever cause; violent coughing, excessive purging, or constipation of the bowels, profuse blood-letting, falls, blows, sea-sickness, the extraction of a tooth, and the various causes which excite undue determination of blood to the womb, as over-exertion in walking, riding, or dancing, errors in diet, and immoderate sexual indulgence.

Some women are so constituted, that any of the above-mentioned causes may readily induce miscarriage, whereas in others it cannot be brought on by the strongest moral or physical causes. Numerous cases are recorded of violent means having been unsuccessfully employed to procure abortion, and it cannot be too generally known that even where these criminal measures do succeed, it is often at the expense of the woman's life. The symptoms preceding or accompanying miscarriage, vary according to the period of pregnancy at which it occurs; during the first two months, the embryo or fœtus is discharged without pain or much loss of blood, and it often happens at this early stage that the woman is not aware she has miscarried, and attributes the discharge to the return of the menses. At a later period, the death of the fœtus is announced by great depression of strength and spirits, palpitation of the heart, paleness of the countenance, fetidity of the breath, a sensation of coldness and weight at the lower part of the belly, mucous discharge from the genital organs; sometimes there is frequent desire to void urine, and after the middle of the fifth month, the movements of the child cease to be felt. These signs are followed by more or less profuse flooding, and clots of coagulated blood may be observed, which serve to distinguish this discharge from that of the healthy menstrual fluid, which never coagulates. The flooding is accompanied with acute pain, extending from the navel to the genitals, and bearing down pains resembling those of regular labor, are occasionally felt. At last the fœtus comes away, and is generally enveloped in its membranes when the accident occurs before the third month of pregnancy; in the following months the membranous bag containing the fœtus, bursts, and the waters are immediately discharged; then the fœtus comes away, and finally the after-birth.

Sometimes symptoms threatening abortion, continue during two or three days; the woman is first attacked with rigors or shiverings; shortly afterwards the pulse becomes quick and full, the skin hot with thirst, aud other signs of general excitement, accompanied by a sensation of weight and fulness at the lower part of the belly and loins, followed by discharge of blood from the womb in larger or smaller quantity, with pains at intervals, resembling those which take place at the commencement of natural labor. When such symptoms are manifested, miscarriage is very likely to occur, yet, by timely and judicious treatment this accident may be averted, the bearing down pains may be suspended, and the flooding checked, and the womb may retain the child until the full period. But, when the mouth and neck of the womb soften, and the bag of waters begins to protrude, while the discharge and contractile pains continue, all our efforts to prevent miscarriage will be fruitless.

Miscarriage takes place most frequently during the first three months of pregnancy; when it happens in consequence of the gradual decay and death of the fœtus, which is by far the most common cause, it is less dangerous than when it occurs suddenly from accidental or violent causes; under all circumstances, the danger increases with the advance of pregnancy. Sometimes the after-birth is retained for several weeks after the fœtus has been expelled, becomes putrid, and is discharged in detached pieces, or it may remain during several months, and then be thrown off in a shrivelled or partially dried state, or in the form of a fleshy mass.

Treatment.—When, from the symptoms above mentioned, we have reason to believe that the fœtus is dead, it would be useless to attempt preventing miscarriage; but if signs of plethora (fulness of blood) and general excitement be manifested, together with the local premonitory symptoms already noticed, we then have it greatly in our power to ward off the threatened accident, and this may even be effected after flooding and irregular pains have been experienced; but if the waters be discharged, miscarriage is inevitable. From twelve to sixteen ounces of blood should be immediately taken fr... the arm, and, after a longer or shorter interval, if the symptoms continue urgent, an equal quantity may be also withdrawn. In all cases, but more especially where the woman is nervous, and of an irritable temperament, it is advisable to administer an opiate, (half a grain of the *acetate of morphine*, or fifteen drops of *Battley's sedative liquor of opium*,) immediately after the bleeding, in order to allay the bearing down pains, or contractions of the womb. The diet should consist of light farinaceous food, as arrow-root, sago, toasted bread, &c., and lemonade, soda-water, or any other cool beverage, may be drank freely. But the most essential part of the treament, without which neither the above nor any other means are likely to be of much service, is mental and bodily quietude. This must be strictly attended to from the time that premonitory symptoms make their appearance until all danger is past. The apartment should be large and well aired, and the patient should lie on a mattress or couch with the body lightly covered. In the event of flooding coming on, cold applications are to be assiduously employed, as before directed, until the discharge is arrested. When the *pains* and flooding have ceased, a liltle *castor oil*, with from ten to fifteen drops of laudanum, or a mild dose of *rhubarb* and *magnesia*, may be given to act gently on the bowels.

When all our efforts to prevent miscarriage prove ineffectual, and the fœtus is expelled, while the after-birth is retained in the womb, and the flooding continues, the *ergot of rye*, or plugging the vagina, in the manner recommended under the head of Flooding, should be employed; or the *acetate of lead*, which has a powerful effect in subduing hemorrhage, may be administered in the following manner.

Sugar of lead, from six to twelve grains,
Vinegar, one or two tea-spoonsful,
Water, three ounces,
Battley's opiate, half a drachm,
Syrup, an ounce. Mix. A table-spoonful to be given every second or third hour, according to the urgency of the case, until the discharge of blood begins to abate.

Plethoric or full-blooded women, who have previously aborted during the early months of pregnancy, should be bled at the recurrence of the menstrual periods, and remain in bed, or on a couch, for two or three days, live low, and drink freely of some cooling drink. If symptoms appear threatening abortion, fifteen drops of Battley's opiate, or from eight to ten drops of the following mixture should be taken, and the dose repeated from time to time according to the circumstances of the case.

Take of the acetate of morphine, sixteen grains,
Vinegar, eight drops,
Rectified spirit of wine, a drachm,
Distilled water, seven drachms. Mix.
Dose, from five to twenty drops.

The cold hip-bath, or sponging the lower extremities and lower part of the belly with cold vinegar and water, strict attention to diet, moderate but regular exercise, cooling saline laxatives, and abstaining from conjugal intercourse during the first five months of pregnancy, will be found the best preventives of miscarriage.

MORTIFICATION.

The appearances of a mortified part are very striking, and when once seen can seldom be mistaken afterwards. They are best observed in cases of mortification from cold, or in that peculiar form of the disease which often attacks the extremities of old people. The parts so affected lose gradually all feeling, the natural heat is also lost, and the mortified portion of the body or limb becomes quite cold; it is of a brown, livid or black color: decomposition now takes place sooner or later; the scarf-skin is raised up in little tumors from the gas which is disengaged by the decomposing flesh; a very offensive odor is emitted, and any discharge which may accompany the mortification is of a highly fetid kind. The dead part is now either removed from the body by a natural process, or excites a species of low fever, which eventually terminates in death.

It should, however, be remarked, that in many cases mortification is not so complete as we have just described it to be; but is preceded by what medical men call *gangrene*. Here the parts are not completely dead, but are, more or less, rapidly approaching to a state of mortification; the powers of life in the part are much diminished, but not quite extinct; some feeling still remains, and the blood circulates in some of the vessels.

Causes and Symptoms.—One of the most frequent causes of mortification is unquestionably inflammation. When certain parts of the body are violently inflamed, (more especially if the inflammation be of an erysipelatous kind,) they are subject to partial or complete mortification, and this is the more to be dreaded in persons of dissipated habits, or those whose health is reduced by poor food, bad air, and irregular modes of life. When mortification is about to take place, we generally find that the pain and fever which accompanied the inflammation suddenly diminish or altogether subside; the affected part gets soft, and loses its natural heat and feeling, while at the same time it assumes a dark or livid color; the scarf-skin soon becomes separated from the true skin underneath, and sometimes vesicles filled with fluid, and resembling small blisters, appear on different points of the mortified surface. Our description is confined to mortification of *external* parts, for when any of the internal organs are attacked by mortification, the case is altogether beyond the reach of medicine.

The life of any portion of the body cannot be sustained without a due supply of blood and nervous power; hence any cause which suspends or interrupts this supply may excite mortification. Thus long-continued pressure will often occasion mortification, as we frequently see in cases of typhus fever, &c. Cold, also, is often another cause; and people should always remember that when parts which have been frost-bitten or frozen are suddenly warmed, they are very apt to be attacked by gangrene and mortification.

Treatment.—In strong, robust, and full blooded individuals, when the fever runs high, and there are few or no symptoms of debility, we must take blood from the arm, and endeavor to reduce the febrile action by purgatives and diuretic medicines, at the same time restricting the patient to severe diet. When the inflammatory symptoms have been removed, or when from the beginning the mortification is attended with low nervous fever, and the patient seems to be sinking under the disease, it will be absolutely necessary to support his strength by a mild, nourishing diet, and by cordials. The best cordial, perhaps, which we can give is a wine-glassful of Sherry or Madeira wine, every four hours or oftener, according to the necessities of the case.

The use of Peruvian bark should be limited to those cases of the disease which are attended with low typhoid fever, and in which the functions of the stomach and bowels are not much deranged. From two to four drachms of the powdered bark may be given in water, or, according to circumstances, in wine every three or four hours. During the administration of the bark, care must be taken to keep the bowels open by some mild laxative medicine; but active purging should not be encouraged, or allowed to persist if it occur.

As in many cases of mortification, the pain, restlessness, and anxiety of the patient are distressing, we must endeavor to mitigate the pain and relieve the suffering by opiate medicines. These may be combined with the bark, if the latter be given, or with a few grains of nitrate of potass or camphor. As it has been proved that, in many cases, opium produces a stimulating effect, it will be more prudent to administer half a grain of the acetate of morphia every five or six hours.

However, in the peculiar species of mortification which attacks the toes and feet of old people, we may give one grain of solid opium every three or four hours with advantage.

The *local* treatment of mortification is very simple. The best thing that we can do is to envelope the mortified part in a large poultice, and renew the latter as often during the day as cleanliness may require. The following poultices are those most frequently recommended by surgeons.

CHARCOAL POULTICE.

Add about two ounces of finely powdered charcoal to half a pound of common linseed poultice.

BEER POULTICE.

Take of the grounds of strong beer half a pint; add as much oatmeal as will make it pretty thick, and then stir it up.

YEAST POULTICE.

Add to an infusion of malt as much oatmeal as will render the substance of a proper thickness, and then add a spoonful of yeast. When the mortified portions are being detached, and the patient complains of much pain, we may add two or three tea-spoonsful of laudanum to the poultice.

To counteract the fetid discharge and smell which always attend cases of mortification, we may use with advantage the *chlorine lotion*, composed of one part of chloride of lime to eight parts of water.

MUMPS.

This disease is seated in the parotid gland and surrounding cellular substance. It is sometimes epidemic, and is generally believed to be contagious. It usually commences with slight shivering, followed by hot skin, thirst, and other feverish symptoms, which seldom run high. The constitutional derangement is soon followed by swelling under the angles of the jaws, gradually extending over a considerable part of the throat affected. The swollen parts feel firm and elastic, are slightly red, and tender or painful. When the tumefaction is extensive, there is some difficulty in swallowing, and pain on moving the jaws. The disease generally begins to subside on the fourth or fifth day, and, in the course of a few days, the neck resumes its natural appearance; but in some cases, when the swelling is diminishing at the neck, the testicles in males, and the breasts in females become swollen; this continues for some days, and then disappears gradually. Sometimes, however, the testicles remain enlarged for a considerable length of time. When the disease is confined to one side of the neck, the testicle or breast of the same side only is affected. This disease occurs most frequently in children, and generally in those of scrofulous constitution.

Treatment.—The mumps seldom require medical treatment. Stimulating food and drink should be avoided; mild laxatives are necessary, and a little purified nitre dissolved in barley water may be taken. The neck should be protected from cold by covering it with fine flannel. If the testicles or breasts become swollen and painful, it will be advisable to apply leeches, and afterwards warm fomentations of marshmallow, or poppy heads, and warm poultices of linseed or bread and milk.

MURIATIC ACID.

It is sometimes employed both internally, and as a gargle in typhus fever and scarlatina. From eight to fifteen drops, mixed with four ounces of water, are used by some practitioners as an injection for the cure of gonorrhœa. Muriatic acid is a better remedy than mercury in syphilitic cases, where there is constitutional irritability complicated with debility.

MUSK.

Musk is a peculiar secretion which is deposited in a small sac situated near the umbilicus of the *Moschus Moschiferus*, or musk animal, a native of the Himalaya mountains, and other elevated regions of Asia.

The dose is from six to twenty grains, repeated, if necessary, every five or six hours. It is difficult to obtain that which is genuine.

NETTLE-RASH.

No part of the body is exempt from nettle-rash. It appears in large, flat, elevated patches or wheels, of irregular shape, hard, of a pale red color, but in some instances whiter than the surrounding skin, and is attended with severe itching and tingling. The eruption is sometimes accompanied by a slight degree of fever, in other cases it appears suddenly, without any constitutional disturbance. It generally appears in the morning, vanishes in the course of a few hours, and perhaps reappears twice or thrice in the course of the day. After breaking out repeatedly in this manner, it usually disappears entirely at the expiration of six or eight days, sometimes much sooner. Nettle-rash occurs most frequently in young people, and females; it is generally if not always connected with disorder of the digestive organs, and, in particular constitutions, is readily produced by certain articles of food, as lobsters, crabs, mussels, and other kinds of shell fish; cucumbers, mushrooms, &c.

Treatment.—In mild cases little will be required beyond light farinaceous diet and gentle laxatives. When the eruption appears after taking into the stomach certain substances which disagree with it, or to which it is unaccustomed, an emetic of *ipecacuan* generally effects a cure; and in cases where the feverish symptoms are urgent, and the itching severe, the loss of ten or fifteen ounces of blood from the arm seldom fails to remove the disorder. Nettle-rash generally yields in the course of two or three days under the use of low diet, mild laxative medicine, and drinking freely of lemonade, or barley water containing a little nitre.

NIPPLES, SORE.

Women when nursing are liable to have sore nipples, a complaint which is very troublesome, and, in many cases, not easily subdued. This may sometimes be prevented by washing the nipples frequently, during a month or two before delivery, with equal parts of the *tincture of myrrh*, and a strong *decoction of oak bark*. When, however, the nipples have become excoriated and chapped, an artificial teat, attached to a shield, should be employed, and the following lotions may be used.

Borax, one drachm,
Water, three ounces and a half,
Spirit of wine, half an onnce. Mix.

Lime water, and
Oil of poppies, of each an ounce. Mix. The excoriated nipples to be frequently anointed with this liniment.

Dr. Hanny, of Glasgow, deems *lunar caustic* the best application for a sore nipple; it should be used in the following manner. Having gently, but carefully dried the nipple, the part is to be freely touched with a sharp pencil of lunar caustic, (*nitrate of silver*,) which is to be insinuated also into the chaps and chinks. The nipple is then to be washed with a little warm milk and water. The pain soon subsides, and the sore may then be healed with a little *zinc ointment*, (*Turner's cerate*.)

Great care must be taken not to allow the sore parts to stick to the clothes; to prevent this the popular plan of placing *a fresh ivy-leaf* over the nipple, every time the infant is removed from the breast, is very serviceable.

NITRE.

Nitre (nitrate of potash, saltpetre) is an excellent medicine to abate heat, and is used for this purpose in all inflammatory diseases and hæmorrhages. Given in small and frequently repeated doses, to the extent of a drachm, or eighty grains, in the course of twenty-four hours, in cold water, toast water, or barley water, (each dose being dissolved at the time it is to be administered,) it diminishes the strength and frequency of the pulse, while it lowers the animal heat, and abates thirst; and is consequently regarded of great value.

Nitre is sometimes given as a diuretic in dropsical cases; and in the proportion of a drachm and a half to half a pound of water, is frequently prescribed as a gargle in different kinds of sore throat.

Five ounces of nitre, with five ounces of sal ammoniac (muriate of ammonia) dissolved in sixteen ounces of water, will reduce the temperature of the liquid forty degrees. Hence this mixture placed in a bladder is used as an external application, in various cases; to the head in inflammation of the brain and apoplexy, to the lower part of the belly in some cases of retention of urine, to the belly in violent floodings; and to hernial tumors (when ice cannot be obtained) to diminish their size and facilitate their reduction.

NITRIC ACID.

Nitric acid is often of great service in syphilis, when the use of mercury would be improper. It is more particularly useful when the disease is complicated with scrofula or scurvy, when it is accompanied with much debility, and, in patients whose constitutions have suffered from the excessive use of mercury. In such cases it is generally given along with the compound decoction of sarsaparilla—sometimes it produces salivation. The diluted nitric acid of the pharmacopœia is the form in which it is generally used. This is prepared by mixing one fluid ounce of nitric acid with nine fluid ounces of distilled water, and the dose is from twenty to thirty drops, in water sweetened with syrup or sugar, three times a day. This acid injures the teeth, it is therefore advisable to drink the mixture through a glass tube, and afterwards wash the mouth.

Nitric acid is given in the same manner as the sulphuric and muriatic acids, in cases of gravel, where the urine deposits a white sediment.

As an application to certain ill-conditioned or sloughing ulcers, Sir Astley Cooper recommends a lotion composed of fifty drops of nitric acid to a pint of water. Some practitioners use two drachms of the diluted acid mixed with an ounce of water, as a stimulating application to fetid sores attended with a thin acrid discharge.

OPIUM.

Opium is the concreted juice of the capsule or head of the white poppy.

Opium renders the pulse fuller, stronger, and quicker. The latter action, however, is not always produced. For example; when the pulse is quick and frequent, in consequence of debility, opium makes it slower and more regular, and strong doses render it even slow, and similar to that which is met with in apoplexy. A moderate dose taken when in a state of health always slightly accelerates the pulse.

Opium, besides the property which it possesses of increasing the action of the heart, and the fulness and frequency of the pulse, exerts a powerful influence as a *narcotic*, that is, in diminishing the sensibility of the nervous system, allaying pain, and procuring sleep. But when the pulse is hard, the skin hot and dry, and other feverish symptoms are present, or when we have reason to believe that inflammation is commencing, it would be improper to administer opium as a narcotic, because its primary or stimulating action would certainly aggravate the symptoms.

Opium is much used *externally* to mitigate pain, and allay spasmodic action. When employed in this manner, it is applied in the form of laudanum, or mixed with camphorated oil, and is found very serviceable in cholic, hysteria, and other similar diseases.

Two or three grains of opium, introduced into the rectum, are very efficacious in relieving tenesmus, * spasmodic stricture, and in alleviating the pain arising from cancer of the womb.

* "An urgent, distressing, and almost painful sensation, as if a discharge from the intestines must take place immediately; always referred to the lower part of the rectum."—Webster.

The wine of opium, dropped into the eye, is an excellent application in chronic ophthalmia, and is in very general use.

In 1804, a German chemist, named Serturner, discovered an alkaline substance which has been called *morphia ;* this combines with several acids, and forms salts. The acetate, muriate, and sulphate of morphia, are at present in general use, and have the advantage of being less injurious to the digestive organs than solid opium. These salts are given instead of opium in the dose of from a quarter to three quarters of a grain; the subjoined formula is of the same strength as laudanum.

Acetate of morphia, sixty-four grains,
Distilled water, fifteen ounces,
Proof spirit of wine, one ounce. Mix.

The usual dose of opium is one grain, of laudanum twenty drops, and of the salts of morphia a quarter of a grain.

PALSY.

It were impossible for us, in a work like the present, to offer any thing more than a very general idea of palsy, and of its treatment; in the following observations, therefore, we shall confine ourselves to the common forms of this disease, as it affects the voluntary muscles, and when it is not a consequence of apoplexy.

Paralysis from apoplexy generally occupies one side of the body; when it arises from disease of the spinal marrow, the lower extremities only are affected; but in many other cases the palsy comes on more or less slowly and compromises certain muscles, leaving others of the same part untouched; the palsy likewise may be complete or incomplete; in the former case the muscle or muscles attacked are unable to affect any movement whatever; in incomplete palsy the power of motion is much diminished, but not altogether lost.

Causes.—As we have already mentioned, we do not notice that form of palsy which occurs as a consequence of apoplexy, because it has already been described under the head of apoplexy. Many other diseases of the brain and spinal marrow may excite it, such as tumors, inflammation, with softening of the mucous substance, injuries caused by external violence, &c.; palsy may also arise from a great variety of causes, the chief of which are pressure on some particular nerve, cold, the action of poisons, whether metallic or animal, sexual indulgences, derangement of the digestive functions, worms, &c.

When palsy occurs without having been preceded by an attack of apoplexy, it often comes on in a gradual manner. Occasionally the symptoms indicate some disturbance of the circulation within the head; the patient complains of severe head-ache, tingling in the ears, flushing of the face, and throbbing of the arteries, which supply the head with blood.

In other cases the loss of power over the muscles takes place suddenly, being preceded by a kind of fit or momentary loss of consciousness, which bears some resemblance to an attack of apoplexy.

Treatment.—In the treatment of palsy, especial attention must be paid to the exciting cause of the disease, and to its nature; that is to say, as to whether it depends on disease of the brain, of the spinal marrow, or merely of the nerves distributed to the palsied part. All exciting causes must be avoided or removed. Recent paralysis, connected with diseases of the brain, must be treated in the way described under the term apoplexy. In that form of the disease which depends on some affection of the spinal marrow, much benefit may be expected from the use of blisters along the lower part of the spine; or an issue may be placed on either side of the spine, and kept open for a considerable time. The bowels should be moved twice a day by purgative medicine.

As a general and safe rule, we may lay down that no stimulating remedies should be given internally, nor any stimulating applications used externally in *recent* cases of palsy. We mention this for the guidance of non-medical persons, who probably would be unable to distinguish when the palsy depends on acute disease of the brain and spinal marrow, or when it is simply produced by loss of power in the nerves, or by sympathy with some other organ.

When, however, the paralysis has existed for some time, and when there are no evident signs of excitement about the head or spinal marrow, certain local and general means may be had recourse to for the purpose of restoring their lost power to the nerves.

The paralysed parts may be rubbed with the *liniment of ammonia*, with *spirits of turpentine*, or with a mixture of equal parts of these two substances; at the same time local irritation should be kept up along the spine (over the neck when the arm is affected, and along the back for the legs,) by means of the tartar emetic ointment, blisters, or setons. The application of electric or galvanic currents to the nerves which supply the palsied muscles is often attended with very great benefit; but the use of these means requires much perseverance and attention. Sulphureous baths have been found to act favorably in several cases of paralysis.

PAREGORIC ELIXIR.

Paregoric elixir is prepared in the following manner; "Take of camphor two scruples and a half, hard opium, powdered, and benzoic acid, of each seventy-two grains, oil of anise a drachm, proof spirits, two pints; macerate for fourteen days, and strain." This remedy is much used in chronic asthma, and cough, when no inflammatory symptoms are present. A tea-spoonful of it may be taken three or four times a day, and two tea-spoonsful at bed-time. Half an ounce of this elixir contains a grain of opium.

PERUVIAN BARK.

Peruvian bark, or Cinchona, is commonly termed *bark* by way of pre-eminence.

Bark, or the sulphate of quinine, is deservedly considered the most valuable tonic medicine we possess, and has a wonderful power in checking all periodic or intermitting diseases; the latter effect is more especially shown in ague, in which it acts almost as a specific, and also exercises, when properly managed, a powerful influence in subduing the remittent fevers of warm climates.

All the preparations of bark are to be withheld in inflammatory diseases, and in all disorders complicated with an inflammatory condition of the alimentary canal.

The facility with which small doses of sulphate of quinine can be taken has led to the substitution of this preparation for that of the bark in powder, which is objectionable on account of its nauseous taste, bulk, and from the woody fibre and inert matter contained in it rendering it indigestible and oppressive to the stomach. The ordinary dose of the powder is half a drachm, three times a day, mixed with wine and water; but in urgent cases, it may be taken to the extent of one or two ounces in the course of twenty-four hours. The dose of the sulphate of quinine is from one to six grains, three times a day. In many cases, we have known larger doses to cause buzzing, ringing, and other noises in the ears, giddiness, deafness, confusion of ideas, and other symptoms of cerebral excitement; and even grain doses administered during convalescence from fever, dysentery, and other acute diseases, sometimes produce this affection of the head. The brain is more especially excited by this remedy, even in small doses, when administered as a tonic in chronic dysentery. Quinine, ftom its excessively bitter taste, is usually given in the form of pill, made up with a little crumb of bread or mucilage. It is also frequently given in a liquid form; but, as it is not very soluble in water, a little spirit, or a few drops of the *elixir of vitriol* (*aromatic sulphuric acid*) are generally added to increase its solubility.

The *cold infusion of bark* is a useful tonic in indigestion, and is in many cases more grateful to the stomach than quinine; it is prepared in the following manner. Take of Peruvian bark, bruised, an ounce, boiling water a pint; macerate for six hours in a vessel lightly covered, and strain. A wine-glassful to be taken as a dose three or four times a day.

The *tincture of bark* is sometimes taken as a stomachic in the dose of two or three tea-spoonsful. Many people, residing in districts where they are constantly exposed to the influence of malaria from decaying vegetable matter, take this tincture habitually with the intention of keeping off fever.

PILES.

Piles are small painful tumors, situated at the extremity of the great gut called the *rectum*, either within the anus or fundament, or around its margin. In popular language, these swellings, when situated within the gut, are termed *internal piles;* when beyond the verge of the anus, *external piles;* and when there is no discharge of blood they are usually called *blind piles.*

There are two kinds of piles, differing from each other in structure. The *first kind* is formed by dilatation of the veins of the anus; in those which are external, the veins are covered by thick indurated cellular substance, and the skin surrounding the verge of the anus; the internal are also covered with dense cellular tissue, and by the mucous, or lining membrane of the gut. In the *second kind*, the piles are soft, spongy, and not composed of enlarged veins, but of numerous minute vessels interwoven with each other. When irritated, they increase in size, become hard, and blood is exuded from innumerable points on their surface; whereas, in the first kind, the hæmorrhage takes place from the bursting of the vein, and the blood flows in a stream. Some authors describe other varieties of piles; but they appear to be only modifications of the kinds above described.

Causes.—The causes which induce piles are numerous. The principal of the *predisposing causes are*, a plethoric habit of body, a melancholic, bilious temperament, hereditary disposition, hot and variable climates. Piles are seldom met with before puberty, and women are most frequently affected with them after *the turn of life.* Sedentary occupations and indolent habits, conjoined with full generous diet and the habitual use of wine, malt liquor, spirits, &c., induce a state of general plethora, and more especially fulness of the blood vessels of the abdomen. In such cases, the discharge of blood from piles is merely a salutary effort of nature to relieve the system, and is to be considered as one of the means which nature makes use of to maintain the balance of the various functions of the animal economy, which numerous circumstances, even during the most satisfactory state of health, tend constantly to disturb.

The chief *occasional causes* are, constipation of the bowels, which is by far the most frequent, pregnancy, large or too often repeated doses of purgative medicine, more especially of Morison's pills. This disease is also brought on by long sitting; hence it is common among tailors, shoemakers, &c.; by sitting on the damp ground, wearing tight stays, and various causes which tend to obstruct the circulation of blood in the abdomen, and irritate the lower part of the rectum.

Treatment.—The first step to be taken to relieve the patient from this distressing state, is to apply twelve or fifteen *leeches* round the anus, and, as soon as they have fallen off, he should sit over the steam of warm water, or *decoction of poppy heads*, during at least half an hour; this is to be repeated every two hours, and immediately followed each time by the application of a warm bread and milk, or linseed poultice. A smart dose of *castor oil*, with a drachm and a half of the *tincture of henbane*, should be taken as a dose, or a tea-spoonful of the following electuary may be taken every three hours, until the bowels be freely opened.

Take electuary of senna, (lenitive electuary,) an ounce,
Flour of sulphur, the same quantity,
Jalap, in powder, a drachm,
Balsam of copavia, half an ounce,
Ginger, in powder, half a drachm,
Cream of tartar, half an ounce,
Syrup of ginger, a sufficient quantity to form the whole into an electuary.

If the fomentations and warm poultices do not relieve the pain in the course of a few hours, the same number of leeches are to be again applied. This treatment is very efficacious, and soon gives great relief. When the acute stage is past, the following lotion should be repeatedly applied to the anus during the day.

Goulard water, six ounces,
Laudanum, an ounce. Mix.

A tea-spoonful of the above electuary, should be taken at bed-time, and the dose may be repeated the following morning, if necessary, in order to keep the bowels open.

Piles, at first, give very little trouble, and seldom protrude, unless the bowels have been neglected, or the person has been indulging more than usual at table. Under such circumstances, they become slightly painful, with a sensation of heat and itching at the anus. These symptoms may be soon relieved by attention to diet and regimen, and regulating the bowels by suitable doses of the above electuary. A laxative in common use in such cases is composed of equal parts of cream of tartar and sulphur, made into an electuary with syrup or molasses; the ordinary dose of this is a large tea-spoonful at bed-time. The patient should pass his motions at night, just before going to bed. *This is an important part of the treatment, and ought never to be neglected.*

Other means, besides the above, may be employed with advantage to remove piles which have arisen from occasional or accidental causes. Sir B. Brodie, and several of the best French authors, recommend a *lavement* of half a pint of cold water every morning after breakfast.* The following astringent ointment is very generally used, but perhaps the best local application is a saturated solution of *alum*.

Powder of oak galls, an ounce,
Elder ointment, or hog's lard, the same quantity. Mix.
The piles and anus are to be anointed with this night and morning.

Washing of the parts should be resorted to after each evacuation from the bowels, and Mr. Mayo suggests that they should be washed with yellow soap and water.

When piles come on spontaneously, and have become constitutional, giving out blood periodically, they are in a manner necessary, and act as a safety-valve for the relief of the overloaded circulation, and thus serve, in a great measure, to protect the system from gout, internal hæmorrhage, apoplexy, and other dangerous diseases. Hence, it is obvious that in many cases it would be dangerous to interfere with bleeding piles; more especially when the habits of the individual are such as to render an outlet of this description necessary.

Piles frequently become so troublesome, that the patient is desirous of getting rid of them at all hazards. There are two methods of removing piles; the one is by *excision*, and the other by ligature. The former is always preferable when the piles are external; the latter when they are internal. Both operations are exceedingly simple. The manner of applying the ligature is, "to draw down the pile with a forceps or tenaculum, and tie a piece of waxed silk around it; draw the knot until the patient complains severely; then tie a second, cut off the ligature a little way from the knot, and return the intestine and pile." After the operation, the patient should confine himself to low diet, and drink freely of barley water, or linseed tea with nitre. If he experience pain, half a grain of the

* By this, undoubtedly, is meant a washing with cold water, of the anus. But the effect desired would be facilitated should the sufferer seat himself over some vessel containing cold water, and with his hand *dash* it for several minutes against the part. The oftener this application is made, the better.—Ed.

acetate of morphine, may be taken, and relief will be derived from fomenting the parts as already recommended.

PLEURISY.

This is an inflammation of the pleura, a painful disease of very frequent occurrence, though rarely fatal, when not complicated with other diseases. At its commencement, the blood-vessels immediately under the inflamed portion of the pleura become distended with blood, and form a kind of net-work of a bright red color. The natural secretion from the affected part is at first supposed to be considerably diminished; but an overflow of thin serous liquid soon takes place, and, if the inflammation increase, the fibrinous part of the blood which, in a state of health, nourishes and sustains the pleura, is also thrown out, and forms in solid films or layers upon its surface, or is mingled with the effused liquid which has accumulated in the side of the chest affected. This excessive secretion sometimes continues until the side in which the inflammation is seated becomes completely filled with liquid, and the lung is in consequence so compressed that it ceases to perform its function. The inflammation, however, may attack both sides of the pleura, (double pleurisy;) but this is comparatively a rare occurrence.

Pleurisy commences with a slight degree of chilliness, sometimes with severe rigors or shivering. The patient, either at the same time, or shortly after, complains of an acute cutting pain (*stitch*) below the nipple, or towards the anterior edge of the arm-pit, which occasionally catches or interrupts the breathing. The ordinary series of feverish symptoms soon follow, viz. hot, dry, and harsh skin, thirst, high colored urine, and a firm hard pulse. Yet cases frequently occur where it is small, soft, sometimes unequal or intermittent, and closely resembling that which results from great debility; while the patient is at the same time laboring under much oppression and tightness at chest, accompanied by distressing anxiety. Now, if this oppressed state of the system were mistaken for real debility, and stimulants administered, all the symptoms would be aggravated, and serious consequences might accrue. But these symptoms, instead of being the result of direct debility, indicate the violence of the inflammation; the acute pain prevents the patient from breathing freely, and the constantly impeded respiration causes obstruction in the lungs; part of the blood, therefore, only reaches the heart, and, consequently, the quantity in general circulation is greatly diminished. Every time the patient coughs, or attempts to draw in a full breath, the pulse becomes suddenly full and hard; and if venesection be resorted to, it may be observed to rise gradually as the blood flows from the arm, and the inflammatory symptoms soon declare themselves in a manner not to be mistaken. We have deemed it necessary to notice particularly this modification of the pulse, because it might mislead those who have not received a medical education, and cause them to neglect depletion, and the active measures necessary in such cases.

Cough is a symptom which is always present in every inflammatory affection of the lungs; in ordinary cases, it is brought on each time the patient endeavors to take a deep inspiration, and, when the inflammation is severe, is induced by speaking, or even by moving the chest. In pleurisy the cough is short, dry, and very painful; and the expectoration is scanty, a little whitish, or transparent.

The patient generally lies on the back; but, at the early stage of the disease, sometimes on the sound side. In the chronic form, the patient lies on the back, or more frequently on the side affected, because the weight of the liquid would impede the motion of the healthy lung, if the patient lay upon that side.

In mild cases, or when active treatment has been adopted at the commencement, and only a small quantity of liquid is effused into the chest, recovery takes place in a few days; but when the accumulation of liquid is considerable, the disease may continue from one to three months.

There is a form of pleurisy frequently met with which is at first attended with pain and slight feverish symptoms, but afterwards slight cough, difficulty of breathing, and an uneasy sensation at the chest, are the only symptoms experienced by the patient. In some cases, no pain is felt at any period of the disease, and the cough, difficulty of breathing, &c., are so slight as scarcely or not at all to be observed. This latent species of the disease comes on sometimes during convalescence from fever, and there is often a considerable accumulation of liquid before any affection of the chest is suspected. Many people, who are supposed to die from old age, perish from this latent form of pleurisy.

When pleurisy declares itself in the usual way, and active treatment is adopted at the commencement, recovery generally takes place; but when the subjects of the disease are children, or people far advanced in life, it often proves fatal.

Pleurisy usually arises from cold and wet; but it may be brought on by any of the causes which give rise to inflammation of the lungs.

Treatment.—The treatment of pleurisy is based on the rules which apply to all acute inflammatory diseases. The most effectual remedy is *blood-letting*, and this measure is the more beneficial the sooner it is employed after the commencement of the disease. The blood is to be allowed to flow from the arm until the approach of fainting, and, after the lapse of six or eight hours, from twenty to forty *leeches* are to be applied over the seat of the pain. By employing these energetic means *at an early period*, the patient is enabled to draw in a full breath without suffering pain, the pulse becomes soft, the feverish symptoms abate, and thus, in many cases, we succeed in completely arresting the progress of the disease at its very onset. When the tissue or substance of an organ is inflamed, we repeat the general bleeding as often as it may be found necessary; but when the inflammation is seated in the membranes, whether enveloping organs, or lining the great cavities of the body, it is found more advantageous to repeat the local bleeding, by means of cupping or leeches, than to have again recourse to venesection. Hence, in pleurisy, if the pain, cough, and difficulty of breathing return, local depletion is to be resorted to a second time; and this measure is to be employed as often as the urgency of the case may require, until the inflammatory action cease. The bowels are to be freely opened, after the first bleeding, by a dose of *calomel*, (six or eight grains,) combined with a quarter of a grain of *tartar emetic*, or six grains of *James's powder*, followed by a draught of the infusion of *senna leaves*, with *Rochelle or Epsom salts*. The *tartar emetic* mixture is of great service in keeping under the inflammatory action. In general, a table-spoonful every two or three hours will be found sufficient to keep up its depressing action on the system; but the strength of the doses, and the frequency of their repetition, must depend on the severity of the disease, the age and constitution of the patient, and various other circumstances. A slight degree of sickness at stomach (nausea) is a sure indication that the remedy has been carried to the proper extent; if the dose were to be increased after this symptom is induced, the consequence would be vomiting, which could be of no service, and might do harm. If the disease have been neglected during the first two or three days, venesection is to be avoided; but local bleeding, and the tartar emetic mixture, should be employed until the pain and the inflammatory symptoms abate. On the third or fourth day from the commencement of the disease, a large *blister* is to be applied over the side; tissue or silk paper, moistened with oil, being placed between it and the skin, and kept on during forty-eight hours; but if the tissue paper be not interposed, the blister should be removed at the expiration of six or eight hours, and a large poultice applied over the part.

Pleurisy is sometimes checked, when met by vigorous treatment, at the commencement; but in the great majority of cases, even if the patient be bled to fainting, the feverish symptoms, though relieved for a time, soon return. We then know that the inflammation is advancing, and, in spite of the most active treatment, it goes on from five to nine days. But, though we cannot prevent the inflammation, when once confirmed, from running a certain course, we, nevertheless, have it greatly in our power to moderate the symptoms until the disease come to a crisis, and then, in ordinary cases, no further remedial means are required. There is still, it is true, an accumulation of fluid in the chest, but the process of absorption, by which this is carried off, may be safely left to nature, if the patient have sufficient self-command to live very sparingly; yet, though nothing is more efficacious than the control of hunger at this stage of the disorder, few persons are able to resist the keen appetite which accompanies convalescence; and intemperance in diet is almost sure to retard the absorption of the fluid, or induce a relapse. The desire for food is sometimes so urgent, that, in order to blunt the appetite, we are under the necessity of giving the tartar emetic mixture in small doses, to keep the stomach slightly under its influence.

If the absorption of the fluid secreted into the chest go on very slowly, it will be advisable to apply *blisters* repeatedly over the affected side, or the *tartar emetic ointment* may be used, so as to keep up constantly a copious eruption of pustules, until the cure is completed. Internally, the subjoined pills, or mixture, may be given to assist in the removal of the fluid.

Calomel, twenty-four grains,
Squills, in powder, twelve grains,
Foxglove, in powder, three grains. To be formed into twelve pills, with a little syrup or mucilage. One or two to be taken daily, until the mouth become slightly affected.

Tincture of aloes, from one to two drachms,
Tincture of foxglove (digitalis) twenty drops,
Tincture of squills, twenty drops. Mix with a little water. To be given an hour before breakfast, every second or third morning, according to the effect which it produces.

The *iodide* or *hydriodate of potash* is at present much used for the purpose of promoting absorption, and may be given as follows.

Iodide of potash, thirty-two grains,
Water, eight ounces. Mix. A table-spoonful to be taken as a dose four times a day.

By taking the simple precaution of eating a bit of bread or biscuit after each dose of this mixture, the irritation of stomach and nervous symptoms commonly ascribed to iodine are prevented.

POTASH.

The bi-carbonate, or, as it is commonly called, carbonate of potash, is sometimes used in indigestion, to correct acidity, to prevent the formation of lithic acid or red gravel, and for the latter purpose it is frequently employed in gout, which, as we have already had occasion to mention, is frequently complicated with the formation of red gravel. When it is found necessary to administer effervescing draughts to relieve irritability of stomach, many practitioners prefer this salt to soda. The effervescing draught, in common use, is made by dissolving a scruple of the bi-carbonate of potash in water, and then adding fifteen grains of citric acid, or the same quantity of tartaric acid, or three drachms and a half of lemon juice. The dose of the bi-carbonate of potash is from ten to thirty grains three times a day.

PRUSSIC ACID.

This acid, in its concentrated state, is the most powerful and rapid poison known. When prepared for internal use, it is given in the dose of from three to ten drops, three times a day, in sugar and water, and has been found very useful as a sedative in asthma, hooping cough, chronic bronchitis, at the commencement of consumption, in some forms of indigestion, in allaying nervous palpitations, more especially when caused by a disordered state of the digestive organs. In running tetter and some other diseases of the skin, accompanied with severe itching, the following lotion is said to be useful.

Prussic acid, two drachms,
Acetate or sugar of lead, sixteen grains,
Alcohol, half an ounce,
Distilled water, eight ounces. Mix.

PUERPERAL OR CHILD-BED FEVER.

This is the name given to a very dangerous inflammatory disease, to which women are liable shortly after delivery. It assumes two forms; the *first* is purely inflammatory, the *second* is accompanied with typhoid symptoms. In both varieties the inflammation is seated in the peritoneum, or serous membrane, which lines the cavity of the abdomen, and envelopes the various organs contained in it. The whole or only a part of this membrane may be affected, and sometimes the substance of the womb and its appendages are inflamed.

The *first variety* commences with general shivering, or merely a sensation of chilliness in the back and loins. In either case the feeling of cold is soon followed by heat of surface; full hard pulse, sometimes not quicker than natural, but generally varying from a hundred to a hundred and ten beats in the minute; head-ache, great restlessness, and other symptoms of general excitement, attended by pain and swelling in the whole or part of the abdomen, according to the extent or progress of the disease. The discharge called the *lochia*, or in popular language, the cleansings, which always follow delivery, is commonly checked, but sometimes it continues to flow as usual. The breasts become flaccid, and if the milk have begun to flow, it is dried up, but the disease generally commences before this secretion is established. The patient lies on her back, with the knees raised upwards towards the belly; this position being found the least painful, inasmuch as it slightly relaxes the inflamed peritoneum.

This alarming disease generally makes its attack about the third day after delivery, sometimes on the first, and often not until the sixth day, or even later. It is always the more dangerous the earlier it commences. By energetic treatment it may be subdued in the course of a few days, the pain and swelling subside, the appearance of anxiety and distress so strongly depicted in the countenance gradually wears off, and the woman quickly recovers; or it may be prolonged from eight to fifteen days, and then terminate favorably, or pass into a chronic state, from which the patient very seldom recovers. In many cases the symptoms progress with frightful rapidity, the belly becomes enormously distended, the inflammation extends to the peritoneal covering of the stomach, vomiting supervenes, and the patient dies delirious and in great agony. It occasionally happens, after a longer or shorter period of severe suffering, that the pain subsides, and the patient becomes perfectly quiet and composed. This deceitful calm indicates the near approach of death.

In the *second*, or *typhoid variety*, the shivering is severe and long contiuued; the head-ache is intense, and accompanied, even from an early period, with constant low delirium, which is, in most cases, preceded for a short time by drowsiness and listlessness; the latter symptom is shown more particularly by the patient becoming careless about her child. The pulse is small, hard, and exceedingly quick, being from 130 to 160 in a minute; the higher it is, the greater is the danger. The skin is hot and dry, whereas, in the former variety, it is generally moist; the face is pale and contracted, there is great prostration of strength, and frequently vomiting and purging.

Causes.—Child-bed fever may be caused by violence during delivery, exposure to cold, premature exertion, agitation of mind, errors in diet, or the imprudent use of stimlants, and it sometimes prevails as an epidemic.

Treatment.—It is supposed that half the women who die in child-bed fall victims to puerperal fever; *but the mortality would not be nearly so great if medical aid were procured at an early period of the disease;* for it is only within the first twenty-four hours that much confidence can be placed in remedies. It cannot, therefore, be too strongly impressed upon the minds of the friends and attendants of child-bed women, that medical counsel should be sought at the very onset of this formidable malady, for, from the moment the first symptoms are manifested, the woman's life is in peril, and this will be increased by every hour's delay. The few instructions we have to offer with regard to the treatment are of course intended for the guidance of those who are placed in circumstances where medical assistance cannot be obtained, and where the friends of the patient must either act with promptitude and decision, or leave her to almost certain death.

When the pulse is full and hard, the face flushed, and the skin hot, the remedy which naturally suggests itself is free and repeated bleeding. No rule can be given with regard to the precise quantity of blood to be withdrawn. This must depend upon the extent and severity of the inflammation, the age and strength of the patient, the stage of the disease, and other circumstances connected with the case. The safest and most efficacious plan of bleeding, is to place the patient in the *erect* position, and allow the blood to flow until the approach of fainting; and in the event of this accident happening, there is no danger to be apprehended, the patient will soon recover when placed in the recumbent position with her head low. In the course of four or five hours, if the feverish symptoms and pain return, from fifteen to thirty leeches are to be applied over the abdomen, and after they have fallen off, the bleeding from their bites is to be promoted by the application of warm poultices, or fomentations of chamomile flowers. It may be necessary to repeat the leeching two or three times within the first twenty-four hours, in the event of the continuance or recurrence of the pain and other symptoms of inflammation. Indeed, it must ever be borne in mind, in treating this disease, that more harm is likely to accrue from not bleeding sufficiently, than from bleeding too much. If it be found necessary to stop the oozing of blood from the leech-bites, they should be touched with a bit of lunar caustic, or a little powdered alum, or tincture of steel may be applied. This ought to be particularly attended to when only two or three of the leech-bites continue to give out blood, an occurrence which keeps the patient in an uncomfortable state without being attended with any advantage.

If at the expiration of twenty-four hours, the pulse be as low as 115 in the minute, and the patient feel considerably relieved, a favorable result may be anticipated; and there will be no necessity for repeating the bleeding, unless there should be pain or tenderness when pressure is applied over the abdomen, and then twelve or fourteen leeches should be employed. But if at that period the symptoms should not be in some degree subdued, and if the pulse be at 140 or upwards, the patient is not likely to recover.

Immediately after the first bleeding the following mixture should be administered, so as to keep up a slight degree of nausea, until the inflammation is subdued.

Tartar emetic, six grains,
Tincture of henbane, three drachms,
Water, six ounces,
Simple syrup, or syrup of orange peel, two drachms. Mix. A table-spoonful to be given every hour.

The first dose of this mixture, in many cases, produces vomiting, and the second has frequently the same effect, but in a slighter degree; the subsequent doses only excite slight nausea. This remedy, like bleeding, is borne to a much greater extent in the first variety of the disease than in the second. In both it produces a directly sedative or lowering action on the whole system; and when carefully administered, according to the circumstances of the case, possesses great power in maintaining the effect produced by the first bleeding, and often prevents the necessity of further depletion. In the second or typhoid variety, the application of thirty or forty leeches to the abdomen, conjoined with the judicious use of this mixture often arrests the progress of the disease in a prompt and decisive manner. It must not however be forgotten, that all internal remedies are to be considered only as secondary to general and local bleeding.

The circumstances which indicate that the bleeding and antimonial mixture have exercised a salutary influence on the inflamed parts are, the subsidence of the pain, tenderness, and heat of the abdomen, and the diminution of the swelling. A large blister may now be applied, or tartar emetic ointment may be rubbed in over the abdomen; but counter-irritation must never be resorted to while the inflammatory symptoms continue high.

If injections of warm water, linseed tea, or decoction of marshmallows, have not the effect of opening the bowels, *castor oil* will be found the best purgative. When the disease is accompanied with purging, an injection composed of two ounces of thin starch, with twenty or thirty drops of laudanum, should be administered every two or three hours, until it is checked.

When the tongue is parched, and of a florid, red, or brown color, with urgent thirst, and severe irritation of stomach, the tartar emetic mixture should not be given. In such cases the usual practice is to give calomel and opium, until the mouth be slightly affected or the inflammation subdued.

Calomel, ten grains,

Opium, a grain and a half; to be formed into three pills, with a little mucilage or crumb of bread, and given as a dose every three or four hours; or the same quantity of *calomel*, combined with five grains of *James' powder*, or ten grains of *Dover's powder* may be given in a little jelly.

The violent character of child-bed fever, the rapidity of its progress, and the little control which the physician has over it, show the great importance of adopting measures to prevent its occurrence. Regular exercise ought to be taken during the last months of pregnancy, and the bowels should be carefully kept open by the occasional use of a dessert-spoonful of *lenitive electuary*, or mild doses of fine East India *castor-oil*. If the woman be robust and full-blooded, the abstraction of a moderate quantity of blood from the arm is a necessary precaution, if not forbidden by peculiar circumstances. Two or three hours after delivery the infant should be allowed to take the breast, and this practice should be contiuued during the first fortnight, even if the mother have no intention of suckling the child herself. She ought to remain in bed during the first nine days, and not quit her apartment for a fortnight. During that period no stimulating food should be taken; the diet should consist principally of farinaceous substances, as panado, sago, arrow-root, &c., with a little chicken broth or beef-tea. Exposure to cold, mental excitement, and every thing stimulating, are to be carefully guarded against. The best laxatives are lenitive electuary and castor oil, but if the mother is not to nurse the child herself, her bowels should be freely opened, three days after delivery, by means of from two drachms to an ounce of *sulphate of potash*, dissolved in warm water.

PUERPERAL MANIA.

"The period at which this mental disease appears is various, but it is seldom, if ever, sooner than the third day, often not for a fortnight, and, in some cases, not for several weeks after delivery. It usually appears rather suddenly, the patient awakening, perhaps, terrified from a slumber; or it seems to be excited by some casual alarm. She is sometimes extremely voluble, talking incessantly, and generally about one object; supposing, for example, that her child is killed, or stolen; or, although naturally of a religious disposition, she may utter a succession of oaths, with great rapidity. In other cases, she is less talkative, but is anxious to rise and go abroad. In some instances the patient recovers in a few hours, in others, the mania remains for several weeks, or even some months; but, I believe, it never becomes permanent, nor does it prove fatal, unless dependent on inflammation of the brain."

Treatment.—Puerperal mania is a disorder of the nervous system. The treatment consists in keeping the patient as quiet as possible, in opening the bowels occasionally by mild laxatives, as *lenitive electuary*, or *castor-oil*, in keeping the head cool by the application of eau de cologne and water, vinegar and water, or any other simple cooling lotion. Mild anodyne remedies are useful in soothing the patient and preventing restlessness during the night. Sometimes the *extract of henbane*, in the dose of from three to five grains, has a good effect; in other cases the solution of the *acetate of morphine*, is preferable. The diet should be light and nutritious. The secretion of milk should be stopped by removing the infant from the mother. But in this disorder, which is seldom dangerous, time, and careful nursing, are more to be relied upon than medicine.

PULMONARY CONSUMPTION.

Consumption is caused by the deposition of scrofulous matter in the substance of the lungs. The deposition takes place in small granules, called tubercles, which are of a dull white or yellowish color, of firm consistence, slightly transparent, varying from the size of a small pin's head to that of a garden pea or a small hazel-nut, and disseminated more or less extensively through the lungs; but they are almost invariably more numerous, larger, and more fully developed towards the upper and back part than at the base. The progress of the disease therefore is usually from above downwards. In their earliest stage these little bodies are distinct from each other, but as they increase in size and number they coalesce, so as to form thick opaque masses of a yellow color and of considerable size. These small tumors at length soften, and acquire the consistence and appearance of matter (pus); they communicate with each other, and the matter finds its way into the bronchial tubes or air passages, and passes off by expectoration. Each mass or cluster of tubercles, after reaching a certain size, undergoes the same change, and the cavities necessarily produced by the evacuation of the matter, tend to run into each other in consequence of the gradual development and softening of surrounding portions. The openings formed are at first small, but the softening of tubercles forming the walls of the cavities goes on gradually, until a free communication takes place. The excavations thus produced vary in size; sometimes they are not larger than a pea, at other times they might contain half a tea-cupful, or even a cupful of fluid; they may be seated deeply in the substance of the lungs, or may approach the surface, so as to be bounded only by the pleura, or enveloping serous membrane. The walls of the cavities constantly secrete matter, and portions of them gradually become detached. Sometimes the surrounding substance of the lungs remains sound, but in general it becomes more or less impervious to air, and before the patient dies; it is supposed that on an average three-fourths of the whole texture of the lungs are rendered incapable of carrying on the function of respiration.

In the *first stage* of consumption the principal symptom is cough, which at first occurs only on rising in the morning, and is little noticed, but after some time it becomes more or less troublesome during the day, particularly after going up stairs, or on taking ordinary exercise, but, for a considerable length of time, is not accompanied by expectoration. At length the patient begins to expectorate a thin, whitish, semi-transparent mucus resembling saliva, and this is observed to be more copious on getting out of bed than during the day. A sensation of constriction now begins to be felt at the chest, and is at times attended with slight difficulty of breathing. After a longer or shorter period the general health commences to give way, a slight degree of shivering is experienced occasionally, and is followed by restlessness and heat of the skin, more especially of the palms of the hands and soles of the feet, terminating in slight perspiration. As the disease gains ground the patient becomes gradually emaciated, and is unfitted for much bodily or mental exertion. His face is sometimes flushed, at other times pale. The pulse is considerably quickened, and the face appears flushed after eating, or any bodily exertion. Lassitude soon follows, and the countenance assumes a peculiar expression of languor and fatigue. The patient feels at times chilly, and cannot bear cold as formerly; he is restless during the night, and sometimes awakes with his chest or the calves of his legs bathed in perspiration; and in many cases the hair loses its strength and falls off. At this period the tubercles are interspersed to a greater or less extent through the substance of the lungs, but are still greyish and semi-transparent.

The *second stage* commences with softening of the tubercles, and is manifested by a decided change in the appearance of the expectoration, which is now whitish, opaque, and does not run together in masses, but is seen in detached portions, of a round form, with irregular indented edges, and floating in the thin transparent liquid secreted by the lining membrane of the air passages. During this stage, sometimes at an earlier period, spitting of blood, which is one of the most marked symptoms of the disease, generally takes place. This may be slight, from a few streaks of blood to a spoonful, or it may be to the extent of a pint or more. In some instances the patient is seized with spitting of blood, while enjoying apparent health, and this may be the first symptom which he observes. Blood sometimes comes from the mouth or throat, or spitting of blood may be caused by deranged menstruation, or by local injuries. But it rarely happens that blood comes from the lungs, unless the patient be consumptive. The cough is now greatly aggravated, and is troublesome during the night; the pulse is permanently quicker than natural, and ranges from ninety to one hundred and twenty beats in the minute; hectic fever becomes confirmed; the debility and emaciation increase; the face is pale during the day and flushed in the evening; and pains resembling rheumatism are felt at the shoulders and chest.

In the *third stage* all the symptoms already enumerated increase, the rigors or chills in the evening are severe, the consequent heat of the surface of the body, thirst and restlessness, are very distressing, and the morning perspirations more profuse. The cough occurs more frequently, and is followed by breathlessness; the voice becomes more or less hoarse or indistinct; the slightest exertion increases the difficulty of breathing, and many patients suffer severely from pains in the chest. The expectoration is now very copious, and assumes a yellow color, with a dirty greyish tinge, and nauseous smell; it no longer appears in round masses with indented edges, but runs together, still appearing unmixed with the thinner liquid. Frequent purging also harasses the patient, and tends greatly to increase the debility and emaciation; the ancles begin to swell in the evening, and after some time remain permanently swollen. Some patients suffer comparatively little towards the termination of the disease; they waste away gradually until the powers of life are completely exhausted, and death takes place without a struggle. In other cases again, the hectic fever, difficulty of breathing, and frequent cough, followed by a sense of suffocation and sinking, are severe to the last.

The duration of consumption varies greatly in different individuals; sometimes it commences almost insensibly, progresses very slowly, and passes through its different stages almost without either fever or cough; this latent form of the disease is common in children, and in persons far advanced in life. In other cases again, the tubercles are extensively disseminated through the substance of the lungs, and the disease declares itself abruptly; the fever and prostration are sometimes so intense, and the emaciation so rapid, that the patient sinks in the course of a few months. This form of the disease is known to the public at large under the denomination of *galloping* consumption, and occurs more frequently in women than in men. It often happens that consumption advances slowly during a year or two, or even considerably longer, then becomes suddenly developed, and terminates fatally in a very short time. In such instances a slight cough is perhaps the only symptom particularly noticed by the patient or his friends, until he is suddenly seized with shivering, followed by a considerable degree of fever, with oppression and difficulty of breathing, and on examining the chest, the physician now discovers that the disorder has advanced beyond the reach of our art. In cases of this description, it is more than probable that tubercles had long existed in the lungs in a latent state, and that the softening process had commenced suddenly in a great many of them at the same time, giving rise to fever and the usual symptoms of the disease in their most intense form.

Sometimes the symptoms of consumption appear to intermit; they cease during summer, and the friends of the patient are led to believe that there is no longer any cause for alarm; the following winter, however, brings back the symptoms, which again disappear almost entirely when the weather becomes mild; these changes perhaps take place during several years before the disease becomes fully developed.

The duration of consumption depends greatly on the circumstances of the patient. Those who have it in their power to avoid all the causes which tend to aggravate the disease, are of course more likely to linger during a longer period than those who have not. The average duration of consumption is from twelve to eighteen months.

Causes.—Pulmonary consumption is generally admitted to be referrable in all cases to one common origin, viz., that debilitated state of the constitution termed the scrofulous habit. This is more particularly remarkable in the hereditary transmission of consumption in scrofulous families, and in the frequent connexion which exists between consumption and various symptoms and appearances of scrofula. The development of an external scrofulous abscess bears a strong analogy to the formation and progress of tubercles in the lungs. Both commence in the same slow, insidious manner, become solidified, then soften, and present the same kind of thick curdy matter. We also observe the same general symptoms—the hectic fever, the excessive sweating, the flushing of the face, emaciation, purging, &c., in scrofulous inflammation of the hip or knee-joint, as in confirmed consumption.

Although the tuberculous or scrofulous constitution, or that state of the system which precedes consumption, can generally be traced to hereditary origin, it may nevertheless arise from various causes, the principal of which are the following.

1. A cold, damp, and variable climate; hence consumption is of more frequent occurrence in countries which have wet and cold alternating with heat, than in those which have a dry atmosphere, whether cold or hot. This is illustrated by the frequency of the disease in this country and in Holland; whereas, within the tropics and in the northern parts of Russia, where the atmosphere is dry, it is comparatively rare.

2. Improper food. Diet composed of substances not sufficiently nutritious or stimulating, or an inadequate supply of food, tends strongly to produce consumption. Hence the disease occurs most frequently amongst the poor; and many consumptive individuals of this class of society, attribute their illness to the privations they have undergone from want of food; and among the indigent, particularly in large towns, it is observed that women frequently become consumptive while nursing. On the other hand, among the more affluent classes of society, there is reason to believe that the disease is often induced by using more food than the wants of the system require, more especially animal food and stimulating articles of diet.

3. Impure air. Some modern authors place this at the head of the causes of consumption, and there can be no doubt that it exercises a very pernicious influence on the animal economy. Breathing an atmosphere loaded with smoke, and polluted with numerous exhalations necessarily connected with the various processes of animal and social life, must tend greatly to increase the mortality of large towns, more especially among the working classes, who reside in narrow dirty streets, lanes, confined courts, and similar localities, where the ventilation is imperfect, and the vivifying rays of the sun are excluded.

4. Excessive labor. This cause depresses the energies both of the physical and moral system; and whatever tends to debilitate the body tends also to induce consumption.

5. Deficient exercise must also rank among the causes of consumption.

6. Certain occupations. The sedentary occupations of literary men, tailors, shoemakers, weavers, dressmakers, &c., conjoined with want of pure air, induce that state of the constitution of which consumption is to be considered as the local manifestation. This disease also appears to be frequently brought on by certain trades, which expose the workmen to an atmosphere loaded with irritating gases, and minute particles of various substances.

Treatment.—A point with regard to which all parties are agreed, is the hereditary nature of consumption; but, although this fact is well known to the public, it seems to have very little effect in preventing the healthy from intermarrying with the consumptive.

We shall now notice the measures which ought to be adopted to ward off consumption where children are born with a predisposition to it. If the consumptive tendency be derived from the father only, while the mother is robust and in sound health, she ought to obey the law intended by nature, and suckle her own child. But, on the other hand, if the predisposition to the disease be inherited from the mother, a healthy nurse should be procured to suckle the infants; and this measure becomes the more necessary when the health of the mother is in a delicate state, because if she were to nurse her child under such circumstances, not only would her own health suffer, but her child would be rendered sickly, and liable to be carried off during the dangerous process of teething, or by any of the various ailments of infancy. The child should be suckled from twelve to eighteen months, or until the first set of teeth appear; and, as a general rule, the only nutriment allowed during the first six months should be the nurse's milk. The qualifications of a hired nurse are of great consequence. She should be of a healthy appearance, and care should be taken to ascertain that her constitution is not tainted with scrofula; she ought not to be too young or inexperienced; her milk should be plentiful, and suited to the age of the child she is to suckle. It would be wrong, for example, to employ a woman who has been nursing her own child for six or eight months to suckle a new-born infant. The character and habits of a nurse also deserve attention. Many women think that while nursing they cannot eat and drink too much, and they consequently indulge their appetites to an unwarrantable extent; and this, conjoined with indolence and other bad habits, render them very improper nurses for delicate or scrofulous children.

The child must be watched with the greatest care from its earliest infancy, and every means adopted to give strength and vigor during the growth and development of the various structures of its tender frame. Dress carefully suited to the season, neither too light nor too warm and oppressive; frequent ablution, in order that the body be kept thoroughly clean, and the functions of the skin duly performed; habitation where the air is dry and wholesome; a well-ventilated nursery; and the greatest attention to the state of the digestive organs, and proper regulation of the bowels.

Nothing tends more to maintain the various organs of the body in a state of healthy activity, and equalize the distribution of blood, and, consequently, nourishment, heat, and, in a word, life throughout the animal economy, than free and regular exercise in the open air. Healthy children are naturally inclined to take exercise, and the out-door amusements which they make choice of are generally the best suited to invigorate and promote the growth and development of the body. The manner in which young girls are at present educated is often productive of the most injurious consequences, more particularly to the delicate, and to those in whose constitutions there exists a tendency to consumption or scrofula. The long confinement in school-rooms; the constrained position in which they are often kept for hours, perhaps, leaning over a piano or a drawing-table, or in some stiff or erect posture, conjoined with circumstances connected with dress, as wearing thin shoes, the prevailing and pernicious fashion of tight dressing, and the absurd custom of wearing stays; and the various unnatural restraints so rigidly and unnecessarily enforced, are followed in thousands of instances by the worst effects. The extremities become cold, and the blood is preternaturally determined to the chest, where it accumulates or becomes congested, thus increasing the tendency to the formation of tubercles in the lungs of those constitutionally predisposed to consumption, or sowing the seeds of this fatal malady among others, in whom no hereditary tendency exists. It is, indeed, much to be regretted, that the physical education of girls is so much neglected; the cultivation of the mental faculties, and the acquiring of a fashionable education, seem to be considered by many parents as the first and paramount consideration; and, at the majority of boarding-schools, to excel in a variety of accomplishments is deemed of more importance than the maintenance or improvement of health. The consequence of this is, that since the children of consumptive parents are often endowed with a superior development of the mental faculties, and great aptitude for the attainment of knowledge, their minds are often worked to the fullest extent, to the neglect of proper exercise, and other measures conducive to health, in order that they may excel in educational pursuits; and thus their health is slowly and almost imperceptibly impaired, until at length it becomes irrecoverably injured, and the highly-gifted and accomplished young lady, with a mind still active, with personal beauty, and with every capacity for enjoying life, is hurried to an early grave by the terrible though silent and insidious enemy of the most beautiful and most interesting part of our race.

The question, therefore, now to be considered is—what are the measures to be adopted in order to counteract this phthisical tendency? The principal object is to invigorate the system generally, and the best means of effecting this consists in properly regulated regimen and diet, rather than in the use of medicine. The patient should rise early in the morning, breakfast and dine early, his diet should be generous without being too stimulating, he should take plenty of animal food plainly dressed, with good bread, and a moderate quantity of wine or sound beer; the latter being less stimulating is generally to be preferred. Slops and watery diet are to be avoided. He ought to take exercise on foot, on horseback, in an open carriage, or on the top of a coach, and should be, at least, four or five hours in the open air every day when the weather permits. Every necessary precaution should be taken to avoid danger from wet feet, sitting in currents of air, the long-continued influence of cold and wet, and sudden alternations of atmospheric temperature, as going out of hot rooms into the cold night air, or passing from the latter into heated rooms; but exposure to the open air at all seasons when the body is protected by suitable clothing, and proper precaution is observed, improves the general health and strength, and tends strongly to fortify the system against the impression of cold, whereas confining phthisical persons in warm rooms during winter, and the adopting of other measures for the purpose of escaping the effects of a cold and variable atmosphere, have a tendency to debilitate the constitution, and instead of counteracting the unfavorable influence of the climate, only render the invalid more subject to it, and thus produce the very opposite effects to those intended. Another powerful means of hardening the body so as to allow the invalid to withstand atmospheric vicissitudes and render him capable of following his usual avocations, and enjoying the rational pleasures of life, is *cold bathing*. At first the tepid shower bath may be used, or simple ablution of the trunk of the body by means of a sponge or a towel dipped in water, containing a portion of salt or vinegar, (two ounces of either to a pint of water,) and after the skin has been carefully dried, friction with the hair glove or a rough towel should be used. The time for using this process is immediately on getting out of bed. It is advisable in all cases, whether the shower bath or sponging be employed, to begin with warm water, reducing the temperature gradually until it can be used quite cold. Either of these methods may be continued daily through the coldest winter, but the latter being the least troublesome, is generally preferred. Both sexes should wear flannel next the skin from the collar bones to the knees. It ought to be worn of a thinner texture in summer than in winter, *but never altogether discontinued.* Many young ladies bring consumption on themselves by deficiency in clothing, and wearing silk stockings and thin shoes during winter. These habits are often persisted in, in spite of repeated warnings, and when conjoined with late hours, long-continued excitement, and other evils of a luxurious and artificial manner of living, are the means of destroying thousands of lives.

It is at this period, or at the commencement of the first stage of the disease, that change of climate is to be recommended; and we would earnestly advise those whose circumstances will allow them to avail themselves of this valuable resource, to proceed at once to a tropical climate.

The climate which we consider to be the most eligible for pulmonary complaints, is that of the leeward islands of the West Indies. No climate can be more equable and salubrious. It varies little through the whole year, and the never-failing sea breeze carries with it health and strength to the invalid. He may there command all comforts and conveniencies which can be made available; he will not be subject to the embarrassment arising from the use of a foreign language; he will enjoy the society of a people long celebrated for the urbanity of their manners, and the hospitality and kindness which they never fail to show towards strangers, an advantage of no small importance to a valetudinarian far distant from his home. St. Vincent, Barbadoes, Montserrat and St. Kitts, are the islands more particularly suited for the patients whose cases we are now considering; but there are may salubrious situations in the hilly districts of all the leeward islands, where exercise is practicable at any period of the day without much inconvenience, and where the invalid can enjoy the same advantage (to as great an extent as health requires) in the morning and evening. One thing, however, it is our duty to notice, that where the disease has reached the second stage, that is, where it is confirmed, a warm climate debilitates the patient, and tends to shorten his days.

If there be much debility and emaciation, flushing of the face, cough which has continued during several weeks, unusual perspiration during the night, and other symptoms indicative of the commencement of the first stage, the following draught should be given daily in three doses.

Infusion of calumbo, three ounces,
Elixir of vitriol, forty drops,
Quinine, a grain and a half,
Tincture of henbane, a drachm and a half. Mix.

This mixture, together with exposure in the open air during several hours daily, animal food twice a day, with good beer, or two or three glasses of sound wine, according to the habits of the patient, and carefully avoiding every thing of a debilitating tendency, will, in many cases, check the night perspirations, abate the cough, and give strength and vigor to the system.

Many distinguished practical physicians strongly recommend the administration of emetics at the commencement of consumption; twenty-five to thirty grains of *ipecacuan*, or half a drachm of the *sulphate of zinc* (*white vitriol*) in water, to be taken early in the morning once, twice, or even thrice a week, according to the circumstances of the case. This practice, it is stated, may be continued for months with perfect safety, and does not interfere with any general treatment which may be considered necessary. We have no knowledge of this method of treatment from our own observation; but, from the many able practical writers who bear testimony to the good effects which it has produced in numerous cases, it appears to be worthy of consideration.

When hectic symptoms are manifested, the pulse remaining permanently quicker than natural, while the cough and emaciation are gaining ground, twenty drops of the *tincture of foxglove* (*digitalis*) should be added to the above mixture, and the quantity of tincture of henbane may be gradually increased.

When, unfortunately, the disease becomes confirmed, our treatment must be in a great measure palliative, and principally directed to the relief of the more urgent symptoms. The strength is to be supported by nourishing diet; the purging should be checked by *chalk mixture* with *laudanum;* the night sweating may be corrected by the administration of *elixir of vitriol* in the *infusion of roses;* demulcents with laudanum are to be given to alleviate the cough; *opium*, *morphine*, *hemlock*, or *henbane* are to be employed to soothe irritation; the redness and tenderness of the tongue, and the thrush-like ulcers of the mouth, are to be relieved by washing the parts with a solution of *borax*, or *Armenian bole*, and honey. These are the chief measures to be adopted for the purpose of ameliorating the symptoms, and rendering the advance of the disease less distressing. When the lungs are disorganized, no hope of recovery can be offered to the patient.

QUASSIA.

The wood, bark, and root of the quassia tree are all exceedingly bitter, but possess no aromatic principle. The wood, which is the part chiefly used for medicinal purposes, is a cheap, simple, and valuable tonic, especially in some forms of indigestion, in looseness of the bowels, (diarrhœa,) in ague, and remittent fevers of warm climates.

The *infusion of quassia* is prepared in the following manner. "Take of quassia, sliced, two scruples, boiling water a pint; macerate for two hours in a vessel lightly covered, and strain. The dose is a wine-glassful three times a day."

QUINSY.

Quinsy, or inflammation of the throat, is seldom ushered in by shivering, as in other inflammatory diseases; it usually commences with a slight degree of head-ache, and stiffness of the neck, and a feeling of general uneasiness. At the same time, or shortly after, a slight difficulty in swallowing is experienced, together with a sensation of heat and dryness or rawness of the throat, which is soon followed by pain more or less severe, according to the intensity of the inflammation. The patient has a constant inclination to swallow, and every attempt at deglutition greatly increases the pain; the voice becomes nasal, and the articulation imperfect, so as materially to affect the speech; the mucus of the mouth is very tenacious or slimy, and every attempt to spit it out is attended with an aggravation of the pain. Sometimes the patient cannot open his mouth sufficiently to allow the throat to be examined, but if this can be effected, one or both tonsils, generally both, although one is usually more affected than the other, are red and swollen, the uvula or pap of the throat is also enlarged, and hangs down on the base of the tongue. It often happens that the tonsils enlarge until they touch each other; the uvula is then thrown backwards, and almost entirely concealed by them. In many cases the inflammation extends over all the back part of the throat, and even attended by slight deafness, buzzing, and pain. The tonsils are not unfrequently swollen to such an extent that swallowing is entirely prevented, and if the patient attempt to receive any kind of drink it is immediately returned by the nostrils.

If the throat be examined at the commencement of the disease, the tonsils appear like two red balls, dry and shining; but at a later period we may observe in the majority of cases, several oval or irregular shaped spots of a yellowish, sometimes of a greenish color, not only upon the surface of the tonsils, but on all the parts to which the inflammation has extended. We must be careful not to mistake this appearance, which arises simply from thick tenacious mucus deposited upon the inflamed surface, for that which results from a much more dangerous form of the disease—the malignant or putrid sore-throat, in which false membranes are thrown out similar to those which we have described as being formed upon the lining membrane of the wind-pipe in croup.

The feverish symptoms which accompany quinsy are generally more severe than the local disorder would lead us to expect; the pulse is full and frequent, sometimes as high as 120 in the minute; the face is flushed; there is head-ache with a sensation of fulness and weight in the head; there is considerable heat of skin, which sometimes alternates with slight shivering; the tongue appears swollen and is covered with white or yellowish colored mucus, and there is a disagreeable taste in the mouth; sometimes there is nausea or vomiting; the bowels are generally constipated; the urine is scanty and high colored; the patient is restless during the night, and complains of a feeling of fatigue and general oppression.

Causes.—Exposure to vicissitudes of temperature, sitting in a current of air, wet feet, wearing damp linen, going out of a heated room into the cold air, or cold and wet in whatever manner applied, are the most frequent causes of quinsy. This disorder occurs generally in young people, in those of full and robust habit of body, and is common in all cold and variable climates, more especially in spring and autumn. It may also arise from a disordered state of the stomach. Women are more particularly subject to it during the period of menstruation.

Treatment.—In robust, full-blooded individuals, it may be necessary, if the inflammatory symptoms run high, to take blood from the arm; but in ordinary cases, ten, twelve, or fifteen *leeches*, applied under the angles of the jaw, followed by warm fomentations or poultices, to promote the bleeding, will be sufficient. The bowels should be freely opened by *calomel* and *jalap*, five grains of the former combined with fifteen to twenty grains of the latter, or a dose of *castor-oil* may be taken, and the feet should be repeatedly bathed, the water being used as hot as it can be borne. If the symptoms be not considerably relieved at the expiration of twelve or fifteen hours, the same number of leeches should be again applied to the throat, and if the inflammation be not checked by these measures, it will run its course and terminate at the usual time, either in resolution or suppuration. To moderate the symptoms and conduct the inflammation to a favorable termination, take forty grains or a drachm of *nitre*, with one or two grains of *tartar emetic*, mixed in barley water, in the course of twenty-four hours, and this remedy should be continued daily as long as there is any chance of suppuration being prevented. Gargling the throat in the acute form of this disorder, is in most cases to be avoided; but frequently inhaling the vapor arising from hot water mixed with *vinegar*, or from a *decoction of poppy-heads*, will be found very serviceable in every stage of the disease. If suppuration cannot be prevented, the application of warm poultices of bread and milk or linseed-meal to the *sides* of the throat, (not on the fore-part of the neck,) and diligently steaming the throat, are the means to be employed to promote the formation of the matter.

In children and young people the best remedies at the commencement of sore throat are emetics and purgatives; these when timely administered often arrest the progress of the disorder, and ought never to be neglected.

In the *relaxed sore throat*, or that state of chronic enlargement of the tonsils and uvula, to which many people are subject in the spring and winter seasons in all countries where the weather is cold and variable, the remedies usually employed are astringent gargles, such as a strong decoction of oak bark, or the following.

Purified alum, one drachm,
Tincture of myrrh, half an ounce,
Water, seven ounces. Mix.

Ten grains of *nitrate of silver*, (*lunar caustic*,) dissolved in one ounce of water, constitute an excellent application for this description of sore throat—it should be applied by means of a camel-hair pencil. Many people derive benefit from the use of *Cayenne lozenges;* but it often happens that the throat continues in this relaxed state for months, obstinately resisting every kind of local treatment. Under such circumstances, change of air, active exercise, and temperate habits, will be found the best remedies.

REMITTENT FEVER.

Some indisposition usually precedes an attack of remittent fever for several days. The patient is listless, languid, complains of headache, pains in the back and loins, and oppression at the chest. The appetite is impaired, and the bowels are irregular.

The attack in general commences with shivering, or a sensation of cold and chilliness, alternating sometimes with flushes of heat. This state is soon succeeded by burning heat and dryness of the skin, flushing of the countenance, and injected eyes, with great increase of the head-ache, and pains of the back and limbs. The tongue is foul, and the mouth sometimes dry and clammy; there is nausea, and perhaps vomiting, with much thirst. The pulse, which during the cold stage was weak and quick, is now full and strong; the breathing may be hurried, and the patient is extremely restless. The throbbing and pain of the head are occasionally very violent, and may end in delirium; the urine is scanty and high-colored; the bowels are generally though not always constipated; and some degree of tenderness is felt on pressing with the hand over the stomach.

After these symptoms have continued from twelve to eighteen hours, partial perspirations appear, followed by an abatement of the febrile symptoms, or they subside without any moisture on the skin. The remission is marked by the pulse being less full and frequent, the skin cooler, and the pains in the head, back, and loins relieved;

and by the patient being free from delirium, and the stomach in a less irritable condition. Nine or ten hours elapse before the patient is seized with another paroxysm, which may come on at once without any feeling of cold, or be preceded as at first by chilliness or shivering. The disease goes on in this manner with alternate remissions and returns of fever. If the case end favorably, each succeeding paroxysm becomes milder, until the fever entirely disappears, or it may be carried off by copious perspirations. The periods of remission and increased severity are very irregular, though the abatement of fever very generally takes place in the morning. In cold climates the disease may run on to the fourteenth day, or later; but in hot countries it is much more rapid in its course, terminating sometimes as early as the third day, but the usual period is from five to seven or nine days.

In the more violent and dangerous cases, the skin is burning hot and the thirst intense; the vomiting is incessant, scarcely any thing being retained on the stomach; there is violent throbbing or shooting pain of the head, attended sometimes with furious delirium, and the pulse is full, quick, and strong. The remissions are short and indistinct, and, if the fever proceed to a fatal termination, it may become continued. The tongue is furred; red, contracted, and dry, or crusted with black matter; the skin and eyes may have a yellowish tinge; and dark-colored matter may be discharged from the stomach. In some cases before death there are copious perspirations, and the patient sinks rapidly, or the hot, pungent, dry skin continues to the last.

Fever of the remittent type has been divided into different varieties from some peculiarity of the symptoms, or from particular organs being affected. Thus, for example, when the liver is diseased, or there is much disorder of the biliary organs, it has received the name of *bilious remittent*; when the eyes become yellow, and the skin acquires a dusky yellowish hue; there is vomiting, or purging of bilious matter; the tongue is loaded with a yellow fur; and there is often tenderness on pressing with the hand under the ribs, at the right side, in the situation of the liver. The irritability of the stomach in this form is generally very obstinate, and the determination of blood to the head great.

Treatment.—In most cases of remittent fever, when the patient is young and strong, blood-letting is required, provided the disease has not existed for several days. The propriety of abstracting blood from the system will be indicated by a full, strong pulse, hot skin, violent head-ache or delirium, embarrassed breathing, &c. The quantity to be withdrawn must be in proportion to the age, constitution and habits of the patient, and severity of the symptoms; but, as in all diseases of an acute nature, (where blood-letting is practised,) the blood should be permitted to flow until a decided impression is made on the symptoms, or the patient feels faint. If after a few hours (from six to twelve) the pulse be still strong and hard, and little or no relief has been afforded by the first blood-letting, the arm should be again tied up, and blood taken away until some effect is produced.

As the bowels are generally in a disordered state, the patient should be freely purged; from five to ten grains of *calomel*, with fifteen or twenty grains of jalap may be given, and followed in three hours by a draught of the infusion of senna with salts. The powder should be repeated every six hours, with intermediate purgative draughts and purgative injections, if necessary, till the bowels are freely acted on. If the stomach is irritable and rejects these purgative medicines, six or ten grains of *calomel* and one grain of *opium* made into pills will generally be retained, and can be followed by the purgative powders and draughts when the stomach is settled. When the bowels have been freely evacuated, and the skin still continues hot and dry, with no abatement of the fever, the patient may take two grains of calomel, with six grains of James' powder, mixed in a little jelly, every fourth hour till perspiration makes its appearance. The action of these powders will be promoted by administering a table-spoonful of the following mixture in a wine-glassful of water, at intervals of three or four hours:—

Mindererus' spirit, (liquor of the acetate of ammonia,) half an ounce,
Nitre, thirty grains,
Sweet spirits of nitre, two drachms,
Water, five ounces. Mix.

In the course of the attack local treatment is not to be forgotten. If the brain be the organ chiefly affected, and after repeated blood-letting the pain and heat of head still remain, *leeches* should be applied behind the ears, or to the temples, or the patient may be cupped on the nape of the neck. The application of cold water to the head, as directed in the article on inflammation of the brain, will be found very beneficial; and to reduce the burning heat of skin, the whole surface may be sponged over with vinegar and water. In the advanced stage of the disease, when the head symptoms have not been mitigated, and especially if there be a tendency to stupor and drowsiness, a *blister* should be applied to the nape of the neck. If there be much tenderness or pain over the liver or stomach, leeching or cupping is to be resorted to in the situation of these organs, and followed by blisters if the pain continue.

In the more severe cases the irritability of stomach is sometimes so great that scarcely any thing can be retained. To allay the vomiting a full dose of calomel and opium (one to two grains of opium and eight to fifteen of calomel) should be given, and repeated at intervals of three or four hours, in smaller doses, till the vomiting be checked; at the same time fomentations of spirits of turpentine with warm water, or mustard cataplasms, are to be applied over the stomach, and if these fail it will be advisable to cover the region of the stomach with a large blister. When the stomach has been quieted, and the bowels require to be evacuated, purgative medicine in a solid form ought to be administered—*calomel* four grains, *compound extract of colocynth* eight grains, in three pills, every fourth or sixth hour; and a Seidlitz powder may be given two hours after the pills if the stomach continue quiet. If the above should be rejected, we may succeed in opening the bowels by giving eight or ten grains of calomel with a drop of *croton oil*, in a tea-spoonful of syrup.

As soon as a remission takes place, which may be known by an abatement of all the symptoms, as already pointed out, the *sulphate of quinine* should be administered; and in hot climates, although the remission be short, and not very well marked, still the opportunity should not be lost of giving this excellent medicine. Two grains may be taken at first, in a little water, or wine and water, every hour and a half or two hours; or,

Sulphate of qninine, a drachm,
Elixir of vitriol, (aromatic sulphuric acid,) two drachms,
Water, a quart. Mix. A wine-glassful to be taken every two hours.

If the bowels have not been well evacuated, an ounce of Epsom salts should be added to this mixture, but purgative medicine ought always to precede the exhibition of quinine. It ought always to be borne in mind that in administering this medicine the same dose will not answer for each individual; some persons can scarcely bear the smallest quantity, while others require it to be given in large doses to produce any decided effect; hence the safest method of employing it, is to commence with a small dose, increasing the quantity gradually until some of its usual effects on the system are felt—as giddiness, ringing in the ears, slight deafness, nervous restlessness, &c.; the medicine ought then to be left off for a time. The quantity which the system will tolerate can be thus ascertained, and the doses regulated accordingly. The exhibition of quinine must, of course, be suspended on the recurrence of febrile symptoms, and again resumed during the period of remission. For several days after the fever has entirely disappeared, it ought to be continued in gradually diminished doses. If left off too soon, a return of fever is a very probable consequence.

In the malignant form, where there is great depression from the beginning, with weak quick pulse, general blood-letting will not be borne; blood, however, may be abstracted locally, if any particular organ be much involved. The directions already given with regard to purgatives, sudorifics, &c., are applicable to this form. In hot climates sudden sinking of the vital powers sometimes occurs; the pulse becomes weak and irregular, or is scarcely to be felt; the extremities are cold and clammy, and the body may be covered with cold perspiration; the face is pallid; the eyes sunk in their sockets; and the voice fails. When these symptoms are present, no time is to be lost in giving stimulants. Port or Madeira wine, or brandy, in sago, arrow-root, &c., or Champagne, which is the best stimulant in such cases, should be given every hour until the pulse begins to rise, and the extremities are warm; stimulants are then to be discontinued. The cold perspirations must be constantly wiped off, and the extremities rubbed with warm flannels or rough towels. To rouse the system, mustard poultices or blisters are to be applied over the stomach or to the calves of the legs. If the tongue be charged with a yellowish or brownish colored fur, and the bowels have not been well cleared out, the following pills should be given every third hour till discharges follow.

Calomel, four grains,
Quinine, two grains,
Camphor, two grains. Mix, and form into pills.

But if the bowels have been well evacuated, a quarter of a grain of opium may be added to the above prescription, and the dose of calomel reduced to two grains, discontinuing it altogether if the gums become sore. The opium ought also to be omitted if much drowsiness arise, but in these states it usually acts as a stimulant when given in small doses.

In the course of the attack the patient may be put in a warm bath when there is much restlessness, and hot, dry skin; or, at the commencement, if the extremities be cold, the pulse weak, and re-action have taken place but imperfectly, a hot bath will be of great utility. The patient's drink should consist of barley-water, lemonade, soda water, tamarind beverage, &c., and if requested by the patient, cold water may be allowed, a copious draught of which we have known to bring on perspiration when other means had failed. Liquids should never be taken in large quantities if irritability of stomach be present, as they will be rejected almost immediately. In the low malignant varieties, effervescing liquors, such as Seltzer or soda water, light beer, &c., will be useful, and are likely to remain on the stomach. The diet ought to be light and nourishing—as arrow-root, sago, panado, &c., and if the strength be much reduced, beef-tea, soups, custards, &c., should be allowed. Sometimes the vomiting is so intractable that no nourishment will remain on the stomach; in that case the patient's strength may be supported by injections of arrow-root, broths, or other nourishing fluids in small quantities. The apartment ought to be kept perfectly quiet—the evacuations are to be immediately removed, and the room sprinkled with *vinegar*, or *chloride of lime*, if the effluvia be disagreeable.

The period of convalescence is sometimes very tedious, tonic and strengthening medicines being necessary; but change of air will be found one of the best of remedies; this is particularly beneficial when the fever has ended in the intermittent form, (ague,) which in many cases will not yield to the usual remedies until the patient resort to change of situation.

RHEUMATISM.

The more immediate or exciting cause of rheumatism is cold, especially when it succeeds an opposite state of the atmosphere, or is combined with moisture; and the system is more particularly susceptible of the injurious influence of cold when the person is fatigued, or in a heated and perspiring state. But although undue exposure to cold in some way or other, will be found to have preceded an attack of rheumatism in by far the greater number of cases, it does not appear that this alone is sufficient to give rise to the disease, inasmuch as the instances where individuals are attacked in consequence of exposure to cold, are small indeed compared to the numbers who are constantly exposed to atmospheric vicissitudes, and to the influence of cold under all the circumstances in which it would be most likely to prove injurious, without any disease being induced. Hence it may be inferred that cold cannot produce rheumatism, unless the system be predisposed to it; but of the real nature of this predisposition we have no positive knowledge.

Rheumatism appears under two forms—the *acute* and the *chronic*.

ACUTE RHEUMATISM OR RHEUMATIC FEVER

Is often preceded during several days by general uneasiness, giddiness, ringing in the ears, a feeling of weight and fulness in the head, sometimes head-ache; there may be also occasional palpitations, hurried breathing on any slight exertion, and symptoms of congestion or fulness of blood, in different organs. But these premonitory symptoms are not always observed; it frequently happens that the disease comes on suddenly, in consequence of the body having been exposed to cold and wet. In either case certain general symptoms usually precede the local inflammation. These consist in more or less severe shivering, alternating with flushes of heat, followed by quickness and fulness of the pulse, hot skin, thirst, and a sensation of fatigue in the back and extremities. After several hours, sometimes not before the expiration of a day or two, an aching or gnawing pain is felt in one or more of the larger joints, which goes on increasing until it becomes exceedingly severe, often lancinating as in gout, and greatly aggravated by the slightest movement or pressure. The affected joints become swollen, and the skin covering them acquires a rosy tint, which generally appears in patches. The fever gains ground with the increased severity of the local symptoms—the pulse becomes full and bounding, varying from a hundred to a hundred and twenty beats in a minute—the face is flushed, or pale and bedewed with perspiration—the eyes are red—the skin is hot, and occasionally covered with perspiration which emits an acid, pungent smell—the urine is scanty, and deposits a brick-colored sediment—the tongue is white and furred, but continues moist—there is considerable thirst, and the appetite is lost. When many of the joints are affected at the same time, the patient lies on his back, and is incapable of moving, his limbs being completely disabled; the slightest movement of the body is attended with excruciating pain; the suffering is greatly increased during the night, and if sleep overtake him towards morning, he is soon roused by some frightful dream. Sometimes the fever almost entirely subsides in the morning; this, however, is attended with little or no mitigation of the pain; and it is equally remarkable that no relief is afforded by the profuse sweating which frequently occurs during the progress of the disorder. The migratory character of rheumatic inflammation is another singular feature of the disease; it often shifts its seat from one joint to another, and after some time perhaps returns to the joint originally attacked.

Rheumatism, though a painful and severe disease, is seldom dangerous unless it extend to the heart, and then the risk is greatly increased. Even in this case the immediate danger generally ceases along with the fever, but in many instances disease of the valves of the heart is subsequently induced, and gives rise to enlargement of its substance, (hypertrophy,) and dilatation of its cavities, lesions which sooner or later terminate in dropsy and death.

The febrile symptoms usually abate about the end of the second week; the local symptoms then gradually diminish until they entirely disappear, or the disease passes into the chronic form.

CHRONIC RHEUMATISM.

The symptoms being less severe and of longer duration, are the principal circumstances which distinguish chronic from acute rheumatism. The general character of both these forms of the disease is the same, and the former is in many cases merely the sequel of the latter. In the chronic form the joints are more or less swollen and painful, while symptoms of general excitement are always present in a sufficiently marked degree to indicate the existence of inflammation. The tongue is white and furred, the skin is hotter and the pulse quicker than natural; the latter, it is true, sometimes appears feeble and easily compressed, but is always in some degree increased in quickness; and if blood be drawn from the arm, it will invariably present the buff-colored appearance on its surface which is observed in all inflammatory diseases. Both the constitutional and local symptoms may continue, varying at times in severity according to circumstances, during a longer or shorter period, perhaps several years; and the disease, if not checked by proper treatment, gradually undermines the patient's health, while it disorganizes the joints, wastes the muscles, and renders him a cripple.

Chronic rheumatism, after continuing a considerable length of time may ultimately wear itself out, that is to say, the febrile symptoms may cease, and the local disease may no longer carry on its ravages in the joints. The parts which have been inflamed may remain cold, stiff, and contracted; and exposure to cold or atmospheric vicissitudes may render them painful, but rheumatism, properly speaking, no longer exists; the patient now only labors under the morbid changes which the disease has already induced. This state requires little or no medical treatment, and ought therefore to be carefully distinguished from that above described, in which the judicious use of suitable remedies may be of the greatest service.

Treatment.—The inflammatory nature of acute rheumatism indicates the propriety of general blood-letting. This remedy, if it do not check, at least tends more than any other to moderate the urgency of the symptoms, and hasten convalescence. Bleeding is not to be confined to particular cases; we are not to be deterred from using the lancet because the patient is of a nervous or irritable habit of body, or because his constitution has been injured by dissipation. This measure may be employed at the commencement of the disease in all cases, both with safety and advantage. The repetition and extent of the bleeding must depend on the circumstances of the case—the age—the previous habits—the temperament and strength of the patient, and the intensity of the inflammation.

Cupping, or the application of *leeches* to the inflamed joints, may be of considerable service as an auxiliary to general bleeding, but should never be trusted to alone. If the hands and feet be principally affected, twelve or fifteen leeches, according to the circumstances of the case, may be applied to the ancles and wrists; but where many joints are suffering from the disease, local bleeding cannot be advantageously employed.

There is no difficulty in opening the bowels, even in the acute stages of rheumatism; but this should always be done by means of the milder laxatives, administered occasionally throughout the course of the disease.

When the tongue is white and moist, which is generally the case, the action of the bleeding will be greatly assisted by the subjoined mixture.

Tartar emetic, two grains,
Tincture of henbane, two drachms,
Water, six ounces. Mix. The whole to be taken in the course of the day; one or two table-spoonsful may be given at a time.

The quantity of tartar emetic should be increased or diminished, according to the effect produced on the stomach. This excellent remedy, when carefully and perseveringly administered, and in such quantity as shall produce a slight degree of nausea occasionally, tends greatly to alleviate the pain and moderate the febrile symptoms.

If depletory measures have been freely resorted to, anodyne medicines may be given with perfect safety.

Sometimes the stomach is in an irritable state, and feels tender or painful when pressed upon; the tongue is, at the same time, furred in the middle, and red at the edges and point. In this case, *leeches* should be repeatedly applied over the stomach, (six, eight, or more each time,) and no internal remedy should be employed, with the exception of gum water, of which the patient may drink freely until the irritation is removed.

In some instances, the application of lukewarm poultices of linseed-meal, with laudanum, or a decoction of poppy-heads, to the inflamed joints, have the effect, at least to a certain extent, of soothing the pain; in other cases, again, no local appplication can be tolerated.

Before proceeding farther, it may be well to notice, in order to condemn, the practice of applying mustard cataplasms, Whitehead's essence of mustard, strong liniments of ammonia, and other repellant remedies to the inflamed joints in acute rheumatism. These stimulating applications may sometimes give relief, but in many instances they have driven the disease inwards, on the heart and lungs, and caused death.

When the febrile symptoms are in a great measure subdued, the repeated application of blisters round the joints chiefly affected often produces an excellent effect.

The above remedies, with proper attention to diet, constitute the treatment which we believe to be the most efficacious in subduing this painful disorder.

In the above brief description of rheumatism, we have mentioned that the disease sometimes extends to the heart. This accident occurs most frequently when the disorder has been neglected at the commencement, or when inappropriate remedies have been employed. The symptoms by which we judge that inflammation has invaded this vital organ are, unusually hurried breathing, pain in the region of the heart, perhaps palpitation, and a feeling of oppression at the chest. These symptoms are to be removed by the repeated application of leeches, or cupping over the region of the heart, aided by the lowering action of the tartar emetic mixture, carried as far as the stomach will tolerate without bringing on vomiting. When these means have produced a decided impression on the inflammation, a large blister should be applied over the left side of the chest.

After the feverish symptoms have ceased, and the pain is in a great measure allayed, frequent friction of the affected parts with a hair-glove or flesh-brush should be employed, and the patient should begin to renew the movements of the joints. This ought to be done gently at first, gradually increasing the extent and duration of the exercise until the limbs are again prepared to perform their natural functions. If the patient, from a want of energy, or from the dread of pain, neglect these salutary measures, the joints will continue stiff and painful when moved, and at length become contracted; while the muscles connected with them gradually waste, and are unfitted to perform their natural motions. It is also of the utmost importance, during convalescence from rheumatism, that the patient should pay strict attention to dietetic rules; indeed, we cannot point out in too strong terms the necessity of moderation in eating and drinking. When the feverish symptoms wear off, the patient is generally left with a keen appetite, which he is but too apt to indulge; blood consequently again accumulates in the system to a preternatural extent, and thus the affection is prolonged, in a chronic form, to an indefinite period.

Indulgence at table often brings on rheumatism in persons who are in a debilitated state from previous illness.

No disease is more liable to relapse than acute rheumatism;

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hence, those who have been once attacked should be very careful to avoid the predisposing and exciting causes above mentioned.

For a considerable length of time after the disease has subsided, animal food should be very sparingly taken, and wine, spirits, porter, and other fermented liquors, altogether abstained from. If the patient allow his appetite to guide him in the quantity of food he should take, another attack of the disease would, very probably, soon convince him of his error. A mild nutritious diet, and regular exercise on foot, as far as the strength will admit, are the proper means of invigorating the body, of promoting the healthy condition of its organs, and maintaining them in the due performance of their functions.

The vapor-bath, followed by friction with a hair-glove, or rough towels, and exercise on foot in the open air, if the weather be favorable, will be found very serviceable in promoting the healthy function of the skin, and maintaining it in that condition, which is greatly conducive to the preservation of health at all times, and more particularly beneficial in restoring health after an attack of rheumatism, as well as in preventing the recurrence of the disease.

Treatment of Chronic Rheumatism.—In this form of the disease, local bleeding by *cupping* or *leeches* is often of great service ; and to moderate the febrile symptoms, from a grain to a grain and a half of *tartar emetic*, with from a scruple to thirty-five grains of *purified nitre*, may be taken in barley water in the course of the day ; or ten drops of the *tincture of colchicum*, with an equal quantity of the *tincture of henbane*, may be taken in a little water, three times a day, not so as to produce purging, but merely to keep up the lowering action of the former remedy. When the symptoms are considerably subdued by these measures, a succession of *blisters* should be applied upon and in the immediate vicinity of the affected joints. The state of the bowels is to be particularly attended to; mild laxatives, or the occasional use of an injection, may be employed when opening remedies are required. Much benefit is derived in all the forms of chronic rheumatism, from the frequent use of the *vapor bath.* In protracted cases when other remedies have failed, the *iodide or hydriodate of potash* in the dose of three or four grains three times a day, in a little water, has frequently succeeded in restoring the patient to health. Small and frequently repeated doses of calomel or blue pill, administered so as to produce the general stimulant and alterative action of mercury on the system, have been followed with marked benefit in numerous instances.

Oftentimes the best-directed treatment is frustrated by a want of self-control on the part of the patient in attending to regimen and diet. It cannot therefore be too often repeated, that the diet should be cooling, light and nutritive, and spirituous liquors entirely abstained from—that regular exercise should be taken in the open air, and flannel worn constantly next the skin; and we can assure the patient that unless he pay the strictest attention to these important objects, he will greatly deceive himself if he place much reliance on any kind of medical treatment.

We cannot conclude this important part of the subject without mentioning that many rheumatic patients, after laboring under the disease for years, have been completely cured by removing to the West Indies.

LUMBAGO

Is the name given to rheumatism of the loins; the patient experiencing a sensation of stiffness, and a dull, aching pain at the back and loins, which is increased by taking exercise. The pain becomes gradually more acute, and is generally increased by stooping, rising up, sitting down, or by any attempt at motion, and is most distressing in the evening or during the night.

Lumbago may be confined to one side, or it may affect the loins generally, and is frequently accompanied by *sciatica* of one or both extremities.

Treatment.—Rubbing the affected parts, night and morning, for twenty minutes or half an hour each time, with the embrocation of *camphor liniment* and *laudanum* will afford relief in mild cases of lumbago. In the more severe forms of the complaint, mustard poultices, the turpentine embrocation or a large blister, should be applied over the loins. But if the pain be very severe, and accompanied with feverish symptoms, the application of *leeches* to the part, or *cupping*, should be had recourse to. The bowels are to be kept freely open with *calomel* and *jalap*, and twelve or fifteen grains of *Dover's powder* should be taken every night at bed-time until the more urgent symptoms are relieved.

Friction over the loins with the hair-glove or flesh-brush, night and morning, and the employment of stimulating embrocations, are salutary.

A large strengthening or stimulating plaster applied over the loins, is very serviceable in protecting the parts from cold, and sudden vicissitudes of temperature; and also from the counter-irritation which it produces.

When the pain is completely removed, the patient may prevent a recurrence of the disorder, by bathing the loins every morning with cold salt water, and afterwards employing friction with rough towels and the hair-glove.

RHUBARB.

Rhubarb is much employed to give tone to the stomach and bowels, in doses of two or three grains twice or thrice a day; and in doses of from twenty-five to thirty grains it acts as a mild and excellent purgative. Rhubarb, besides its *cathartic property*, possesses a slightly astringent principle; hence, after its full purgative action the bowels are liable to become constipated. To obviate this it may be taken with cream of tartar, or a small quantity of jalap or magnesia, and it should be combined with calomel when the liver is in a torpid state. The constipating effect which usually follows the purgative action of rhubarb renders it very serviceable in diarrhœa, in cases where we have reason to suppose that the disorder is caused by offending matter lodged in the bowels. Perhaps the best medicine that can be employed to relieve common colic is an ounce of the compound tincture of rhubarb, with twenty or twenty-five drops of laudanum. The *compound rhubarb pill* of the London Pharmacopœia is a mild and very useful laxative medicine.—"Take of rhubarb, powdered, an ounce; aloes, powdered, six drachms; myrrh, powdered, half an ounce; castile soap, a drachm; oil of carraway, half a drachm; syrup as much as may be sufficient; mix the powders together, then beat the whole together until incorporated." The usual dose is two pills of five grains each.

RICKETS.

Rickets occurs generally in children between the ninth month and the fourth year of their age, and is essentially characterized by softening of the bones. At the commencement of the disease the child is observed to be less cheerful than usual, languid and disinclined to be amused; the appetite is impaired, or capricious; and the bowels are irregular. These symptoms are either accompanied from the commencement, or soon followed, by a slight degree of febrile excitement and disturbed sleep. The process of teething goes on slowly and with difficulty, and the teeth soon decay and fall out. The bones of the skull, instead of gradually closing and becoming united, separate from each other, and the head increases in size; the belly is also enlarged; while the limbs, more especially the thighs and legs, appear thin and wasted. After a longer or shorter period the symptoms which more particularly characterize the disease are manifested. The ends of the long bones at the wrists and ancles, and the extremities of the ribs where they join the breast bone, become swollen and knotted; the spine is curved in the form of the italic letter *S;* the right shoulder rises, the breast bone is thrust forwards, and appears somewhat like that of a bird. If the child have begun to walk, he is now unwilling to be left on his feet, and cannot cross the room without difficulty; the knees approach each other, the feet are turned outwards, the limbs are unsteady, and seem to yield under the weight of the body. As the disease advances the digestive organs suffer, and the urine deposits a white sediment; the bones now begin to lose the phosphate of lime which gives them firmness, and are softened in such a manner that they bend in all directions, and the little patient is soon reduced to a shocking state of deformity, which renders him a singular, though distressing object of observation.

Rickets does not generally prove fatal unless the disease declare itself shortly after birth, and then it almost invariably destroys life. When it appears at a later period, and proper attention is paid to the patient, the general health improves, and recovery frequently takes place, but not without leaving a raised shoulder, a hump-back, or some other deformity. In females, the bones of the pelvis often remain distorted, and this, in the event of pregnancy, necessarily leads to consequences of a more or less dangerous nature. If the disease do not give way before the patient reach his fifth or sixth year, he is doomed to be a miserable object during life, which is seldom prolonged to middle age.

Causes.—In the higher classes of life this disease is comparatively rare, and when it does appear, can generally be traced to hereditary transmission; but among the children of the working classes it is far from being uncommon, and appears to originate from the same debilitating causes which give rise to scrofula. Mothers of weak constitution, and relaxed habit of body, who live on poor diet, and neglect or have it not in their power to take sufficient exercise in the open air, or are exposed to the long-continued influence of any of the various debilitating causes which impair the vital energies, cannot be expected to bring forth robust and healthy infants, neither is it possible that they can nurse them properly after they have given them birth.

Treatment.—Children, who have every attention paid to them, are sometimes attacked by rickets; but, in the great majority of cases, much may be done to prevent the disease coming on. If the child be delicate from its birth; if any individuals of the same family be rickety; if the parents be scrofulous; or if there be any other circumstances which might lead us to dread the occurrence of the disease, it will be advisable to procure a strong healthy nurse for the infant, in whom confidence can be placed, and her diet should be carefully attended to as long as the child continues at the breast, in order that her milk may be plentiful and nutritious. Chicken or mutton broth, beef-tea, &c., may be allowed at an earlier period than would be proper for robust healthy children. The child should be washed daily, and the limbs frequently rubbed with a warm hand; and, when the weather permits, he should be carried out into the open air as much as possible, and kept clean and dry. The nurse-maid should be careful to carry the child alternately on either hand, and not allow it to remain in a slovenly way in the hollow of the arm. The child ought not be weaned until the end of the fifteenth month, unless particular circumstances occur to render this step necessary at an earlier period.

At the commencement of the disease there is generally considerable commotion in the system, and, as we mentioned in enumerating the symptoms, the infant is feverish, and the stomach and bowels are in a disordered state. During this stage of the disease, therefore, no preparation of animal food should be allowed, the diet must be sparing, and composed of mild farinaceous substances. To correct the disordered state of the bowels, it will be proper to administer two or three grains of *calomel* occasionally, which should be followed by a little *rhubarb* and *magnesia*, or any other gentle laxative medicine. To moderate the febrile symptoms, the tepid bath may be employed, and from four to six drops of *antimonial wine*, with the same quantity of *sweet spirits of nitre*, may be given every four or five hours, or at longer or shorter intervals, according to the urgency of the case. At a more advanced stage, when the febrile excitement has subsided, tonic remedies may be given with advantage. The *tincture of steel*, in the dose of four drops, twice a day, in a little water; or the following mixture may be administered.

Sulphate of quinine, two grains,
Elixir of vitriol, six drops,
Water, an ounce. Mix. A tea-spoonful to be given as a dose twice a day.

Two grains of *calomel*, combined with four or six grains of *rhubarb*, may be given occasionally at bed-time, if the state of the bowels authorize the use of opening medicine. Animal food, with a due proportion of stale bread or biscuit, are now to be given to as great an extent as the digestive organs will tolerate; and a little sound wine or malt liquor may be allowed. The child should be washed daily with salt and water, which may be employed tepid in winter, and cold in summer; and the body should be well rubbed afterwards with a dry cloth. He should not be allowed to sleep on a bed which yields to the weight of the body. A hair mattress, or any kind of bed which is sufficiently smooth and firm, is to be preferred, and the bed-clothes should be warm, but not oppressive.

Various mechanical means have been invented to correct the deformity which results from rickets, and, when skilfully used, are often of great service; but it must be borne in mind that no contrivances of this nature can be advantageously employed during the progress of the disease.

RING-WORM, OR SCALD-HEAD.

Ring-worm, or scald-head, is a common and well known disorder of the hairy scalp, occurring chiefly in children. It is manifested under various forms, which have been minutely described by writers on cutaneous diseases; but such distinctions, although they may be interesting to medical men, are, in a practical point of view, of no value, inasmuch as the essential characters of the disease are always the same, and the different appearances which it assumes are, no doubt, owing to some local or constitutional peculiarity.

Ring-worm usually appears in patches of an oval or circular form, each of which consists of numerous pustules of a pale yellow color, and often so minute as not to be seen with the naked eye. These soon burst, and the thin acrid matter which they discharge forms crusts or scabs. In the course of a few days a fresh crop of pustules break out round the patch; these burst in their turn, and the exudation increases the size of the scabs, which, if not removed by proper attention to cleanliness, become thicker, firmer in consistence, and run into each other; in this manner the disease, if not arrested in its progress, extends over the whole head, and sometimes attacks the forehead and neck. The hair appears to be affected from the commencement of the disease, and gradually falls off; the baldness thus produced constitutes one of the leading features of the disorder.

Ring-worm is decidedly contagious; it is often caught at schools by boys putting on each other's caps, using the same towels or combs, or sleeping in the same bed. "To show you," says Dr. Elliotson, "how very contagious this disease is, I may mention that a barber had a child with a scald-head, and he kept a razor specially for shaving it. One day by mistake he shaved himself with it, and although he had washed and stropped the razor well, and had put it into hot water first, yet the disease came out upon his chin about a week afterwards. I saw it distinctly. Small circular pustules came out. You must strongly impress upon the minds of people the necessity of a child's dress being kept by itself in this affection, lest the disease should spread." When it breaks out in large schools or manufactories, it is often exceedingly difficult to eradicate.

Treatment.—The first thing to be done is to shave the head, but if the disease has advanced so far as to render this impracticable, the hair is to be cut as short as possible. In the latter case it is always advisable to wash the head repeatedly with soap and warm water, and apply warm poultices of bread or linseed meal, to remove the scabs. When we have succeeded in this, the parts of the scalp affected should be well anointed night and morning with the following ointment, and after each rubbing the head is to be covered with brown paper.

Common soda, (barilla, or natron,) three drachms,
Sulphuret of potash, (liver of sulpher,) the same quantity,
Lard, three ounces. Mix.

The head must be well washed with soap and water, and carefully dried with soft rags, before the application of the ointment. This is the best application for scald-head with which we are acquainted, and when assiduously used generally effects a cure in the course of three weeks. The ointment may be made stronger if not found sufficiently active

Kreosote ointment is at present much employed in mild cases, and frequently with success; it should be applied at bed-time, and the precaution above mentioned, to wash the head previously, should not be neglected.

Sometimes the patches are considerably inflamed at the commencement of the disease; in this case it will be necessary, before using the ointment, to wash the head frequently with tepid water, or a *decoction of poppy heads*, and apply emollient poultices until the irritation is removed

In every case the local treatment will be greatly aided by attention to diet and regimen; the food should be light, yet sufficiently nutritious; the feet must be kept warm; the tepid or cold bath, or sponging the body, should not be neglected; and in a word every means ought to be adopted to support the general health.

There is a species of this disorder occasionally met with, called *bald-scall*, which is characterized by oval or circular patches of baldness on different parts of the scalp. The denuded spots present a smooth, shining, silvery appearance, without any kind of eruption.

The treatment of this form of the disorder, consists in shaving round the bald places to the extent of an inch, and rubbing them twice a day with an ointment composed of equal parts of *sulphur*, *tar*, and *lard*. Equal parts of *oil of turpentine* and *spirits of wine*, also constitute a very successful application.

ROCHELLE SALT.

Rochelle salt, acts as a cooling, mild, laxative, and is less disagreeable to the taste than Epsom or Glauber salts. It is the principal ingredient in the well-known Seidlitz powders. The dose is from three drachms to an ounce and a half.

INFUSION OF ROSES.

The infusion of roses is prepared in the following manner. "Take of red rose petals or leaves, dried, three drachms; diluted sulphuric acid a drachm and a half; sugar six drachms; boiling water a pint. Pour the water upon the rose leaves in a glass vessel; then mix in the acid. Macerate for four hours, and strain the liquor; lastly, add the sugar to it." This infusion is useful in spitting of blood, in the dose of two or three table-spoonsful three times a day; and is much employed as a gargle for sore throat. It is principally used as a vehicle for the administration of quinine and Epsom salts.

ST. VITUS'S DANCE.

There is no better description of St. Vitus's dance than that given by Sydenham a hundred and fifty years ago. This disease, he says, is "a species of convulsion, which for the most part attacks boys or girls, from the tenth year to puberty. First it shows itself by a lameness, or rather instability of one of the legs, which the patient drags after him like a fool. Afterwards it appears in the hand of the same side, which he that is affected with the disease can by no means keep in the same posture for one moment; if it be brought to the breast or any other part, it will be distorted to another position or place by a convulsion, let the patient do what he can. If a cup of drink be put into his hand he represents a thousand gestures, like jugglers, before he brings it to his mouth; for whereas he cannot carry it to his mouth in a right line, his hand being drawn hither and thither by the convulsion, he turns it often about for some time, till at length, happily reaching his lips, he flings it suddenly into his mouth, and drinks it greedily, as if designing only to make sport."

It must not however be supposed that the above will apply to all the forms under which this morbid affection is manifested. In many cases the involuntary motions are confined to one side of the body; sometimes the face, or only one of the limbs is affected; the muscles of the wind-pipe and tongue are occasionally attacked, and then the patient cannot articulate properly. In some instances deglutition is performed with difficulty. The disease assumes a variety of appearances according to the severity of the muscular disorder, and the number of parts affected. It is very liable to relapse, and has been known to recur several times in the same person. It is not dangerous, and in young persons generally terminates favorably. It may continue only a few weeks, or as many months; in some cases it has been known to continue through life without having materially injured the general health.

The cause of this disease is not known.

Treatment.—If there be head-ache, drowsiness, heat of the head, or other symptoms indicating congestion or undue determination of blood to the head, the patient should be cupped at the nape of the neck, or from three to ten leeches may be applied behind the ears. If the child be full-blooded and robust, which is not generally the case, it will be preferable to draw blood from the arm. Having relieved the head, or the system generally, by the abstraction of blood, and cleared out the bowels by some purgative medicine, we are then to adopt a tonic or strengthening plan of treatment, which in most cases may be commenced at once; for bleeding, either local or general, is but seldom necessary. The tonic remedies are the carbonate or prepared rust of iron, and the sulphate of zinc or white vitriol; the disease generally yields to either of these in the course of six weeks, but sometimes two months or even a longer period may be required, before the cure is completed. The dose of the *carbonate of iron* is from a scruple to twenty-five grains three times a day in gruel, molasses, or jelly; three times this quantity may be given with perfect safety, but in ordinary cases there is no necessity for administering very large doses. The *sulphate of zinc* may be employed at first, in the dose of a grain three or four times a day, and gradually increased to six or ten grains, or even a larger quantity, according to the state of the stomach. As this remedy is not intended to produce sickness or vomiting, it will be advisable to give each dose about half an hour after eating. In all cases where the patient is of ruddy complexion, and robust habit of body, the sulphate of zinc should be employed in preference to the carbonate or any other preparation of iron. There is no necessity for purging in this disease, but care should be taken to keep the bowels gently open, with mild laxative medicines. The cold bath ought never to be neglected. The above treatment will be greatly aided by attention to diet and regimen; the food should be light and nourishing, and exercise should be taken in fresh and open air. Sea bathing is of great service.

SAL AMMONIAC.

Sal Ammoniac is only used externally. Equal parts of this salt and powdered nitre dissolved in six or eight parts of water, form a cold lotion, which may be substituted for ice, in the reduction of strangulated hernia. An ounce of sal ammoniac, dissolved in nine ounces of water, with the addition of two table-spoonsful of spirit of wine, is an excellent discutient * lotion for scrofulous or indolent tumors; but when the parts are red and painful, it should not be used.

SARSAPARILLA.

In the broken-down state of the constitution which has arisen from long protracted syphilis, or from mercurial irritation, the compound decoction of sarsaparilla prepared in the following manner is generally considered an excellent restorative, at least it is very extensively employed. Take of sarsaparilla, sliced, five ounces; boiling water, four pints; macerate for four hours, in a vessel lightly covered, near the fire, then take out and bruise the sarsaparilla. When bruised, return it to the liquor, and again macerate in the same manner for two hours; afterwards boil down to nearly two pints; then add sassafras, sliced, guaiacum wood shavings, and liquorice bruised; of each five drachms; mezereon, a drachm and a half; boil the whole for a quarter of an hour, and strain. A pint of this decoction must be taken in the course of the day. The powdered root may be taken to the extent of an ounce, in divided doses during the day. In whatever manner sarsaparilla is taken, it must be continued regularly during several weeks.

SCAMMONY.

Scammony in the dose of from five to fifteen grains acts as a strong purgative; it is frequently given with cream of tartar, in dropsy; and in combination with calomel and jalap to destroy worms, and to carry off slime from the bowels of children. It enters into the composition of many of the purgative pills in general use.

SCARLATINA, OR SCARLET FEVER.

The first, or mildest form of scarlatina, commences with loss of appetite, sometimes slight nausea, but rarely vomiting; a dull heavy pain in the loins and lower extremities, and occasional chills or shiverings, which are soon followed by fever. The surface of the body becomes hot, although the feet are sometimes cold. The pulse varies from 106 to 120; in some cases it reaches 140, and the thirst is urgent. On the following day, sometimes later, the rash appears upon the skin, but its commencement is not so regular as that of other eruptive diseases; sometimes it breaks out first on the face, or on the neck, and upper part of the chest; at other times, on the trunk, or on the limbs, and spreads, in the course of twenty-four or

* *Discutient.*—A medicine or application which *disperses* a tumor or any coagulated fluid in the body.—Ed.

thirty hours, over the whole surface of the body and extremities. It consists of innumerable small red points so closely set together that the skin acquires a uniform red color, which has been compared to that of the shell of a boiled lobster, and feels rough to the touch, more particularly at the parts where it is brightest. The rash extends to the inside of the nostrils and mouth, to the tonsils or almonds of the ears, and over all the back part of the throat. The tongue is also covered with the rash, but it generally happens that its edges and point only present a bright red appearance, the surface being coated with white mucus. The eruption, in many instances, is not diffused over all the trunk of the body, but is distributed in large irregularly shaped patches. The parts on which the body rests are of a bright raspberry red tint; the color is also deeper at the folds of the joints, and is more vivid in the evening than in the morning. The skin is always intensely hot, and affected with troublesome itching. Sometimes there is considerable swelling of the face, of the throat, and of the extremities of the body, and occasionally a slight degree of delirium. The burning heat of the skin, the thirst, sickness at stomach, constipation of the bowels, and difficulty in swallowing, become less severe in some instances when the rash breaks out, but more frequently they continue until it begins to disappear.

The eruption loses its brightness and gradually diminishes towards the fifth day, and generally disappears on the seventh; the patient can now swallow with ease, and the fever has ceased. It frequently happens that perspiration or purging takes place at this time, or the urine deposits a quantity of sediment. On the seventh day, the cuticle or scarf-skin begins to scale off, and this process is completed on the tenth day. In some instances, the falling off of the skin is scarcely perceptible; in other cases, again, it continues to separate and peel off during two or three weeks; and as long as the scaling of the skin goes on, the patient is annoyed with a troublesome itching.

The second form of scarlatina, with severe sore throat, commences with stiffness of the neck and lower jaw, and the throat is affected before the feverish symptoms are manifested; these are much more urgent than in the simple form of the disease above described, and precede the rash during two or three days. The edges of the tongue are red, and numerous red points are seen rising through the crust with which it is covered; the uvula or pap, tonsils, and all the back part of the throat are intensely red, painful, and so much swollen that swallowing is rendered distressing and difficult, sometimes impossible, and then, when the patient attempts to quench the burning thirst which constantly distresses him, the drink passes off through the nostrils. The breathing is more or less embarrassed, the voice is hoarse, and there is a very distressing sensation of constriction in the throat. The pulse is very quick, the skin hot, there is sickness at stomach, and sometimes vomiting, great restlessness, head-ache, often delirium towards evening, and not unfrequently bleeding from the nose. The rash does not cover the whole body, but appears in broad irregular patches; these often vanish, and again make their appearance on different parts of the body at uncertain times. The red color of the skin is more particularly observed on the buttocks, about the loins, in the arm-pits and hams, and at the bend of the arms.

But the predominant symptom of this form of the disease is sore throat. In most cases, the tonsils and back part of the throat and mouth are covered with specks or patches of adhesive matter (coagulable lymph) of a grayish white or ash color, which, at first sight, might be mistaken for ulceration. These little masses, or patches of lymph, sometimes acquire a dark brown or black color, from being mixed with blood. When the throat presents this black appearance, the tongue and lips are often at the same time covered with dark colored crusts. A very tenacious tough phlegm also collects in the throat, and, by inducing the patient to make frequent efforts to get rid of it, greatly aggravates his sufferings. The throat may become slightly ulcerated, but this does not generally occur.

On the fifth or sixth day of the disease, sometimes later, the inflammation of the throat and the febrile symptoms begin to subside, while the rash grows less vivid, and gradually disappears. If the rash has been slight, the scarf-skin does not scale off, but in ordinary cases it is detached, as in simple scarlatina, and the scaly peeling of the skin often continues during two or three weeks, or even longer; in the more severe cases, the skin peels off the hands in large masses resembling portions of a glove.

The third, or malignant form of scarlatina, commences like the one last described, but the eruption appears at an earlier period, usually within twenty-four hours, advances slowly, and is seldom of a bright red color. It often recedes suddenly, and reappears, and after some time the rose color, which it first assumed, changes to a livid red hue. The pulse is very quick, varying in fatal cases from 120 to 140 even to the last moment; the eyes are blood-shot and watery, there is great heat of skin, with vomiting and oppression of the system. On the third day, or at an earlier or later period, low delirium comes on, and the pulse loses strength, although it still continues exceedingly quick; the tongue is covered with a dark colored crust, and, in a word, the worst symptoms of typhus fever are present. The throat presents the same dark brown or ash colored appearance already described, and the breath is very offensive, but mortification or sloughing of the throat is not a frequent occurrence even in fatal cases. The soft pulpy gangrenous appearance of the tonsils and fauces arises from the exudations with which the mucous or lining membrane of these parts is covered, becoming putrid from exposure to heat and moisture.

As the disease advances, the prostration of the vital powers increases, numerous purple colored fever spots make their appearance, and a disagreeable odor exhales from the skin. When young children are affected with this form of the disease, they lie in a state of stupor, and the pulse is so quick that it can scarcely be counted.

In malignant scarlatina the system appears to be saturated with a peculiar poison which constitutes, as it were, the essence of the disease, and while nature is struggling to expel this morbific matter the patient dies. This termination often occurs on the fourth or fifth day, sometimes on the third, and in many instances death does not take place till the second or third week. Some patients recover even when the urgency of the symptoms appeared to preclude all hopes of recovery, but in such cases the convalescence is always exceedingly tedious.

Various affections occasionally follow scarlatina, as swelling of the glands under the angles of the lower jaw, abscesses of the tonsils, inflammation of the ear, leaving a discharge of fetid matter, sometimes deafness; but the disorder most to be dreaded is dropsy, which not unfrequently attacks the patient during the second or third week after the disappearance of the rash. Dropsy occurs oftener, and is for the most part more dangerous in children than in adults, and is more frequently observed in winter than in summer. Before this affection makes its appearance the patient generally complains of depression of spirits, loss of appetite and disturbed sleep; these symptoms are soon followed by quick, hard pulse, hot skin, constipation of the bowels, scanty urine, and much restlessness. The dropsical swelling is first observed in the eyelids, it then attacks the face, the limbs, and soon extends in many cases, to the whole body. When dropsy is confined to the external parts of the body, there is comparatively little danger; but when in the belly, or in any of the internal cavities, the disease is then to be viewed in a more serious light.

Treatment.—In the first or mild scarlatina all the treatment really necessary is to keep the patient quiet in bed, in a moderately cool apartment, to open the bowels with gentle laxatives, or emollient injections of linseed-tea with the addition, if necessary, of a little castor-oil, to let him drink freely of cold water, lemonade, or any other cooling beverage, and to keep him on low diet. The disease must run its course, and nature seldom fails, when not unnecessarily interfered with, to complete the cure in eight or ten days. But even in the mildest cases the patient should be carefully watched, and if any inflammatory action be observed, the lancet, or leeching, according to circumstances, ought to be resorted to without delay.

The second form of the disease requires more active treatment. In young robust persons, blood should be drawn freely from the arm, if there exist any symptoms of congestion or inflammation in any particular organ ; and in children, leeches are to be applied. In adults, if the inflammation, pain, and swelling of the throat be severe, one or two applications of twelve or fifteen *leeches* to the fore-part of the neck will be found very serviceable, and the same or a greater number may be applied over the pit of the stomach if pain be felt there when pressure is made with the hand, and the necessity of this measure will be more strongly indicated if the patient suffer from nausea and frequent vomiting. If the head feel much hotter than natural, while the patient is unusually drowsy, complains of headache, and appears oppressed, leeches are to be applied freely and repeatedly to the nape of the neck, and cold water with vinegar to the head, until these symptoms are relieved. General and local bleeding, according to the age and strength of the patient, the stage of the disease, &c., constitute the means on which we are chiefly to rely, because scarlatina, when severe, is almost always accompanied with congestion or inflammation of the brain, of the stomach and bowels, or of the chest.

The bowels are to be acted upon by mild laxatives or emollient injections. Strong purgatives would be improper. But if there be symptoms of inflammation or accumulation of blood in the brain, or lungs, or if the throat be severely affected, and no pain be felt when the hand is pressed upon the abdomen, or any other symptom which would lead us to suspect a disordered state of the bowels, we should then have no hesitation in freely employing the more active purgatives, such as *calomel* with *jalap*, or the *black draught* in conjunction with *blood-letting*.

The intense heat of the skin, so distressing in this disease, the quickness of the pulse, and, in a word, all the febrile symptoms may be considerably mitigated, and the patient greatly refreshed, by sponging the surface of the body and limbs with cold water or vinegar and water. Dr. Bateman, a physician of great experience, and one of our best writers on diseases of the skin, strongly advocated this practice. "We are possessed," he says, "of no physical agent, as far as my experience has taught me, (not excepting even blood-letting in acute inflammation,) by which the functions of the animal economy are controlled with so much certainty, safety and promptitude, as by the application of cold water to the skin, under the augmented heat of scarlatina, and of some other fevers. This expedient combines in itself all the medicinal properties which are indicated in this state of disease, and which we should not before hand expect it to possess, for it is not only the most effectual antidote to fever, but is, in fact, the only sudorific and anodyne which will not disappoint the expectation of the practitioner under these circumstances. I have had the satisfaction in numerous instances of witnessing the immediate improvement of the symptoms, and the rapid change in the countenance of the patient produced by washing the skin. Invariably, in the course of a few minutes, the pulse has been diminished in frequency, the thirst has abated, the tongue has become moist, a general free perspiration has broken forth, the skin has become soft and cool, and the eyes have brightened; and these indications of relief have been speedily followed by a calm and refreshing sleep. In all these respects the condition of the patient presented a complete contrast to that which preceded the cold washing; and his languor was exchanged for a considerable share of vigor. The morbid heat, it is true, when thus removed, is liable to return, and with it the distressing symptoms, but a repetition of the remedy is followed by the same beneficial effects as at first.

The throat should be gargled with a solution of *alum*, and this remedy reduced to a fine powder should be employed in the manner directed under the head of quinsy (see page 552.)

During convalescence the diet should be nutritious but light, a little plain animal food may be allowed once a day, and if there be much debility, a glass of Port wine may be taken during dinner; but tonic or strengthening remedies, although sometimes serviceable, so frequently do mischief that it is better to avoid them altogether. The state of the stomach and bowels must be strictly attended to as the fever declines, and indeed until the patient has entirely recovered; and, whenever in young and delicate persons the disease is followed by constipation of the bowels, pain, or tenderness when the belly is pressed upon with the hand, while the strength, instead of increasing, diminishes, and emaciation is observed to gain ground, it may then be inferred that chronic inflammation exists in some part of the intestinal canal, and when this insidious affection occurs as a sequel of scarlatina, or any other acute disease, it is always to be viewed in a serious light, and the patient cannot be considered out of danger until it be entirely subdued. The tepid bath should be employed every second day, or the body should be sponged daily with warm or tepid water; a few leeches, proportioned to the age and strength of the patient, are to be applied over the abdomen at the part where the soreness is chiefly experienced, and blood is to be taken away in this manner from time to time, until relief is afforded; afterwards a *blister* may be applied or the *tartar emetic ointment* should be rubbed in freely over the abdomen. No kind of strong purgative medicine should be administered, but the bowels may be gently acted upon by means of injections or mild doses of rhubarb and magnesia. The diet should consist of thick gruel, barley-water, preparations of tapioca, rice, sago, arrow-root or panada.

The dropsy which follows scarlatina is usually brought on through exposure to cold and vicissitudes of temperature, hence *the greatest care should be taken for several weeks* to keep the surface of the body and limbs as nearly as possible at an equable temperature.

Treatment of Malignant Scarlatina.—This form of the disease generally runs its course rapidly, and it is only at the very onset, when in the space of a few hours the symptoms assume a dangerous aspect, that blood-letting can be resorted to with safety. If the patient be robust, no time should be lost in drawing blood freely from the arm, and leeches should be applied round the chest. Emollient injections or mild laxatives are to be employed to open the bowels, and in children gentle emetics are to be administered to carry off the acrid phlegm with which the throat is generally clogged. The body should be frequently sponged with warm or tepid water. If the head be much affected and the patient become delirious, a blister should be applied to the nape of the neck, and the feet are to be covered with mustard poultices. The *alum* should be employed as already directed, or the whole of the back part of the throat should be carefully cleaned and then moistened with a strong solution of the *nitrate of silver*, (lunar caustic,) twenty grains to an ounce of water; this is to be done by means of some sponge or lint fastened to the end of a piece of whalebone or wood, and passed into the throat.

In this form of scarlatina it is essentially requisite to change the patient's linen daily, and to admit fresh air freely into the room; *chloride of lime* should also be used to correct offensive odors and prevent infection.

When scarlatina prevails epidemically, malignant cases occasionally occur, and even isolated cases are sometimes met with, in which the prostration of the vital powers is so great that strong soups, ammonia, wine, and other powerful stimulants are required to support the patient's strength and prevent him from sinking. Malignant scarlatina is fortunately seldom met with; the disease as it generally appears rarely proves fatal when judiciously treated.

SCIATICA.

Sciatica is a very painful affection of the great sciatic nerve. This is the largest nerve of the body, it runs from the posterior part of the hip-joint down the back of the thigh to the ham. In severe cases of sciatica, the pain extends along the whole course of the nerve, and is so distressing during the night that the patient is completely prevented from sleeping; sometimes it is accompanied by quick hard pulse, thirst, foul tongue, and the usual symptoms of fever. In chronic cases, the patient occasionally suffers from cramp, and a sensation of tingling and numbness is felt in the limb. In long protracted cases the limb shrinks and the patient has great difficulty in keeping it warm. This affection generally arises from exposure to cold and moisture; and occurs chiefly in adults, and people advanced in life. In females it not unfrequently comes on during pregnancy, and after labor.

Treatment.—The treatment in the acute form of the disease consists in repeated *leeching* or *cupping*, followed by warm fomentations; in frequent purging; and in the administration of twelve or fifteen grains of *Dover's powder* every night at bed time. In less violent forms of the disorder, and in chronic cases, it will be proper to apply blisters, issues, or stimulating embrocations. (See *Rheumatism and Lumbago.*)

SCROFULA.

Scrofula, in the general sense of the term, consists of a morbid deposit, called tuberculous matter, which commonly appears in small tumors or knots called tubercles.

The lungs are more frequently affected with scrofula than any other internal part; in that organ it is manifested at first in the form of numerous small tubercles, which, after remaining in a latent state during a longer or shorter period, gradually increase in size, then soften and cause incurable consumption, (see *Consumption.*)

No age confers complete immunity from scrofula, but different periods of life render some organs more liable to be affected than others. The parts of the body in which the vital functions are most active, are more particularly subject to the disease. Hence, tubercles of the brain frequently occur in infancy and seldom in grown-up people, because in the former the brain is the seat of constant and strong functional action. The glands of the neck are most frequently affected during the process of teething, probably in consequence of the continued irritation about the jaws which this occasions. *External* scrofula seldom *originates* after puberty; on the other hand, consumption, or as it may be termed, scrofula of the lungs, chiefly occurs in adults, in consequence, it is presumed, of the greater activity of the lungs at this period of life. At a more advanced age, when the digestive organs are stimulated to a greater extent and the abdomen increases in size, the liver and other organs contained within that cavity are almost exclusively the seat of the disease. Irritation of the stomach and bowels may develope scrofulous disorders of the mesenteric glands at any time of life; this variety of the disease however is more commonly met with in children.

Scrofula appears to be so mixed up with the very elements of existence that it has the effect of modifying the symptoms of a great part of the diseases to which the body is liable. The effects of this influence are more particularly observed when syphilis, and diseases of the eye, occur in individuals of scrofulous constitutions; and the unmanageable and obstinate character which many inflammatory diseases acquire when modified by a scrofulous taint in the system is well known to medical men. It is also well known that wounds and other injuries of the soft parts in scrofulous people are often very slow in healing. In many chronic diseases connected with scrofula, it is frequently found necessary to administer tonic and stimulant remedies, which, in the same diseases under other circumstances, would be inadmissible.

Causes.—Many causes are said to give rise to scrofula; in fact every agent, moral or physical, which depresses the energies of the system, tends to develope the disease. One of the most powerful of these is, without doubt, the long-continued action of a cold moist atmosphere. The injurious influence of this cause will be greatly aided by defective or unwholesome diet, want of cleanliness, sedentary habits, living in confined situations, where the atmosphere is not renewed, and the direct light of the sun is excluded.

There cannot be the slightest doubt that impure air and the absence of the direct solar rays exercise a powerful influence in inducing scrofulous affections; this is shown by their greater prevalence among the inhabitants of large towns than among those who breathe the pure air of the country.

We see the influence exercised by climate over this disease in the aggravation of the symptoms during the spring and winter seasons, whereas in the summer months, scrofulous sores generally improve or disappear altogether. All external agents, all circumstances, which reduce the energies of the system below the natural standard, (more especially when conjoined with atmospheric humidity and cold,) are exciting causes of scrofula. The children of scrofulous parents, under whatever circumstances they may be placed, are more liable to the disease than the children of healthy parents in parallel circumstances.

Our limits will not allow us to notice in detail the various means recommended to prevent the development of the disease in children predisposed to it; but we may say with the celebrated philosopher, Hunter, "let an infant have plenty of sleep, plenty of milk, and plenty of flannel;" these, when conjoined with plenty of pure air, are the principal objects in domestic treatment to be observed during infancy, and should be strictly attended to, from the very first hours of birth.

The cold bath is improper for newly-born, or very young children; in the delicate and those in whom there is reason to suspect a disposition of scrofula it increases the debility, and may lead to very injurious consequences. The cold bath however agrees well with many children; this is evinced by their soon becoming warm and appearing lively after being taken out of the water, whereas in others it has an opposite effect; they continue chilly and pale for some hours afterwards, and the faculties of the body appear, as it were, overpowered. But although cold bathing is generally inadmissible, washing the body with warm or tepid water is necessary, not only with respect to cleanliness, but also to promote the healthy functions of the skin.

As the child grows up, constant care is required in regulating the diet; this should consist principally of animal food taken at regular intervals, but never in such quantity as to overload the stomach.

All healthy children have a natural desire for exercise; than which nothing is more conducive to the digestion of the food, the circulation of the fluids, and the health and growth of the body. To scrofulous children, or those who have a predisposition to the disease, plenty of exercise is indispensable, and should always be taken in the open air when the weather is fine, otherwise they should be allowed to play in a large well-aired room. A judicious writer of the last century, Dr. Cheyne, speaking of the advantage of exercise to children, says; "'Tis beautiful to observe the earnest *desire* planted by *nature* in the young persons to *romp*, *jump*, *wrestle* and *run*, and constantly be pursuing *exercise* and bodily *diversions* that require labor even till they are ready to drop down, especially the healthier sort of them, so that sitting or being *confined* seems to be the greatest *punishment* they can suffer; and imprisoning them for some time will much more readily correct them than *whipping*. This is a wise contrivance of nature, for thereby their joints are rendered *pliable* and *strong*, their blood continues sweet and proper for a full circulation, their perspiration is free, and their organs stretched out by due degrees to their proper extension."

Without the assistance of pure country air, children are not likely to derive much benefit from any other means. We ought therefore to make choice, as far as lies in our power, of a dry and temperate atmosphere, untainted with exhalations and, known by experience to be, salubrious ; and sudden extremes of heat and cold should be avoided as much as possible.

Sea-bathing, when judiciously managed, is one of the most valuable remedies that can be employed in scrofulous disorders. In delicate children the sea-water should be used warm at first, then tepid, reducing the temperature by degrees until the system is prepared to withstand the shock of immersion in the open sea.

All scrofulous people of delicate constitution, and those affected with chronic diseases, should wear flannel constantly next the skin ; this is the best safeguard in protecting the body from the injurious influence of damp and variable climate ; and although it may be worn of a thinner texture during the warm weather, *should never be entirely thrown off*. Flannel gently stimulates the skin, promotes the insensible perspiration, while it absorbs the moisture as it is thrown out, and tends greatly, under all circumstances, to keep up an equable temperature ; this last is an object of much importance where there are great, and often sudden vicissitudes of the temperature of the climate.

The giddy practice of throwing aside our winter garments too early in the spring, and of exposing our bodies, when overheated, to sudden colds, has destroyed more than famine, pestilence, and sword.

Much depends in counteracting the disposition to scrofulous maladies, upon the management of childhood. If the physical education of early life is of the utmost importance, the moral training, even from the earliest dawn of reason, also demands the strictest attention. Parents should commence early to discipline the minds of children and *train them to habits of obedience, for on this their future health in a great measure depends.* How often do we see that those who have been over-indulged and pampered when children, are unable in after life to control their appetites and passions, and thus cause the disease to be lighted up in the lungs, when it otherwise might have remained quiescent or inactive during a long lifetime.

A great variety of drugs have been employed in the treatment of scrofula, but they are all of secondary importance in comparison with the means above recommended. The remedy principally used at present, and which is generally understood to possess a greater influence in overcoming scrofulous affections than any other medical agent hitherto discovered, is *iodine.*

Iodine, one grain,
Iodide, or hydriodate of potash, two grains,
Distilled water, eight ounces. Mix. To a child under seven years of age a dessert-spoonful of this mixture is to be given three times a day in half a tea-cupful of water sweetened with a little sugar.

The dose should be gradually increased to two table-spoonsful, and the remedy is to be continued, if no untoward symptoms occur, for a period of four or five weeks; its use is then to be suspended, and gentle laxatives are to be administered. After an interval of a fortnight the mixture is to be again administered, commencing with a dessert-spoonful, and gradually augmenting the dose as before. At the expiration of a month the remedy is to be again discontinued, and again renewed. In this manner iodine may be employed with perfect safety, and continued until the cure is accomplished.

For adults the following formula will be found convenient.

Iodine, ten grains,
Iodide or hydriodate of potash, twenty grains. Mix. From four to twelve drops to be taken in a glass of water three or four times a day.

During the internal administration of iodine, the following ointment may be employed externally.

Ioduret of lead, a drachm,
Lard an ounce. Mix. About the size of a nutmeg, or a larger or smaller quantity according to the bulk of the swollen glands, is to be rubbed in every night during six minutes.

In adults it should be applied in this manner twice a day. This ointment, spread on soft linen or lint, is also an excellent application to scrofulous sores.

Whether scrofula be only commencing, or already confirmed, Dr. Golis, a very high authority in diseases of children, gives in all cases the following powder.

Gum guaiac, half an ounce,
Iron filings, half a drachm,
White sugar, half an ounce. Mix.

Of this powder a pinch, larger or smaller, according to the age of the child, is given twice a day, and continued for a considerable length of time. If feverish symptoms supervene the remedy is to be discontinued for a time. He also employs a tepid bath three times a week, and prescribes a diet of broth and milk.

Scrofula can never be cured rapidly, inasmuch as it is the result of a morbid change affecting the entire organization of the body, and we repeat, that the best means, not only of preventing, but of controlling and removing this obstinate disorder, are proper diet and clothing; pure, dry, and warm air; and regular exercise. It must also be borne in mind, that though the medicines above mentioned are of the greatest service, it is only when they are employed with steady and patient perseverance, aided by the strictest attention to the rules requisite for the improvement of the general health.

SCURVY.

Scurvy evidently arises from a depraved state of the blood, caused chiefly, if not altogether, from want of fresh animal and vegetable food. The blood, when in a natural state, stimulates and nourishes every organ and structure of the body; but when this vital fluid is altered in quality, it is no longer capable of fulfilling the purpose for which it is destined, and the whole animal economy suffers in consequence. The first symptoms which announce this morbid change in the circulation, are general weakness, disinclination to move about, great lassitude after any ordinary bodily exercise, dull heavy pains in the back and limbs, great depression of spirits, disturbed sleep, weak and frequent pulse, loss of appetite, slow digestion, cold dry skin, hurried breathing, and palpitation of the heart on walking a little quicker than usual, or from any other bodily exertion. A sailor, for example, on going aloft experiences the two last mentioned symptoms, along with a sensation of giddiness, and a feeling as if he were about to faint.

This stage of the disease often continues a considerable length of time, and is at first little noticed; but at last the signs, which more particularly characterize the disease, make their appearance. The skin, which is at first unusually pale, gradually assumes a dingy yellowish hue, the face looks puffed or bloated, the gums become swollen, dark, red colored or livid, spongy, and bleed from the slightest friction. As the disease advances the teeth loosen, the gums ulcerate; fungous excrescences shoot up from the ulcers, and the breath acquires an exceedingly offensive smell. The urine also emits a peculiarly disagreeable rank odor, and appears muddy and high colored. While the gums become gradually affected in the manner above described, dark colored spots at the same time make their appearance on the calves of the legs, on the thighs, sometimes on the arms and back, rarely on the face; these run into each other, and form large blotches of a yellowish greenish, or livid color, similar to the marks which follow bruises or blows. The small, round, purple colored spots, and the large, discolored, bruise-like patches are most frequently seen on the lower extremities, and both are the consequence of effusion from the blood-vessels. Ulcers in many cases form on the legs, and soon present an appearance peculiar to scurvy; the edges of the sore are of a purplish color, and appear as if inflated; a thin acrid fetid matter is at first discharged; but as the disease advances, a dark colored covering of coagulated blood is deposited upon the surface of the ulcer, which is not easily removed, and is soon replaced by a similar coagulum. The surface of the sore, under this dark colored mass, is soft, putrid, and spongy, like the gums, and bleeds from the slightest cause. As the disease gains ground, the knee-joints contract, the hams become swollen, hard, and painful; and in two cases we have seen, the calves of the legs were hard like a piece of wood, so that the skin covering them could not be pinched up between the finger and thumb. In most cases the nostrils bleed occasionally, and blood is discharged from the bowels. Such are the symptoms of scurvy as we have observed them on board of ship in northern latitudes; all of which vanish in a surprisingly short time when the natural remedies—vegetables and fresh animal food—can be procured.

Towards the termination of the disease, one of the most remarkable symptoms is the tendency to swooning on any bodily exertion. It has also been observed, that the appetite for food generally continues to the last. "Many of our people," says Mr. Walter, in the Narrative of Lord Anson's Voyage, "though confined to their hammocks, ate and drank heartily, were cheerful, and talked with much seeming vigor, and in a loud, strong tone of voice; and yet, on their being the least moved, though it was only from one part of the ship to another, and that in their hammocks, they have immediately expired; and others, who have confided in their seeming strength, and have resolved to get out of their hammocks, have died before they could well reach the deck. And it was no uncommon thing for those who could do some kind of duty. and walk the deck, to drop down dead in an instant on any endeavors to act with their utmost vigor; many of our people have perished in this manner during the course of the voyage."

Causes.—The grand cause of scurvy is the want of fresh animal and succulent vegetable food, more especially of the latter; and the disposition to the disease from this cause is, no doubt, greatly promoted by long exposure to a cold damp atmosphere, fatigue, long-continued watching, deficient exercise, mental distress, and, in a word, all the debilitating causes which depress the powers of life.

Treatment.—Such is the power which we now possess in preventing scurvy, that many surgeons of the British navy of long standing have never seen a case of it. But the crews of our merchantmen, during long voyages, often suffer severely from this disease, in consequence of being obliged to live on unwholesome food; from this cause alone many valuable lives are annually lost. Hard bad beef, and worse biscuit, constitute the only food which the sailors in some vessels are allowed for weeks together. The biscuit is often so hard that it cannot possibly be masticated without previously soaking it in water.

The means to be adopted, in order to preserve the general health of seamen, and, consequently, to prevent scurvy, consist in wholesome food, that is to say, the articles of victualling generally used on board of ship should be sound, and of good quality; in an abundant supply, when in port, of fresh animal and vegetable diet, more especially of succulent vegetables and fruit; in a plentiful supply of lemon-juice, without which no vessel should ever proceed on a distant voyage; in personal cleanliness, exercise, and cheerfulness; and in strict attention to ventilation, cleanliness, and dryness of the ship.

Lemon, or lime-juice, in the absence of fresh vegetables or fruit, is now admitted on all hands to be the best preventive of scurvy, and also the best remedy after the disease makes its appearance. This juice is preserved by mixing a tenth part of brandy with it. The first account we have of the use of lemon-juice in scurvy is in a curious old work, by John Woodall, surgeon of St. Bartholomew's Hospital, published in 1636, entitled the Surgeon's Mate, or Military and Domestic Medicine. "And further experience," says the author, many of whose observations are very judicious, "teacheth, which I have oft found true, that where a disease most raigneth, even there God hath appointed the best remedies for the same grief, if it be his will they should be discovered and used; and note, for substance, the lemmons, limes, tamarinds, oranges, and other choice of good helps in the Indies, which you shall finde there do farre exceed any that can be carried thither from England; and yet there is a good quantity of juyce of lemmons sent in each ship out of England by the great care of the marchants, and intended onely for the reliefe of every poore man in his neede, which is an admirable comfort to poor men in that disease; also, I finde we have many good things that heal the scurvy well at land, but the sea chirurgeon shall do little good at sea with them, neither will they indure. The use of the juyce of lemmons is a precious medicine, and well tried, being sound and good; let it have the chiefe place, for it will deserve it; the use whereof is: It is to be taken each morning, two or three spoonsful, and fast after it two hours; and if you adde one spoonful of *aquavitæ* thereto to a cold stomack, it is the better. Also, if you take a little thereof at night, it is good to mixe therewith some sugar, or to take of the syrup thereof is not amisse. Further note, it is good to be put into each purge you give in that disease. Some chirurgeons also give of this juice daily to the men in health as a preservative, which course is good if they have store, otherwise it were best to keep it for need. I dare not write how good a sauce it is at meat, least the chiefe in the ships waste it in the great cabins to save vinegar. In want whereof, use the juice of limes, oranges, or citrons, or the pulpe of tamarinds." In another part of the work, he remarks, "And generally note, that bitter and sower medicines prevail most to the cure of this griefe, amongst which you have that are approved good thereto; those that follow as chiefe, juyce of lemmons, of limes, of citrons, and oranges. In like manner, the juyce or pulpe of tamarinds hath a great acetositie, and is found a precious remedy against the disease."

Another excellent and cheap remedy, though inferior to lemon-juice, is *sour krout*, which "is prepared by slicing the soundest and most solid cabbages in the way cucumbers are used in this country. In this state they are put into a barrel in layers, hand high, and over each is strewed a handful of salt and carraway seeds; in this manner it is rammed down, layer above layer, till the barrel is full, when a cover is put over it, and it is pressed down with a heavy weight. After standing for some time in this state, it begins to ferment, and it is not till the fermentation has entirely subsided that the head is fitted to it, and the barrel is shut up and prepared for use."

The preparation of oatmeal, well known in Scotland under the name of *sowens*, has been proved to be very efficacious both in preventing and curing scurvy. It is prepared by putting some oatmeal into a wooden vessel, pouring hot water upon it, and allowing it to stand for two or three days in a place moderately warm until the liquid ferments and becomes sour. The liquid is then removed from the grounds, and boiled to the consistence of a jelly; it may be sweetened with raw sugar, and flavored with a little cinnamon.

When no lemon juice could be procured, we have seen good effects result from the use of an ample daily allowance of *molasses* and *vinegar*.

A great variety of medicines have been employed in scurvy; but they are all insignificant in comparison with fresh succulent vegetable juices, as lemon juice, &c., and it appears questionable whether they ever produce any good effect.

All the best writers on scurvy disapprove of blood-letting. The patient generally dies soon after the operation. Nor does it bear strong purgatives, which are often injudiciously administered in its commencement. From blisters there is danger of a gangrene (mortification.) Persons, in the advanced stages of scurvy are not, without great caution and prudence, to be exposed to a sudden change of air. On such an occasion they are to be given a glass of generous wine well acidulated with lemon or orange juice, which is likewise the best cordial in their fainting fits. The sloth and inactivity belonging to the disease are not to be mistaken for wilful idleness. This has proved fatal to many, some of whom, when obliged by their officers to climb up the shrouds, have been seen to expire and fall from the top of the mast. After a long abstinence from green vegetables and fruits, persons afflicted with scurvy should be treated like those nearly starved to death; that is, not permitted for a few days to eat voraciously, or surfeit themselves; otherwise they are apt to fall into a dysentery, which often proves fatal.

They are sometimes much troubled with constipation of the bowels. When this occurs, *castor oil*, tincture of rhubarb, and polychrest salt will be found the best laxatives. From three drachms to an ounce or more of the latter dissolved in a basin of thin gruel, operates mildly and is perhaps the best opening medicine that can be employed. Opiates at bed-time produce sleep and relieve the patient greatly during the night, but upon the whole, they do more harm than good. Mercury is decidedly injurious, and ought never to be given under any circumstances, not even when the disease is complicated with syphilis.

The best wash for the mouth is a weak solution of *chloride of lime*, or *chloride of soda;* either of these may also be used as a local application to ulcers which are induced by the disease. For these, lint soaked in lemon or lime juice, diluted with twice or thrice its quantity of water, is recommended. It is always advisable in such cases to cover the dressing with oiled silk to prevent evaporation. A *solution of alum* in water in the proportion of two drachms to the quart is an excellent application for spreading or sloughing sores of this kind.

SENNA.

Few domestic remedies are more extensively employed than senna, and it may be taken with perfect safety in almost every disease where laxatives are required. The simple infusion is prepared by pouring six ounces of boiling water over three drachms of the leaves, and letting it stand near the fire for at least half an hour. Half a cupful to a cupful or more of this may be given to children. Dr. Paris states that the nauseous taste of this infusion is covered by mixing it with *Bohea tea*, sugar and milk being added in the same proportions as in common tea. The infusion is more frequently given in combination with salts, &c., in the form of the black draught.

The *electuary of senna*, or *lenitive electuary*, is a mild and very useful laxative; it is generally recommended in cases of piles, to pregnant women, and for habitual costiveness.

SHINGLES.

This singular disease is characterized by an eruption of vesicles, extending in a semi-circular form round one half of the body. In general the eruption is preceded for two or three days by a feeling of languor, slight headache, occasional rigors or shivering, loss of appetite, and increased quickness of the pulse, with heat, aching, a disagreeable feeling of tingling, and sometimes a stinging or burning pain in the part where the vesicles are about to make their appearance. The eruption usually commences at, or near, the navel, sometimes at the lower part of the chest, and extends gradually round to the spine, or it breaks out first close to the spine, and follows an opposite course, so as to appear in either case, like half a sash about three or four inches in breadth. It very rarely surrounds the body entirely, but sometimes passes upwards across the shoulder like a sword-belt. The vesicles are filled with a limpid fluid, have a silvery transparent appearance, and are generally distinct, although they are often closely agglomerated, and seem to run into each other. They appear in clusters surrounded by a red inflamed border. Although very minute at first, they enlarge in the course of twenty-four or thirty hours to the size of small pearls, and in the course of three or four days attain their full size, which is about that of a pea. The clusters or patches of vesicles do not all appear at once, but in succession, so that at one part they have arrived at maturity while at another they are only commencing. On the third or fourth day the vesicles begin to lose their transparent appearance, while the red margin surrounding them changes to a purplish or livid hue; they assume a yellowish color, flatten and dry up by degrees, or break, and the matter discharged forms dark colored scabs, which fall off about the tenth or twelfth day.

This disorder is sometimes very slight, unattended with feverish symptoms, and terminates completely at the expiration of a fortnight; but in most cases it lasts from twenty-five to thirty days or even longer; and sometimes leaves a severe pain in some part of the skin which has been covered by the vesicles.

Shingles is not a dangerous disease, although always very troublesome, and often painful; the causes which give rise to it are unknown; it occurs most frequently in autumn and summer; and attacks adults in preference to children or elderly persons. It is not contagious, but may attack the same individual repeatedly.

Treatment.—Active treatment is not required in this disease; mild laxatives should be taken occasionally; and as long as feverish symptoms are present the diet should be mild, consisting principally of farinaceous articles, such as sago, arrow-root, rice or bread pudding, &c. All kinds of strong drink ought to be abstained from, but lemonade or any other cooling beverage may be taken freely. To relieve the smarting and tingling sensation which is often very distressing, the patient may wash the parts affected from time to time with equal quantities of *laudanum* and tepid water. Ointments and other greasy substances ought not to be employed, as they tend to irritate the parts. The *oxide of zinc* (commonly called *tutty-powder*) should be sprinkled over the vesicles when they begin to break, with the intention of absorbing the fluid; this has an excellent effect in relieving the irritation, and is preferable to the application of lotions, poulticing, or any other method of treatment with which we are acquainted. The French physicians employ flour instead of tutty.

SMALL POX.

The two principal divisions of small pox are the *distinct* and *confluent*. In the former the pocks are distinct and separate from each other; in the latter they unite, and the eruption is continuous.

MILD OR DISTINCT SMALL POX.

The specific contagious principle, or poison, of small pox remains in a latent state in the system during a longer or shorter period, generally ten or twelve days, and then gives rise to fever. The patient is seized with shivering, which is soon followed by thirst, restlessness, and anxiety; he complains of pain in his head, back, and joints; nausea is always experienced, vomiting generally occurs, and pain is felt at the pit of the stomach. Children usually appear sleepy and oppressed, and are sometimes attacked with convulsive fits.

At the expiration of forty-eight hours, or on the third day from the commencement of the shivering, the eruption makes its appearance in small red spots like flea-bites; these are first observed on the forehead, face and neck, next on the wrists, and gradually increasing in number and size extend, in the course of a day or two, over the whole surface of the body; the legs and feet being always the parts last affected. The feverish symptoms abate on the appearance of the eruption; the pulse diminishes in strength and quickness, the pain of the back, headache, and sickness at stomach are greatly relieved, and the patient is not so restless, and the sleep is more refreshing. The numerous red points constituting the eruption are from the first slightly elevated above the skin; on the second day their base becomes enlarged, and feels hard to the touch; on the third day, beyond which the eruption seldom continues to be thrown out, a small vesicle or pock having a central depression, and containing a thin limpid fluid, shows itself on the summit of each pimple. The pocks are now about the size of a small pea, and with an inflamed border of a damask red color, more or less vivid according to circumstances; on the sixth day, reckoning from the beginning of the eruption, the central depression disappears, and the fluid which was at first thin and limped, is changed to a yellow color, and presents all the appearance as well as consistence of the matter of an abscess. On the following day the pustules on the forehead, face, and parts where the eruption first appeared, burst, and on the eighth day, still counting from the date of the eruption, scabbing commences over the whole body; but on the legs and feet the pustules are slow in reaching maturity, and do not, in many cases, begin to decay or discharge their contents until three or four days after scabs have appeared on the face.

The fever, which had in a great measure or altogether subsided on the appearance of the eruption, recommences when the pocks are ripened; the pulse becomes quick, the sleep is much disturbed, the urine is again scanty and high colored, and sometimes there is delirium at night. This is called the *secondary fever*, in contradistinction to the *primary fever* which preceded the eruption. During three or four days previous to the bursting of the pustules the face and hands are in most cases considerably swollen, and the eyes are closed up. At this period the skin emits a sickly, disagreeable smell, peculiar to the disease; it is tender and more or less painful, accompanied with a distressing sensation of itching throughout the whole period of maturation.

In this form of the disease the secondary fever seldom continues long, the swelling of the face and hands soon subsides, and about the fourteenth or fifteenth day of the eruption the crusts have fallen from the face, neck, and upper parts of the body, leaving the skin of a brown or clarety hue, which sometimes does not disappear for two or three months. In many cases ulceration succeeds the bursting of the pocks, and pits or depressions are the consequences which continue through life.

CONFLUENT SMALL POX.

The fever which precedes the eruption in this form of the disease is usually very severe; the symptoms enumerated in describing the distinct variety appear in a much more intense degree; the languor and general oppression, the pain in the back and sickness at stomach, are more severely felt; the pulse is quick, contracted or oppressed; delirium often sets in early, and is sometimes of the lower character described under the head of typhus, or the patient is outrageous and requires to be controlled.

The eruption is thrown out to a much greater extent than in the distinct kind, and this constitutes the principal feature of confluent small pox. The vesicles appear early on the third day, and are filled with a thin brownish fluid; they never rise to an eminence, but run into each other, forming large patches or blisters, and sometimes the face is completely covered, as if with a mask. The face and head begin to swell on the third or fourth day, the glands of the mouth become affected about the same time, and copious salivation continues until the ninth or tenth day; this symptom is also not uncommon in distinct small pox. On the fifth day the eyes are closed up, and the limbs are much swollen. As the disease advances the glands of the neck become enlarged, while the head and face are hideously swelled and disfigured, and contrast in a striking manner with the healthy and blooming appearance which the countenance presented only a few days before. When the pustules break, large dark colored scabs are formed, accompanied with an exceedingly loathsome smell.

There is little or no diminution of the fever on the breaking out of the eruption; the patient continues very restless, the sleep is much disturbed, the skin is hot, and the thirst urgent. With the approach of the disease towards its crisis, the symptoms in many cases become still more alarming, the brain and nervous system are affected as in typhus fever, and a long train of typhoid symptoms are manifested; there is a great prostration of strength, the tongue is dry, tremulous, and protrudes with difficulty, low muttering delirium or a state of stupor comes on, the urine and stools are voided involuntarily, convulsive starting of the tendons, picking at the bedclothes, and hiccup take place, and the patient dies between the eighth and ninth days of the eruption.

Some patients, however, are fortunate enough to escape all these impending dangers, and the disease reaches the period of decline; but another ordeal, fraught with extreme danger, has still to be gone through. The restorative process has no sooner commenced than a state of general excitement, called *secondary fever*, is lighted up; this occurs in all cases where the inflammation has penetrated to the cellular texture beneath the skin, and is also frequently experienced in children and delicate persons even in the distinct variety of the disease, where the cellular substance is little or not at all implicated. On the ninth or tenth day of the disease, sometimes later, the skin becomes hot and dry, the pustules are hard and scaly, the pulse is increased in frequency, the tongue is white, there is great thirst, and the patient is deprived of sleep. This secondary constitutional disturbance may be complicated with various local disorders; these are sometimes confined to the external parts of the body; in other cases, again, the internal organs are affected.

MALIGNANT SMALL POX.

In this form of the disease, the fluids of the body are in a depraved state, and hæmorrhage or discharge of blood takes place from the nose, the gums, the stomach, or bowels; and in females, from the womb. Purple colored fever spots make their appearance on all parts of the skin not covered by the eruption. The pocks, as they advance to maturity, instead of being filled with yellow colored matter, (pus,) contain a thin bloody colored serum, and run into each other, as in the confluent form above described. There is great prostration of the vital powers, the countenance is haggard, the breathing is hurried and irregular, the urine is dark colored or bloody, and the patient is affected with low muttering delirium almost from the onset of the disease; although, in some instances, the intellectual faculties continue unimpaired to the last. This is by far the worst form of small pox, and almost invariably destroys life between the fifth and eighth days from the commencement of the eruption.

Mild, or distinct small pox, seldom proves fatal; but when the disease appears under the confluent form, it is much more to be dreaded, and the malignant variety almost invariably proves fatal. The signs which lead us to anticipate a favorable termination are, a small and soft pulse, undisturbed sleep, quiet of mind, and a crimson colored border surrounding the pocks. The unfavorable symptoms are, restlessness, sleepless nights, delirium, hoarseness, cough, &c., occurring at an early period of the disease; the appearance of vesicles on the tongue, or the inside of the mouth and throat, a purple or claret colored margin surrounding the pocks, a white and pasty appearance of the face, and flatness of the pocks on the body and extremities. Purple colored fever spots, and loss of blood from the mucous membrane of any part of the body, announces a fatal termination. Infants, and people advanced in life, seldom recover from confluent small-pox. The most favorable age for receiving the disease is from the seventh to the fourteenth or fifteenth year.

Causes.—In every instance it arises from a specific poison, or contagious principle, derived from some one already affected with the disease. It is well known that the infectious effluvia are contained in the air which surrounds the patient; and, also, that the seeds of the disease adhere to linen, clothes, bedding, and other things, and may lurk in them a long time in full force, until they are extricated by some cause, and occasion the complaint.

Although in Georgia, Circassia, Egypt, and India, *inoculation* has been practised from time immemorial, in order to mitigate the violence of small pox, yet in Europe the practice was unknown for centuries, and the disease swept off tens of thousands during every generation, and left thousands more disfigured, crippled, or blind, burthensome to themselves and distressing to the feelings of others. At last, Lady Mary Wortley Montague, whilst with her husband during his embassy to Constantinople, witnessed inoculation, and being convinced of its efficacy, submitted her children to the operation, which fully answered her expectation. In one of her letters, dated April 1, 1717, she says, "The small pox, so general and so fatal amongst us, is here entirely harmless by the invention of *engrafting*, which is the term they give it. There is a set of old women who make it their business to perform the operation. Every year thousands undergo it, and the French embassador observes pleasantly that they take the small pox here by way of diversion, as they take the waters in other countries. There is no example of any one that has died in it, and you may believe I am well satisfied of the safety of the experiment, since I intend to try it on my dear little son. I am patriot enough to take pains to bring this careful invention into fashion in England." This highly accomplished and spirited lady fulfilled her promise, and introduced the practice into England in 1721; thence it spread rapidly over all Europe, and deprived this loathsome disease in a great measure of its virulence and fatality. Inoculation, however, was attended with many serious disadvantages, and is now therefore entirely superseded by vaccination, which is in every respect decidedly preferable.

Treatment.—Small pox, like scarlatina and other diseases which result from a specific contagion, must run a certain course, and pass through its natural stages before the patient can be restored to health; hence, we must not attempt to stifle the development of the symptoms or unnecessarily interfere with the natural progress of the disease, but should confine our treatment to palliative measures, and to preventing or counteracting any untoward accident which may occur during its course. The inflammatory disorders which sometimes arise during the progress of the disease, should on the contrary be treated by remedies of a more active nature.

In the mild or distinct species of small pox, the inflammation of the skin is always comparatively slight, and that of the mucous membrane of the air passages is seldom very severe; it should nevertheless be borne in mind, that the eruption is not always developed in these structures in an equally mild form. In some instances, although mild and perfectly distinct externally, it may be accompanied with internal affections of a sufficiently serious nature to require the greatest attention and the most careful management. When, however, the eruptive fever is mild, and the inflammation of the skin moderate, we have merely to keep the patient in bed, in a cool, well-aired chamber, and watch the progress of the disease. Should the symptoms which precede the eruption be attended with frequent vomiting, pain, and tenderness of the abdomen, we should apply four to twelve leeches to the abdomen, (according to the patient's age,) and administer cooling drinks freely; general blood-letting will not be necessary, unless there be evident signs of inflammation of the stomach. Accidents of this kind, however, and other dangerous symptoms, seldom attend the benign form; they are more frequently observed in the severe or *confluent* species, to the treatment of which we shall now direct our attention. As we have already mentioned, the eruptive fever of confluent small pox is often very violent, and attended with delirium, or convulsions in children. The violence of the premonitory fever may be alleviated by general blood-letting, and, although there is some difference of opinion upon the point, it will be the safer practice to abstract blood from the arm, (in proportion to the patient's age,) lest the fever should turn out to be an inflammatory one, and not a precursor of small pox. When the headache is very severe, a dozen leeches may be applied to the temples, and a saline sweat-draught with twenty drops of opium given at night. The occurrence of convulsions in children need not excite much alarm, unless they be extremely violent and accompanied by signs of excessive determination of blood to the head; the treatment of these accidents has been already pointed out. (See *Convulsions.*)

During the period of maturation, that is to say, while the pustules are rising and filling with matter, the regimen fitted to reduce heat of the body must be strictly pursued; the patient should drink nothing but cold barley-water, lemonade, toast water, &c.; a laxative draught composed of *senna* and *salts*, or half an ounce of *castor-oil* with thirty-drops of *tincture of hyosciamus* (henbane) should be given at bed-time, and the occurrence of local symptoms should be carefully watched and met with appropriate remedies. For example, when the skin is considerably swollen, tense and painful from the quantity of pustules, sponging the skin with tepid water will frequently afford considerable relief. Swelling of the glands of the neck and inflammatory sore throat will require the employment of leeches, gargles, and, in some severe cases, of general bleeding (see *Quinsy*.) Although the patient may be highly excited and delirious at night, the disturbance of the nervous system more frequently depends upon irritation than actual inflammation of the brain; hence it will seldom be necessary to bleed the patient on account of these symptoms, unless there be evident signs of inflammation within the head, (see *Brain, inflammation of*,) and the patient be very strong and of robust constitution. During the period now under consideration, and indeed at a later one, during the decline of the pustules, the eyes are frequently attacked by a severe form of inflammation, which often terminates in loss of sight. When the eyelids are considerably swollen, the eyes painful, and matter begins to run underneath the lids, or by drying glues them together, we must at once apply a dozen leeches to the temples, foment the eyes constantly with a warm decoction of poppies, and frequently inject underneath the lids one of the lotions recommended at page 414. During the whole course of this period the bowels should be opened once or twice every day by a laxative medicine.

One of the most interesting points in the history of the treatment of small pox is the various efforts which have been made, from time to time, to prevent the pustules from coming to maturity, and thus diminish the irritation and other unpleasant consequences that invariable accompany an extensive crop of confluent pustules over a large surface of the skin; for obvious reasons the greatest attention has been paid to the state of the face and neck. The Arabian physicians were in the habit of opening the pustules, when completely formed, and pressing out the matter in order to prevent its absorption; the parts are then washed gently with a rag moistened in tepid milk; this practice may always be followed with advantage. Some French physicians endeavored to prevent the formation of pustules altogether, by *cauterizing* them on the first or second day with the *nitrate of silver*. This may be done most safely by touching the pustule with a sharp-pointed stick of lunar caustic; the caustic should be applied lightly twice a day, so as not to burn the surface of the skin deeply; in this way the pustules are frequently prevented from coming to maturity.

A third method has still more recently been introduced, and employed with the best effects; this consists in covering the face, or such parts of the body as we wish to preserve from scars, with a mask of mild mercurial plaster. The plaster must be applied as soon as the pustules make their appearance, and be kept on for four or five days without intermission. This method is not attended with any danger, and may be safely entrusted in the hands of persons who have not received a medical education.

Persons laboring under confluent small-pox, especially towards the end of the disorder, require constant care and attention. When the whole body is covered with pustules, which emit fetid pus in greater or less quantity, the surface should frequently be sprinkled with starch powder; the linen must be frequently changed, and every attention paid to cleanliness. Sores of an evil nature are about this time apt to form on the buttocks, or other parts of the body exposed to pressure; these sores must be carefully looked for, and undue pressure prevented by placing pillows under the back, legs, &c.; the sores may be dressed with a decoction of bark, and the patient's strength supported by wine, nourishing broths, and cordial draughts. The following is a good form.

Compound infusion of orange-peel, twelve ounces,
Aromatic confection, six scruples,
Sulphate of quinine, one scruple. Two ounces to be taken every four hours.

SODA.

The carbonate of soda is sometimes used in preference to the carbonate of potash, in the preparation of effervescing draughts.

The dose is from fifteen grains to a drachm in water twice a day.

The *borate of soda*, or *borax*, is seldom used internally. A drachm of this salt powdered, and mixed with an ounce of clarified honey, forms a useful local application to the sore mouths of children. The following mixture is very serviceable as a cooling gargle in common sore throat, and as a wash for the mouth where profuse salivation has been produced by the inordinate use of mercury.

Borax, in powder, two drachms,
Rose water, eight ounces,
Tincture of myrrh, two drachms,
Honey, a tea-spoonful. Mix.

SPRAINS.

When a joint is twisted or strained in a direction contrary to its natural range of motion, or is moved to too great an extent in a natural direction, the injury done to the part is called a sprain. In all cases, the ligaments and tendons are stretched, and the soft parts about the joint are more or less injured. The pain which immediately follows the accident is always very acute, and greatly increased by the slightest motion of the joint; sometimes it is accompanied by sickness at stomach, and faintness. The parts soon become swollen, and, in many cases, there is considerable discoloration occasioned by the bursting of numerous small vessels, and the consequent effusion of blood into the cellular or fatty substance beneath the skin. In severe cases, the ligaments are partially torn, and the muscles of the limb are injured. Sprains are always very troublesome injuries, and often, especially in elderly persons, require a longer time before the cure is completed than a broken bone or a dislocation. In persons of scrofulous constitutions, a sprain frequently becomes a very serious and tedious disorder, and, when neglected or improperly treated, sometimes gives rise to the disease of the joints called white swelling. The parts most liable to this accident are, the ancles, wrists, and joints of the thumbs and fingers; the ancle is most frequently affected, particularly at the outside of the joint; a fall, making a false step, as it is usually called, and leaping, are the ordinary causes. A sprain at the wrist, or at the thumb or fingers, commonly arises from falling upon the hand.

Treatment.—The *first* object in the treatment of sprains is to prevent or subdue inflammation; and, for this purpose, the most essential of the measures to be adopted consists in keeping the joint perfectly at rest, the limb being elevated higher than the rest of the body, in order to diminish the flow of blood to the part. When the ancle is sprained, the limb should be placed upon a pillow covered with a piece of glazed cloth, and the parts are then to be kept constantly wet with any simple cold lotion, as *Goulard water*, or vinegar and water. But cold applications are not to be employed if the patient be troubled with cough, or disposed to inflammatory disorders of the lungs; and females are, no doubt, aware that they would be improper during menstruation. Many surgeons, instead of applying cold lotions to sprained or bruised parts, prefer the practice of fomenting them with warm water, or *decoction of poppy heads*. On this point, the patient must judge for himself; if cold applications do not produce the effect of soothing the pain and abating the inflammation, it will then be proper to have recourse to warm emollient fomentations.

In severe cases, it may be necessary to apply twelve or fifteen leeches round the joint, and afterwards warm emollient fomentations and poultices; cooling saline purgatives are to be taken, and the patient ought to confine himself to low diet until the inflammatory action is entirely subdued.

The *second* object is to restore the proper tone of the vessels, and to brace the weakened parts, in order to allow the joint to perform its natural functions. But no measures are to be had recourse to, with this purpose, until we have succeeded, by keeping the joint perfectly quiet, and by the means above directed, in subduing the inflammation. It will then be necessary to pump cold water on the joint, and employ friction with *opodeldoc*, or some other stimulating application. The treatment is to be conducted on the same principle as that of bruises. There is no better method of keeping down the swelling, of supporting the parts, and restoring their tone, than pressure by means of a laced stocking, or the application of a flannel roller. Some practitioners apply strips of adhesive plaster in opposite directions round the joint, and this, when properly managed, is perhaps the best plan of employing pressure.

We repeat, that the most essential part of the treatment consists in *keeping the joint at rest*. Without attention to this, no remedies are likely to be of much service. Recovery is often retarded by premature attempts at using the limb; by this imprudence, the inflammation in many instances is renewed, and becomes chronic, the bones at the joint become diseased, and amputation is the consequence.

SPANISH, OR BLISTERING FLIES.

Spanish flies, or cantharides, are a species of beetles common in Spain, Sicily, Italy, and some other parts of Europe. They are found adhering to the leaves of the ash, the lilac, willow, and other plants, and are collected before sunrise in the months of June and July; they are killed by being exposed to the vapors of vinegar, and are afterwards dried in a stove.

These insects are employed for medical purposes both internally and externally, but are chiefly used to make the common *blistering plaster*. When the immediate effect of a blister is required the *vinegar of cantharides* is the most effectual application. A piece of blotting paper moistened with this fluid raises a blister almost immediately; hence it may prove of essential service when applied behind the ears in toothache, or over the stomach in cases of sudden cramp; and the raw surface produced in this manner affords a ready means of introducing certain medicinal substances into the system by absorption; morphine, for example, when sprinkled upon a portion of the skin which has been deprived of its cuticle, is quickly absorbed, and the patient may be thus relieved where remedies could not be otherwise employed, as in cholera, colic, &c.

Cantharides are sometimes employed internally in cases of palsy of the bladder, whites, gleets, &c., and are administered either in *tincture* or in *powder*, the dose of the former being from ten to thirty drops, that of the latter from one to three grains. In full doses they act powerfully on the urinary and generative organs, and if taken incautiously may produce strangury, bloody urine, vomiting, and inflammation of the bladder, kidneys, or intestines.

Cantharides are sometimes absorbed into the system from a blister, and cause great heat, pain, and difficulty in making water. When this accident occurs the patient should drink freely of barley-water, linseed tea, or any other demulcent drink, and take four ounces of *camphorated emulsion* with twenty drops of *laudanum* or half a drachm of the *tincture of henbane*, to each dose.

SPITTING OF BLOOD, OR HÆMORRHAGE FROM THE LUNGS.

This disorder may come on suddenly when the patient least expects it; but in general it is preceded by symptoms of congestion of the lungs. A sensation of tightness, heat, and itching is felt throughout the chest, or at some particular part of it, accompanied with difficulty of breathing and a feeling of anxiety. The pulse may be felt jerking or vibrating under the finger, the patient experiences frequent chills alternating with flushes of heat, his extremities are cold, and he feels languid. When the blood has escaped from the vessels, and is thrown loose into the air passages, a sense of ebullition or bubbling is felt in the chest, arising from the air coming in contact with the blood during the alternate movements of inspiration and expiration; at the same time there is often a saltish taste in the mouth, and the difficulty of breathing is increased. At length the irritation in the air passages produces cough, which is followed by expectoration of a greater or less quantity of blood. Sometimes the tittilation excited in the windpipe and throat causes the contents of the stomach to be thrown up, and, as these are mingled with blood, we might at first suppose that the hæmorrhage has proceeded from the stomach. But in most cases the red vermillion color and frothy appearance of the blood, and the previous symptoms of internal disease, are sufficient indications that the lungs are the source of the hæmorrhage. The extent of the discharge varies greatly; many cases are on record where persons have ejected considerable quantities of blood from the lungs, periodically, for years, and yet have ultimately recovered; but in persons of a scrofulous or tuberculous constitution the slightest expectoration of blood is a symptom of fearful omen (See *Pulmonary Consumption*, page 541.)

Women are more subject to spitting of blood than men, owing in a great measure to the facility with which the menstrual flux is obstructed from various causes. When that important function is suppressed, or ceases to be performed, the superabundant blood sometimes seeks its way out of the body through other channels; occasionally it escapes from the blood-vessels of the lungs into the air passages, and is coughed up without causing pain or much inconvenience. This may continue periodically for a considerable length of time, perhaps for years, and at last ceases when the natural function of the womb is restored. Many women otherwise in good health are affected with periodical spitting of blood every time they become pregnant; but in all cases of this description the discharge, even when profuse, is not to be viewed in so serious a light as when it occurs under other circumstances. Another fruitful source of this disorder in girls is the bad habit of wearing tight stays. When the chest is strongly girt with stays, the natural movements of respiration are impeded, and the blood is retarded in its passage through the lungs; the obstruction thus produced acts in the same manner as malformation of the chest, organic diseases of the heart, or any other circumstances, which, by mechanically interrupting the balance of the circulation, may cause the blood to stagnate in the lungs until, as not unfrequently happens, it is forced out of the vessels into the bronchial tubes or air passages, and discharged by the mouth. Spitting of blood is not the only evil which this artificial system of restraint induces; the free expansion of the lungs being impeded, the breathing is rendered shorter and quicker than natural, and the air not being admitted in due quantity, the blood is not sufficiently oxygenized, and the whole organization of the body suffers in consequence. The healthy temperature cannot be kept up, the countenance is pale, the feet are often cold, and there is a degree of listlessness and depression which unfits the body for the requisite exercise of its physical powers. This imperfectly vitalized state of the blood prevents the process of nutrition from being adequately accomplished; hence every part of the animal economy is reduced below the standard of healthful vigor, and if any dormant predisposition to consumption be present, nothing will more certainly rouse it into action than this depressed condition of the vital powers, a condition which but too frequently brings on this fatal malady, where no hereditary diposition exists; and in all cases increases the susceptibility to the impression of other diseases.

The exciting causes of this disorder are numerous. It may arise from any violent bodily exertion, as running, rowing, or wrestling, from sudden changes of temper, or from sudden exposure to cold when the body is overheated, and it may be brought on by any circumstances which debilitate the body or render the circulation irregular. Fatal hæmorrhage from the lungs has occurred in some instances from distress of mind.

Treatment.—A safe and excellent popular remedy, frequently employed to check spitting of blood, is *common salt.* The patient should swallow from a dessert to a table-spoonful, dissolved in cold water, as soon as possible after the hæmorrhage begins from the lungs. It is usual to repeat the dose daily, for three or four days, in order to prevent a return of the disease. It always produces a burning sensation as it passes into the stomach, and is followed by considerable thirst; sometimes it excites sickness at stomach. But we are not to rely on this remedy alone; if the patient be young, and not enfeebled by previous illness, he should be bled from the arm until he become giddy and feel as if he were about to faint; and while the blood is flowing from the arm, the chest should be sponged with cold salt and water, or vinegar and water, the clothes being loosened or removed from the upper part of the chest. A *blister* may be applied between the shoulders. The bowels must be freely opened with *Epsom salts,* and from a drachm to a drachm and a half of *nitre* should be given, in cold barley water, in the course of twenty-four hours. The diet should consist of mild farinaceous substances, as arrow root, sago, gruel, panado, &c., milk, or fresh made soft curd. Repose both of body and mind are absolutely necessary; the patient should not be allowed to speak, and everything which might produce excitement of the system is to be carefully avoided.

The patient must be strictly watched, and if the pulse be observed to increase in strength and frequency, and symptoms of congestion or determination of blood to the lungs be again manifested, the general bleeding must be repeated, or from twelve to twenty *leeches* should be applied over the chest. The latter measure ought never to be neglected if the patient complain of pain or a sensation of fulness and weight at a particular part of the chest.

In cases where the constitutional disturbance continues, and the strength of the patient will not admit a repetition of the bleeding, the mixture of *tartar emetic* and *henbane* as directed at page 488, given in the dose of a dessert-spoonful every hour, or at longer or shorter intervals, so as to keep a slight degree of nausea occasionally, is a remedy in which the greatest confidence may be placed. The tartar emetic never fails to restrain the violence of the heart's action, while the henbane allays the cough, and acts as a sedative. The use of this mixture should not prevent the patient from taking nitre in barley-water, as above directed.

When the patient is delicate, and the hæmorrhage is not attended with increased action in the system, blood-letting would be improper. The feet should be placed in hot water, to which a portion of mustard has been added, and common salt should be administered as above recommended. It will also be advisable to apply a large blister over the chest. The diet, although mild, should be sufficiently nutritious, and when the attack is over a little Port wine, or claret and water, may be allowed.

These are the means to be adopted during the attack, the subsequent treatment must depend on the nature of the disease which has given rise to the hæmorrhage, for, as has been already mentioned, this affection is much more frequently symptomatic of disease of the lungs, heart, &c., than a disease in itself.

We mentioned at the commencement of this short essay that spitting of blood may arise from obstruction of the menses, and that when we succeed in restoring this important function, the hæmorrhage from the lungs does not recur. It must, however, be kept in recollection that spitting of blood rarely occurs from this cause, although for the most part it attacks young women whose menses have been for some time obstructed, and it has been well ascertained that, under such circumstances, both these affections, in the great majority of cases, result from tubercles in the lungs, as we have had already occasion to notice in another part of this volume. (See *Pulmonary Consumption.*) It is therefore preferable to wait until the advice of a physician can be obtained, than to administer stimulating remedies with the intention of bringing back the menstrual discharge. In certain cases severe hæmorrhage from the lungs occurs in females at the turn of life, when the menstrual discharge is about to cease altogether. The symptoms of this form are often very alarming, but the loss of blood is usually restrained by an assiduous use of the means just pointed out.

SQUILL.

Squill is principally employed as a diuretic and expectorant.

The dried root of squill is often of great service as a diuretic in dropsy, in the dose of a grain evening and morning, gradually increased to three grains; its power is augmented by combining it with small doses of calomel, or blue pill. This combination is more particularly useful when dropsy is connected with obstruction of the liver, or spleen.

The *tincture* and *oxymel* of squills are frequently prescribed to promote expectoration in chronic cough, asthma, hooping cough, and difficulty of breathing occasioned by the lungs being oppressed with tenacious phlegm. The stimulating property of squill renders its use improper in all cases connected with inflammation. The dose of the tincture of squills is from ten to twenty drops three times a day, and of the oxymel half a drachm may be given three or four times a day.

STOMACH, INFLAMMATION OF.

Acute inflammation of the stomach is a rare disease. When severe it is characterized by symptoms which distinguish it from other disorders. After the usual premonitory symptoms of all acute inflammatory affections, such as pain of the limbs and loins, slight giddiness, lassitude, general uneasiness, and a fit of shivering or chills alternating with flushes of heat, the patient is attacked with burning pain at the pit of the stomach, nausea, retching, great anxiety, and extreme restlessness. There is an urgent and constant desire for cold drinks, which, for the most part, are no sooner swallowed than they are thrown up again, mixed with portions of mucus or bile. The region of the stomach generally feels unusually hot, and the slightest pressure upon it greatly augments the pain. The pulse is quick and small, sometimes soft, but more frequently hard, the tongue at the commencement of the disease may be white and furred, or it may present no particular appearance, but in general it soon becomes rough in the centre and towards the root, while its edges and point are red. In bad cases the pain extends upwards along the gullet, and across the abdomen, attended with a great sense of tightness, and shooting pains are felt extending to the back between the shoulders ; the breathing is quick, hiccup is a more or less troublesome symptom, and the countenance is expressive of anxiety and extreme suffering. If the disease continue to gain ground, the thirst becomes unquenchable ; and, although the patient is well aware that whatever he takes into the stomach will be almost immediately vomited up with great pain, yet so urgent is the thirst, that he is unable to resist the craving for cold drink with which he is unceasingly tormented ; the breathing becomes quick and laborious, the patient lies on his back, and perhaps faints when any attempt is made to raise him up in bed ; the pulse is now small, feeble, and intermitting, cold sweats break out all over the body, the extremities are cold, the features are shrunk, and for some time before death there is great prostration of strength.

When inflammation of the stomach gives rise to the alarming train of symptoms above enumerated, we have always reason to suspect that some acrid or corrosive substance has been swallowed, such as arsenic, cantharides, or corrosive sublimate, because we know that this violent form of the disorder seldom occurs independently of the operatiou of irritating poisons. If, therefore, the vomiting and other symptoms already noticed, which announce the disease, can be traced to this cause, no time should be lost in removing the poison from the stomach. This is most effectually done with the stomach-pump; by means of this instrument the surgeon fills the stomach with warm water, then pumps it out, introduces more water, removes it in the same way, and continues in this manner to fill and empty the stomach until the fluid comes away quite clear. But if medical aid cannot be obtained, an emetic of from twenty-five to thirty grains of the *sulphate of zinc*, (*white vitriol*,) or ten grains of the *sulphate of copper*, (*blue vitriol*,) dissolved in a wine-glassful of water, should be administered as soon as possible. These emetics are to be preferred, because they act more promptly than ipecacuan or tartar emetic. After the poison has been removed, whether by means of the stomach-pump or an emetic, the ordinary remedies for inflammation of the stomach are to be employed according to the urgency of the symptoms.

The occasional causes of inflammation of the stomach are excess in eating and drinking, indulging in the use of highly seasoned food, blows inflicted over the stomach, drinking cold water, or using ices when the body is overheated from exercise, exposure to cold and damp, or any of the ordinary occurrences which produce inflammation in other organs or parts. In children it occurs most frequently during the process of dentition, and it often arises during the course of fevers and other inflammatory disorders of warm climates.

Treatment.—In all acute inflammatory diseases the first thing to be done is to draw blood freely from the arm, and the sooner this measure is adopted the more benefit the patient is likely to derive from it. The blood should be allowed to flow from the arm, the patient being *in the erect* position, until a sensation of faintness and a slight degree of giddiness are experienced. The extremities of the body are generally cold, and therefore it will be proper to immerse them in warm water, or employ mustard poultices, in order to restore them to their natural temperature. No kind of aliment is to be allowed, but the patient may drink a little cold water occasionally, or iced water if it can be procured. In severe cases, where no kind of fluid can be taken without causing vomiting and a considerable aggravation of the pain, the intolerable thirst may be relieved to a certain extent by rinsing the mouth from time to time with cold water, or by allowing portions of ice to dissolve in it. The bowels are usually constipated, and therefore it becomes necessary to have them evacuated, but we are not to do this by making the patient swallow purgative medicines, because the stomach being in a highly irritable state would immediately reject them, and even if it did retain them, they would certainly tend to increase the inflammation; hence, it will be preferable to administer clysters of warm water, with common salt or castor oil.

If, at the expiration of six or eight hours from the first bleeding, the pain and feverish symptoms be again urgent, it will be proper to apply, over the region of the stomach, from fifteen to forty *leeches*, according to the intensity of the inflammation, the age, the strength of the patient, and other circumstances; and when they fall off, warm fomentations or poultices are to be employed, in order to promote the bleeding. If these energetic measures fail to arrest the progress of the disease, all that then can be done with propriety is, to assist nature in conducting the disease to a safe termination. The most efficient practice in order to attain this end, is to keep the patient as quiet as possible, and to moderate the inflammation by repeating the application of leeches, to the extent of eight, ten, or more, to the pit of the stomach, as often as the pain and irritability of stomach shall seem to indicate, and the age and strength of the patient, the stage of the disease, and other circumstances, shall appear to authorize. It must be obvious to every one, that during an acute disease of the stomach, the regulation of the diet must be considered as an important part of the treatment. It has been already stated that, at the commencement of the disease, no kind of food should be allowed; but after a day or two, when the inflammation begins to subside, a little mild farinaceous aliment may be taken, in small quantities at a time, such as thin arrow-root, gruel, or any other bland article of this description of diet.

During convalescence the diet and regimen must be strictly attended to, and for several months afterwards very little animal food should be used; every thing stimulating ought to be carefully avoided. The diet should consist chiefly of farinaceous substances, with milk.

Chronic inflammation of the stomach is described under the head of indigestion.

STONE AND GRAVEL.

Stone and gravel are the terms applied to concretions formed in the kidneys and bladder, by a morbid deposition from the urine. This fluid, when in a healthy state, contains in solution at least twelve different ingredients; of these, some belong to the class of acids, others are alkaline or earthy substances. Now, in certain morbid conditions of the system, the urine undergoes changes within the body; and some of these ingredients accumulate until they are no longer held in solution, but are deposited in a solid form in the kidneys or bladder. The salts which form the deposition are chiefly of two classes, depending on two distinct states of the constitution, with which they are respectively associated. In *the first class*, which is by far the most common, the lithic, or uric acid, and lithates, more especially the lithate of ammonia, form the deposit which is called, in popular language, *red gravel*, whether it appear in the form of sand or distinct concretions. In the second class, the deposition consists of the phosphatic salts; namely, the ammonio-magnesian and the phosphate of lime, generally the latter. This species of the disorder is known under the denomination of *white gravel.*

The passing of red sand or gravel is preceded, during a considerable length of time, by a copious deposition from the urine of a tawny, reddish brown, or brick-dust color, or of a more or less vivid pink hue. The urine from which this sediment is precipitated, when first voided, is generally clear, rather scanty, and high colored. It is most frequently met with in children, and in persons beyond forty years of age.

All authors who have written on this subject have noticed the intimate connection which exists between gravel and gout; both diseases, in numerous instances, appear to derive their origin from the same source. The peculiar condition of constitution, whether derived from hereditary origin, or acquired by luxurious living, which is considered essential to the production of gout, is acknowledged on all hands to be of the same nature as that which is associated with gravel. Sudden and frequent alternations of temperature, long exposure to cold and wet, and similar circumstances, are classed as predisposing causes of considerable influence; and this appears probable, from the fact that gravel complaints are more common in temperate than in very cold or warm climates; indeed, in the latter, these disorders are scarcely known, probably owing to the free perspiration which is kept up by the constant heat. It has been well ascertained, that the red gravel occurs most frequently in persons whose skin is habitually harsh and dry; in fact, a free and regular action of the skin seems almost incompatible with the occurrence of this form of the disorder. We have known several instances of red gravel being repeatedly produced by removing from a warm to a cold climate, and as often relieved by returning to the former. Indeed, it appears to us that, next to a well regulated diet, a free secretion from the skin is the most effective means not only of preventing, but also of relieving gravel complaints.

The medical treatment consists in the use of alkaline remedies, for the purpose of correcting the morbidly acid state of the stomach and of the urine; the medicines of this class usually employed are soda, potash, and magnesia; these are administered either to prevent the formation of red gravel, where the state of the urine above described exists, or to palliate the symptoms where the disorder has already commenced. From half a drachm to a drachm of *bicarbonate* (commonly called carbonate) of *soda* or of *potash*, dissolved in from half a pint to a pint or more of barley-water, toast-water, rice-water, linseed-tea, decoction of quince-seed, or any other mild diluent, should be taken twice or thrice a day, according to circumstances, about two or three hours before or after eating, and continued daily for a considerable length of time. These alkaline salts may, in most cases, be taken for many months without deranging the digestive organs, and with much benefit to the patient's general health. If, however, the stomach become weakened from their long-continued use, it will then be advisable to take them along with an *infusion of chamomile flowers*, or dissolved in a *decoction of gentian* or of *calumbo*. The manner of preparing and using these tonic remedies has been already pointed out in other parts of this volume. *Magnesia*, in doses of ten grains once or twice a day, has sometimes been found more serviceable than the carbonate of potash or of soda. Equal parts of *lime-water* and *rennet whey* constitute one of the best remedies that can be employed in this species of gravel. Every alkaline medicine when taken for a long time is apt, in many cases, to disagree with the stomach; it is therefore, in general, advisable to vary these remedies, rather than to persist long in the use of *any one* of them in particular.

The means to be adopted during a *fit of the gravel* have been already pointed out at page 482.

The *second* kind of gravelly disorders, in which the urine deposits the phosphatic salts in the form of white sediment, or sand, generally depends on some constitutional derangement of a serious character, or on great irritation or organic disease of the urinary organs. In the first, or lithic acid gravel, the urine is generally more or less scanty, high-colored, and deposits a red sediment; here, on the contrary, it is of a pale color, secreted abundantly, and deposits, when cool, a copious white sediment, sometimes white sand. The disease occurs most frequently among persons who have lived intemperately and have committed excesses in early life. Those who draw largely on the vital resources during youth, are sure to pave the way to various bodily discomforts and disorders in after life, and of all the ailments thus induced this is certainly one of the most distressing. This species of gravel is also frequently met with among the ill-fed and half-clothed children of sickly or dissipated parents in the lower classes of society. The countenance of persons affected with red gravel often appear florid and the appetite is good; but in this form of the disorder the face is pale and appears care-worn; the patient is unfitted for any ordinary mental or bodily exertion; he becomes irritable, discontented, and gradually loses flesh; he has little or no appetite, and is troubled with flatulency, constipation, and other symptoms of indigestion. In this state of things the patient, if residing in a large town, should remove to a healthy part of the country, and remain as much as he can in the open air; he may take daily a few glasses of wine, or some sound malt liquor; his diet should be nutritious, and composed of such articles as the stomach will most easily digest. Where the object is to invigorate the system and improve the general health, it would be impossible to lay down a general rule with regard to the kind of food which ought to be taken; this must depend on the peculiarities of constitution and previous habits of each individual. As the celebrated Van Swieten justly remarks, "to assert a thing to be wholesome without a knowledge of the condition of the person for whom it is intended, is like a sailor pronouncing the wind to be fair without knowing to what port the vessel is bound."

To quiet the irritability of the system which always accompanies this form of the disorder, *opium* will be found an invaluable remedy; it may be given to the extent of two or three grains daily until the irritation is in a great measure quieted. To correct the predominance of alkali or alkaline earths in the urine, it is usual to prescribe acids. Ten drops of *diluted muriatic acid*, or the same quantity of *elixir of vitriol* or *diluted nitric acid*, may be given three times a day in an *infusion of gentian* or *calumbo*. Saline purgatives, soda-powders, and all alkaline remedies should be carefully avoided.

STONE IN THE BLADDER

Arises in the great majority of cases from a portion of gravel having passed from the kidney along the ureter to the bladder, and there gradually increased in size by successive depositions upon its surface; sometimes it originates in the bladder, and occasionally the nucleus of the stone consists of a clot of blood, or a foreign body which has accidentally got into the bladder, such as the broken end of a catheter, or a portion of a bougie.

The immediate relief which follows the escape of a small stone from the kidney into the bladder often deceives the patient, and leads him to believe that all danger is past. The means most likely to secure the passage of the stone out of the body are not resorted to, and this neglect is generally fraught with consequences of the most distressing and ultimately dangerous nature.

Should timely measures not be adopted to remove the stone, a train of painful symptoms are sooner or later manifested, and the patient's life is rendered miserable. At first a dull uneasy sensation is occasionally felt about the neck of the bladder, at the lower part of the belly, or in the groin, and the patient experiences an unusually frequent desire to make water. The symptoms soon undergo a change for the worse, the desire to make water becomes more frequent and urgent, with an inclination to empty the bowels at the same time. While the urine is flowing, the stream is suddenly stopped, so that it is expelled, as it were, by fits, the expulsion of the last drops being attended with excruciating pain. The urine is mixed with mucus and is often tinged with blood, particularly after exercise; pain is frequently felt at the point of the penis, more especially after making water, walking, or taking any ordinary bodily exercise. "This pain is one of the most marked symptoms of the disease. A child, who labors under stone, tells you of it, not in words but in his actions. He is always pulling at the end of the penis, and pinching it with his fingers, even so as to cause the prepuce (foreskin) to become elongated. You often find his fingers with the skin soft and sodden, as if they had been soaked in water, from the urine which has been imbibed."

The suffering is greatly aggravated by the motion of a carriage or riding on horseback.

A patient affected with stone in the bladder may do much to palliate the painful symptoms to which it gives rise, by strict attention to diet, and the judicious use of medicine. Whatever remedies are employed, they should be directed to correct the particular states of the constitution on which the formation of different kinds of stone depend. If the lithic acid condition of the urine predominate, which is generally the case, the alkaline remedies already directed should be had recourse to, not with the expectation of dissolving the stone, but of restoring the urine to its healthy state, and improving the general health. Great care should be taken in proportioning the doses of these remedies to the particular circumstances of each case.

Surgery possesses two methods of extracting a stone lodged in the bladder. The *first* is *Lithotomy*, an operation which consists in making an incision into the bladder sufficiently large to allow the surgeon to lay hold of the stone with forceps and extract it entire. The *second* is *Lithotrity*, which consists in breaking the stone within the bladder, by means of certain instruments constructed for the purpose, so that the fragments may be discharged from the bladder by the natural passage.

STRICTURE OF THE URETHRA.

When a part of the canal or *urethra* which conveys the urine from the bladder out of the body is rendered narrower than it is in a natural state, in consequence of morbid action or change of structure, the disorder is called stricture. Writers on this subject generally agree in describing strictures under three forms, the spasmodic, the inflammatory, and the permanent.

Spasmodic Stricture not associated with inflammation is a rare disease. It comes on suddenly, and is not attended with pain until the patient attempts to make water. Various causes are said to give rise to this kind of stricture; it may proceed from exposure to cold and damp, excesses in drinking wine, spirits, &c., retaining the urine too long in the bladder, irritation of distant parts; or "even an irritated state of mind, or a mind deeply engaged in study, will occasionally influence the nervous system to such a degree as to produce spasmodic stricture of the urethra."

Treatment.—"You should introduce a bougie," says Sir A. Cooper, "letting it steal gently along the urinary passage, and when it arrives at the strictured part there let it rest for a short time; after this, you should gradually push it forward, using only a very slight force, but continuing that force until you have succeeded in passing the stricture. Let the bougie rest for a minute or two in the strictured part, and then withdraw it; the patient will be immediately enabled freely to pass his urine. If you have not a bougie at hand, you may employ a catheter, and it will answer equally well; you must take care, however, to use it gently, as I have just described." The chief point to be attended to in such cases is not to irritate the parts by attempting to pass the stricture with a bougie, or to reach the bladder with a catheter. If much resistance be offered to the introduction of instruments, it will be better to have recourse to other means rather than persist in overcoming the obstacle by using force. The bowels should be well cleared out by means of copious injections of warm water, and afterwards an injection consisting of fifty or sixty drops of laudanum with a wine-glassfull of warm water should be administered, or from forty to fifty drops of this medicine may be given by the mouth; and the dose may be repeated after a few hours, if the patient be not relieved. (See *Urine, Retention of.*)

INFLAMMATORY STRICTURE.

Persons who indulge too freely at table, while laboring under chronic gonorrhœa or gleet, are most liable to this kind of obstruction; it may also occur during acute gonorrhœa, in consequence of inflammatory swelling of the mucous or lining membrane of the urethra, and may follow the introduction of a bougie. It is generally associated with the spasmodic form of the disease above described, is quick in its approach, and accompanied with severe pain.

Treatment.—The treatment in this case consists in *drawing blood* freely from the arm, if the patient be young or of a robust habit of body; in opening the bowels with an *infusion of senna and salts*, or by means of *purgative clysters;* in the application of fifteen or twenty *leeches* round the perinæum; and in the use of the warm bath. The injection with laudanum should be employed as above directed, and much benefit will be derived from keeping up a slight degree of sickness at stomach by frequent doses of the tartar emetic mixture, (see page 488.)

PERMANENT STRICTURE.

This is, by far, the most common form of stricture; and, in the great majority of cases, proceeds from gleet or frequent attacks of gonorrhœa. Sir Astley Cooper states, that it arises from the latter disorder in ninety-nine cases out of a hundred. Astringent injections, employed in the cure of gonorrhœa and gleet, were formerly supposed to be frequent causes of stricture; but experience has shown, that they have been often condemned without sufficient reason.

The number of strictures varies in different cases. The usual number is one, or at most two; but cases have occurred where six, or even more, existed at the same time. The form of stricture also differs. In the callous, or indurated stricture, the whole circumference of the passage, or only a part, may be affected. Some strictures are confined to a small part of the circumference of the urethra, or they may occupy from half an inch to an inch of the canal; in other instances, again, the stricture is formed by a small band stretching across the urethra.

It frequently happens that persons, either from ignorance or inattention, are affected with stricture for a considerable length of time without their knowledge; but, as the disorder gains ground, the symptoms become sufficiently urgent to attract the patient's attention, and convince him of the nature of his ailment. They are thus described by Sir A. Cooper. "At the commencement of every permanent stricture, you are made acquainted with the real nature of the complaint by the following symptoms. The first is, the retention of a few drops of urine in the urethra after the whole appears to have been discharged, so that when the penis has been returned into the small clothes, the linen becomes slightly wetted; and if you press on the under side of the urethra, a few drops more will be voided, which had collected between the bladder and that part of the urethra where the stricture is situated. The next circumstance you notice is an irritable state of the bladder. This is evinced by the person not being enabled to sleep so long as usual without discharging his urine. A man in health will sleep for seven, eight, or nine hours without being obliged to empty his bladder; but when he has a stricture, he cannot continue for a longer period than four or five hours, and frequently much less even than this. The next circumstance observable is the division of the stream; the reason of which is, that the urethra is in an uneven state from the irregular swelling that surrounds it, and, consequently, the urine is thrown with an inequality of force against its different sides; sometimes the stream splits into two, becoming forked; sometimes it is spiral; at other times it forms, as it were, a thin sheath. Occasionally the stream rises perpendicularly, its long axis being at right angles to the long axis of the penis; thus, then, the retention of a few drops of urine after the whole appears to have been discharged, a more frequent propensity to make water than when in health, and the peculiar character of the stream, as just described to you, will be conclusive evidence of the existence of stricture."

Treatment.—It must not be supposed that every case of stricture requires treatment; because it not unfrequently happens that, although the circumference of the canal is slightly diminished, and the stream of urine is more or less irregular, yet the disorder is *definitive*, that is to say, it has no tendency to increase, is not accompanied with any discharge, and does not interfere with functions of the urinary and spermatic organs. Under these circumstances, the ordinary means of treatment, instead of proving serviceable, would be more likely to irritate the parts, and do mischief.

Various plans have been proposed for the cure of permanent stricture, but almost the only method of treatment now employed is the gradual dilatation of the part by means of bougies.

The first thing to be done is to ascertain the situation of the stricture, by passing a common-sized bougie into the urethra. The introduction of this instrument requires considerable caution and address; it should be first warmed before the fire, or dipped in warm water, then smeared with olive oil, or lard; if made of wax, it should be slightly curved in the form of a catheter, and is then to be gently passed along the canal until the stricture prevents it from proceeding farther; it is then to be withdrawn. On the following day, a small conical or taper-shaped gum-elastic bougie is to be introduced; it should be of the same size as the stream of urine, and, being previously greased as above directed, is to be carefully passed along the urethra. When it reaches the stricture it should be allowed to rest a little, and is then to be pushed gently forward; if resistance be still offered it must be again allowed to rest for a minute or two, so as to avoid producing irritation or pain. If we succeed in introducing the instrument through the stricture, the cure is then in our power; but sometimes this cannot be effected without repeated trials and a great deal of trouble. When the bougie is introduced, it becomes tightly grasped by the stricture, and the patient is to retain it in that position until it passes through the stricture easily; this generally soon takes place, in many cases only a few minutes are required; it is then to be gently withdrawn. On the next day, or not until the expiration of two or three days, if irritation occur, the same bougie is to be again introduced, and if it pass easily, one a little larger is to be employed, and the same directions followed. In this manner the treatment is to be conducted, substituting successively larger bougies, always taking care to allow sufficient time to elapse between each introduction, in order to avoid irritation of the urethra; should this arise, the employment of a larger instrument is to be deferred until the symptoms of reaction pass off. By thus steadily but cautiously persevering in the introduction of bougies, the stricture will be at length overcome, and the largest bougie may be passed with facility. Five or six weeks, or perhaps a considerably longer period, may be required to complete the cure; but this mode of treatment, though slow, is safe, and very successful. No attempt should ever be made to get rid of a stricture suddenly, because it has been well ascertained that the dilatation is the more durable the more slowly it has been effected.

After the stricture is relieved the patient should pass a bougie or a catheter, once or twice a week, for a fortnight or three weeks, and afterwards at longer intervals. Should the stream of urine at any time diminish, he must again have recourse to the gradual process of dilatation above described, until the cure be permanent.

In long neglected strictures, it sometimes happens that even the smallest instrument cannot be introduced into the bladder. In cases of this description, much benefit will be derived from very carefully introducing a bougie every day, and gently pressing on the face of the stricture. By patiently persevering in this mode of treatment, a depression is made on the anterior part of the stricture, and, ultimately, the bougie will penetrate the constricted part. The cure may then be completed by gradually dilating the stricture, as already directed. Sometimes five or six weeks are required in obstinate cases before the instrument can be passed, but in general the obstruction is soon overcome.

STYE.

A stye is simply a small boil, projecting from the edge of the eyelid. Matter forms slowly, but at last the tumor is observed to point, that is to say, a small white speck appears on its most prominent part. After a longer or shorter period, sometimes two or three days, it bursts, and a small quantity of matter is discharged along with a little mass of disorganized cellular membrane commonly called the *core;* the swelling then subsides, and the eyelid soon resumes it natural appearance. But it often happens that only a small quantity of curdy looking matter is discharged, and the core is retained within the tumor; the opening heals, and the swelling continues for a considerable length of time. In other cases, again, the suppurative process advances slowly, and the stye remains hard and painful, without showing the slightest disposition to point, or to undergo any further change.

Treatment.—The administration of an *emetic of ipecacuan*, followed by a smart purge of *calomel* and *jalap*, or the *black draught*, and the constant application of *Goulard water*, or vinegar and water, to the eye, if employed early, sometimes prevent the inflammation from terminating in suppuration; but in most cases no kind of treatment succeeds in arresting its progress.

If, therefore, the above means should not produce the desired effect, and suppuration appears to be advancing, it will be advisable to discontinue the cold lotion, and apply warm poultices of bread and water, or of linseed meal, inclosed in a small linen bag. A fresh poultice should be applied at least three or four times in the course of twenty-four hours, and each time the eye must be well fomented with warm milk and water. These local applications are to be assiduously employed until the suppurative process is completed, and the matter discharged.

SUBCARBONATE OF AMMONIA.

The subcarbonate of ammonia, or hartshorn, is a powerful stimulant and antispasmodic. It is sometimes employed as a sudorific, but is more frequently used as a stimulating application to the nostrils in fainting (*sal volatile.*) The dose of this salt is from five, to fifteen, or even twenty grains.

The aromatic spirit of ammonia is a more agreeable stimulant than spirit of hartshorn, and is employed in weakness of the stomach, languor, fainting, flatulent colic, hysterics, and other nervous disorders. The dose is from half a drachm to a drachm in a wine-glassful of water, and repeated from time to time until relief is obtained.

Liquid hartshorn mixed with olive oil, forms the *volatile liniment*, a useful external application for sore throat. All the preparations of ammonia should be kept in stoppered phials.

SULPHUR.

Sublimed sulphur, commonly called the flowers of sulphur, acts as a mild laxative and promotes the insensible perspiration. It pervades the whole system, and transpires through the pores of the skin, as appears from the smell which exhales from the bodies of persons who are under its influence, and by staining silver in the pocket of a blackish color. Equal parts of sulphur and magnesia (fifteen grains or a scruple of each) taken every night at bed-time affords great relief in piles.

This remedy, employed both internally and externally, has long been celebrated for its power of curing the itch and other diseases of the skin, (see *Itch.*) When taken alone for some time it produces a slight degree of feverish excitement, hence its use should be discontinued occasionally, and a Seidlitz powder or some other saline medicine administered. The dose, as a laxative, is one or two drachms in milk, or mixed with molasses, jelly, or some kind of conserve.

SULPHURIC ACID.

This acid is generally administered in the form of *elixir of vitriol*, which is an excellent tonic in the dose of from ten to twenty drops, twice or thrice a day, in a cupful of cold water. It is sometimes of very great service in indigestion, where bitter and aromatic remedies have failed to produce any good effect; and is employed in spitting of blood, and to check excessive perspiration. It may be advantageously combined with the decoction of Peruvian bark, or of quassia.

Women when suckling ought not to take this medicine, because it acts on the system of the infant, producing griping, and sometimes convulsions.

SUPPOSITORIES.

Suppositories are medicinal substances introduced in a solid form into the rectum, there to remain and dissolve gradually. In this manner opium, the extracts of henbane, hemlock, &c., are employed to relieve the pain and irritation arising from diseases of the lower bowel, the womb, the bladder, the prostrate gland, and adjacent parts. Aloes and soap are sometimes introduced as a suppository to destroy the small thread-worms called *ascarides*.

SWEET SPIRIT OF NITRE.

Sweet Spirit of Nitre is obtained by distilling alcohol and nitrous acid; it is an excellent sudorific in the dose of a drachm and a halt or two drachms, given with a basin of warm gruel, or some other warm drink, at bed-time. When taken in this manner at the *commencement* of a common cold, it generally succeeds in arresting the progress of the disorder. This medicine also acts as a diuretic when given in smaller doses frequently repeated, mixed with cold water; but is more frequently used to correct or promote the action of more powerful diuretics in dropsy.

SYPHILIS, OR VENEREAL DISEASE.

There are few complaints either more prevalent amongst, or more interesting to the public, than the venereal disease. The business of the medical man is to relieve the bodily sufferings of his fellow-men, without inquiring how those sufferings may have been produced. His duty is simply to prevent or cure disease, by medical counsel or the administration of remedies, and he may, with a safe conscience, reject all other considerations, provided he can attain the great object of his labors—the restoration of health.

The venereal disease, or syphilis, arises from the introduction ot a peculiar animal poison into the system. The manner in which the poison, or virus is generally introduced, is well known.

CHANCRE.

As we have already observed, syphilis arises from the effects of an animal poison on the body. The poisonous matter is placed in contact with some part of the genital apparatus and there excites a sore, which secretes poisonous matter similar to that which first gave rise to the sore; after a certain lapse of time the poisoned matter is taken up, mixes with the blood, and produces a regular succession of disorders or secondary affections in the skin, throat, or other parts of the body. The sore produced by the application of the syphilitic virus to the skin is called a *chancre*, but it does not follow that every sore which may appear on the genital parts after impure connexion is a syphilitic sore or chancre. Hence, a very important question presents itself—viz., by what means can we distinguish simple sores from the true venereal ulcer or chancre. This is a question more easily asked than answered. The medical man can always ascertain the virulent nature of a sore by inoculation; but this is an experiment which others should never venture to make. It will therefore be more prudent for such persons, as a general rule, to regard *all* sores on the genital organs as syphilitic, provided they treat them in the manner presently to be described.

The progress of the sore will assist better in deciding upon its nature than any external characters. The true venereal ulcer commonly pursues a certain course for some time, and is not much influenced by ordinary applications; hence, says Mr. Colles, "if an ulcer be not interfered with by any stimulant or caustic application, and after eight or ten days it shows no disposition to heal, and if at the same time there be an absence of any cause (such as defect in the general health) to account for this obstinate condition of the local disease, we may then pronounce the ulcer to be syphilitic."

It is unnecessary to confuse the reader with minute descriptions of its varieties; for all practical purposes it will be sufficient to distinguish the five following forms—viz., 1, the common chancre; 2, the indurated chancre; 3, the irritable; 4, the inflammatory; and 5, the sloughing chancre.

Indurated Chancre.—This is the sore which has often been called the Hunterian chancre, because it was so perfectly described by the great John Hunter. It is supposed to constitute the most regular and perfect type of the venereal ulcer, but is now met with much less frequently than in former years. In men, chancres generally make their appearance on the glans penis, frænum, or at the angle between the skin and glans, because these are the parts on which the virus is most easily retained; in some rare cases, the virus gets into the urinary canal or urethra, and gives rise to a hidden chancre in that part; and this explains the fact why many persons are affected with constitutional symptoms who have never had any appearance of sore or ulcer on the external parts. In females, the sores may occur on any part of the genital organs, in the vagina, or even as high up as the neck of the womb.

The interval between the application of the virus and its effects on the parts is very uncertain; in some few instances, chancres appear within twenty-four hours after the application of the matter. Generally, the interval varies from three days to a week; but cases are on record where the disease did not appear until after several weeks. The first appearance of a chancre is generally indicated by an itching in the part where the sore is about to form; a small pimple then arises; this soon contains matter, and turns into a regular ulcer; the base of this ulcer feels hard when it is pressed between the fore-finger and thumb; the edges are regular, and the thickening of the tissues which surround it does not spread far into the neighboring parts, but is very circumscribed; the edges of the ulcer are surrounded by a narrow line of inflammation, (areola,) somewhat similar to that which encircles the small pox pustule. The bottom of the sore is usually covered with a grayish yellow colored matter, which adheres *tenaciously* to the abraded surface, and differs evidently from common pus; after some time the secretion becomes altered, and the edges of the sore lose their sharp aspect and become rounded off, the inflammatory areola disappears, small granulations form on the surface of the sore, and it gradually heals, leaving a hardened red mark or cicatrix, which is very apt to break again.

Simple Chancre.—This is the most common form in which the disease appears at the present day. In general features it resembles the Hunterian chancre, just described, but the base of the sore is free from *hardness*, and it is not attended with signs of irritation or inflammation.

In *irritable* chancre the surface of the sore is red, and bleeds on the least touch; it is painful, often of irregular appearance, and has a tendency to spread whenever it is excited by irritating applications.

The *inflamed* chancre is nothing more than a simple venereal sore when it is attacked by inflammation; here the sore, generally in consequence of excesses on the part of the patient, becomes painful, red, and swollen; the regular appearance of the sore is lost, the edges are removed by grayish or black sloughs, and the secretions from the part are of a very acrid and irritating character.

Sloughing chancre generally occurs in persons of broken down constitution, or who have injured their health by debauchery and excesses of various kinds; it is also apt to occur in those who give themselves up to drinking, &c., while under the use of mercury; in cases of this kind the original sore and the surrounding parts are rapidly destroyed by foul sloughs or gangrene, and unless the utmost attention be paid, the unfortunate sufferer may lose the greater part of the sexual organ.

Treatment.—The treatment of chancre is *local* and *constitutional.* We shall first speak of the *local* means, and shall point out a few remedies on which the greatest reliance may be placed. The virus first excites a local sore, but four or five days may pass over before the virus is taken up by the absorbing vessels, and passes into the blood, to produce what are called constitutional symptoms.

This fact leads us to a first rule in the treatment of chancre. As soon as any sore or pimple appears on the sexual organs after impure coitus, it should be immediately cauterized, by passing over it lightly a stick of *lunar caustic;* this may be done twice in succession, but care should be taken not to press the caustic firmly on the sore, or carry it beyond the edges; our object is merely to destroy the *surface* which secretes the virus; a piece of fine dry lint should then be placed over the sore, and supported by any convenient bandage. When the eschar (scab, caused by the caustic) falls off, the caustic may be applied a second time in the same way, as a precaution. Even when the sore has existed for five or six days before it has been noticed, this mode of treatment may be employed. We should here observe that it is only applicable to simple and indurated chancre.

When the eschar has fallen off, the sore should be dressed with some mild astringent or gently stimulating application. The *zinc ointment*, weakened by the addition of one-third part of spermaceti ointment, is a very useful one; some practitioners recommend the *black wash;* if there be much pain and soreness in the ulcer the following will be beneficial.

Prepared lard, eight ounces,
Wine of opium, half an ounce.

A weak solution of alum, applied with lint, also forms an excellent dressing. During the use of these means the patient should live as quietly as circumstances will permit him, and avoid all excesses in food, drink, exercise, &c. The dressings should be changed at least three times every day.

Under this treatment common chancre will usually heal in a short time. The other forms of chancre require a somewhat different treatment, according to their nature. If the sore be of an *inflammatory* character, we must not think of applying caustic or any exciting remedies; the organ or ulcered part should be wrapped up in lint, moistened with tepid water or Goulard water, and covered with a piece of oiled silk; the patient should keep as much at rest as possible, live low, and take an opening draught occasionally; in some cases, where the inflammatory symptoms run very high, it may be even necessary to draw eight or ten ounces of blood from the arm. For *irritable* chancre the best local dressing is the opiate cerate mentioned above, or a strong aqueous solution of opium.

We have now to speak of the *constitutional* treatment of chancre. When the means already mentioned have been applied *early* and assiduously, the patient has a great chance of escaping what is called secondary Syphilis, and, as a general rule, we would not advise the use of mercury for any primary venereal sore except the *indurated* one. Experience shows that this form of sore is very often followed by secondary or constitutional symptoms, and that the cure of the sore itself is hastened by the use of mercury. It is impossible to lay down rules for the employment of this powerful remedy, which shall suit every individual case. Generally speaking, the safest preparation that can be employed is the *blue pill;* of this the patient may take five grains night and morning, until the mercurial taste be perceived in the mouth and the gums are a little sore, when it should be discontinued. Should the mercury, as it sometimes does, occasion much griping or purging, three grains of the extract of *henbane* or one-fourth of a grain of *opium* may be added to the evening dose; it will not be advisable to push the mercury beyond touching the gums. The precautions to be observed during a course of mercury will be noticed when we treat of *constitutional Syphilis.*

SECONDARY SYMPTOMS, OR CONSTITUTIONAL SYPHILIS.

Bubo. The virus which is secreted by a syphilitic sore may be taken up by the absorbent vessels of the part, and conveyed by them to one or more of the lymphatic glands situated in the groin, where it excites inflammation; the gland thus inflamed and swollen is called a *bubo.* This swelling generally commences on the second or third week after the appearance of the chancre; it may be ushered in by shivering and symptoms of fever; but, generally speaking, the patient's attention is first directed to it by some pain, stiffness, or uneasiness, about the groin, and on examination he finds a small knot or tumor; this gradually increases in size, and then as gradually disappears, or it may suppurate and break, continuing to discharge matter for weeks or months; in some cases, however, the bubo will remain obstinately stationary for a great length of time.

Treatment.—As soon as a swelling in the groin is perceived after the existence of chancre, the proper treatment should be adopted without loss of time, for the chances of our preventing the tumor from bursting depend much on the *early* application of remedies. If the occupations of the patient will permit him, he should constantly rest on a sofa; if not, he should at least endeavor to avoid any kind of exercise as much as possible; cold applications should be made to the part, and the diet should be very abstemious. When, however, the tumor continues to increase, is very painful, and the skin over it begins to get red, fifteen or twenty leeches must be applied to the bubo and repeated within two days if no well-marked effects are produced by the first leeching; should the patient be plethoric, and any general fever accompany the bubo, it may be necessary to draw blood from the arm. During the day lint moistened with *Goulard water* should be constantly applied, and the bowels should be opened twice a day with a cooling purgative. When the inflammatory symptoms have been relieved, the tumor may be covered with the *mercurial plaster*, or the *compound ammoniacal plaster*, and a drachm of *blue ointment* may be rubbed in over the swelling, every evening, for a quarter of an hour. When the bubo shows a disposition to become indolent, that is, neither to recede nor to ad-advance, a blister should be placed on the tumor, and the blistered surface dressed with blue ointment; this may be done two or three times in succession, fresh blisters being applied as the old ones heal up. Instead of blistering the tumor we may employ frictions with the common *iodine ointment;* or apply lint soaked in the following solution.

Tincture of iodine, one scruple,
Distilled water, two ounces.

Secondary symptoms are those which make their appearance after the venereal virus has been carried into the blood from a chancre, or syphilitic bubo; they very seldom come on before the second week, generally towards the fifth, sixth, or eighth week, but occasionally later. It is not easy to say what length of time may elapse between the occurrence of chancre, and the subsequent breaking out of secondary symptoms, still there is much reason to believe that the stories of confirmed syphilis having appeared several years after infection are fabulous.

SORE THROAT.

This form of secondary syphilis occurs very frequently, and is often mistaken for common sore throat; on looking into the back of the throat we see a dusky redness, and here and there circular or semi-circular patches covered with a whitish and very *tenacious* secretion; these patches often occupy the surface of each tonsil; they may remain indolent for a length of time, but sooner or later they ulcerate and form deep irregular sores; in ordinary cases the pain, inflammation, and swelling are much less than what we find in common sore throat.

The *local* treatment consists in using gargles, or in touching the sores with some stimulating application. As a gargle, the following will be found useful—

Diluted muriatic acid, one drachm,
Decoction of Cinchona bark, four ounces.

To stimulate the ulcers they may be touched occasionally with a strong solution of *lunar caustic* or *sulphate of copper* (fifteen grains, to the ounce of water.)

CONSTITUTIONAL TREATMENT OF SECONDARY SYMPTOMS.

When secondary symptoms, such as coppery spots on the skin, sore throat, &c., make their appearance after chancre, mercury must be at once employed, with exception of the cases presently to be mentioned.

Mercury may be administered for the cure of syphilis in either of two ways—viz., as an ointment by friction, or internally. The choice of the form in which this remedy should be used must depend on several circumstances; its internal administration is usually the more convenient; but some patients cannot bear mercury when taken into the stomach; in such cases, therefore, we must have recourse to frictions.

The method of employing mercurial unction is very simple, from half a drachm to a drachm of *blue ointment* (mild mercurial ointment) should be rubbed in along the inner side of the thigh or leg before a fire, every alternate night. The frictions should be alternately on the lower extremities and in the direction of the hair, in order to avoid, as much as possible, irritation of the skin. In some cases where concealment is necessary, instead of friction on the legs, a drachm of the ointment may be placed in the armpit on going to bed.

The best preparation of mercury for internal use is the *blue pill;* of this, five grains in the form of pill may be taken night and morning. Should it cause pain in the bowels, or purging, a small quantity of opium (one-sixth of a grain) may be added to each pill; but if the purging be severe, and continue for more than two or three days, the use of mercury must be suspended.

We have already said that mercury is a remedy unsuited for certain states of the constitution; when, therefore, the general health of the patient will not admit of his undergoing a mercurial course, we must employ a remedy which is scarcely less efficacious in the treatment of secondary syphilis. This remedy is the *hydriodate of potass;* four grains may be added to a quart of the compound *decoction of sarsaparilla*, and the whole taken at intervals during the day; the hydriodate must be gradually increased until the patient takes fifteen or twenty grains in the above quantity of vehicle during the day. When it is not convenient to obtain the compound decoction of sarsaparilla, the simple decoction, or a decoction of *guaicum*, with a few grains of nitre, will answer. In cases of foul, sloughing ulcers which occur in debilitated subjects, nutritious diet, with opiates at night and the *ioduret of iron*, will afford the best chance of cure. The ioduret of iron may be administered in the form of syrup or of pill; the quantity to commence with is two grains, which may be gradually increased to ten daily.

[Yet after all we can say upon this subject we earnestly advise every one afflicted with this disease to seek, at the outset, the advice of a physician. But let him be sure to consult one who will be governed in his judgment and treatment, not only by medical *books*, but by his own personal acquaintance with its various forms.

Hence, physicians of long experience and high reputation in cities should be consulted, as having better opportunities of observation and practice than those in the country.]

TARTAR EMETIC.

Tartar emetic or the tartrate of antimony. Of all the preparations of antimony this is the most to be depended on, and when given in appropriate doses is capable of fulfilling every purpose for which antimonial remedies are employed. The action of this salt varies according to the dose, and the state of the system at the time of its administration. In doses of three or four grains it acts powerfully as an emetic, aud the safest plan of exhibiting it with this intention, is by dissolving three or four grains in half a tea-cupful of water, and giving a table-spoonful of the solution every ten minutes till free vomiting takes place. But when it is found necessary to excite vomiting in very young children, ipecacuan, being a safer emetic and less harsh in its action, is generally preferred; and in cases of poisoning the sulphate of zinc (white vitriol) is a more suitable emetic, because it acts more quickly and with greater certainty.

Tartar emetic, in all cases where there is pain or tenderness at the pit of the stomach accompanied with much thirst, while the tongue at the same time is of a florid red color, should never be administered. But when the tongue is furred, it often becomes clean after the operation of the medicine.

Tartar emetic, when applied externally in the form of ointment produces an eruption on the skin resembling that of cow pox, and is, on this account, frequently employed as a means of counter-irritation. (See page 266.) A hot solution of tartar emetic, rubbed in by means of a piece of flannel, produces pustules of a smaller size, which heal up without leaving any marks on the skin. This last method of counter-irritation is, therefore, preferable for females.

TEETHING.

When the first teeth are about to pierce the gums a certain train of symptoms usually occurs; these may be briefly noticed in order that they may not be mistaken for disordered actions; the edges of the gum where the tooth is about to come through present a slight ridge or eminence; the infant becomes a little uneasy at night, cries frequently and carries its fingers to the mouth; the point of the gum just above the tooth now becomes red and sore; it softens, then is covered with a white point, and at length the crown of the tooth makes its appearance.

While the symptoms which accompany dentition are of the local and mild character just described, the process may be regarded as natural. In many cases, however, the symptoms accompanying the eruption of the milk teeth are much more severe; the child is more or less feverish; the digestive organs are deranged, and vomiting or diarrhœa supervene; finally the local irritation in the mouth may extend to the nervous system, and excite either general convulsions or an almost endless variety of nervous disorders.

We shall examine each of these affections successively.

One of the most common effects of difficult teething is sympathetic fever; the febrile symptoms occur with various degrees of intensity, in some cases being very slight, in others extremely severe. Slight feverish action need excite little apprehension, but when the skin is very hot, when the child becomes exceedingly restless and refuses to take the breast, we must not neglect the sympathetic disturbance of the vascular system, lest dangerous consequences follow. As a general rule, it may be stated that, whenever any *serious* accidents accompany the eruption of the teeth, we should have recourse to the simple, but efficacious operation of *lancing* the gums; this may be done with a gum-lancet, or even a common pen-knife, the edge of the instrument being placed over the point where the tooth is about to come through, a cut may be made until the blade is felt to grate against the edge of the tooth. The operation may be repeated three, four, or even six times, on every alternate day, should circumstances require. To calm the general disturbance tepid baths will be found useful, and the bowels may be opened with *manna*, the *syrup of senna*, or a few grains of calomel. No one who is not a physician, should, on any account, administer *opium* by itself to infants of tender age.

The frebrile disturbance now alluded to is often accompanied by *diarrhœa*, or looseness of the bowels; this may be considered as the most frequent accident of teething. When the diarrhœa does not last beyond four or five days, it is attended with no danger; but in many cases, the looseness continues beyond this period, and is increased at the appearance of each new tooth; the child occasionally vomits up its food, the face assumes an unhealthy, dull, and leaden look, the flesh wastes away, and the little patient may be suddenly cut off by convulsions, or perish in a state of great exhaustion and debility.

Far from considering, then, the diarrhœa which accompanies teething as an useful flux that should not be interfered with, we are of opinion that it should be restrained whenever the looseness continues beyond a few days, or seems to affect, even in a slight degree, the general health of the infant. Lancing the gums must be had recourse to here, as in the former case; the state of the skin which, in old cases of this kind, is generally dry and hard, must be improved by the use of the tepid bath twice a week. Should the looseness be attended with any signs of inflammation about the abdomen, then we must endeavor to remove this state, without reducing too much the strength of our little patient; warm fomentations may be applied to the belly; small doses of *ipecacuan* (two grains every three or four hours) may be given, unless vomiting accompany the diarrhœa, and one or two *leeches* may be placed on the abdomen. As an astringent, one of the best which can be employed is the *compound kino powder*, in doses of two grains, but it must be remembered that every twenty grains of this powder contains one grain of opium.

Vomiting generally arises from sympathetic irritation of the stomach; it can only be relieved by removing the irritation of the gums on which it depends; this may be done by the means already pointed out; and the same laxative medicines should be administered (unless diarrhœa exists) and the quantity of food given in the twenty-four hours must be diminished.

But the most dangerous affection to which children are subject during the period of teething, is convulsions. The severity of the symptoms connected with the nervous system is extremely various; in some cases we have nothing but an undue degree of sleepiness; in others, the effects on the general condition of the nervous system are shown by restlessness, want of sleep, starting in the sleep, flushing of the face, partial paralysis, squinting, irregular movements of the muscles; in a word, by an almost endless variety of nervous disorders. Thus irregular motions similar to St. Vitus' dance, are often connected with difficult teething.

LOCKED JAW, OR TETANUS.

Tetanus is characterized by violent and painful contractions of the voluntary muscles of the whole, or some part, of the body, accompanied with tension and permanent rigidity of the muscles affected; the mental faculties and power of sensation remaining unimpaired.

The approach of this painful and dangerous disease is seldom announced by any premonitory signs. In general the earliest symptom is a feeling of stiffness about the neck, and at the back of the head, which in most cases is first observed on awaking in the morning, or after sleeping during the day; this increases and extends to the jaws, while the throat becomes dry and slightly sore. These symptoms, however, so frequently occur from exposure to currents of air or other circumstances, and wear off without putting the patient to much inconvenience, that, at the commencement of this disorder, they are generally overlooked. But a train of symptoms soon follow which distinguish this from all other diseases. The muscles of the neck and jaws become rigid, painful, and are occasionally seized with spasms; the patient then finds considerable difficulty in opening his mouth; the power of swallowing is impaired; and before long a sudden spasm brings the teeth firmly in contact, so that the mouth cannot be opened by the most powerful efforts. If the spasms and rigidity do not extend to other muscles the disease is called *trismus*, or *locked jaw*, which, though a less painful form than that in which the muscles of the body and limbs are affected, can scarcely be considered as less dangerous. The next circumstance which generally takes place is great difficulty of breathing, occurring in paroxysms, and accompanied with violent pain about the midriff or diaphragm; this is occasioned by the spasmodic action and rigidity having extended to the muscles of the chest; but although the violent and painful contractions about the chest, and consequent difficulty of breathing, are much more severe at one time than at another, they never entirely cease, and constitute the chief source of the patient's suffering throughout the progress of the disease. The muscles of the belly are drawn in towards the spine, and in some cases become as hard as a board. When the disease is at its height the muscles of the limbs are also rendered stiff, and partake of the general spasm, which is sometimes so violent that the body is bent in the form of an arch, its whole weight bearing upon the crown of the head and the hips, or sometimes on the heels; in other instances, again, the body is bent so as to rest upon the forehead and toes; but this is a rare occurrence, and the lateral incurvation is still more rare. We have had several patients with chronic tetanus under our charge, in whom the trunk and limbs were perfectly rigid. In such cases the individual is completely helpless and lies on his back.

The extraordinary postures into which the body is thrown during the paroxysms of spasms, the strangely and frightfully distorted appearance of the features, caused by the spasmodic contraction of the muscles of the face, and sometimes the expression of laughter or grinning which the countenance retains during the most intense pain, unite in rendering the patient a remarkable but truly painful object of observation. The eyes appear watery, and remain fixed, staring, and motionless in their orbits; sometimes the tears are seen to trickle down the cheeks; and, in the more severe cases, the teeth are occasionally broken by the violent spasmodic action of the muscles of the jaws.

Causes.—The usual exciting causes of tetanus are, wounds, or other external injuries, exposure to cold damp air, and, perhaps, certain disordered conditions of the alimentary canal; but the proximate cause, or intimate nature of the disease, is involved in the greatest obscurity.

Tetanus is far more common within the tropics than in temperate climates, and chiefly arises in all countries from wounds, bruises, &c., inflicted on the fingers and toes, and more frequently from injuries done to the testicles than from other causes.

Treatment.—Dissections of those who die of tetanus have been carefully and diligently practised, but it must be admitted that nothing satisfactory has yet been discovered with regard to the nature or proximate cause of the complaint. Hence, the principles of treatment are necessarily deficient; and, indeed, it is melancholy to reflect how little this disease is under the control of medicine, although almost every powerful remedy has been tried, in the hope of relieving the patient. No plan which human ingenuity has hitherto devised can be said to possess any specific power over the disease.

It rarely happens that any kind of treatment is resorted to at the onset of tetanus, because, as we have already mentioned, its earliest indications are common to other disorders of comparatively little importance, and are, therefore, almost invariably overlooked. The first symptoms which alarm the patient are slight stiffness about the jaws, and some degree of difficulty in swallowing, especially of fluids. These uneasy sensations are usually accompanied or soon followed by a painful feeling of constriction under the breast bone. More importance is to be attached to these symptoms, if the patient has previously pricked, bruised, or in any way injured one of his thumbs or fingers, or if he has wounded one of his toes in cutting a corn; in a word, if he bear a wound, whether slight or severe, upon any part of his body or limbs, he may then be certain that the indications above mentioned announce the approach of a series of more urgent symptoms which may soon place his life in imminent peril. He ought, therefore, to lose no time in endeavoring by active measures to ward off the sufferings with which he is threatened.

From two to three grains of *tartar emetic*, according to the age and strength of the patient, together with a strong dose of Epsom salts, calomel and jalap, castor oil, or any active purgative which can be obtained without delay, should be taken, in order to act promptly and freely on the stomach and bowels. Another dose should be taken at the expiration of an hour, if the first do not produce the desired effect. It may also be advisable to take blood from the arm, if the patient be of a robust habit of body. The bowels are to be kept well open for several days, and the tartar emetic mixture (p. 488) is to be given at intervals, not with the intention of producing vomiting, but in order to maintain its lowering action upon the system. By this simple treatment the disorder, in the great majority of cases, may be checked at the very threshold of its career, or rendered so mild, that recovery takes place in the course of a few days. But if the stomach and bowels cannot be moved, and the disease continues to advance, or, as is generally the case, the treatment be not begun until the jaws are closed, and the disorder is fully established, then all kinds of remedies fail to produce their usual effect upon the body.

In all cases of tetanus, unless in some instances towards the termination of the disease, the mouth may be opened for a few seconds, by suddenly dashing a cupful or basinful of cold water upon the face. As soon as this is done, a person stationed close to the patient should instantly introduce a piece of India rubber or a bit of wood between the teeth; this remains firmly fixed, and cannot be withdrawn until water be again employed in the same manner. By this means the teeth are kept sufficiently apart to allow the introduction of medicines into the mouth; but this, unfortunately, is not the only obstacle to be contended with in the administration of remedies. It often happens that the patient, in attempting to swallow, is seized with a convulsive paroxysm, and the medicine is violently propelled from the mouth. The remedy which we recommend at this advanced stage of the disease is *tartar emetic*, three grains of which, dissolved in a wine-glassful of water, are to be given every hour, or every two hours, according to the urgency of the case, until a decided impression is made upon the system. By steadily persevering in the use of this medicine, the heat of skin diminishes; the pulse, which had been ranging from 110 to 120, is gradually reduced to about 90; the spasmodic action becomes by degrees less violent, and the paroxysms less frequent. At last nausea and vomiting come on, and in general the bowels are freely acted upon. By this method of treatment, we have succeeded in rescuing patients from almost certain death; but such is the resistance which the body offers to the operation of the remedy, that it is sometimes necessary to give two scruples of tartar emetic, or upwards, before any very marked effect is produced; and, indeed, we have given it to a greater extent than this without any evacuation, or any apparent effect whatever being produced, the tetanic symptoms continuing with the greatest violence to the termination of the patient's existence. After the full operation of the tartar emetic, the patient appears languid and inclined to sleep; and, if it has been found necessary to give a large quantity, the prostration of the vital energies is sometimes so great that it becomes requisite to administer hot brandy and water, strong beef-tea, &c., to support the patient's strength. Stimulants, however, are not often required; but in most instances the solution of tartar emetic, in smaller doses, must be continued for several days before the disease can be entirely subdued. During that period, strong mutton broth, beef-tea, or any other kind of nourishing food which the patient may be able to swallow, should be freely allowed; and in general the appetite returns, notwithstanding the occasional nausea produced by the tartar emetic. As soon as this remedy can be dispensed with, it will be proper to give *quinine* in two grain doses thrice a day, and generous diet, with wine or porter, until the patient recover his strength. In severe cases the patient is sometimes rendered incapable of swallowing even the smallest quantity of any kind of liquid. When this occurs, the tartar emetic, in the same or in larger doses, dissolved in about the same quantity of tepid water, should be injected into the bowels. This method of administering the remedy is usually attended with considerable difficulty, but it must not on that account be abandoned.

We do not mean to recommend tartar emetic as a remedy competent to effect a cure in all cases, because the disease often advances rapidly to a fatal termination uninfluenced by any kind of treatment. But we believe it will be found to exercise a greater influence over the disorder than any other medicine or mode of cure hitherto proposed.

LOCKED JAW OF INFANTS.

This affection is very common in warm climates, more especially in the West Indies, where it was formerly computed to have destroyed upwards of a third of the negro infants shortly after birth.

It usually occurs within the first ten days after birth, and has been ascribed to various causes, such as irritation produced by tying the navel cord, or by subsequent neglect of cleanliness, exposure to currents of air, and irritation of the bowels.

The infant, at the commencement of the disease, appears less lively than usual, and is observed to suck with some degree of difficulty; the jaw soon becomes stiff and immovable, and the child, being then rendered incapable of sucking the breast, or of swallowing, gradually sinks, or dies in convulsions.

Dissection has thrown no light on the nature of this disease; no morbid appearances whatever were discovered in any of the bodies which we have examined.

We are not acquainted with any method of treatment on which the slightest confidence can be placed. The following is the only instance of recovery which has come under our notice. The child of a negress from Bonny was attacked with locked jaw five days after birth; as soon as the mother, who was greatly attached to her children, observed that the infant sucked with increasing difficulty, and that the jaw was becoming rigid, she commenced rubbing the neck and jaws with warm castor oil, and gradually extended the friction over the body and limbs. She continued this treatment without intermission until the disease was sufficiently subdued to allow the infant to swallow, and then gave a tea-spoonful of oil internally. This woman informed us that she had saved the life of her eldest son, when three days old, by the same treatment; she also mentioned that at the part of Guinea where she was born, more children died from locked jaw than from any other disease, and that as soon as the slightest appearance of the disorder was observed the mothers rubbed in the castor oil as she had done, until their infants recovered, or died in their arms.

TETTER.

There are two diseases of the skin commonly called tetter; the one is dry and scaly (Psoriasis;) the other is moist, and known under the name of running tetter (Impetigo.)

1. THE SCALY TETTER, OR DRY SCALL,

Is characterized by irregularly shaped scaly patches, chiefly confined to the hands and arms, although they often appear on all parts of the body. Fissures or cracks are very apt to form in these patches, and give out a thin fluid, which is concreted into crusts or scabs. The surface under these is red, tender, and irritable. This disorder is always attended with heat and itching, which are more distressing at one time than at another. Sometimes it is periodical, vanishing and reappearing at certain seasons of the year. The patient generally suffers most in spring and autumn, in consequence of the sudden alternations of temperature which take place during those seasons.

Persons with dark complexion and full habit of body, whose skin is usually harsh and dry, are most subject to this kind of tetter; it is said to occur more frequently in women than in men; is often connected with gout and gravel, and is generally understood to be of a hereditary nature, and not contagious.

Many physicians are of opinion that scaly tetter is a species of leprosy. Whether this be the case or not, it must be admitted that these affections are closely allied, and often exhibit themselves in the same person.

Treatment.—The first step in the treatment is to change the mode of living. The diet should be mild. Stimulating food, such as baked meats, pastry, highly-seasoned dishes, pickles, wines, spirits, and all kinds of fermented liquors should be carefully avoided. Nothing of the kind can be taken without aggravating the irritation of the skin, and increasing the patient's distress. Whether the disease be acute or chronic, more benefit will be derived from strict attention to regimen and diet than from any of the numerous remedies which have been recommended; and certainly without the most rigid observance of these essential points, no effort of medical art is likely to be of much avail. In the commencement, if there be much irritation, and the patient be of a robust habit of body, *blood-letting* will be found serviceable; and the bowels should be kept freely open by means of *saline purgatives*, and the occasional administration of three or four grains of *calomel* at bed-time. The tepid bath should be employed twice or thrice a week, or the parts may be washed with tepid water, milk and water, or decoction of poppy heads. This last has sometimes an excellent effect in soothing the irritation of the skin.

In chronic or very intractable cases, when the long-continued use of purgatives has failed to produce any very marked effect upon the disease, it will be advisable to have recourse to sulphur in combination with alkalies. Two or three tea-spoonsful of the *milk of sulphur*, (*or common sulphur*,) with the same, or half the quantity of the *carbonate of soda*, or the *carbonate of potash*, should be given daily, and continued for some months. Sulphur baths may also be employed with advantage; and sea-bathing has often an excellent effect. An ointment composed of three drachms of *Æthiop's mineral*, (*black oxyde of mercury*,) mixed with two drachms of *lard* is sometimes of service in obstinate chronic cases. The troublesome itching of the skin, which generally accompanies this disorder, may be greatly relieved by the external use of *prussic or hydrocyanic acid*, freely diluted with water. The following lotion is recommended.

Spirit of Mindererus, two ounces,
Diluted hydrocyanic acid, one drachm,
Tincture of fox-glove, three drachms,
Rose water, five ounces. Mix. To be applied to the parts affected night and morning, by means of a sponge.

When the disease has arisen or is kept up by deficient diet and clothing, want of cleanliness, and the other evils which accompany poverty, no remedies will be of much service until the patient is placed under more favorable circumstances.

HUMID, OR RUNNING TETTER

Makes its appearance in circumscribed, irregularly round or oval shaped patches of small pustules closely set together, which, after discharging their contents, continue to throw out a thin acrid matter. This dries, and forms into yellow or greenish colored scabs, from under the edges of which the matter still continues to ooze, giving rise to itching, or a stinging or smarting sensation accompanied with heat. This disease may appear on any part of the body, and may continue for months or for several years, being kept up by repeated eruptions of pustules. It is not contagious.

This eruption often breaks out in children while cutting their teeth, in young people, and in females with fine delicate skin and rosy complexion. It generally appears in spring, and sometimes breaks out at that season, for several years in succession. It may be developed on the neck, on the trunk of the body, or on the limbs; but in children the scabs are generally first observed on the middle of the cheeks, or at the sides of the nose, and gradually extend to the corners of the mouth and round the chin. The crusts or scabs resemble dried honey in appearance. When they fall off, the skin appears red and shining, and is sometimes deprived of the cuticle or scarf-skin. When the disease is not prolonged by successive eruptions, the crusts generally dry up, and after remaining two or three weeks fall off, and the skin gradually resumes its natural appearance.

This affection is often very difficult to cure in old people, more especially when it appears on the lower extremities; but it is never attended with danger.

Treatment.—In the commencement of this disorder frequent gentle doses of *Epsom salts*, or *sulphur* and *cream of tartar* are to be taken, and during all its stages the diet should be sparing and confined to farinaceous substances and milk, with a small quantity of animal food once a day. Wine, spirits, and every thing stimulating, should be entirely abandoned. It may be necessary after some time to resort to the *carbonate of soda* or of *potash*, with *sulphur* as prescribed for dry tetter.

The best local treatment consists in dusting the parts with *tutty or calamine powder*, (*oxide of zinc*,) in order to absorb the acrid matter and thereby diminish the distressing sensation of itching. The constant application of tepid water, or *decoction of poppy heads* with *marsh mallow*, will also afford great relief.

Half a drachm of *nitric acid*, dissolved in a pint of barley water, taken daily, is salutary. If this oppress the stomach, it must be discontinued for a few days, and the warm bath employed occasionally. In long continued cases, which have resisted the remedies usually employed, this treatment seldom fails in effecting a cure in the course of a month or a month and a half.

If the eruption has been preceded or is accompanied by obstructed or painful menstruation, the *preparations of iron* will be found the most efficacious remedies, (see *Menstruation*,) and this treatment will also be found serviceable when the disease occurs in scrofulous subjects ; in this last case sulphur baths should be employed.

When the eruption breaks out in infants, particularly during teething, nothing more should be done than to keep the parts as clean as possible, and administer small doses of rhubarb and magnesia occasionally.

TIC DOULOUREUX, OR NEURALGIA.

Tic Douloureux is the term usually applied to a painful affection of certain nerves of the face. It may be seated in one of the temples, at the side of the nose, under the eye, or in the gums—sometimes the pain attacks one side of the head and face, and may extend to the eye or ear. But although this affection is for the most part confined to the face, it may nevertheless attack the extremities of the body, the female breast, the liver, the womb, or any other internal organ, and has in many instances been known to follow diseases of the skin ; for example, it frequently succeeds the disorder called shingles, before described. The pain comes on in paroxysms, is of a peculiar kind, and differs from that which accompanies inflammation. The patient describes it as being lancinating, stabbing, sudden, and excruciating. In severe cases the pain is increased by the slightest touch, shaking of the room, or even by blowing upon the part, or by the least bodily exertion, and, when constant, delirium is sometimes the consequence. In some instances convulsive twitchings of the face are observed, and the tears are seen to run down the cheeks. There is perhaps no disease to which the human frame is liable, accompanied with more intense suffering than that which results from the more severe forms of tic douloureux. The attacks at first are comparatively mild, do not occur frequently, nor continue long, but when the disease is confirmed, they last for days, weeks, or even months, and may recur after very irregular intervals without the slightest warning, or any apparent cause ; and it is worthy of remark, that although the long duration, or constant return of severe pain, may render the patient's existence a wretched burden, yet it appears to have very little effect in abridging the period of life.

Tic Douloureux, whether seated in the face or in any external or internal part or organ of the body, is distinguished from inflammatory disorders, by the sudden manner in which it appears and disappears, the absence of swelling, redness, heat of the part, and, in a word, of all the symptoms which characterize inflammation, with the exception of pain.* It ought, however, to be observed, that in persons of an irritable habit of body, the violence of the pain sometimes occasions a greater or less degree of febrile excitement. Of the *causes* of this disease we *know* nothing. But often a decayed tooth or a disordered state of stomach and bowels, or general debility, may act as *exciting* causes.

Treatment.—Of late years the remedy which has been principally relied upon in the treatment of tic douloureux, is the *prepared rust of iron* in doses of from a scruple to a drachm thrice a day; but it ought to be remembered that this, or any other preparation of iron, will be more likely to do harm than good, if the patient be of a robust habit of body, and full-blooded, (plethoric.) *Fowler's solution of arsenic*, or the arsenical solution of the pharmacopœia, in doses of six to twelve drops, with the same quantity of *laudanum*, taken in a little water three times a day, has been found efficacious in many cases. *Quinine* in doses from one to five grains three times daily, is perhaps more beneficial than any other remedy, when there is a weak habit of body and general debility, or when the attacks come on at regular intervals. But these remedies except quinine, to be of service, must be continued for a considerable length of time; and during their administration it will be proper to employ counter-irritation, by means of blisters, by rubbing in croton-oil, or the tartar emetic ointment, over or near to the affected part. Many persons have been cured by taking a *blue pill* every night until the mouth became affected; and since this remedy offers some chance of success, it should be resorted to in every case where other modes of treatment have failed. In all cases constipation should be guarded against, and the state of the digestive organs strictly attended to. [When there is bad breath or other indications of a foul stomach, an emetic will sometimes entirely cure. If the stools are unnatural in color, correct them with *blue pill.*]

Cutting out portions of the affected nerves has been tried in many cases, but in general this operation is only followed by a temporary good effect.

It occasionally happens that neuralgia, after appearing at longer or shorter intervals during many years, at last wears off spontaneously; but more frequently it continues uninfluenced by any description of remedies, and harasses the patient until the termination of life. [A grain of stramonium extract given every two or four hours will often cure an attack of neuralgia, but will cease to be efficacious

* It is proper to add that *swelling* is not necessarily absent, and though usually absent it is *sometimes* present.

when it has been employed to relieve several successive attacks, and the system has become accustomed to its use.]

When other remedies have been found of no avail, most persons seek relief from the use of opium, or the salts of morphine; but though these, and other narcotic remedies, such as the extracts of belladonna, hemlock, henbane, &c., produce the effect of palliating the disease, they seldom succeed in removing it entirely. The pain is often greatly relieved for a time, by the application of a *belladonna plaster* over the part affected; and the same effect is frequently produced by rubbing in the *ointment of veratria*, which is prepared by mixing from ten to forty grains of veratria with an ounce of lard.*

TOOTH-ACHE.

Sometimes the pain may be relieved immediately, by the application of a little *kreosote*, or by a little strong nitrous acid mixed with three or four times its weight of spirit of wine, introduced into the hollow part of the tooth, by means of a hair pencil or a little lint. But when the irritation extends to the periosteum, or fibrous membrane which envelopes the tooth and lines its socket, the pain becomes permanent and exceedingly distressing. The treatment in this case consists in the employment of warm fomentations of poppy-heads, blistering behind the ear, and drawing blood from the gums. When, by these means, the inflammation is subdued, and the pain in a great measure relieved, the tooth should be extracted; or, when the pain and inflammation have entirely subsided, the cavity should be filled with gold, zinc, tinfoil, or whatever substance an experienced dentist may deem the most appropriate. But this process must not be too long neglected, nor employed while the slightest degree of pain is felt in the tooth.

A tooth much decayed and often attended with pain, should certainly be extracted. This measure should also be adopted when a fungous growth begins to spring up in the hollow part of the decayed tooth. But when a tooth decays to a certain extent, and then remains stationary, without occasioning pain, it may be serviceable for many years, and ought not, therefore, to be rashly interfered with.

Rheumatism sometimes attacks a decayed tooth, and gives rise to pain in the gums, face, and jaws. When tooth-ache results from

* I have sometimes succeeded in entirely abating the pain attendant upon this disease by administering to the patient from one to two tea-spoonsful of the ammoniated tincture of valerian, diluted in a wine-glassful of water. If the first dose has failed to soothe, the second has usually succeeded. This should follow the first after an interval of an hour or two. I have in one instance used the mesmeric *local* application with good effect. These are temporary reliefs, not cures.—ED.

this cause, blisters should be applied behind the ears, Dover's powder in doses of twelve or fifteen grains taken at bed-time, and the patient should confine himself to low diet until the inflammatory action subsides.

Tooth-ache is sometimes intermittent. For example, it may come on every night and wear off towards morning; and this sometimes occurs in teeth apparently sound, or only slightly decayed. In all such cases the tooth should not be removed until a fair trial has been given to quinine, or the arsenical solution as recommended under the head of ague.

The pain which arises from cutting the wisdom teeth (so called) may be relieved by scarifying the gums, taking cooling saline purgatives, and living abstemiously.

TURPENTINE.

Oil of turpentine is much employed for destroying worms. To expel the tape-worm it is given in the dose of an ounce and a half to two ounces; and is also used against other intestinal worms in children, in the dose of a tea-spoonful, or twice or thrice that quantity, according to the age.

An ounce of the oil of turpentine mixed with the yelks of two eggs, and a pint of thin starch, constitutes an excellent clyster (injection) in cases of flatulent colic.

Turpentine is a very useful and safe counter-irritant in all internal inflammatory diseases, after an impression has been made upon the affected organ by blood-letting. A large piece of folded flannel dipped in hot water and wrung as dry as possible, and then freely sprinkled with turpentine, should be applied with the least possible delay, over the part where the pain is most severely felt, and carefully covered with a dry cloth to prevent evaporation; this is to be kept on as long as the patient can bear it, and should be renewed as often as may be found necessary. This method of counter-irritation has an excellent effect in determining the blood to the skin, is easily managed, and affords almost immediate relief. The external use of turpentine in this manner, when employed at the very onset, or in mild cases of inflammation, frequently checks it without the assistance of bleeding.

TYPHUS-FEVER AND TYPHOID.

Various species of continued fever have been described by medical writers, such as nervous, spotted, putrid, malignant, ship, and jail-fevers; but of late years the observations of many scientific men, in this country and in Europe, have shown that nearly all these continued fevers that have been classed as distinct febrile diseases, are merely varieties of the fever of which we now propose to give a brief description, and which in its mitigated form of typhus fever, is by far the most common kind of continued fever in this country. It is also generally admitted, that the numerous forms under which typhus-fever appears, are owing chiefly to inflammatory affections of the brain, lungs, bowels, or other organs with which it frequently becomes complicated ; thus giving rise to many symptoms not manifested in the simple or regular course of the disease. Patient investigation has also convinced nearly all the medical men who have taken the trouble to inquire into the subject, that typhus-fever, in the great majority of cases, is distinguished from all other febrile diseases by a specific eruption on the skin, and moreover that, as a general rule, it only attacks the same individual once in the course of his life—thus obeying the law which governs small-pox, scarlatina, and other eruptive fevers.

Typhus-fever sometimes commences abruptly ; at other times it is preceded, during several days, by certain symptoms which are called precursory or premonitory. The patient feels low-spirited, debilitated, and fatigued ; he becomes dull, morose, and complains of a sensation of constriction and oppression at the chest, and of soreness or lassitude of the back and limbs. The countenance is unusually pale and sallow, the eyes lose their natural brilliancy and appear languid, the breath is cold or fetid, and the appetite is lost. These symptoms vary in severity. They may be so slight that the patient does not confine himself to his room, and in some instances they escape particular attention. Observation has shown that usually, the quicker and shorter this premonitory stage is, the more severe and rapid will be the subsequent fever.

First stage.—The fever begins with a sensation of cold at the loins, followed by shiverings alternating with flushes of heat, considerable depression of strength and spirits, restlessness, and general uneasiness. At the expiration of a few hours, fever in its more literal sense is manifested. The pulse is full and quick or oppressed, the head feels heavy, giddiness and headache are experienced, the face is flushed, or sometimes continues pale ; there is considerable disturbance of the intellectual faculties, and an expression of distress is seen in the countenance, which is highly characteristic of the disease. The patient complains of constant thirst, the tongue is covered with a thin whitish colored fur, there is nausea, the bowels are often in a natural state, and the urine is scanty, high colored, and hot. As the disease advances, the drowsiness increases, there is singing or buzzing in the ears, and the patient lies in a half-stupid state, and is unable to sit up in bed. When roused, he still answers questions coherently, although in a slow and unusual manner, and when he awakes or is spoken to abruptly his countenance expresses an air of astonishment. There is now oppression at the chest, the general prostration is much increased, and in many cases there is cough with expectoration. On the fourth or fifth day, often at a later period, an eruption of pink or reddish-colored measle-like spots, about the size of the head of a pin, breaks out on various parts of the body, but chiefly on the chest and abdomen; they are slightly rough to the touch, and disappear when pressed upon with the fingers, but soon re-appear when the pressure is removed. This rash usually continues from three to five days, but is occasionally so slight and indistinct, particularly in children, that it often escapes observation; and, in some instances, the fever runs through its different stages, without the skin exhibiting the slightest appearance of any kind of eruption. Bleeding from the nose sometimes occurs about this period, and much relieves the head for a time. All the symptoms are aggravated during the night, the slumbers are short, disturbed, and unrefreshing, and there may be slight wandering, or delirium. The duration of this stage is generally about a week.

Second Stage.—The surface of the body, which may have been previously moist, is now dry, and greatly increased in temperature. If the hand be pressed upon it for a minute or two, a peculiarly hot pungent sensation is communicated, which continues for some time after the hand is removed. The pulse is variable; it may be moderately quick, full, or soft, and easily compressed. In fatal cases it continues very frequent, generally above 125. Often a *deep colored* red suffuses the cheek, approaching either purple or mahogany color. The tongue, which was at first moist, now begins to get brown, dry, and shrunken; and the parched state of the throat causes some difficulty in swallowing. The desire for cold and acid drinks is still urgent. Small purple colored spots, or numerous minute white vesicles, like millet seeds, are frequently seen upon the skin about the eighth or tenth day from the occurrence of the shivering. Sometimes the fever spots exist at the same time with the specific eruption already noticed. When this occurs, they both present nearly the same color, but may, nevertheless, be easily distinguished from one another. The brain is now more under the influence of the disease, the patient lies on his back in a sort of stupor, and appears careless about every thing, although he is still aware, at times, of what is going on around him. When roused, he says that he is very well; his ideas are so confused that his answers to questions are generally incoherent, and he soon relapses into the same state of insensibility to external objects. He talks deliriously, and dreams without sleeping. This kind of delirium is almost characteristic of the disease. In some instances the delirium is noisy, and the patient requires restraint. The abdomen is painful when pressed upon, and sometimes becomes distended and tense. There is also purging to a greater or less extent, and in many instances dysentery comes on; the urine is passed with difficulty, or may even accumulate in and distend the bladder; the hands tremble, twitchings or spasmodic movements of different parts are observed, and black adhesive mucous matter covers the lips, gums, and teeth.

Third Stage.—Towards the fourteenth day, sometimes two or three days earlier, if the disease is about to terminate favorably, a gradual amendment of all the symptoms is observed. A slight degree of moisture breaks out in the skin; sometimes bleeding from the nose takes place; the tongue, gums, and nostrils become moist, while the dark colored matter with which they are covered is detached and falls off, and the patient now expectorates easily and freely. In many cases, free perspiration breaks out all over the body and limbs, and emits a peculiar odor; the urine flows abundantly; the delirium ceases; the senses recover their activity; the patient is again able to sleep; the appetite returns; the strength gradually increases; and convalescence commences about the twenty-first day. The memory often remains impaired, while the buzzing in the ears, which has been more or less troublesome throughout the disease, and the deafness, continue long after the fever has ceased.

When, on the contrary, the disease proceeds to a fatal termination, the symptoms become more alarming, and new morbid phenomena are developed. The skin is covered with a viscid fetid sweat; the urine and fœces are passed involuntarily; the expectoration is dark colored and fetid; gangrenous sores form on the parts which have been subjected to pressure; the delirium is low and muttering; and the patient picks at the bed-clothes; the dead rattle (as it is commonly called) is heard in the throat, and death takes place about the termination of the third week; frequently at an earlier period; rarely later.

The congestion, or accumulation of blood in the principal internal organs, which always occurs to a greater or less extent in the course of this disease, frequently causes inflammation. The brain is more or less affected in every case, but inflammation only occasionally occurs, and then we are often unable to determine its existence. This complication is most frequently met with in young robust individuals, and is manifested for the most part during the first stage of the disease, sometimes within twenty-four hours from its commencement, by buzzing and other noises in the ears, severe pain in the head, throbbing at the temples, delirium, convulsive movements, &c.; sometimes nausea, vomiting, purging, and pain in the bowels are the predominant symptoms. The danger is then not so great as in the preceding case. In other instances, pain in the chest, bloody expectoration, cough, and difficulty in breathing, indicate inflammation of the lungs, or inflammation of the liver may be announced by an acute pain of the right side, a jaundiced appearance of the skin, &c. These affections greatly increase the danger, and they are the more to be dreaded because the extreme drowsiness and oppression of the brain, often prevent the patient from directing the attention of the practitioner to the affected organ, and often conceal their existence from ordinary observers.

Typhus-fever frequently appears under a *very mild form*, (*typhoid*,) which is in no way dangerous when not improperly treated. Griping in the bowels, aching pains in the limbs, and headache, with disturbed sleep, constitute the chief sources of complaint. The headache is generally aggravated towards night, but is seldom accompanied with much intellectual disturbance. Sometimes an air of astonishment is observed in the patient's countenance on awaking, and his ideas are slightly confused for a short time. This benign form of the disease does not occasion fear of contagion, is its most prevalent form with us, and generally lasts from twenty to forty days.

On the other hand, in severe epidemics, the contagious principle is so virulent that the vital powers soon become overwhelmed. The patient lies as if he were in a state of apoplectic stupor. Black spots soon appear in different parts of the body, dark-colored unhealthy-looking blood issues from the nostrils, the prostration increases, and the patient dies before the seventh day from the commencement of the disease.

Much diversity of opinion still exists in the medical world respecting the cause of typhus-fever. Many physicians believe that it cannot in every instance arise from intercourse with an infected person, and that it may be generated and developed by various external agents, such as filth, foul air, improper food, intoxicating liquors, &c., and afterwards become susceptible of communication from one individual to another.

The circumstances which operate in the diffusion of typhus-fever are filth and impure air, deficient nourishment, and food of bad quality, intemperance, a cold and moist state of the atmosphere, and everything of a depressing and debilitating nature.

All the excretions from a patient with the graver form of typhus, are charged with contagious *effluvia*, which become highly concentrated when cleanliness is neglected, and the ventilation is defective. Hence among the poor of larger European towns, who are congregated in dark, dirty, ill-ventilated hovels, the danger from the contagion is much greater than in the well-ventilated fever-wards of a hospital, with their iron bedsteads, clean walls and floors, &c., where the patients are carefully sponged and cleaned, their excretions immediately removed, and their sheets and linen frequently changed. It is on this account that medical men and clergymen, who visit the sick poor at their own habitations,* are more frequently attacked with typhus than those who attend fever patients in properly-regulated hospitals; for it has been well ascertained that the secretions and excretions convey infection much more readily than simple contact with the patient's skin. When ventilation is neglected, and the air is confined and quiescent, the contagious effluvium from fever patients becomes concentrated, and settles upon the clothes of the attendants or visitors; and thus the disease is carried from one house to another, and often widely disseminated. When personal cleanliness is neglected, the effluvium is also imbibed by the filth deposited upon the skin, and is afterwards taken into the system by absorption. This occurs the more readily when the weather is moist and cold, because this condition of the atmosphere favors the process of absorption, the power of which is greatest when the air is most loaded with moisture. Hence typhus is more prevalent when the weather is cold and wet, than in dry and more genial seasons; and it has also been observed that the seasons during which it has prevailed epidemically have been unusually cold, and attended with more than an average quantity of rain. On the other hand, when the weather is warm and dry, the exhalation from the skin is increased, and the perspiration is rapidly carried on, absorption is consequently diminished, because nothing is present to stimulate the absorbing function of the skin—nothing, in other words, on which the absorbents can act. Within the tropics, where the heat of the climate powerfully excites the action of the exhalent vessels, and free perspiration and evaporation are constantly kept up, typhus-fever is altogether unknown. The complete immunity from this disease enjoyed by the inhabitants of the torrid zone, is also no doubt owing to the powerful heat of the sun in those climates, dissipating or destroying the contagious effluvia, which appear to be volatile, like the emanations from putrid bodies.

But of all the agents which predispose the body to be acted upon

* This remark may perhaps apply to England. But I have, in hundreds of instances, seated myself by the bed-side of patients suffering under this disease as it appears in the United States, and have remained with them hour after hour. The effluvia from their bodies and breath has been intolerable, and I have freely employed my hands upon their skin. Yet I have never contracted the disease.—Ed.

by typhus contagion, there is none more common or possessed of greater influence than intemperance. The long-continued use of ardent spirits lowers the vital energies, weakens and emaciates the body, and prepares it for the reception of typhus contagion, or of any epidemic disorder which may happen to prevail; and thus keeps the system, as it were, constantly upon the brink of disease. Besides the injurious influence which the use of alcoholic liquors exercises directly upon the animal economy, a train of evils are indirectly induced. The family of the drunkard are deprived of sufficient food, fuel, clothing, and other necessaries and conveniencies of life; while filth, and all the concomitants of poverty, which so strongly tend to the diffusion of typhus-fever, are brought into play; and hence the disease chiefly prevails in the districts of large towns, where the greatest quantity of spirits are consumed.

Treatment.—In mild cases of typhoid-fever, convalescence is established between the fourteenth and eighteenth days from the commencement of the disease; that is to say, the patient, although still in a feeble condition, begins to relish his food, and sleeps more soundly, while his tongue is tolerably clean and his pulse natural. In ordinary cases, as we have already mentioned in describing the disease, the patient cannot be considered convalescent, until about the twenty-first day; and, in the more severe cases, the disease may be protracted to the thirtieth or fortieth day, or even later. In the treatment of typhus and typhoid-fever, our remedies are to be directed, not to cutting short, but, to controlling the fever, and relieving the local disorders which may occur during its course, until nature effects the cure. But when after frequent contact with the sick, a person finds he has head-ache, pain in the back, and general lassitude, by taking an emetic at night, or a cathartic, or both, he may be relieved of these symptoms, which otherwise might prove the precursors of the fever.

In mild cases of typhus, or in the simple forms of continued fever, above alluded to, the only remedies required are mild laxatives, such as a little *castor oil*. The daily use of purgatives interferes with the regular course of the disease, and might produce considerable irritation, or even inflammation of the bowels. Sponging the whole body and limbs daily with tepid water is very refreshing to the patient, and is attended with no risk. The drink should consist of cold water which has been boiled, toast water, or lemonade; and a little light farinaceous food, such as arrow-root, or gruel, may be allowed if the patient be inclined to eat; but soup, or any other preparation of animal food, must be entirely prohibited.

In more severe cases, if the patient be young and robust, and there be symptoms indicating a disposition to *inflammatory action of some internal organ*, it will be proper to draw blood from the arm to the extent of from ten to sixteen ounces; but in the great majority of cases, more especially if the patients be of weak constitution, or have been living intemperately, general bleeding is not only unnecessary, but would probably prove injurious, and should never be resorted to under any circumstances, unless at the commencement of the disease, that is to say, within the first three or four days. But in all cases, *local bleeding* should be employed whenever any particular organ is threatened with inflammation. [In the more malignant forms, *commencing* with excessive prostration, stupor, and the mahogany-colored cheek, not a drop of blood can be lost with safety; and if the pulse has a doughy or easily compressible feeling, brandy must be immediately administered.]

If there be increased heat or severe pain of the head, an unusually red or injected appearance of the eyes, quick sharp pulse, or other signs indicating undue determination of blood to the head; and, more particularly, if at the same time the patient be delirious, noisy, and attempts to get out of bed, local blood-letting is indispensable. Twelve or fifteen *leeches* should be applied to the temples, behind the ears, or to the nape of the neck, and the bleeding afterwards encouraged by warm fomentations. The hair should be removed, and pieces of linen rag dipped in vinegar and water, or spirits and water, are to be applied to the scalp, and frequently repeated, so as to keep the head cool. The light should be excluded, the room kept quiet, and every source of irritation carefully guarded against.

If the abdomen become distended, painful, or tender when pressed upon with the hand, or if there be purging and other symptoms of irritation of the bowels, the same or a greater number of leeches are to be applied over the part where the pain is most severely felt, and afterwards a large warm poultice is to be placed over the abdomen, to encourage the bleeding. [In every case, the abdomen should be pressed in every part, to discover if there is tenderness on pressure, and if so, especially if the patient is disposed to lie with the knees drawn up more than is natural, blood should be taken from the tender point by cups or leeches; for usually there is some degree of ulceration in the intestines which may aggravate all the symptoms.] In some cases, one or two of the leech-bites continue to bleed longer than is requisite; when this occurs, press a little cotton into the orifice with a pin, and by folded rags maintain the pressure.

If, in the early stages of the disease, the patient be harassed with a constant desire for cold drinks, and experiences pain, tenderness, or heat at the pit of the stomach, accompanied with much nausea and vomiting, no time should be lost in applying fifteen or twenty leeches over the seat of the pain. If there be cough, difficulty of breathing, a more or less livid appearance of the countenance, or pain and other symptoms of congestion or inflammation of the lungs, or of the lining membrane of the chest, (pleura,) the local abstraction of blood is indicated if the disorder be detected sufficiently early. In such cases, the application of the ear to the chest is of *great* value to the practitioner, because the patient is often unable to give the necessary information with regard to his ailments; and without this aid, pulmonary disorders might advance to a dangerous extent before they were detected, and the period allowed to escape at which our remedial means could be employed with most avail. Hence, every conscientious practitioner applies his ear to the chest each time he visits a patient laboring under typhus fever. A skilful medical attendant is obviously necessary.

If symptoms of irritation, or of inflammation of an internal organ, come on towards the termination of the third week, or at any advanced period of the disease, the difficulties attendant upon the treatment will be greatly increased. The patient is perhaps affected with low muttering delirium, he may be lying on his back in a helpless condition, his strength greatly exhausted, and occasionally uttering faint cries of distress, while his features are shrunk, his eyes sunk in their orbits, his tongue covered with a brown or black crust, dry, and chapped; and his pulse, rapid, sharp, and wiry. Under these alarming circumstances, although the debility might induce us to administer wine or other stimulants, yet remedies of this description cannot be employed without aggravating all the symptoms. We must therefore endeavor to relieve the brain by applying a few *leeches* to the temples, a large *blister* to the nape of the neck, *cold lotions* to the head, and *mustard poultices* to the feet. If the bowels be affected, and the patient frequently voids liquid, fetid, ochre-looking stools, an emollient injection should be administered, and a large blister applied over the abdomen.

[Sometimes when the patient is in this state, the administration of a grain of calomel every two hours until a copious fetid stool with a discharge of yellow or green bile is produced, will restore his consciousness and he will improve from that hour.]

During the first stage of the disease, care should be taken to empty the bowels; but this should be done with *castor oil*, or some other mild remedy; and after the eighth day, medicines of this description should be discontinued altogether, or only given in very small quantities every other day. An emollient injection, however, may be administered daily. In the second and third stages of the disease, there is some degree of intestinal irritation in every case, and this would more probably be augmented, rather than alleviated, by the use of purgatives; whereas the administration of emollient clysters, and the occasional use of very gentle doses of the finest *castor oil* or *rhubarb* and *magnesia*, cannot irritate the bowels, and will be found quite sufficient for the removal of morbid excretions. If these were allowed to remain, they would no doubt prove an additional source of irritation, and might tend to contaminate the whole frame; but the irritation which they produce in the intestinal canal, almost invariably, causes their expulsion from the body. Hence, the indication is to soothe the bowels by means of emollient injections, rather than increase the irritation already existing by the unnecessary administration of purgatives. It ought never to be forgotten that there is a greater tendency to inflammation, and consequent ulceration, of certain portions of the small intestines, than to organic disease of any other part of the body; hence we cannot too strongly deprecate the practice of keeping up a constant discharge from the bowels by means of saline purgatives, because, it must necessarily have the effect of increasing the irritation, and debilitating the patient.

Sponging the body with cold or tepid water and sprinkling the pillow and sheets is very beneficial, in all cases; it diminishes the distressing heat and dryness of the skin, is soothing and grateful to the patient, and is sometimes followed by gentle perspiration and more tranquil sleep. When the skin is hot and dry, cold water may be employed with perfect safety, and without any risk of interrupting the regular course of the rash, which usually appears on the skin; but tepid water is to be preferred if there be any degree of moisture on the skin, and at very advanced periods of the disease.

Cases frequently occur, (particularly when the patients have been accustomed to the use of alcoholic liquors,) in which, during the last stage of the disease, the supine position and prostration of strength; the quick, soft, and compressible pulse; the cool or damp skin; and cool state of the scalp, the pale and collapsed countenance, the extreme restlessness or low delirium, the starting or convulsive movements of the limbs, and other symptoms of direct debility, indicate the necessity of administering stimulants, in order to rouse the energies of the system, and thus prevent the patient from sinking. The best stimulant in such cases is pure brandy, diluted with a little water, given every two, three, or four hours, or at longer or shorter intervals, according to the effect produced. Or a pint of Sherry wine in the course of twenty-four hours will sometimes be borne beneficially. Whether wine or any other stimulant be employed, it should be gradually withdrawn as soon as the desired effects are produced.

The treatment, then, consists in drawing blood from the arm at the onset of the disease, if the patient be full-blooded or of a robust habit of body—in local bleeding, by means of leeches or cupping, whenever and wherever congestion, irritation, or inflammation renders it necessary, care being taken not to exhaust the strength of the patient by excessive depletion—in the daily administration of emollient clysters, and the occasional use of the mildest laxatives—in sponging the body with cold or tepid water, and in the free use of cold beverages.

If rawness or excoriation of the hips, haunches, or back occurs, the part may be washed with a solution of ten to fifteen grains of *nitrate of silver*, (*lunar caustic*,) in an ounce of water, or with a weak solution of the *superacetate of lead*, (*sugar of lead*,) in spirits of turpentine; and if sloughing or gangrenous ulcers form, *carrot poultices*, and the means recommended under the head of *mortification*, are to be employed. But we should endeavor to avoid these untoward occurrences by supporting the patient with pillows, so as to take off the pressure from the parts most likely to suffer; and in all tedious cases, when a tendency to excoriation is observed, the parts should be defended by soap-plaster. The India rubber water bed and the India rubber air pillows, are the best means of guarding against the effects of pressure.

It sometimes happens, in the course of typhus-fever, that the bladder becomes distended and incapable of discharging its contents. The state of this organ should therefore be carefully attended to; and if fulness or swelling be observed at the lower part of the belly, the urine must be drawn off with the catheter.

Ventilation of the sick chamber is always of primary importance, and is more particularly demanded in all contagious febrile diseases. But great care must nevertheless be taken to screen the patient from *currents* of air, and to regulate the temperature according to the stage of the disease and the state of the patient. As long as the surface of the body continues hot and dry the room should be kept cool, and the bed-clothes light; but towards the termination of the fever, or when the temperature of the body is considerably reduced, additional covering must be employed. The bed-pan for evacuations should be used, on the necesary occasions, and the patient disturbed as little as possible; and should the evacuations be passed involuntarily, the bed should be protected by placing a piece of oiled silk, or glazed cloth, under the patient. The gums should be carefully washed, the linen and bed-clothes frequently changed; and the necessity for the utmost attention to cleanliness in the patient's person, and to every thing around him, must be obvious to every one.

During *convalescence* the patient should wear flannel next the skin, and avoid sudden alternations of atmospheric temperature. He must carefully abstain from premature mental or bodily exertion, and the return to his ordinary occupations ought to be *gradual and cautious.*

Diet and regimen.—During the first or inflammatory stage of the disease, no kind of nourishment should be allowed beyond newly prepared whey or barley-water; but when the excitement subsides, small quantities of very light food should be given, such as thin arrow-root, gruel, tapioca, and vegetable jellies. When wine is considered necessary, it will also be advisable to keep up the patient's strength with beef-tea, chicken or mutton broth, &c.

It may be inferred, from what has been stated in a previous part of this article, that the best means of diminishing the power of contagion, in this and other eruptive fevers, are cleanliness and proper ventilation. The attendants should avoid standing in a current of air which has passed over the patient; or, in other words, should stand between the patient and the channel through which the air enters the apartment; they should also avoid inhaling his breath, or leaning over him. [And should avoid entering the sick apartment in the morning with an empty stomach.] It will likewise be advisable to purify the room from time to time, by placing flat dishes, containing the *chloride of lime* mixed with water, on different parts of the floor.

The late Dr. Henry, of Manchester, discovered that clothes, impregnated with the contagious effluvia from the bodies of patients with typhus, scarlatina, &c., are disinfected by exposing them to a temperature of 204° F., for an hour and three-quarters, and may afterwards be worn with perfect safety by healthy persons.

ULCERS.

Ulcers, whether proceeding from local or constitutional causes, are classed by surgeons under different heads, according to their appearances and the symptoms with which they are accompanied. The species of ulcers usually described are—the healthy, the indolent, the irritable, and the sloughing, or phagadenic.

The *Simple or Healthy Ulcer*, is covered with small fleshy projections, which are of a red color, firm, and pointed. These granular eminences are closely connected, forming an equal surface, and are bedewed with cream-colored matter (*pus.*) This form of ulcer is not painful, but is attended with a peculiar sensation of itching; its edges are smooth, soft, and though slightly florid, do not present the fiery-looking appearance of an inflamed part. Now, when an ulcer, whether proceeding from a wound, a burn, an abscess, or, in a word, from any other cause, either local or constitutional, exhibits these appearances, we know that the process which nature sets up for the restoration of the part is going on favorably, and needs no assistance from art. In fact, no means possessed of the direct power of promoting a cure are known; hence, all that remains for us to do is to preserve the natural process from interruption, by defending the part from injury.

In ordinary cases, it will be sufficient to dress the sore with dry lint, or old linen, once in twenty-four hours, when it should be carefully washed with milk-warm water. If part of the dressing adhere to the edges of the ulcer, it should be carefully removed, so as not to produce irritation, or injure the numerous red points already noticed, called *granulations.* The necessity of protecting these little bodies from mechanical injury is obvious, because they secrete the matter which flows from the ulcerated surface, and without which the healing process could not be carried on; while at the same time they gradually fill up the cavity of the sore, until its surface reach the level of the surrounding skin—thus constituting the means adopted by nature for the completion of the cure. Many surgeons smear the lint, or whatever covering is employed, with a little *Turner's cerate*, *sugar of lead ointment*, or some other mild unctuous substance; this, however, is not done with the intention of expediting the cure, but merely to prevent the lint from adhering, and the edges of the ulcer from being injured on its removal. The dressing must be kept on by a roller wound round the limb, from its extremity to some distance above the sore. This is not to be applied so tightly as to produce pain, but with sufficient firmness to retain its own place and that of the lint, or whatever dressing may be employed.

When a wound cannot be healed by the adhesive process, or by what surgeons call the first intention, and when it is found necessary to open an abcess, we should apply warm poultices to the part, in order to promote the growth of granulations, until these have sprung up to a level with the surrounding skin. The poultices are then to be discontinued, and lint applied as above directed.

Sometimes the granulations become too luxuriant, and spring up higher than the edges of the sore, forming what is called *proud-flesh*, which may cover the whole or only part of the ulcer. When this occurs, we must touch the fungous part daily with *blue vitriol*, (*sulphate of copper*,) or *lunar caustic*, until it be brought down to the proper level; or we may apply pressure, by means of strips of adhesive plaster and suitable bandages. In some instances, the ordinary means of keeping down proud-flesh do not succeed; we then have recourse to the application of a piece of sheet lead over the sore. When this measure is deemed necessary, a pledget of lint, covered with simple ointment, should be interposed between the lead and the ulcer, and a long roller or laced stocking, applied so as to embrace the whole limb, and thus keep the lead from shifting its position.

The *Indolent Ulcer* is characterized by a smooth surface, without granulations, of various colors. Sometimes it is glossy, or semi-transparent, or covered with a layer of viscid mucous; its edges are hard, white, and sometimes turned outwards, while the surrounding skin presents a varnished appearance, looks polished, like a pebble, or exhibits a rough and scaly aspect. The limb, on which this description of ulcer is seated, is always more or less swollen, and the matter discharged is a thin serous-looking fluid, or is tenacious and fetid.

Some people submit to all the inconvenience and discomfort of an indolent ulcer for years, being afraid to dry it up through a dread of injuring the system, and inducing some inveterate or acute disease, by suppressing a long-continued discharge. These ulcers, however, may be healed with perfect propriety, provided proper treatment be adopted, and the patient adheres to a sufficiently rigorous diet, until the system accommodates itself to the change, and the state of the general habit is corrected.

The mode of treatment now generally preferred is that by pressure with adhesive straps, which is not only very efficacious, but possesses the advantage of being simple and easily managed. It is performed in the following manner. The limb having been shaved, a slip of adhesive plaster, about an inch and a half in breadth, is to be applied completely round the limb, about two inches below the ulcer; and, in order to fix the strap firmly, one end of it should be made to overlap the other; then a second strap is to be applied a little higher, so as to cover two thirds of the first; then a third in the same manner, proceeding upwards until the ulcer is entirely covered, and an inch or two of the skin above it. Having completed this part of the process, a long cotton roller, three inches broad, is then to be wound round the limb, from the toes to the joint immediately above the sore, or a laced stocking may be employed in place of the roller. The ulcer should be dressed once in thirty-five or forty-eight hours; and if the patient complain of severe itching and heat at the part, the bandage must be freely moistened with cold water. The straps and roller should not at first be applied very tight, or in such a manner as to produce pain; but after they have been used several times, the patient will, without inconvenience, bear to have the pressure considerably increased. This method of treatment soon produces the effect of subduing the swelling of the limb, and reducing the callous edges of the ulcer; granulations begin to spring up, and discharge cream colored matter; the part assumes a healthy action, and presents the appearance of the simple ulcer, above described, and the cure is soon completed.

Although the most obstinate cases of indolent ulcer are often remedied by the above plan of treatment, yet it is not to be expected that this or any other method shall be invariably successful; we are therefore occasionally under the necessity of having recourse to other remedies. Various stimulants are employed to excite the growth of granulations, and induce a healthy action of the part. *Mild citrine* ointment, spread on lint or on soft linen rag, or salve composed of an ounce of *basilicon* mixed with a drachm of the *red precipitate of mercury*, are useful dressings; but they must be used stronger or weaker, according to the effect produced. If the patient complain of smarting or pain, the strength of the ointment should be diminished by the addition of a little lard. The best plan, however, is not to persist in the use of any particular ointment or lotion, but to vary the dressing as soon as we observe that the ulcer begins to fall back into the same indolent state, or remains stationary. Whatever application is employed, the use of the roller should never be neglected, because there is no fact in surgery better ascertained than the efficacy of pressure in cases of indolent ulcer.

Irritable Ulcers vary considerably in appearance in different cases. In general, the surface of the sore at the commencement, presents a very unequal aspect; the granulations at some parts are seen shooting up too high, in others they are scarcely perceptible. There is much pain and tenderness of the part, and redness of the adjacent skin; the discharge consists of bloody matter, which Sir Astley Cooper compares to strawberry-cream in appearance. If the irritation be allowed to continue, the granulating action is gradually destroyed; the surface of the sore acquires a smooth buff-colored appearance, the matter discharged is thin, and the part becomes exceedingly tender, and is very painful when touched. Sometimes this species of sore is level with the surface of the limb; at other times it is deep like a cup, with thin sharp edges, and continues to spread as long as the excess of action exists. Weak, irritable individuals, more especially those whose constitutions have been injured by intemperance, are most liable to this kind of ulcer; it also occurs in full-fed plethoric persons.

In the treatment of irritable ulcers, we must avoid every thing which can keep up the excitement and employ remedies of a soothing tendency. Of these, the best, if the excitement be merely local, are *fomentations of the decoction of poppy-heads*, and warm bread and milk poultices. The following ointment is strongly recommended by Sir A. Cooper.

> Spermaceti ointment, and
> Citrine ointment, of each half an ounce,
> Opium in powder, a drachm. Mix.

To be spread on lint, and applied to the part twice a day.

When an ulcer is of an indolent character, moderate exercise on foot may be allowed, and is even serviceable in many cases; here, on the contrary, motion would certainly have the effect of increasing the irritation, and absolute rest must therefore be strictly enforced.

The *Sloughing, or Phagedenic Ulcer*.—The irritable ulcer without granulations is very liable to become affected with inflammation of a low character, which soon terminates in sloughing or mortification.

The sloughing ulcer generally arises from constitutional causes, such as great irritability of the system brought on by drinking spirits, by the abuse of mercury, or by the deleterious influence of an unwholesome atmosphere. The inflammation produced by the local application of certain morbid poisons may likewise end rapidly in sloughing ulceration.

During the inflammatory stage, which invariably precedes the sloughing, the soothing applications above mentioned, are to be employed; in some instances it will be advisable to apply *leeches* round the part, and general bleeding may be employed, if the patient be of a robust habit of body. When the sloughing has commenced, *carrot poultices* should be had recourse to, or a lotion, composed of fifty drops of *nitric acid* to a quart of water, may be constantly used, the strength being increased or diminished according to the patient's sensations. This application has an excellent effect in promoting the growth of healthy granulations. Oiled silk should be applied over the ulcer, until the slough be detached, in order to prevent the disagreeable smell which would otherwise arise from the mortifying parts. The state of the constitution must be carefully attended to. In most cases the administration of *opium*, as already recommended, is found necessary.

URINE, INCONTINENCE OF.

When a person is unable to retain his urine, and it constantly passes off involuntarily, he is said to be affected with incontinence of urine.

Inability to retain the urine is a symptom of various disordered conditions of the urinary organs. In people advanced in life, it is frequently associated with retention of urine. The bladder is constantly full, and every movement of the body causes the urine to escape; in this manner it passes involuntarily, as quickly as it is secreted by the kidneys. (See *Urine, Retention of.*)

Incontinence of urine is often connected with a weakened or paralyzed state of the lower limbs, which, in many cases, is caused by injuries done to the spine, or by some disorder of the spinal marrow. Sometimes, again, the paralytic condition of the inferior extremities, to which the incontinence of urine is obviously subordinate, comes on gradually, without any known cause. In such cases, the bladder does not appear to be distended; but its sphincter muscle offers no resistance to the escape of the urine, which dribbles constantly from the parts, to the great discomfort of the patient. The treatment generally relied on, in this form of the disorder, consists in cold bathing, more especially the daily application of the cold douche * to the lower parts of the body—the application of *blisters* to the lower part of the back, (*sacrum*)—the internal use of the *tincture of cantharides*, in doses of ten drops, three times a day, in half a tea-cupful of gum-water or linseed tea—and tonic remedies, such as *quinine* or the *prepared rust of iron.* In some cases, the introduction of the *catheter* has been found serviceable.

Children are particularly liable to incontinence of urine. In general, they are troubled with it only when asleep; but in many cases, the calls to void the urine during the day are more frequent than in health; and the child, if spoken to sharply, or alarmed from any cause, makes water involuntarily. Many medical men have recommended corporal punishment, as the best remedy in such cases. Who ever heard of any young person having been cured of this infirmity by such treatment? Children are keenly alive to the disgrace which is attached to it; and if it were possible, would gladly give up a practice which exposes them to the taunts and scoffing of their companions. This nocturnal incontinence of urine sometimes resists every kind of treatment; but it usually gets well of itself, as the child grows up and acquires strength. Much benefit may be derived from tonic remedies; of these, perhaps, the most eligible is the *tincture of steel*, which should be given in doses of five drops, three times a day, in a wine-glassful of the infusion of gentian, or decoction of whortleberry, and continued daily for several weeks, or months, according to the circumstances. A succession of blisters to the sacrum, or lower part of the back, have been often successfully employed. Bathing the lower part of the abdomen and genital

* A stream of water applied with force to any part of the body.—Ed.

organs, night and morning, with cold water, has often an excellent effect. The state of the stomach and bowels should be carefully attended to. Watery diet should be avoided, and tea prohibited in the afternoon. Eating shortly before going to bed is improper. Contrivances, which mechanically prevent the discharge of urine, often do serious mischief, and are never followed by any permanent benefit. In all cases of this disease in the male sex, a small bag of oiled-silk, or India-rubber cloth, (Macintosh,) appended to the parts, will be found very serviceable as far as regards cleanliness; and a piece of the same description of cloth, about a yard square, placed under the hips at night, is also conducive to cleanliness and comfort.

URINE, RETENTION OF.

Retention of the urine, or strangury, as it is commonly called, is either *complete* or *incomplete*. In the former case, no urine can be passed, or only a few drops are voided with great straining, and at intervals, without affording any relief to the patient, whose state soon becomes one of the most distressing to which man is liable. In the latter case, the symptoms are not so urgent, and the patient passes, occasionally, a considerable quantity of urine, without the pain or distention at the lower part of the belly, being much, or in any degree, relieved, or the restlessness and symptoms of general excitement abated.

Retention of urine sometimes occurs in persons who have been prevented from making water by delicacy, indolence, or other causes, until the bladder, from over-distension, has become so weakened that it loses its contractile power, and is unable to empty itself. In this case, the feet ought to be placed in water as hot as it can be borne, and warm fomentations should be applied over the lower part of the belly, or the penis may be immersed in a basin of warm water; by these means, continued for some time, and the application of gentle pressure over the bladder, the patient will occasionally succeed in voiding his urine. The disorder, when depending on this cause, may be relieved by other methods of treatment; but in general it is found necessary to draw off the urine by means of a *catheter*. In many instances, this instrument must be employed twice or thrice daily, or even more frequently, for several days, or even weeks, until the muscular structure of the bladder recovers its tone. A simple and excellent method of restoring the tone of the bladder is to pour cold water on the lower part of the belly from a height, by means of a jug or tea-kettle. This should be done night and morning until the catheter is no longer required. Retention of the urine, from a weakened or paralyzed state of the bladder, may also arise from certain affections of the brain, or from injuries done to the spine by blows or otherwise. In the latter case, some degree of insensibility and weakness of the lower limbs is generally present. This form of the disorder is often symptomatic of particular diseases. It occurs sometimes in the course of fevers, painters' colic, dysentery, &c. In all such cases, the state of the bladder should be carefully attended to, and the catheter employed at least three or four times in the course of twenty-four hours, until the patient recovers from the disease on which the retention depends.

Strangury sometimes arises from the internal administration of Spanish flies, (cantharides,) or their external application in the form of blisters. In this case, there is a sensation of fulness and weight at the region of the bladder, attended with frequent inclination to make water, smarting, heat, and difficulty in voiding it. These symptoms are soon relieved by drinking freely of linseed-tea, barley-water, decoction of marshmallow, or gum-water with nitre, as directed at page 281. In severe cases, it will also be advisable to take forty or fifty drops of the *tincture of henbane*, in two ounces of camphor mixture, every four or six hours. These remedies are also very serviceable in relieving the strangury which attends gonorrhœa. In this last case, much relief may also be derived from the immersion of the penis in warm water.

In retention of urine, from spasm at the neck of the bladder, the *tincture of steel* is a remedy which occasionally proves very beneficial. It may be given in doses of ten drops, in a little water, every ten minutes. After six or eight doses have been taken, the urine sometimes flows freely. Spasmodic stricture has been frequently relieved and a copious flow of urine procured, by dashing cold water on the lower part of the belly and thighs, when all other remedies had been tried in vain. This method of treatment was highly extolled by Sir John Floyer, of Litchfield, and Dr. Baynard, nearly a century and a half ago.

Dr. Baynard says, "Of the power of *cold* water, in a suppression of urine caused from too long retention, I have many instances." One of which is the following. "A gentleman, at a long tryal at the *bar*, in a title of law where his all was at stake, held his *water* so long that when the tryal was over he went to make water, but could not, the *fibres* of the bladder being so much and so long extended that they could not contract. The gentleman lay all night in extreme pain, and yet with a great desire to urine, but could not. The next morning he took several diuretick *drops*, as *sweet spirits of nitre*, &c., in white wine, &c., but to no purpose. I hearing of this by chance, bid his friend strip him *naked*, and wrap him round the waist and belly with a wet *towel*, which as soon as done he made water immediately, but was for some time afterward troubled with the *strangury*. And I have heard some of our *judges* complain that by holding their *water* in tedious and long causes, that they have found much injury by the long retention of their urine, &c."

In extreme cases of retention of urine, when all other means have failed, it is the duty of the surgeon to withdraw the urine by puncturing the bladder, in order to prevent a fatal termination.

Persons subject to this disease should live abstemiously, and carefully guard against exposure to cold, sudden vicissitudes of temperature, wet feet, and every kind of severe bodily exercise; and, of all things, they should never neglect to attend instantly to a call to make water.

VACCINATION.

The improved method of treating small pox by the free admission of fresh air into the patient's room, the avoiding of every thing heating or stimulating, the use of cooling drinks, conjoined with other appropriate remedies, and the introduction of inoculation into England, by Lady Mary Wortley Montague, in the year 1721, had greatly diminished the mortality from that loathsome and dangerous disease; but it was not until 1798 that the illustrious Jenner announced the fact, that the human system could be effectually and permanently secured from its influence by vaccination. In the course of two or three years from the time that this benefactor of his race began to promulgate his invaluable discovery—the most important recorded in the annals of medicine—the practice of vaccination had almost superseded inoculation throughout the kingdom, and is now known in the most remote countries in every quarter of the globe.

A tradition, which had long existed among the peasantry in different parts of England, led Dr. Jenner to observe, that, in the dairies of Gloucestershire, the cows were subject to an eruption on their teats and udders which was sometimes communicated to the hands of the persons engaged in milking them, and was attended in most instances by a slight degree of fever. He also observed, that those who had undergone this disease, known under the name of cow pox, were never afterwards liable to small pox, either by inoculation or by exposure to the most active contagion. After carefully investigating the causes and effects of cow pox, during a period of upwards of twenty years, he satisfied himself of the correctness of the fact, that vaccination produced such a change in the constitution as effectually to preserve it from the influence of the contagion of small pox. He also maintained, that both these diseases are essentially the same; and this has since been confirmed, both in England and in Germany, by experiments, which have clearly proved that the cow receives the small pox by inoculation, and changes it into vaccine. This, if again introduced into the human body, produces the true cow pox. He also established the identity of the cow pox with the disorder called the *grease* in horses. It has since been ascertained that cow pox may be communicated to man from the horse, without the agency of the cow; and it is now generally understood, contrary to the opinion entertained by Jenner, that the disease may originate in the cow without access to horses.

Children, if healthy, and their skin perfectly free from every kind of eruption, should be vaccinated before the process of teething commences. The most suitable age for the operation is about the fourth or fifth month after birth. The vaccine matter, or lymph, as it is commonly called, should be taken from the pock, or vesicle, between the fifth and eighth days; and, if circumstances admit, should be inserted in a recent state. It ought to be perfectly limpid and transparent. The operation is very simple. The operator having grasped the child's arm with a sufficient degree of firmness to keep the skin tight, should make two small oblique punctures, by means of a clean sharp lancet, charged with lymph. [The puncture should be made merely below the scarf-skin, so as to place the matter on the surface of the true skin, from which absorption rapidly takes place. No blood should be drawn. A single *full* drop of blood is apt to dilute and wash away the matter inserted. A *particle* of blood usually follows the puncture, showing that it has reached the true skin, and does not interfere with the success of the operation.] It will also be proper to charge the point of the lancet a second time with lymph, and wipe it upon the wounds. This precaution is particularly necessary, if the skin be unusually tough or the lancet blunt; circumstances, which in the first instance, may have prevented the matter from entering the wounds.

The effects of vaccination are thus accurately described by Mr. Bryce:—"About the third day after the insertion of the virus of cow pox, either by puncture, or by slight incision in the arm, a small inflamed spot may be observed in the part where the inoculation was performed. Next day, this spot appears still more florid, especially if the person be warm; and by passing the point of the finger over it, a degree of hardness and swelling in the part is readily perceived. On the fifth day, a small pale vesicle occupies the spot where the inflammation was, and the affection begins to assume the characteristic appearance of cow pox. In place of inflammation, extending round the base of the vesicle, at this period, as is common in small pox and most other pustular diseases, the whole has a milky-white appearance. The vesicle is now turgid, but evidently depressed in the centre, while the edges are considerably elevated. For the next two days, the vesicle increases in size, and retains the same character; so that by the seventh it has acquired very considerable magnitude, and is of a circular form, if the inoculation was performed by a puncture, or of an oblong form if done by an incision; but in both cases the margin is regular and well defined; while the centre, becoming still more depressed, and a small crust forming there, and the edges becoming more turgid, give the whole a very particular appearance and character, which, in my opinion, may readily serve to distinguish this affection from every other.

"About the eighth day from the time of inoculation, the glands in the arm-pit become a little swelled, occasioning pain and stiffness on moving the arm. Head-ache, shiverings, a frequent pulse, and other febrile symptoms take place; and these have been observed to continue, from a few hours to two or more days. These symptoms, however, are in general so slight and transient, as to require no aid from medicine."

The dark-colored scab becomes gradually detached, and drops off about the twenty-first day, after the insertion of the lymph, leaving an indelible scar, which is of a circular shape, depressed, and indented with several small pits, corresponding to the number of cells, of which the vesicle had been formed.

Sometimes, in consequence of a bad habit of body, certain conditions of the atmosphere, the use of impure lymph, or other causes with which we are unacquainted, vaccination is rendered imperfect, and does not run through the regular course above described. In such cases, the part appears to fester, and is affected with a very troublesome itching. The pock, on the fifth day, is filled with opaque, straw colored matter, which has no resemblance to the clear limpid fluid contained in the true cow pox vesicle. The scab which afterwards covers the part is of a yellow color, and falls off on the tenth or twelfth day, sometimes earlier. The above are the usual appearances which result from imperfect vaccination; but severe inflammation, ulceration, the formation of scales and other phenomena may be manifested; all of which may be easily distinguished from the uniform signs of cow pox. When any of these irregular appearances occur, it is advisable to allow the parts to be perfectly healed, before re-vaccinating the child.

A popular notion is at present very prevalent, that the protective power of vaccination becomes gradually exhausted in the course of certain periods—seven or fourteen years; and parents often ask medical men, whether it is necessary to have their children re-vaccinated. No reasonable objection can be urged against this practice. The operation is attended with very little pain, and can be followed by no disagreeable consequences; in fact, it will produce no other effect than a slight degree of redness, and perhaps festering, if the vaccination in the first instance, has run through its regular course. But on the other hand, if the first vaccine process has been incomplete, the second introduction of the lymph into the system will produce vesicles, and the true cow pox, as above described. The second operation, then, will serve at least as a test of the validity of the first; and beyond this it does not appear to us to answer any useful purpose.

VARICOSE VEINS.

A varicose vein is generally of a blue color, sometimes of a brownish hue, is considerably increased in size, appears knotted, irregular, and winds in a serpentine manner beneath the skin. Sometimes several veins enlarge in this manner within a small space, and appear coiled up, or as it were, interlaced with each other, so as to form an irregular dark blue colored tumor under the skin. In other cases, the enlargement or dilatation is partial; and round, circumscribed, elastic swellings, or knots, appear at irregular distances along the course of a vein. Varicose veins increase in size, when the individual is engaged in any active exercise, or continues long on his feet; whereas, on the other hand, repose, the horizontal position, and pressure, cause them to diminish, or disappear altogether.

All veins are not equally liable to this disease; those which are deeply seated in the limbs, or in the internal parts of the body, very seldom become varicose; this morbid alteration of structure is, on the contrary, very common in the veins situated immediately under the skin. The superficial veins of the legs and thighs are most subject to this disorder. Those on the fore-part of the abdomen, and about the *scrotum*, are not unfrequently affected; but it seldom attacks the veins of the arms. When the veins about the lower part of the rectum and anus become varicose, the disease is then called piles.

At the commencement of the disorder, one or more veins, commonly one of the lower extremities, sometimes of both, are observed to be larger than natural, but not attended with pain or any inconvenience. The dilatation and change of structure of the vessels advance very slowly. A year or two, or even a much longer period, may elapse before the patient is induced to pay particular attention to the disease. At length he observes, after walking or remaining long on his feet, that the veins become considerably distended, while the skin over them feels hotter than natural. Resting in the recumbent position soon removes these symptoms, but they are readily brought on again by the same causes. The veins being frequently distended in this manner, at last become permanently dilated, acquire a tortuous appearance, and roll under the skin. As the disease advances, the patient, after any active exercise, experiences a painful sensation of tension in the dilated veins, accompanied with numbness, swelling, and perhaps shooting pains in the limb, which may render him for a time incapable of walking. These symptoms are always aggravated towards night, and again diminished in the morning.

Nature alone sometimes subdues and expels this disease. In other cases again, it continues to get worse, and occasions disorders of the limb, of the most serious nature. But in the majority of cases it remains almost stationary ; and, although it may give rise to considerable pain at times, is rather to be considered as an inconvenient and troublesome affection than important or dangerous.

The accidents to which this disorder may give rise, are loss of blood from perforation or rupture of the veins ; the formation of painful ulcers over the affected parts ; and sometimes inflammation of the veins.

Treatment.—We know very little of the nature and causes of varicose veins, and are equally ignorant of any effectual method of curing them ; but it has, nevertheless, been proved by experience, that we have it greatly in our power to retard the progress of this affection ; to alleviate the pain, and to reduce the swelling by a properly-regulated and permanent compression. For this purpose a laced stocking is generally employed ; and this, with rest in the horizontal position, are the grand means of palliating the disorder.

When the veins or the adjacent parts become inflamed, and painful, *leeches* should be employed, and *vinegar and water*, *Goulard water*, or any other cold lotion, ought to be constantly applied to the parts. Sometimes cold applications do no good ; in such cases, bathing the part with a warm *decoction of poppy-heads*, or warm water with laudanum, will be found serviceable, and more agreeable to the feelings of the patient. The bowels should be freely opened, by means of *calomel* and *jalap*, followed by *Seidlitz powders*, *Epsom salts*, or any other cooling saline purgatives. Low diet and quietude in the recumbent position, are to be strictly enjoined, until the inflammation be entirely subdued.

The varicose veins of pregnant women disappear after delivery—the treatment consists in the local means above mentioned, and attention to position.

The application of a ligature round the diseased veins, burning them with caustic, and similar modes of treatment, have been successfully employed in many cases; but *none of them are free from danger*, and should never be employed unless in extreme cases.

Varicose ulcers are generally situated at the inside of the leg, they are for the most part superficial, and of an oval form. The varicose veins, from which they proceed, prevent them from healing like other sores; indeed they are not only difficult to cure, but very liable to break out again.

The local application usually employed to cure this kind of ulcer, is the *black wash*, which is composed of a drachm of calomel mixed with a pound of lime water. A piece of lint wetted with this compound is to be placed over the ulcer, then a covering of oiled-silk, and over these the laced stocking is to be applied. The recumbent posture is indispensable. The patient being unable to take exercise while under the above treatment, should therefore live very abstemiously. In obstinate cases, particularly if there be an itching tetter round the ulcer, it will be proper to take one of *Plummer's pills* every second night, for a fortnight or three weeks, or, if necessary, until the mouth become slightly affected.

VOMITING OF BLOOD.

Vomiting of blood sometimes takes place in consequence of a blow on the stomach, from riding a rough-trotting horse, from strong mental excitement, or other accidental causes; but, in general, it arises from disorders of internal organs.

In malignant diseases of a putrid character, where the blood itself is diseased, as in small-pox, and malignant or putrid fevers, in which dark-colored spots appear in the skin, vomiting of blood is a symptom which indicates extreme danger, and is generally to be considered as the forerunner of death.

In warm climates, vomiting of blood not unfrequently occurs from an obstruction in the liver, or enlargement of the spleen. It sometimes proceeds from constipation of the bowels, or may be caused by a simple or a cancerous ulcer in the stomach; it occasionally arises in young unmarried women, in consequence of suppression or diminution of the menstrual discharge, and in the latter case is more alarming in appearance than really dangerous. The danger principally proceeds from the source in which the hemorrhage originates.

It is of importance, in every case, to ascertain whether the blood is discharged from the stomach or from the lungs. In the *former* case, the vomiting is usually preceded by a sensation of weight, anxiety, and sometimes pain at the pit of the stomach; is not accompanied by cough, or any uneasiness about the chest; the blood is usually in considerable quantity, of a dark color, not frothy, and mixed in most cases with portions of food. When the discharge proceeds *from the lungs*, the blood is generally in smaller quantity, of a brighter red color, frothy, and not mixed with the contents of the stomach; a feeling of heat or other symptoms of uneasiness are felt at the chest; and the patient, in most cases, has been previously affected with cough, or has shown other symptoms of a disordered state of the lungs. Hemorrhage from the lungs is always a more formidable symptom than when it proceeds from the stomach, inasmuch, as in the former case, it is generally a symptom of pulmonary consumption.

Treatment.—In the great majority of cases, vomiting of blood from the stomach is merely symptomatic, and not a disease in itself; our remedies are therefore to be directed to remove the disorder on which it depends. If it arise from derangement of the menstrual function, the reader will find the necessary instructions in their proper place. If it proceed from constipation of the bowels, the treatment will be found under that head. In warm climates enlargement of the spleen sometimes takes place suddenly from congestion of blood, and gives rise to hemorrhage from the stomach. In such cases we have invariably found the *prepared rust of iron*, or some other preparation of that metal, continued for two or three weeks, remove the cause of the hemorrhage, and thus prevent its recurrence.

In order to stop the hemorrhage it is sometimes necessary, in robust individuals, to draw blood from the arm, or apply leeches over the stomach; under opposite circumstances the abstraction of blood would, of course, be improper. In every case, it is advisable to give the patient cold drink—spring water—*iced water*, if it can be procured—or an *infusion of tamarinds*. Bodily and mental quietude are absolutely necessary; and the diet, for some time, should be of the very lightest quality, and in small quantities. The *oil of turpentine*, in doses of twenty to thirty drops, in cold water, every four or six hours, has been employed successfully, to arrest the vomiting. It will be necessary to give brandy, in small quantities, at short intervals, if the patient be much exhausted.

WARTS.

The excrescences from the skin, called warts, may appear on any part of the body; but they occur most frequently on the hands.

Warts have sometimes narrow necks, more frequently broad bases; they may be quite superficial, or attached to the parts beneath by roots; their surface is smooth, or rough and fissured; and they are not in general painful, unless when bruised or otherwise injured. The popular opinion that warts may be propagated by the blood, which they sometimes discharge when rubbed or roughly touched, is incorrect; but, it appears probable that the matter secreted by soft warts, is capable of producing a similar affection in other persons.

Treatment.—Warts frequently disappear without treatment, but in many cases they increase in size, become troublesome, and require to be removed. Soft warts may be readily destroyed by applying the *tincture of steel* to their surface, or by anointing them daily with *mercurial ointment.* The best method of removing hard warts, is to cut them off with a knife or scissors, and then apply caustic to destroy their roots. These excrescences may be destroyed by touching them repeatedly with *lunar caustic*, *blue vitriol*, or *nitric acid;* or they may be effectually removed by the application of the *chloride of zinc.* A wart with a narrow neck may be easily destroyed by fastening round it a silk thread or a horse-hair. After it drops off, the root should be touched with caustic, to prevent it from growing again. The best application for destroying warts about the anus or genital organs, is a powder composed of equal parts of the powder of *savine-leaves* and *verdigris.*

[Pass a pin through the wart. Apply one end of the pin to the flame of a lamp; hold it there until the wart *fries* under the action of the heat. A wart so treated, will take final leave. It will be *killed* root and branch.—Ed.]

WHITES, OR FLUOR ALBUS.

The mucous membrane of the *vagina* and womb, in the healthy condition of the parts, is always kept moist by its own secretion; but from various general or local causes, this mucous fluid, which is only intended to lubricate the parts, is often secreted in too great abundance, and runs from the vagina. But the discharge, far from being always white, as the vulgar term applied to the disease would lead us to suppose, presents various shades of color. At first it is transparent, glutinous, resembles the white of eggs, and is not very copious; but in the more protracted cases, becomes thin, watery, or appears slightly milky, opaque, and is freely discharged. This disorder is not accompanied with pain, except occasionally in the loins, when the patient is fatigued; but never continues long without producing more or less deragement of the general health. In many cases the menstrual discharge is too profuse, irregular, or altogether obstructed; and, although the patient may be robust, and present the general appearance of good health, for a considerable length of time, yet, at last, she becomes pale, and at times haggard. The eyes lose their natural brilliancy, and the lips their color. The feet and hands are often cold; the bowels are frequently constipated; she complains of general languor, and labors under the usual symptoms of indigestion; and, not unfrequently, the disorder is complicated with hysteria or chlorosis. (See *Green-sickness.*) In some patients the discharge is slight, and not constant, being only observed for some time after each menstrual period; in others, again, it is so profuse, that pieces of linen require to be constantly applied in order to prevent the fluid from running down the thighs; and, without the greatest attention to cleanliness, irritation or excoriation of the adjacent parts is induced. When it exists to this extent, the parts are often much relaxed; and sometimes there is considerable prolapsus, or falling down of the womb; but there is neither pain, heat, nor swelling, and the discharge is without smell. The term Whites is generally understood to apply only to the disease as above described, which is wholly unconnected with inflammatory action, and arises from debilitating causes—such as poor, watery, and deficient diet, living in the confined and impure air of large towns, or in damp, obscure, and ill-ventilated situations, and light or imperfect clothing; hence the lower classes of females in the country, who wear worsted stockings and woollen under-garments are very rarely affected with this disorder. It may also arise from trouble of mind, indigestion, obstructed or excessive menstruation, chlorosis, &c.; and it also appears in many cases to be hereditary.

But females are also very subject to discharges from the genital organs, of an inflammatory nature, resulting from various irritating or exciting causes—such as the use of rich stimulating food and drink; violent exercises, as dancing and riding on horseback; excessive sexual indulgence, improper habits, and irritation of the parts, in whatever manner produced; exposure to cold, difficult labor, an acrid state of the *lochia* or cleansings, worms, piles, &c. This form of the disease, when acute, cannot be distinguished from gonorrhœa; the symptoms are the same. The patient complains of a feeling of tension of the parts, heat, pain, &c, (see *Gonorrhœa.*) The discharge at first is milky, then of a dark yellowish appearance, and afterwards changes to a greenish color; or there may be from the first a discharge of a glairy secretion resembling the white of eggs; this last indicates that the neck of the womb is affected. If the disorder terminate favorably, the discharge begins to deminish from the tenth to the twentieth day, and gradually assumes the appearance described in the first form of the disease, and and at length ceases entirely; or it may become chronic, and then a more or less thick discharge, of various colors, is voided, which may continue during an indefinite period. In some cases the secretion is devoid of smell; in others again it is more or less fetid. This variety of the disease may be characterized by symptoms of a much milder description; the degree of severity must, of course, depend upon the intensity of the cause, the constitution of the patient, and other circumstances.

Treatment.—In the acute form of the disease, the patient should confine herself to low diet, and keep her bowels open with *Epsom salts*, or any other cooling saline purgative. Considerable benefit may be derived from bathing the parts frequently with warm water, or a *decoction of poppy-heads;* and warm water with laudanum, or *warm Goulard water*, prepared by mixing two or three drachms of the extract of lead to a pint of water, may be frequently injected into the vagina. When the pain, heat, and other symptoms of inflammation have subsided, astringent injections should be employed. "The patient," says Dr. Blundel, "should place herself in the recumbent position, with the hips raised, and the thighs a little separated, and, being furnished with a proper syringe, she charges it with injection; beginning, for example, with one drachm of alum to the pint of water, and introduce it to the upper part of the vagina; then, gently depressing the piston, she empties the instrument, lying five or ten minutes after each time of using the injection, to prevent the fluid from immediately returning, which it must necessarily do if she resume the erect posture." But t~~he~~ injection principally relied upon at present is a solution of *lunar caustic*, (*nitrate of silver*,) three, six, or even ten grains to each ounce of water, employed twice or thrice a day. This injection will produce a permanent stain if allowed to run upon the linen. A strong decoction of oak bark may also be found useful.

In the form of the disease first described, which is usually associated with constitutional debility, or a disordered condition of the general health, astringent injections are also to be employed; but more confidence is to be placed in suitable regimen and diet, and the constant use of tonic remedies, than in any other plan of treatment. One or two grains of *quinine*, formed into a pill, or mixed with a little Port wine, may be taken as a dose three times a day; or from ten to twenty drops of the *tincture of steel*, in a little cold water, twice or thrice daily. Constipation of the bowels should be prevented by the occasional use of the pills, page 501; and whatever local treatment may be employed, the *bidet* should be used at least twice a day.

Sponging the back and loins every morning with cold water, containing common salt in solution, or sea-bathing during the season, will be found serviceable. Exposure to sudden vicissitudes of temperature should be avoided; flannel should be worn next the skin; slops and watery diet must be abstained from, and a mild though generous diet, in small quantities, frequently repeated, with a moderate quantity of wine, may be taken—change of air and scene—and, in a word, every means should be adopted to improve the general health.

WHITLOW.

Whitlow is well known to be an inflammatory and exceedingly painful affection of one of the fingers or thumbs, sometimes of one of the toes, generally terminating in the formation of matter. There are three kinds of whitlow, varying in severity, according to the part of the finger in which the inflammation is seated.

In the *first form* of whitlow, the inflammation is confined to the surface of the skin, at the point of the finger; sometimes it extends round the base of the nail. In the *second form*, the inflammation is seated in the cellular substance under the skin. In the *third form*, the disease attacks the membrane which covers the bone at the extremity of the finger; and in severe cases extends upwards to the fibrous sheath, which binds down and retains the tendons in their position. But it must be kept in mind, that these three varieties of the disease are only to be recognized at their commencement, or in mild cases; for it often happens that the inflammation is at first superficial, and afterwards extends to the more deep-seated parts, or it commences in the membranous structures near the bone, and extends outwards. In severe cases, the whole organization of the finger is involved; and if the disorder be improperly treated, the bone is destroyed, and one or two of the joints may be lost, or rendered rigid and useless.

The *first*, which is much the mildest form of the complaint, usually arises from a prick, or slight bruise of the finger, particularly when the injury is inflicted at the root of the nail.

The pain at the commencement is slight, and accompanied with a sensation of itching; the part soon becomes slightly swollen, red, and shining, while a feeling of throbbing is experienced at the point of the finger. After twenty-four or forty-eight hours—sometimes not until the expiration of three or four days—the scarf-skin or cuticle rises from the true skin, so as to form a vesicle filled with a turbid, reddish, or yellowish-colored fluid, which may be situated at the end of the finger, or at the root of the nail; and then the pain, which had gradually become very distressing, and even so severe as to prevent the patient from sleeping, is much abated.

When the vesicle bursts, and the serous fluid is discharged, the true skin appears, covered with a thin layer of yellowish-colored matter, or it is slightly ulcerated, or even perforated, so as to communicate with the cellular substance beneath. (See *Erysipelas.*) If, at the commencement, the whole of the inflamed part, and some distance round it, be gently touched with lunar caustic, the disorder may be very quickly and completely arrested in its progress. But if this method of treatment be not resorted to at an early stage of the inflammation, or if it be employed without producing the desired effect, it will then be proper to apply warm poultices of linseed, or bread, moistened with laudanum, until a vesicle, as above described, makes its appearance. This should be punctured early with a lancet, or sharp pen-knife, or cut open with scissors, in order to allow the matter to escape. The poultices are to be continued for two or three days, and afterwards *Turner's cerate*, or any simple dressing, may be applied. Under this treatment the ulcerated part readily heals, new scarf-skin forms over it, and the finger soon assumes its natural appearance. In some instances, matter forms under the nail, which is detached in consequence, and falls off; but this loss is supplied, after a time, by the formation of a new nail.

In the *second* form of the disease, or that in which the inflammation is seated in the cellular or fatty substance under the skin, the pain is more severe than in the preceding case; and is even, in many instances, very distressing, before the finger presents any appearance of swelling or redness. But these last-mentioned symptoms are not long in exhibiting themselves, although for some time they are not so well marked, as the severe pain which the patient feels would lead us to anticipate. In the course of three or four days, the swelling gradually increases, until the finger attains twice its natural size; the redness, pain, and tenderness are greatly augmented, and the patient cannot bear the slightest pressure upon the finger. The swelling extends to the palm of the hand; in severe cases, the whole hand becomes affected, and the pain shoots upward to the elbow-joint. Matter now forms; and if an opening be not made for its escape, it may accumulate under the skin, from the point of the finger up to the hand, or even extend into the palm of the hand. When at last the matter finds vent, and the parts heal, the finger appears greatly reduced in size, in consequence of the cellular substance having been destroyed by the suppuration; while the joints, from the adhesions which have taken place, are rendered stiff and immovable, the point of the finger being no longer capable of exercising the sense of touch. In this case—which is easily distinguished from the first, by the severe pain, and the symptoms of general excitement, which are always experienced for some time before redness and swelling of the finger are manifested—the treatment must be of a more active description. Six or eight *leeches* should be applied to the finger, which after their removal is to be kept for some time in warm water, in order to promote the bleeding. Warm poultices, with laudanum, as in the preceding case, are then to be employed; and to moderate the feverish symptoms, a table-spoonful of the *tartar emetic mixture* should be given every two or three hours, or at longer or shorter intervals according to circumstances, so as to keep up a slight degree of sickness at stomach. By these energetic measures, we may sometimes be able to check the progress of the inflammation; but in general the most powerful and best directed treatment fails to effect this desirable object. If therefore at the expiration of twenty-four or thirty hours, the pain and inflammation be not abated, a free and deep incision should be made lengthwise at the point of the finger, in order to prevent suppuration, or to give vent to matter if it be already formed. In either case, by adopting this step early, the patient is soon relieved from pain, and the disastrous consequences, which would otherwise follow, are effectually prevented. Immediately after the opening has been made, the finger should be immersed in warm water; and as the blood flows from the wound, the patient's suffering ceases. This simple though painful operation is attended with no risk, and may be performed by any one. The principal point to be attended to, is to make the incision sufficiently deep to reach the seat of the inflammation, or the matter, if it be already formed. Emollient poultices are afterwards to be applied; and in the course of a day or two matter begins to be discharged from the wound, which soon fills up and heals.

In the *third* form of whitlow, whether arising from a punctured wound, or from any other cause, the inflammation is seated in the periosteum, or membrane which covers the bone of the last joint, or in the tendons, and their sheaths higher up. There is perhaps no kind of bodily suffering which equals this in intensity; and the acute pain gives an intimation of the nature of the disorder, which is not to be mistaken. It may be well here to make trial of the treatment recommended in the last case; although it does not often prove successful. Making an incision, as already directed, is indeed the only measure on which much reliance can be placed. To be of service, this should be done within the period already mentioned; because, if the smallest quantity of matter be thrown out from the membrane of the last bone of the finger, or be pent up within the sheaths of the tendons, which rest upon the second and third bones, the pain becomes so excruciating that high fever is produced, to sleep is impossible, and the patient may even become delirious or be seized with convulsions. Not only the finger, but the hand and wrist also become swollen; the pain extends to the elbow, and even to the shoulder, and, if vent be not given to the matter, it spreads among the tendons, and may even accumulate in the palm of the hand, while the finger-bones become diseased, and are destroyed. If under such circumstances the patient escape with the loss of one joint, he may consider himself fortunate. If the last joint of the finger be chiefly affected, the incision should be made as already directed; but if the pain and inflammation be seated higher up, the cut should be made at one side of the finger; and care should be taken to carry it down to the bone, whether it be required at the point of the finger, or higher up near the hand. The subsequent treatment is the same as in the preceding case.

WORMS.

The production and development of worms in the body, is one of the most remarkable facts in connexion with disease. They are found most frequently in the intestinal canal; but have been observed in the bladder, kidneys, liver, brain, and eyes; indeed, there is scarcely an organ or structure of the body, in which they are not occasionally seen. The body is infested with various kinds of worms, which have all been minutely described by scientific writers; and each texture or organ seems to have its peculiar species, which is generally limited to that organ. But we intend here, to confine our observations to the three varieties of these animals which are generally found in the bowels; namely, the long round worms, the small white worms, and the tape-worm.

The general symptoms which indicate the presence of worms, are the following. The face is pale, there is a bluish or livid-colored circle round the eyes, the countenance frequently changes color, the appetite is variable and capricious, sometimes voracious. There is itching of the nostrils and of the anus, disturbed sleep, and grinding of the teeth; the belly is swollen, though not hard, the stools are slimy and irregular, and griping pains are sometimes felt in the belly. Children who are troubled with worms are generally affected with short dry cough, and pains in the chest, unattended with difficulty of breathing; the mouth fills with saliva on awaking in the morning, and before meals; and they complain of a gnawing sensation at the stomach, which is diminished or entirely relieved by eating. Sometimes they are attacked with bleeding from the nostrils, and convulsive fits. In many cases, there is irregularity of the pulse, emaciation, and slight feverish symptoms occasionally. But the most important symptom, and indeed the only one on which complete reliance can be placed, is the discharge from the body of worms, or of portions of them.

The *round-worm* varies from six to ten inches in length, is usually found in the small intestines, and resembles the common earth-worm in its general appearance; it chiefly infests the bowels of children, sickly persons, and those who are badly fed. The particular symptoms which lead us to suspect the presence of this species of worms, are swelling of the abdomen, and sharp or colicky pains felt occasionally, in different parts of it, more especially about the navel, slimy evacuations from the bowels, and a disagreeable breath. In most instances, several of the general symptoms already enumerated are also present; but it often happens that the first indication of the bowels being infested by worms, is the appearance of some of them in the stools.

The *thread-worm*, or *maw-worm*, is from a quarter to half an inch in length, and is usually seated in the rectum or lower bowel. It is remarkable for the quickness of its movements. People of all ages are liable to be troubled with worms of this description; but they are more common in the bowels of children, than in those of adults, or persons advanced in life. The particular symptoms occasioned by thread-worms, are itching about the fundament, which is often very distressing when the patient is warm in bed; occasional scalding or difficulty in voiding the urine, a bearing-down sensation at the lower bowel, an oozing of slimy matter from the fundament, irritability of temper, and, sometimes, great depression of spirits. This, and also the round-worm, occasionally crawl out of the anus during the night.

The *tape-worm* is composed of numerous pieces united by joints, and is generally an inmate of the small intestines, where it lives on the chyle, or milky juice, which is intended to nourish the body. It is seldom less than several feet in length, and is frequently discharged in pieces four or five yards long. In some instances, it has been known to measure upwards of fifty feet. The tape-worm is more common in adults, particularly females, than in children. It is often found alone. Hence the term *tænia solium*. The notion that each joint of this worm possesses an independent life, is a popular error. Itching about the nostrils and anus, pain in the belly, and colic, more or less severe, occurring occasionally, are signs which may lead us to suspect the existence of tape-worm; but there is no unequivocal symptom by which the presence of this worm in the bowels can be ascertained.

Treatment.—It does not often happen that much difficulty is found in expelling the *common round worms*. The remedy usually resorted to for the purpose of removing them is the *oil of turpentine*. Before commencing with this remedy it is advisable to administer some purgative medicine. Three or four grains of *calomel*, with from four to fifteen grains of *jalap*, according to the age of the patient, may be taken in a little jelly. When adults are troubled with them, a stronger purgative will be necessary.

Calomel, from three to five grains,
Rhubarb, six grains,
Jalap, twenty-five grains. Mix.

Turpentine may be given to children with perfect safety in the dose of a dessert-spoonful, along with half a cupful, or more, of milk, linseed tea, gruel, or any other demulcent drink. The best time to take it is in the morning, about half an hour before breakfast, but if it produce much sickness of stomach or vomiting, the next dose should be given the following forenoon about two hours after breakfast. The dose must be repeated daily for three or four days or a week, a dose of castor oil, (a dessert-spoonful or more, according to the age,) being given every second day with the turpentine, until all the worms are expelled. The internal use of oil of turpentine is attended with no risk whatever; even in large doses it either passes off by the bowels or is vomited up without doing any harm.

In the West Indies the remedy generally employed is *cow-itch*, which seldom fails in effectually clearing the bowels of this species of worms. (See article *Cow-Itch*.)

The celebrated American physician, Dr. Rush, of Philadelphia, was very successful in destroying worms with common salt, which he prescribed in doses of a half a drachm upon an empty stomach in the morning.

To destroy *thread-wr ms* the best plan is to give the oil of turpentine by injection, because, as we have already had occasion to notice, these worms are lodged in the lower gut near the fundament, where they are supposed to feed on the mucus which that part secretes, and, consequently, the remedy when used in this manner is sent immediately to the parts which they inhabit. From a dessert-spoonful to a table-spoonful of this medicine, with a tea-cupful of thin starch, or gruel, injected into the bowels, and retained there as long as possible, often brings away great numbers of these small worms involved in slimy mucus, or rolled into a ball. An injection which will be found equally efficacious is composed of half an ounce of the *tincture of steel* in a half a pint of water. Purgatives of *calomel* with *aloes*, three or four grains of each, according to the age of the child, should be given from time to time. *Aloes* is the best purgative in such cases, because it acts more particularly on the lower bowels. Pills composed of equal parts of aloes, calomel, and scammony, have frequently the effect of completely relieving the patient from worms, without the aid of any other remedy. After the expulsion of all kinds of worms, it will be proper to take from three to five drops of the tincture of steel in a wine-glassful of chamomile tea, or of the infusion of gentian thrice a day for a fortnight, as a tonic.

When tape-worm occurs in adults, which is generally the case, the turpentine must be given in sufficiently large doses to act as a purgative, or it should be given with castor-oil, in order to ensure its speedy expulsion from the bowels. The usual dose is a table-spoonful or half an ounce, in conjunction with the same quantity of castor oil, or twice the quantity of olive oil, which may be taken floating on milk, or on cinnamon or peppermint water. It may be necessary to increase the dose to two or three table-spoonsful, and in all cases the remedy should be given every second day until the worm be expelled.

Worms, by the irritation which they produce, and the disorder which they occasion by drawing their sustenance from the juices intended to nourish the body, exercise over all the vital functions, and even over the intellectual faculties, in some instances, a more or less injurious influence, which is felt throughout the whole animal economy, and may give rise to diseases of a formidable and even dangerous character, such as epilepsy, St. Vitus' dance, catalepsy, hysteria, somnambulism, and other obscure nervous affections. Hence, in all these disorders, when no other cause can be traced, we have reason to suspect the existence of worms in the bowels, even though none of the ordinary symptoms by which they are manifested be present. In many cases, the remedies usually administered with the intention of destroying worms, have been the means of curing diseases which have obstinately resisted all other methods of treatment.

Preventive Treatment.—Plainly dressed animal food, well seasoned with common salt; good bread, with a sufficiently liberal allowance of wine or porter; plenty of exercise, and the occasional use of purgative medicine, constitute the best means of correcting that state of the system which appears to be favorable to the development of worms.

Salt is absolutely necessary as a condiment to our food, and appears to be essential to the prevention of worms. According to a law which once existed in Holland, criminals were condemned to live on bread made without salt, the effect of which was, that worms were generated to such an extent that a lingering and terrible death is said to have been the consequence. Salt is not only an excellent preventive, but is one of the safest and best remedies that can be employed against worms. In the dose of from half an ounce to an ounce, taken every morning before breakfast, in warm barley-water or thin gruel, it has had the effect of expelling tape-worm after turpentine and other powerful remedies have been tried in vain. The same quantity dissolved in water, and used as an enema, is a popular and frequently a successful method of destroying the ascarides, or thread-worms.

YELLOW FEVER.

This species of fever very closely resembles the malignant, or virulent typhus. The only difference is, that in the former the skin is not unfrequently tinged of a yellow hue, and there is a vomiting of dark brown matter.

This vomiting of dark, or black matter, is characteristic of the disease, but the yellow tinge of countenance is not so; for although a symptom generally met with, it is not universal.

Symptoms.—An attack of the disease, known under the name of the yellow fever, is not unusually preceded by a defect of appetite, perverted taste in the mouth, heat in the stomach, flatulency, giddiness, or pain in the head, dejection of spirits, languor, debility, and costiveness.

After a lapse of twenty-four or thirty-six hours, the patient is seized with lassitude and weariness, frequent rigors or chilliness, succeeded by flushings of the face, redness of the eyes, with pains in the eyeballs and forehead, extending in some cases backwards to the neck, great faintness, prostration of strength, and frequent sighing, with a tendency to stupor. There is excessive thirst, the tongue is coated with a tenacious fur of a dark brown color, the spittle is viscid, the skin hot and dry, the pulse quick, small, and hard, the urine is high colored, and scanty in quantity; but there is an unusual secretion of bile, which, getting into the stomach by a flowing back from the gall-bladder, is discharged by frequent vomiting.

In the further progress of the disease, the eyes and face, in many instances, become of a deep yellow color, which soon extends also to the chest; the stomach is highly irritable, and almost incessantly throws up a dark brown or black matter, while, at the same time, the bowels are very costive, the urine is still high colored, somewhat turbid, and small in quantity, and delirium of a peculiar nature arises.

It seldom happens that any perceptible remission occurs during this first stage of the fever, which usually lasts from thirty-six to forty-eight hours. At the end of this period there is generally some abatement of the symptoms; but a fresh paroxysm under a highly aggravated form soon again takes place, and excites alarm both to the patient and his friends.

The fever proceeding in its course, with imperfect remissions and fresh paroxysms every twenty-four hours for several days, great debility becomes manifest, and symptoms indicating approaching putridity make their appearance. The tongue now becomes dry and black, the teeth and whole of the mouth are coated with a very dark brown fur, the breath is highly offensive, the whole body is in many cases of a livid yellow color, dark and fetid stools are voided, discharges of blood take place from the nostrils, mouth, and ears, hiccups ensue, the pulse intermits and sinks, and at last respiration wholly ceases.

Causes.—Those which predispose a person to an attack of the yellow fever are, intemperance, a full plethoric habit of body, intense hot and sultry weather, and exposure to night air or cold.

The exhalations arising from vegetable matter under a state of decomposition, or marsh effluvia, as they are termed by professional men, may, under a deranged state of the atmosphere, from great preceding heat and drought have given rise to this species of fever in the West Indies, particularly in persons habituated to a cold or temperate climate. It is also an unsettled point whether or not it is of a contagious nature. The opinion I hold, and ever did entertain, is, that it is communicable from one person to another, or is contagious in an impure or deteriorated atmosphere, where many sick are lodged together in one room, and where there is at the same time a neglect of cleanliness and proper ventilation; but where there is a free admission of pure fresh air, and a proper attention is paid to strict cleanliness in every respect, its contagious properties may be so diluted as to become harmless, and incapable of being communicated to another person from the one laboring under it.

The yellow fever differs from typhus in the following circumstances, viz. it usually prevails only during or immediately after very hot seasons, in which the typhus is soon extinguished; and it is, in its turn, completely annihilated by cold weather in which typhus is most prevalent, if accompanied by humidity in the atmosphere.

Our opinion, as to the event of the yellow fever, must be drawn from a careful consideration of the age and habit of the patient, the mode of attack, and the nature of the symptoms. The danger will be in proportion to the full and robust habit of the patient. Extreme debility, severe and incessant vomiting of dark or black matter, the sudden oppression of all the functions, tremors of the body when moved, dilatation of the pupils of the eyes, with great stupor, pensive sadness in the countenance, a weak irregular pulse, highly offensive breath, black and fetid discharges by urine and stool, and the appearance of purple or livid spots dispersed over the body, all denote that the life of the patient is likely to fall a sacrifice to the disease ere long. On the contrary a considerable diminution of the affection of the head, a lively appearance of the eyes, free perspiration, a return of natural rest, the pulse becoming fuller and more regular, a gentle purging arising, or the urine becoming very turbid and depositing a copious sediment, and the stomach at the same time perfectly tranquilized, are to be considered in a very favorable light. The disease is apt, however, to exhibit deceitful appearances, and appears at times to be going off, when a sudden change takes place for the worse, and carries off the patient; nay, some sink under it, who apparently are in a state of convalescence.

Treatment and regimen.—If the disease has attacked a person of a full plethoric habit, and the pulse is hard, full and strong, the eyes red, staring, and watery, the skin dry, and parched, with flushing heats in the face, and there is either acute pain in the head, or stupor, (these symptoms evidently demonstrating an inflammatory tendency,) bleeding from the arm to a proper extent, that is, in proportion to the youth and habit of the patient, as well as the violence of the symptoms, will be both advisable and serviceable, provided it is done at a very early period of the disease, say during the first twenty-four, or, at farthest, thirty-six hours. After this period, the operation ought not to be attempted.

At the commencement of the yellow fever, it is not unusual to find the patient complain of great nausea, attended very often by frequent vomiting, which it it is very difficult to allay. An emetic, in such cases, would be improper; and instead of it we should exert every endeavor to calm and allay the irritation of the stomach, by applying flannel cloths wrung out in a warm decoction of bruised poppy-heads, with the addition of a small proportion of camphorated spirits over the upper part of the belly, directing, at the same time a saline draught to be taken, every hour or so, in a state of effervescence. For this purpose dissolve a scruple or half a drachm of the subcarbonate of potash with a bit of white sugar, in an ounce and a half of mint or common water, then add about two teaspoonsful of lemon juice, stir them well together, and let the patient drink the whole during the ebullition which takes place. If the vomiting is very frequent and severe, about ten or twelve drops of the tincture of opium may be added to each draught. Should this unpleasant symptom resist these means, the early application of a blister over the region of the stomach, may possibly have the desired effect.

As soon as the stomach is so much tranquilized as to be capable of retaining medicine, it will be highly necessary to clear the bowels of all acrid and offending matters, by administering some purgative in as small a bulk as possible; for which purpose, we may give about four or five grains of calomel, with ten of the powder of jalap, or the extract of bitter purging apple, (colocynthis,) made up into three pills, with a little common syrup. If necessary, a laxative clyster may be administered some hours afterward.

The good effects resulting from cold affusion in this fever, are such that it ought to be employed at a very early period. Cold water, when applied externally, where the patient is distressed with the sensation of burning heat, generally affords very great relief to his feelings. It is only, however, when the temperature of the skin is raised considerably above the natural standard, that cold water should be applied externally to the body by affusion, or even by wetting it with a sponge dipped in water and vinegar; and the period of its application, and the frequency of its repetition, must be regulated by the feelings of the patient; for should he become chilled by the application, much injury might ensue.

For the purpose of avoiding fatigue to the patient, which the preparation for cold affusion is likely to induce, it has been recommended that he should be covered in his bed, with a single sheet wetted or wrung out in cold water, as this will reduce the heat of his body very considerably by the evaporation which takes place.

Where neither of these modes of applying cold water can be employed with convenience or safety to the patient, we ought to be content to substitute the wetting of the hands, face, and other parts of the body, with a sponge dipped in vinegar and tepid water.

Some benefit may possibly be derived also from cold water, taken inwardly for drink, as the heat of the body, thirst, and severity of the fever, have, in many cases, been moderated by frequent and small draughts of it.

Mercury has been employed with great benefit at an early stage of the yellow fever; when regulated so as to affect the mouth, and excite some degree of salivation. In some cases, calomel has been given with this view to an almost incredible extent before any spitting took place, even when assisted by rubbing in strong mercurial ointment at the same time. From the well established efficacy of mercury in affections of the liver, it may probably be a proper and valuable remedy in the early stage of the yellow fever; but when the distressing and dangerous symptoms of the second stage have made their appearance, mercury would greatly aggravate them and thereby destroy life the quicker.

If we determine on having recourse to mercury at the onset, or very early in the disease, we may give it combined with opium, by forming from two to four grains of calomel with the fourth of a grain of opium, and a sufficient quantity of honey, or thick syrup, into a pill, which is to be taken immediately, repeating the dose every four or six hours. To assist the effect of the remedy in producing, as quickly as possible, a slight degree of salivation, we may at the same time direct half a drachm, or a whole drachm, of strong mercurial ointment, to be rubbed into the thighs, hams, legs, and arms, every six hours; but as soon as a gentle spitting has come on, the use of mercury, in any shape, must be discontinued.

Some physicians have considered a use of mercury, in this fever, so as to produce any degree of salivation, as extremely equivocal in its operation; and they think that its good effects have been much exaggerated. They are, however, of opinion, that it may, and does, prove of essential benefit as a purgative; and, therefore, that it may be given to clear the bowels of feculent matter, as the occasion shall require, throughout the whole course of the disease.

In those cases where violent delirium or very great stupor prevails, the application of a blister in the immediate vicinity of the head may be advisable. Where there is great coldness of the extremities, stimulating cataplasms should be applied to the soles of the feet.

From the very irritable state of the stomach in this species of fever, we should never employ antimonial medicines with the view of exciting perspiration, but we may give other diaphoretics, particularly the saline mixture combined with camphor.

It is rarely, if ever, advisable, at the commencement of the yellow fever, to make use of opium to procure sleep, particularly where delirium prevails; but towards the decline of the disease, when perfect remissions are observable, it will be beneficial. It will also be useful when convulsions arise.

The good effects of mineral acids, in every species of typhous fever, point out the propriety of administering them in this disease; (more particularly the muriatic) not only to be given at an advanced stage of the fever, where a tendency to putrefaction is much to be apprehended, but also at a very early period, with the view of preventing, if possible, the natural disposition thereto. From six to eight drops of the acid may be given every three hours, in an infusion of orange peel or cascarilla bark.

If we are fortunate enough to obtain perfect remissions, we should immediately administer the Peruvian bark in substance, if the stomach will bear it; but if not, we must be content to substitute some lighter preparation of it, such as the infusion or decoction, persevering in the use of the medicine throughout the whole stage of convalescence, which is usually long and tedious. A few drops of the muriatic or diluted sulphuric acid will much increase the efficacy of the bark; and should any uneasiness of the stomach or bowels arise, or purging be excited, we may add six or eight drops of the tincture of opium to each dose of the bark and acid.

But should the fever resist our best endeavors to subdue it, and no perfect remissions be observed, but, on the contrary, run its course with violence and great exhaustion of strength, thereby threatening approaching, if not already apparent, symptoms of putrescency, the aid of the most powerful antiseptics must be called in. On some occasions a use of spirituous baths has been added.

Throughout the whole course of the disease the strictest attentien must be paid to cleanliness in every respect. The linen of the bed, as also that of the body, should be changed frequently; whatever is voided by urine or stool should be immediately removed, and the chamber of the sick be kept perfectly cool, and properly ventilated, by a free admission of fresh air into it. It may also be sprinkled now and then with a little warm vinegar. To assist in correcting any fetid smell, we may make use of the gaseous fumes arising from the muriatic or nitric acids.

At an early period of the yellow fever, the patient should be confined to diet of a mild nature, consisting of preparations of arrowroot, sago, barley, &c.; but as the disease advances, his strength must be properly supported by animal broths made of lean meat, such as beef-tea, veal or chicken broths, somewhat thickened by an addition of crumbled bread, oatmeal, or barley. Where great debility and exhaustion become evident, a moderate use of wine may be allowed; but it will be best to give it in a diluted state, as in the form of negus, which, as containing a vegetable acid, will add to its good effects.

ZINC.

The *sulphate of zinc*, or *white vitriol*, in the dose of twenty-five or thirty grains, acts quickly as an emetic, and is therefore the best medicine that can be used for this purpose, in cases of poisoning from laudanum and other narcotic substances. It is employed as a tonic and astringent in the dose of two grains twice or thrice a-day in chronic dysentery, whites, and other discharges from the mucous membranes, and in the humid asthma of old people. As an anti-spasmodic, it has been found useful in epilepsy, St. Vitus' dance, and hooping cough. In the proportion of two grains to the ounce of rose water, or common spring water, it is much employed as an external application in chronic opthalmia, as an injection in gonorrhœa, and as a wash for sore nipples and ulcers. A solution of from ten to twenty grains in an ounce of water has been advantageously used as an injection in gleet, and in whites.

The *oxide of zinc* or *flowers of zinc*, is sometimes given in epilepsy, St. Vitus' dance, and other nervous diseases, in the dose of from two to ten grains, three or four times a-day. (See *Epilepsy*.)

The *chloride of zinc* is of great service as a caustic or escharotic; and has been strongly recommended for this purpose by Mr. Ure, in cases of cutaneous and sub-cutaneous cancers, and *noli me tangere*.

THE

LYING-IN ROOM AND NURSERY.*

SIGNS OF PREGNANCY.

General Symptoms.—When pregnancy has taken place, the face usually becomes pale, the under part of the lower eye-lid is of a leaden hue, the features become sharper, and not unfrequently the person becomes thinner; the temper is often more than usually irritable; sickness in the morning and after meals, feverishness, indigestion, heartburn, languor during the day, disturbed sleep and disagreeable dreams at night, are often the accompaniments of pregnancy;—a sense of bearing down; an irritation about the bladder and the seat; an unaccustomed flow of urine, are also not uncommon symptoms in the early stage of pregnancy.

State of the Umbilicus or Navel.—This, many have considered, presents one of the most decisive evidences of pregnancy. When it has taken place, the navel is drawn inwards and downwards during the two first months; in the third, it is natural; in the fourth, it is not so hollow as before conception; in the fifth and sixth, it is almost level with the surrounding surface; in the latter part of the sixth and the seventh month, it is quite so; while, towards the latter month of gestation, it projects considerably. If these symptoms follow in regular succession, it may be considered a decisive sign of pregnancy.

Ceasing to be Unwell is one of the most common, and generally an early symptom of pregnancy; but it is by no means a certain sign, as it may arise from many other causes; if you have been regular up to the time of marriage, it is good presumptive evidence. Such, however, are the caprices of nature, that in some persons this

* The remainder of the book has been prepared for the Press by a celebrated physician of New-York.

evidence is never decidedly manifested: in such cases, it will usually be found that the discharge is smaller in quantity, returns at irregular intervals, and does not last the usual time.

Enlargement of the Breasts.—This is an appearance, which, if unaccompanied by other signs, is of little value; but if it has been preceded by somewhat of a diminution of their size, and this enlargement then takes place about the third month after the preceding sign, and is accompanied by a slightly painful and prickling sensation, with a sort of knotty external feeling when the hand is applied to the surface, and particularly if there is occasionally a milky discharge from the nipple, it may be considered presumptive evidence of pregnancy. It frequently occurs that the breasts become enlarged shortly after marriage, from the person becoming stouter; but in this case the whole person experiences the same change, and the breasts are soft and have not that knotty feeling to the touch.

Swelling of the Nipple, and the appearance of the Areola, (or circle surrounding the nipple,) are by many writers considered as among the most decisive of those signs of pregnancy, which are exhibited previous to quickening. In fair women, and particularly with their first child, the change in the areola is very manifest: from its beautiful roseate hue it turns to a dusky brown shade; it increases in size, and continues to darken until the term of gestation is completed. As pregnancy advances, a number of slight excrescences, resembling small pimples, will also frequently appear thereon, and when the individual has had children, or is of a dark complexion, this appearance is one of the best criterions for determining the true areola of pregnancy.

Morning Sickness.—This distressing affection of pregnancy occurs during the earlier months. It may commence almost immediately after conception; but the most usual time of its appearance is two or three weeks after. It arises wholly from sympathy with the newly established action of the womb. This is neither a necessary nor an infallible sign of pregnancy, as sickness may arise from other causes, and by some individuals it is never experienced. It may be observed, however, that it has this peculiarity, viz: that it does not affect the general health, nor does it usually impair the appetite.

Enlargement of the Abdomen.—At an early period of gestation, the abdomen usually becomes flatter, and it is not until about the third month that the enlargement is perceptible.

Quickening simply means the first sensation which proves to the mother the vitality of her child. The feeling is so peculiar and so sudden, that it often occasions fainting and hysteria. The sensation, which has been compared to the fluttering of a bird, is occasioned by the womb suddenly rising from the pelvis, (see page 29,) where the motion of the child could not be felt, to a part that is more sensible. It is not uncommon for a few drops of blood to escape from the *womb*, at the moment of the first sensation. Quickening usually takes place about the fourth month or eighteenth week; but in some cases it occurs as early as the third month, and as late as the fifth. At first the movements of the child are feeble; but in a short time they become strong, and its motions are felt not only internally, but very distinctly, on applying the hand to the abdomen. Instances are of frequent occurrence, when the motions of the child are so lively as to occasion much distress to the parent; but a sensation resembling this cannot be depended on as a proof of pregnancy, if it be unsupported by other evidence.

CIRCUMSTANCES WHICH MAY INDUCE SYMPTOMS RESEMBLING PREGNANCY.

Disappearance of the Menses, or Periodical Discharge.—So many diseases may produce this effect, that there is not space here to go into particulars; suffice it to warn those of my readers especially, who are married late in life, that this disappearance, though continued for months, is no proof of pregnancy, although, as before said, if the individual be *young*, and has been regular up to the time of marriage, it may be considered presumptive evidence.

Enlargement of the breasts may arise from increased obesity or from the stoppage of the menses.

Sickness, Heartburn, Languor, Distension of the Abdomen, may each arise from indigestion.

Quickening.—Persons who marry late in life, are most liable to be deceived by an appearance of quickening when pregnancy has not taken place; and even medical men have been deceived by this appearance, when they have relied on it unsupported by other evidence. This deception is occasioned by the collection of wind in the bowels, which even to the touch, resembles the movements of a child.

Enlargement of the Abdomen may arise from dropsy, disease of the ovary, excessive obesity, and many other causes, which bring us to the conclusion with which we set out, viz: that although each of the signs of pregnancy enumerated may be valuable as accessories, yet, isolated, neither is an infallible one of pregnancy.

DURATION OF PREGNANCY AND MODE OF RECKONING.

The duration of pregnancy seldom exceeds forty weeks, or nine calendar months, although it sometimes continues as long as forty-five weeks, and sometimes not more than thirty-seven weeks;

without in either case diminishing or adding to the size of the child or the perfection of its formation. Births which occur within the last mentioned period will be treated of under the head of premature labors.

Reckoning.—The usual mode is to calculate from the last time of being unwell, as impregnation generally takes place within fifteen days, or perhaps more often within a week after; this, therefore, is considered the best rule by which to reckon; although some calculate with great correctness from the period of quickening, allowing four months for the past time. But neither of these data can usually be depended upon so as to foretell the event to a day, although ladies have been known to predict it within a week of its occurrence.

ON DIET, EXERCISE, BLOOD-LETTING, AND THE STATE OF THE BOWELS DURING PREGNANCY.

Diet.—It is a popular error that an individual in a state of pregnancy requires more nourishment than at any other time. I would indeed, rather advise a decrease than an increase of the usual quantity of food. It is very probable that the appetite will become more craving, but this should not be indulged; if so, it will become voracious and cause much pain and inconvenience, and frequently produce severe attacks of indigestion, flatulence, vomiting, spasm, diarrhœa. (See article "*Constipation*.") The young mother in particular will feel a still more imperative call upon her self-denial, when she is informed that the indulgence of this capricious appetite must injure her own health, and consequently impair that of her child. If, however, the general health was not good before pregnancy—if the appetite was very poor—and if, after pregnancy, the health is improved, and consequently the appetite proportionately and temperately increased, there can then be no objection to its moderate gratification; always, however, keeping in view the fact, that most people eat much more than is necessary; make too much rather than too little blood, and that this latter event is now particularly objectionable. The simplest food, and that which contains most nourishment in the smallest compass, is the most appropriate for pregnant women: mucilaginous aliments such as turnips, parsnips, cabbage, carrots, and asparagus, should be avoided or partaken of sparingly, and always with as much black or red pepper as convenient. Fried, baked, salted, and spiced meats ought to be wholly avoided; and whatever may be the food taken, let it be well masticated. Stimulants, such as wine, spirits, or cordials, must be avoided, or taken with great moderation. Tea, coffee, chocolate, and indeed liquids of any kind taken in excess, are, particularly in a state of pregnancy, highly injurious.

DRESS.—The dress of a pregnant woman should be always loose; tight lacing must on no account be allowed; it prevents the developement of the breasts and abdomen; impedes the growth of the infant, causes inflamed breasts, sore nipples, and all the disastrous consequences which result therefrom; occasioning acute suffering to the mother, and frequently depriving her of the comfort of suckling her child. In the advanced stage of pregnancy it will frequently produce palpitation of the heart, swelling of the legs and veins, costiveness, and scalding urinary evacuations. Obstinate coughs, and spitting of blood, also not unfrequently accrue from the same cause.

EXERCISE.—Popular errors upon this subject of a directly opposite character exist, both of which must be avoided. Let mothers pay particular attention to the following remarks:—After conception has taken place, the individual should for days take but little exercise; her mind should be kept perfectly quiet, and all exciting causes avoided. Moderate exercise is, however, proper at every period of gestation, unless symptoms of miscarriage present themselves. Walking is the best exercise, but it should not be continued until fatigue is produced. Sailing is a very beneficial mode of exercise, if the season be favorable. Long journies—long walks—running or dancing should be particularly avoided. Violent exercise is the ordinary cause of floodings from the womb: abortion, rupture, or premature labor may follow: and, be it recollected, that miscarriage is far more injurious than parturition at the proper period. Lamentable instances of its effects are continually brought under the observation of every medical practitioner. Few, indeed, whose practice has been extensive, but have seen the young and lovely thus hurrying onwards to a premature grave, from the momentary indulgence of a whim—a vanity—in spite of advice and in defiance of warnings.

As the period of parturition approaches, more rest is required than in the earlier months; still, however, recollect that air and exercise, if they can be taken without fatigue, will be highly beneficial. But when there is a tendency to miscarriage exercise must wholly be avoided. I have known individuals who have been thus necessarily confined to their apartment, in a reclining position, or even to their bed, for days, weeks, and even months. I would strongly advise any who have miscarried, to take but little exercise, and to lie much upon a couch during the day.

LATE HOURS are highly injurious to the pregnant woman; she should retire to bed early and take from seven to nine hours' repose; common sense and ordinary experience must force this on her attention; the lethargy and fatigue which affect her towards night—the desire to be disburthened of her clothes—the refreshment which she experiences by their being loosened from their ordinary fastenings, all point out to her the requirements of nature. How weak, then, is it to permit these *importunities* of nature to be unattended to. My fair readers may rely upon the fact, that they must suffer eventually if they neglect her admonitions; and not they only, but their child; for this desire after rest is one of those demands that arise out of an organic law, which cannot be disregarded without subsequent punishment.

BLOOD-LETTING is supposed by ignorant persons to be a necessary operation, which must occasionally be performed during pregnancy. This is an error as absurd as it is popular. In a few cases it may be required—in the majority it assuredly would be productive of mischief. Let it never be done except under the *advice of your medical attendant.*

STATE OF THE BOWELS.—No person can be in health who has not an evacuation daily. How very necessary, therefore, is attention to the state of the bowels during pregnancy. Indigestion, hysteria, flatulency, spasms, and many other ills, are the consequence of inattention to this important particular. For directions upon this subject see "*Constipation.*"

NUPTIAL INTERCOURSE, if not wholly avoided, should be indulged with moderation and care during the months of gestation. The inferior animals furnish an example in this particular, and will not suffer sexual approach during pregnancy—after conception the womb is but imperfectly closed, and in the latter months of gestation it is much distended. Nuptial intercourse stimulates the womb, and as the slightest cause may excite it to expel its contents, and thus produce abortion, or premature labor, this should be indulged, if at all, with great reserve.

ON THE INFLUENCE OF THE MOTHER'S IMAGINATION UPON THE CHILD.—The supposition that the mother's imagination, her longings, or her disgusts, can affect the form, or mark the child in her womb, is opposed to science and the experience of Obstetricians,* as well as to reason and common sense. The best writers agree that the circulation even of the blood between the mother and the child is interrupted, and that there is no nervous connection whatever;† in fact, that the only means of communication between them, viz., the

* OBSTETRICIANS—*Midwifery practitioners.*

† The simplest proof that I can refer to of the non-existence of nervous connection between mother and child is the fact, that NO PAIN is experienced by either when the umbilical cord (*or navel string*) is dissevered. If there were nerves, acute pain would be experienced by both.

placenta or after-birth, has no nerves, consequently that there can be no nervous influence in operation. If we appeal to common sense, how decided is reason in opposition to the absurd belief. The embryo has in itself the elements of all the parts of the future child, how then can imagination destroy those elements? The fœtus being perfect in all its parts, how can imagination dissever a limb, or confer an additional one?

Thus then are anatomical science and common sense opposed to the belief. Let us examine the experience of medical men. Dr. Hunter particularly directed his attention to the subject, and states that, in every one of two thousand cases, the woman was asked, if she had been alarmed by any appearance, injured by any accident, or longed after any food; that, in the major part of the cases, the woman asserted that she had longed, or had been frightened, or disgusted; but that in no one of two thousand cases did he meet with a coincidence. He met with various eccentricities of nature, where no cause was assigned, and found none where the mother had been fearfully apprehensive of the appearance of such. Modern writers, with a very few exceptions, are opposed to the imaginative theory. The celebrated naturalist, Buffon, says, we might as well expect that if a hen on her nest were to see the neck of a cock twisted, her chicks would be hatched with crooked necks, as believe that a child would be born with dislocated limbs, through the mother having seen a man broken on the wheel; and certainly no sight would be likely to create so horrible an effect upon the imagination, as the witnessing of this awful punishment. Obstetricians assert, that in almost every case, women will inform them they have had either frights, disgusts, or longings, yet there is not one child in five thousand which is born with a blemish. Anatomical science, common sense, the experience of obstetricians, and the experience of every one who inquires, are all against this absurd belief; and, therefore, the mother may divest her mind of any fear of the consequences to her child. Let her be frightened by rats, cats, bears, or baboons; let her long for the most curious and unattainable objects, she may be certainly assured, that neither the effects of her longings or her disgusts will be entailed upon her infant; and that, in fact, from the time of conception, the child has as it were an existence independent of the mother, except so far as the circulation is concerned, which nourishes and brings the embryo to perfection. As the child is conceived, so will it be born, if not destroyed.*

* This remark must be understood as applying to formative and physiological actions, or the processes of nature by which the new being is evolved and fitted for maintaining

I would, however, advise women to avoid all objects of disgust, not for fear of the consequences to their child, but for fear of their exciting that nervous irritability, of which pregnant women are often so susceptible, and which frequently occasions so much mental pain. If the imagination is excited, the mother will anticipate all manner of evils, although they do not and cannot exist; but the imagination may cause as much temporary anxiety as if the evil was inevitable and irremediable. I shall close this memorandum by observing, that the marks and deformities of infants can be philosophically accounted for; but as it would involve much delicate discussion fully to explain these causes, and it could be of use only to the professional man, who is of course expected not to require the explanation, I have thought it best to omit it.

THE DISEASES OF PREGNANCY.

By the diseases of pregnancy we understand those which arise from pregnancy as their cause, or which, from their accidental connexion with it, require a modified treatment. Of the more common forms I shall now give a brief description. Did I enter into all, I should fill a volume, and cause needless alarm to my readers, who are to recollect that pregnancy does not necessarily entail any diseases; that inhabitants of many regions, who live in a natural state, have little inconvenience even from parturition; and that they will be free from pain and sickness, in the proportion as they abandon exciting causes, and attend to the dictates of nature. Even in our artificial state of society there is, therefore, no reason for anxiety; women in general do well—I had almost said invariably do well—when they attend to the rules laid down for the preservation of their general health.

VOMITING generally commences shortly after conception, and ceases on quickening. It is usually most troublesome on rising, and hence has obtained the name of *Morning Sickness*, though its attacks are not unfrequent after meals. Sometimes it is very violent and continues all day, and everything taken into the stomach is rejected. This form of the disease requires great attention, and the presence of a medical man. The former will generally be relieved by a mixture composed of a scruple of bicarbonate of potash or soda, dissolved in a wine-glass of water and taken during effervescence, with a table-spoonful of lemon-juice. These draughts may be

an independent existence, but not to certain diseased conditions of the mother, in which there is a contamination of the blood that is capable of communicating a similar affection to the child.

repeated thrice a day if the sickness be troublesome; or half a tea-spoonful of citrate of potash in water every hour, until the sickness is removed. A little cold camomile tea during the day is of service. If these remedies after a proper trial have failed, much comfort may generally be derived from a plaster of Burgundy pitch, or common resin, placed over the stomach, upon which six or eight grains of powdered opium have been dusted. Or a cloth dipped in laudanum and applied to the same part, when the plaster cannot be conveniently obtained, may be used as a substitute. In some cases, in which the alkalies have been unavailing, a tea-spoonful of lemon or lime-juice, or five to ten drops of diluted sulphuric acid, have acted in the happiest manner.

If there is, in addition, pain or pressure at the pit of the stomach, half-a-dozen leeches may afford ease; but in such case I would rather you should apply for advice. The bowels should be kept well open by some of the medicines recommended under the head of "*Constipation.*"

Heartburn and acrid Eructations denote acid in the stomach, and are relieved by opening the bowels with magnesia, and taking half a tea-spoonful of carbonate of soda, or a wine-glassful of lime-water in milk, three times a day, or when required.

Spasms or Cramp of Stomach and Bowels.—If *slight*, fomentations of poppy heads and camomile flowers should be applied, as warm as they can be borne, and ten drops of laudanum and a tea-spoonful of tincture of rhubarb be taken in an ounce of aniseed water every fourth hour. If *very severe*, advice must be taken.

Constipation is very usual in pregnancy and should be carefully guarded against, as it is the groundwork of most of the diseases that arise at that period. An injection into the bowels, taken every morning, (composed of a handful of salt and a pint of water or thin gruel,) will frequently afford relief: it should be taken in a recumbent position, and I would advise the urinary bladder to be evacuated before the application. If the above is not sufficiently active, add a table-spoonful of castor oil. Either of the following domestic medicines taken in the usual quantities will also generally effect the same object. Castor oil, rhubarb and magnesia, senna tea and manna; or the following draughts, or pills may be taken.

Take of sulphate of magnesia, half an ounce,
Tincture of senna and syrup of buckthorn, two drachms,
Infusion of senna, one ounce. Mix. To be taken in the morning.

Take of compound pill of rhubarb, one drachm. Divide it into twelve pills. One, two, or three to be taken at bed-time. These are mild.

Take of compound extract of colocynth,
Compound aloes pills, of each half a drachm. Divide into twelve pills.
One, two, or three to be taken at bed-time.

These are stronger. Any of these medicines may be got from the druggist.

Diarrhœa, or Purging.—This often arises from the bowels having been constipated. Take an ounce of castor oil and five drops of laudanum; or a dose of magnesia and rhubarb; and if after the operation the purging continues, take two table-spoonsful of the following every fourth hour.

Take of chalk mixture four ounces,
Aromatic confection half a drachm,
Tincture of opium twenty drops.

This will generally check it. Should it not, immediately apply for medical advice.

Piles are small tumors at the verge of the seat, which sometimes bleed. They generally arise from constipation; and the bowels should be kept open as directed in "*Constipation*," or by small doses of sulphur and cream of tartar in treacle. The following ointment will afford great relief.

Take of powder of nut-galls, one drachm,
Powdered camphor, half a drachm,
Powdered opium, one scruple,
Ointment of marshmallows, one ounce.
Mix—and let the size of a small nut be rubbed on thrice a day.

If the piles are very painful, leeches should be applied, and the part frequently fomented.

Jaundice arises sometimes about the fourth month, and disappears at the eighth or ninth. If the tinge is slight, taking three grains of the blue pill at night, and the following mixture in the day, will be sufficient to remove it: but if very great, advice should be taken.

Take of carbonate of soda, two drachms,
Powder of rhubarb, one drachm,
Extract of taraxacum, one drachm,
Water, eight ounces.
Mix. Two table-spoonsful to be taken three times a day. (See "*Jaundice*," p. 479.)

Itching of the Genitals is often troublesome. The bowels should be kept open with seidlitz powders, Epsom or Rochelle salts, and a sponge wet with sugar of lead water often applied to the parts.

Irritation of the Bladder, Retention of the Urine, or Difficulty of Passing it, require the bowels to be kept open. Drinks of linseed tea, barley, water, slippery-elm tea, &c., should be taken freely; and the patient should recline on a sofa. Great care should likewise be taken not to retain the urine long. Half a drachm of tincture of henbane at bed-time is often of service. (See "*Irritable Bladder*," p. 281, and "*Urine, Retention of*," p. 653.)

Involuntarily Passing the Urine when Coughing or Laughing is troublesome, but not to be cured. It is considered a favorable sign: rest is the only palliative.

Palpitation of the Heart and Difficulty of Breathing are best relieved by rest, and taking during the paroxysm a few drops of ether, eau de luce, spirit of hartshorn, spirit of red lavender, or ammoniated tincture of valerian, in water. If either be very distressing, *medical advice* should be taken.

Fainting is most usual during the first three or four months. It generally comes on after exertion, agitation, purging, or exposure to heat. The patient should be laid down with the head low; air should be freely admitted; the dress loosened; the face sprinkled with water; the forehead and temples rubbed with ether, eau de luce, Hungary water, or eau de Cologne; and an attempt may be made to give a few drops of any of the things mentioned in the article upon "*Palpitation*." (See "*Fainting*," p. 419.)

Hysteric Convulsions usually arise from the same causes as fainting. The face becomes pale and distorted, accompanied by faintness and convulsive movements; sometimes by screams and sobs, which generally end by a copious flow of tears. Let the forehead and temples be rubbed with eau de Cologne, and the other means adopted which are advised under the head "*Fainting*." (See "*Hysterics*," p. 458.)

Cough.—It is generally dry and difficult of cure, and may depend on so many causes, that advice from the medical attendant had better be sought.

Spitting or Vomiting of Blood, call for immediate professional assistance.

Headache.—If severe and constant, and there is fulness of blood indicated by a flushed face, dull or bloodshot eyes, sense of giddiness, heaviness over the eyes or in the skull, and the person is far advanced in pregnancy, advice should be taken *without loss of time*. All headaches are, however, not dangerous. They may arise from costiveness, indigestion, or nervousness. There is then a bad taste in the mouth, acidity, slight sickness, and the pain is confined to one part. This description of headache is relieved by opening the bowels and keeping the forehead wet with vinegar and water, or diluted lavender or Cologne water.

Toothache often attacks sound teeth. In such cases extraction can be of no service. It has been said that extraction in any case will produce miscarriage. It may have done so; but if a tooth was decayed and very painful, I should not hesitate to extract, and have often done so without any ill consequences. It must not, however, be done without medical advice; when not extracted the cavity may be filled up with cotton wet with tincture of benzoin, or a drop or two of kreosote. The mouth should also be washed with equal parts of tincture of myrrh and tincture of rhatany, in double the quantity of warm water. If the teeth are sound, and many ache, the bowels should be kept open, and two drachms of carbonate of iron taken three times a day, in treacle or honey, for a week or two.

SALIVATION, OR INCREASED FLOW OF SALIVA, is sometimes very troublesome. Washing the mouth with alum-water, and keeping the bowels gently open, frequently affords relief; if it does not, have advice.

PAIN AND GREAT ENLARGEMENT OF THE BREASTS.—A few leeches should be applied, the breasts be well fomented, and afterwards gently rubbed with soap liniment and laudanum. The bowels should be well opened. Nature often gives relief by a discharge of a milk-like fluid from the nipple.

SWELLING OF THE FEET AND LEGS.—The bowels should be kept open, and a bandage applied every morning. The swelling usually goes down in the night, and during the day the recumbent position should be maintained as much as possible.

ENLARGEMENT OF THE VEINS OF THE LEG require the careful application of a bandage, and rest in a recumbent posture. This should be attended to by a medical man, as severe consequences often follow neglect.

OVER DISTENTION OF THE ABDOMEN is best relieved by leeches, and by laxatives, fomentations and frictions, like the following.

Take of tartrate of potash, half an ounce,
Manna, two drachms,
Tincture of senna, half an ounce,
Infusion of rhubarb, seven ounces and a half.
Two table-spoonsful to be taken three times a day.

Take six poppy-heads, bruised,
A handful of camomile flowers,
Boiling water, two quarts,
Boil this down to one quart and strain. To be applied with flannel.

Take of laudanum, half an ounce,
Camphorated oil, an ounce. Mix.
To be well rubbed on the part three or four times a day.

PENDULOUSNESS OF THE ABDOMEN may be best relieved by a bandage, so made as to cross the shoulders and throw the weight upon them.

CRAMPS OF THE LEGS AND THIGHS are often relieved by mere change of position. Gentle friction, with soap liniment six drachms, and laudanum two drachms.

PROMINENCE OF THE NAVEL.—A pad and bandage should be applied.

FALLING DOWN OF THE WOMB.—When this is the case there is a sensation of something coming from the person. It begins early in pregnancy, and disappears about the fourth month. Rest is the best remedy.

TURBULENCY OF THE CHILD.—The movements of the child are sometimes so violent that it seems as if it would force its way through the side. A bandage should be worn, and a few drops of laudanum taken every six hours. Bleeding is frequently of service; but let it be performed under the sanction of your medical attendant, and not otherwise.

DESPONDENCY, MELANCHOLY, ANTIPATHIES, &c.—These are not uncommon. The two first are best remedied by change of scene, air, gentle exercise, cheerful company and due attention to the diet, which should be nourishing; the bowels should be kept gently open. The last is of little moment. The patient, perhaps, takes a dislike to tea, coffee, wine, fruit, or meat, &c. She requires no treatment. Let her have any food she may like that is not unnatural; but on no account *permit* crude uncooked vegetables.

ABORTION, (MISCARRIAGE,) AND PREMATURE LABOR. (See "MISCARRIGE," p. 515.)

When the child is expelled at any period before the sixth month of gestation, it is called miscarriage; if after that time, but before the completion of the full period of pregnancy, premature labor.

MISCARRIAGE is one of the most serious accidents that can befall a woman; for should it become habitual, which it frequently does, the system will be debilitated, the constitution broken up prematurely, and the foundation laid for obstinate disease of the womb. The *immediate danger of miscarriage depends principally on the extent of flooding*, which is usually more formidable in the latter, than earlier months of pregnancy. It will be my endeavor to avert the evil, (habitual miscarriage,) by pointing out the causes of miscarriage, and the means which are in the patient's own power to prevent it.

PREDISPOSING CAUSES.—An irritable and feeble condition of the womb not admitting of distension beyond a certain extent, premature developement of the mouth of the womb, excessive sensibility, debility, habitual delicacy of health, disposition to flooding, overfulness of blood, extreme costiveness, and the habit of miscarriage, which, as I before said, is justly considered by the profession as one of the most serious diseases to which the pregnant woman is subjected; for should a woman once or twice miscarry, there is always more or less danger that she will do so in her succeeding pregnancies. Schulzius relates the case of a woman who miscarried twenty-three times at the third month.

Exciting Causes.—Fatigue, falls, or blows, piles, purging, vomiting; excessive exercise, as dancing, running, or jumping; the motion of a rough carriage; passions of the mind, as grief, joy, fear, &c.; tight clothing, immoderate laughter, sometimes the extraction of a tooth or other surgical operation; the inordinate use of spirits or wine, or any acute disease, as fever, inflammation, &c. &c. The immediate cause of abortion is the separation of the connection between the mother and infant, together with contraction of the womb.

Symptoms of Miscarriage.—The patient feels languid and hot at night, or has a fit of sickness or hysterical symptoms; there is pain in the back and loins, spasms of the bowels, a little fever, and then a discharge of blood. There is frequently before the commencement of miscarriage, pain and irregular action in the parts near the womb, which give warning of its approach before either discharge or contraction takes place. This is the period when it may best be prevented. When it takes place at a very early period, before the end of the second month, it is difficult to distinguish it from being excessively unwell, except by observing that the blood coagulates or forms into clots, and it often continues a length of time fœtid, and mixed with particles like snuff or pieces of skin.

When at any period of pregnancy there are regular pains in the back and region of the womb, more especially if attended by a feeling of weight, griping, difficulty of passing the water, and it coming away in drops, and descent of the womb, we may fear that abortion will take place.

When the child in the womb is dead, there is cessation of the morning sickness, and any other symptoms of pregnancy which may have been present. The breasts become flaccid and lose their firmness; if the pregnancy has advanced beyond the period of quickening, the motion of the child ceases, and a feeling of coldness and weight is felt in the abdomen. When these signs are observed, and are followed by discharge and regular pains, miscarriage will take place, and it would be improper to endeavor to prevent it.

When miscarriages takes place at the third, fourth, or fifth month, &c., (more take place at the end of third and beginning of fourth than any other period,) there is considerable discharge, pain in the back and loins, the stomach is deranged, there are regular bearing down pains, and expulsion of the embryo. In some the pains are severe and protracted, in others short and trifling, in some the process is completed in a few hours, in most before the expiration of three days; but in some it is long threatened, and does not take place for weeks.

TREATMENT.—When miscarriage is threatened by pain in the back, &c. &c., and discharge, the practitioner should immediately be sent for, because it might be in his power to prevent it; and it is impossible to say to what extent the hæmorrhage might extend. But in the meantime the lady should be confined to the horizontal posture on a bed, (a mattress is better than a feather bed,) the room should be airy, very few bed-clothes, no fire in the room, and the most perfect rest of body and mind. If there be much nervous agitation, twenty drops of laudanum may be given to her, but if she is comparatively tranquil, she should take only a little cold barley water or lemonade; and the parts in the region of the womb may be kept cool with a sponge wet with cold water and vinegar, until the arrival of her medical friend.

ON THE PREVENTION OF HABITUAL ABORTION.—The causes that gave rise to the preceding miscarriage, should be, if possible, removed; thus, if there be debility and irritability, delicate and feeble health, recourse should be had to sea air and cold bathing. If cold sea bathing cannot be had, much advantage will be derived from the use of the cold or tepid shower-bath, and sprinkling the whole body, but especially the loins, with vinegar and water, and the daily use of the bidet, or cold water injections, and some light bitter medicine should be taken two or three times a day. The diet should be mild and moderately nutritious, the bowels should be kept gently open; perhaps an ounce or an ounce and a half of the compound decoction of aloes will answer the purpose well, and may be taken every other morning or night if required. This medicine is cordial as well as aperient, and will keep the bowels well regulated without purging; it may be discontinued from time to time, and an injection of cold water and salt into the bowels may be given in the morning instead. There should also be separation from nuptial intercourse, and a recumbent position enforced some weeks before and after the term of abortion, and strict abstinence from wine, spirits, ale, &c., without they be ordered by the medical attendant. Ladies disposed to abortion should never be in a lying-in room, or they may miscarry from sympathy.

On the other hand, those of a plethoric habit who have miscarried, should reduce the quantity of animal food and live chiefly on vegetables; take little sleep, and that on a mattress; exercise in the open air, but not so as to induce fatigue; the bowels should be kept open by a saline purgative; they should bathe, or have the use of a shower-bath; and much advantage is gained by pouring water from a watering-pot on the loins, and the use of cold water injections two or three times a day. After pregnancy has taken place, they must separate from the nuptial bed, at least until it is far advanced. It will also be prudent to have a little blood taken, but not so much as to induce fainting; of course, when the period arrives at which miscarriage has previously occurred, repose on a sofa must be enjoined.

ON THE MANAGEMENT OF THE NIPPLES BEFORE CONFINEMENT.

For a month or six weeks before confinement, especially in a first pregnancy, attention should be paid to the state of the nipple. If it appear healthy, not tender to the touch, and the skin of moderate thickness, nothing more is required than that it should be rubbed two or three times a day with a little sweet oil, and all pressure from corsets and the clothes most carefully avoided; for this pressure is frequently the cause of soreness and flatness of the nipple. If the nipples are painful, and the skin is thin, they should be washed three or four times a day with any astringent infusion, as of green tea, oak bark, willow bark, or brandy or spirits, and exposed to the air each time for ten or fifteen minutes, or longer. The following lotion will also answer for the same purpose, and may be applied three or four times a day, on lint, after the nipples have been washed with soft warm water.

Take of sulphate of zinc, six grains,
Tincture of rhatany, two drachms,
Tincture of opium, one drachm,
Camphor water, two ounces and five drachms.

This will generally prevent the troublesome chops and fissures which after delivery prove so painful, and cause suckling to be a curse instead of a pleasure. Various other applications have been recommended, and may be tried if the above fails, which it seldom does. They are, a pretty strong solution of alum, strong spirits and water, &c. Hamilton says, the pickle of salted meat boiled, has been recommended as an infallible specific.

SYMPTOMS PRECEDING LABOR.

Generally for some days (it may be two, four, six, eight, ten, or twenty days, or only a few hours,) previous to the accession of those phenomena which characterise the existence of labor there are often present certain premonitory signs of its approach, and which, by women who have borne children, are viewed as precursors of that eventful hour.

RESTLESSNESS, particularly at night, is frequent for days and weeks, and is not to be considered unfavorable.

SUBSIDENCE OF THE WOMB AND ABDOMEN is a usual monitor, and may be viewed in a favorable light, as it indicates room in the pelvis or basin of the body. The female feels as if she carried the child lower than formerly, and thinks herself slacker and less than she was before; and in many cases, though before inactive and indolent, she now feels lighter and more alert.

GLAIRY MUCOUS SECRETION, SOMETIMES STREAKED WITH BLOOD, occasionally occurs days before the active symptoms of labor, and render the parts moister than usual; which are also enlarged, relaxed, and soft, and sometimes painful. The discharge spoken of is commonly known by the term, *a show*.

IRRITABILITY OF THE BLADDER, AND IRRITATION AND GRIPING OF THE BOWELS, are often present as symptoms of approaching labor, and demand their frequent relief. Pains in the back and loins, commonly known as bearing down pains, may occur at this time. They are *false pains*, but so greatly do they resemble the pains of labor that the medical man only, upon an examination, can distinguish between the two kinds.

THE MOVEMENTS OF THE CHILD become stronger and more active, and are felt lower down; and there are also pain and weight in the loins. When the above symptoms occur it will be well to send for the nurse, and apprize the female friend who is to be present at the approaching event.

CHAMBER OF ACCOUCHEMENT.

THE BED should be so placed that the room may be well ventilated, without its being in a draught. The bed-curtains, if any, should be thin, and never completely drawn round the bed, so that pure air may be freely admitted and the impure air easily escape. The bed should not be *against the wall*, but placed so that assistance could be afforded on either side if required. The patient is liable, if placed on a *feather bed*, to sink into a hole, and thus prevent her medical attendant from being of so much service to her as he might be. It will, therefore, be advisable to place the mattress on the feather bed, and over it should be put one or more dressed sheep skins, or a piece of oil cloth or oiled silk, and above this the ordinary binding blanket and a clean sheet in the common manner; another in the form of a roller should be applied across the bed, having the ends folded in at the sides; a coarse blanket, folded within a sheet in the form of a table napkin, should be laid immediately underneath the patient, so as to be easily removed after delivery ; the upper sheet, blanket, &c. are put on as usual. The pillows should be placed in such a manner that the face of the patient, when she is on her *left* side, should be turned *from* her medical attendant. The nurse is of course supposed to know how to *make the bed ;* but I have thought it right to throw out a few hints as to the best manner of so doing.

The Dress should be as slight as possible. A loose dressing-gown does very well in the earlier stage of labor ; but in the more advanced a bed-gown and chemise should be worn—the latter is to be folded round the waist, so that it may be kept dry and be drawn down after labor is over ; the lower part of the body should be covered with a petticoat, so made that it can be taken off without raising the person when delivery has taken place.

The stays should never be worn, but in their place a broad double calico bandage, or binder, made with three rows of tapes on each side, so that it can be made tighter as labor progresses, and be used for the ordinary binder afterwards. If it is made with straps to come under the thigh from the back, to fasten in the front with a button, it will be kept down better. These straps need not be used until labor is over. Bandages for such purposes may be obtained of surgeons' instrument-makers ; or they may be procured at many of the stay makers. If they cannot be purchased, a broad bandage made of soft calico or linen in the simplest manner, will answer.

Heat of the Room.—This should be regulated by the patient's feelings. If too hot, it will produce fever, add to the fatigue, often render the pains irregular and ineffective, and thus protract the labor.

Attendants.—The only attendants required are the nurse and medical man, but a female friend may be allowed, for it inspires confidence. A word of advice to the friend :—Let your conversation be lively, (without being too gay, or you may be accused of want of feeling,) and on subjects unconnected with the matter in hand. Remember the mind of your friend who is suffering is distressed, and easily alarmed. Avoid whispering, or any appearance of concealment, as it may make her distrustful of her own powers, and perhaps doubtful of those of her necessary attendants.

Sleep.—If she be disposed to sleep between her pains, she should not be disturbed.

Food.—There is seldom much inclination for food, and, if the labor is not protracted, no occasion for it ; but if there is an inclination to eat, she may have a little tea with dry toast ; soup, sago, or light pudding ; but every thing heavy must be avoided.

Wine and cordials were once frequently given, under the mistaken and mischievous idea of keeping up the strength; but now they are most justly relinquished, as they produce heat, disorder the stomach, retard the labor, and not infrequently dispose to inflammation or fever.

THE URINE should be regularly and frequently evacuated. The *bowels*, if not open, should be acted upon by taking, as labor approaches, a table-spoonful of castor-oil, or an injection composed of a pint of thin gruel and an ounce of castor-oil. Much comfort is derived from this, and the unpleasant consequences which sometimes take place near the end of labor, (if this has not been attended to,) avoided. On the other hand, if the bowels are too much relaxed, take ten drops of laudanum in a wine-glass of water.

POSITION WHEN IN BED.—Medical writers have laid down rules, as to the best position; but the nurse, or other matron in attendance, will be fully capable of giving every necessary information on the subject. It is absolutely necessary that the medical attendant should inform himself of the position of the child. The manner in which this is done will be best explained by the female attendant. It is only requisite for me to say that it is a simple and painless proceeding, but so essential to the well-doing of mother and infant, that I beseech my reader to comply with it as early as her professional attendant may deem necessary, or the life of her unborn infant (should it be in an unnatural position) may be sacrificed; or she may wreck the happiness of a fond, anxious, and affectionate husband, by thus being accessory to her own death.

SHIVERING is very common, from a gentle tremor to a complete and violent agitation of the body. When this is the case, some warm tea or gruel, without wine or spirits, should be taken.

VOMITING is not uncommon, and is useful by emptying, perhaps, an overloaded stomach; it also tends to facilitate the labor.

CRAMP, during labor, is frequent, and may arise from having been in one position too long, for change of posture relieves it; but if in the hip and thigh, it generally proceeds from the head of the child pressing on a particular nerve in the pelvis, and is not removed until it has passed that part.

DURATION OF LABOR.—A first labor is generally the most protracted; but under proper management, and due submission on the part of the patient, is not more dangerous than subsequent ones.

NAPKINS, &c.—The nurse will of course attend to there being a sufficient supply of well-aired napkins, a pair of scissors, a skein of thread, and a proper receiver of flannel for the infant.

HOT WATER.—It will also be well to have an abundant supply of hot water in the house, which would be required if the infant should happen to be born in a state of asphyxia, or suspended animation.

OF LABOR.

The time of actual labor has been compared to the fatigues of a person on a journey; and this idea has led medical men to divide the parts of labor into three stages. The beginning only of the first stage shall I describe, because after that my reader will be in the hands of her medical friend, who will render her all the assistance required.

Symptoms of Labor.—There is pain in the back and loins, occurring at *irregular intervals*, and producing most disagreeable sensations; there is also generally a show; these sensations continue; the patient becomes uneasy; has frequent warm and cold fits, with urgent desire to pass urine, &c., and is exceedingly restless; every situation and position appears insupportable and uncomfortable to her. By degrees the pains increase in frequency and force; they occur now at *regular* intervals of ten or twelve minutes, and do not occasion that continued uneasiness as at first, for when the pain is passed she is pretty easy.

The majority of women, says Dr. Conquest, in his Letters to a Mother, in giving birth to their offspring, have to endure sufferings which often seem more than human nature can bear up under. The pains of labor sometimes convulse the whole frame, and all but destroy life by their severity; and some high and strong-minded women, even when sustained by a consciousness of Divine support and assistance, give expression by their cries and groans to agony, the intensity of which baffles all description; and not unfrequently women of the most gentle and quiet and enduring dispositions become almost wild and frantic from the intolerable anguish they suffer. With what gratitude and readiness should we, then, hail any discovery that can mitigate the violence, or lessen the duration of these heart-rending pangs; and what high delight is imparted to the medical man who may have it in his power to bring science and art to bear on the alleviation and removal of sufferings which he has hitherto been compelled to witness, without the ability to do much more than give expression to his sympathy, in common with those relatives and friends who endure, mentally, almost equal suffering with the agonized patient; and how much greater is the delight of every humane practitioner, should he be able *not only to alleviate the pains, but even to diminish the perils* of labor. Yet all this, and even more, has been accomplished by the employment of

Chloroform,—a fragrant volatile fluid, obtained by the distillation of spirits of wine over powdered chloride of lime, the vapor of which, if inspired from a hollow-shaped sponge or pocket-handkerchief, on which a tea-spoonful has been sprinkled, will sometimes, in less than a minute, produce unconsciousness, of some duration. It has recently been introduced into the practice of midwifery by Dr. Simpson of Edinburgh, whose untiring efforts in the cause of science and humanity have done more to entitle him to the grateful homage of his fellow-creatures than most men of the present day. By his calm and dispassionate and conclusive reasonings, and by the accumulation of facts which he has published, he has quieted the passions and prejudices of many who most violently opposed the use of this inestimable and wonder-working agent; so that now the most formidable and agonizing operations are performed without the consciousness of the patient, and women may pass through "the hour of nature's sorrow" without apparent suffering. My own experience fully substantiates all his statements, and confirms the accuracy of all his deductions; and in summing up the results of his own large experience and that of his personal friends, he says: "The effects of chloroform have been delightful. The mothers, instead of crying and suffering under the strong agonies and throes of labor, have lain in a state of quiet, placid slumber, made more or less deep at the will of the medical attendant, and, if disturbed at all, disturbed only unconsciously from time to time by the recurring uterine contractions, producing some reflex or automatic movements on the part of the patient—like those of a person moving under any irritation of the surface, or from the touch of another, though still in a state of sleep. Nor have the ultimate consequences and results been less happy. I never saw mothers recover more satisfactorily or rapidly, or children that looked more lively. And the practice is not a great blessing to the patient merely; it is a great boon also to the practitioner. For whilst it relieves the former from the dread and endurance of agony and pain, it both relieves the latter from the disagreeable necessity of witnessing such agony and pain in a fellow-creature, and imparts to him the proud power of being able to cancel and remove pangs and torture that would otherwise be inevitable. It transforms a work of physical anguish into one of painless muscular effort; and changes into a scene of sleep and comparative repose, that anxious hour of female existence, which has ever been proverbially cited as the hour of the greatest of mortal suffering." Again: "I never had the pleasure of watching over a series of more perfect or more rapid recoveries; nor have I once witnessed any disagreeable result to either mother or child. I have kept up the anæsthetic state during periods varying from a few minutes to three, four, five, and six hours. I do not remember a single patient to have taken it who has not afterwards declared her sincere gratitude for its employment, and her indubitable determination to have recourse again to similar means under similar circumstances. All who happened to have formerly entertained any dread respecting the inhalation, or its effects, have afterwards looked back, both amazed at, and amused with, their previous absurd fears and groundless terrors. Most, indeed, have subsequently set out, like zealous missionaries, to persuade other friends to avail themselves of the same measure of relief in their hour of trial and travail; and a number of my most esteemed professional brethren in Edinburgh have adopted it with success, and results equal to my own. All of us, I most sincerely believe, are called upon to employ it by every principle of true humanity, as well as by every principle of true religion."

I have already given my full and hearty concurrence to these statements, and would briefly refer to two cases which have occurred in my own practice whilst these pages were passing through the press. They seem to me admirably adapted, in their nature and results, to illustrate the beneficial effects of this wonderful agent; and they suggest the character of the cases to which its use may be most legitimately and advantageously applied. A highly respectable medical man, in the eastern part of London, summoned me, a few days since, to confer with, and assist him in the case of a young woman who had been in labor with her first child nearly eight-and-thirty hours; during which time she had progressed very slowly, and for sixteen hours there had been scarcely any perceptible advancement. Her sufferings had not only been protracted, but extremely severe; and such were the circumstances of the case, that the child could not possibly have been expelled by the natural and unaided powers of the mother. The local and constitutional symptoms demanded immediate delivery, and in no other way could it be safely accomplished than by diminishing the bulk of the child before extracting it from the womb. She readily and cheerfully inspired the vapor of chloroform, and during twenty-five or thirty minutes occupied in the performance of this painful operation was in a profound sleep, from which she awoke in a few minutes after the completion of delivery, exclaiming, "I feel as if I were in heaven!" and seemed totally unconscious of anything having been done to her. She afterwards admitted, that although unable and unwilling to move, or express her feelings during the operation, she heard all that was said, and was conscious of all that was done. She had several hours of sound and most refreshing sleep during the night, and on the following morning was as well, or better, than most women are, after an ordinary and comparatively slight and painless labor.

The other, an equally interesting and instructive case, recently came under my personal notice. A lady, who had been attended by me in eight previous confinements, expressed a wish to inhale the vapor of chloroform, on account of the almost unendurable severity of her sufferings towards the close of several former labors. I rather encouraged her determination, because her life had been in jeopardy more than once, from the indisposition of the womb to contract after the birth of the child, and the consequent formidable flooding, which placed her in so much hazard. I yielded to her earnest entreaties to have it administered, earlier than I should otherwise have done; and during the half hour of seeming unconsciousness under its influence, it was most interesting to all about her to witness her apparent total exemption from suffering, whilst the labor-pains threw the whole system into violent muscular action; and so promptly and so perfectly did the womb contract after the birth of the infant, that the after-burden was expelled without any of the hazardous circumstances attendant on the last stage of her former labors."

This agent, invaluable as it is, is too powerful to be administered except under the direction of a medical man. There are some diseased conditions of the body in which its use is wholly inadmissible, as in affections in which there is an undue determination of blood to the brain, and in diseases of the heart and lungs. As great a blessing as it has proved to be to suffering humanity, if employed indiscriminately, its discovery would only be a curse instead of an inestimable boon.

Close of Labor.—When the labor is proceeding rapidly and the pains become bearing down, the bed must be kept altogether. This is what medical men call the second stage, and having arrived, the patient may assist by exerting her abdominal muscles and diaphragm. To enable her to do this she must not scream, but during pain, hold her breath. A towel will also be fixed to the bed-post for her to pull by, or the hand of another person. But this auxiliary ought not to be employed to pull up by so much as to *fix* the trunk. And if the patient only follow the dictates of nature in this matter, she will do right; for she will find that all that is required is almost an involuntary exertion of voluntary muscles. Let her, however, be careful to make no straining effort in the absence of pain, during the intervals of which she ought to lay at perfect rest, renewing her strength. As its termination immediately approaches, the patient must be careful not to give way to feelings of impatience and become restless, but implicitly follow the directions of her medical attendant, otherwise serious consequences to herself might afterwards ensue. And now, if she have previously obeyed his instructions, she will be in possession of that strength and fortitude, which are called for at this time, and prove invaluable.

A little tepid gruel may now be taken by the patient, and she should be left to rest. If disposed to sleep, she should indulge it; but if not, must be kept perfectly quiet, and undisturbed by conversation.

HOW TO PROCEED IF THE CHILD BE BORN BEFORE THE ARRIVAL OF THE MEDICAL ATTENDANT.—It not unfrequently happens, subsequent to a first confinement, that with some females their labors are so rapid and short (two or three strong and powerful pains being sufficient to bring the child into the world) that it is quite impossible for any medical man to get to them in time for their delivery.

Under these circumstances, the friends are generally excited and alarmed. There is no occasion for this. All that is necessary to do is to see that the child is so placed that it shall obtain plenty of air.

Some nurses will tie the cord and separate the child. There is no objection to this, provided the child is alive, and respiration *fully* established. *But no nurse ought to be permitted to remove the after-birth.* This hint cannot be too strongly borne in mind; for an injudicious interference with the after-birth might be attended with the most serious consequences.

AFTER-PAINS.—About half an hour or so after delivery, a patient must expect pain again to occur. These pains, however, will differ from those which have just subsided; as they are not attended with bearing down efforts, and are accompanied by a slight discharge, these are called "after-pains." They will continue off and on with more or less frequency, severity, and duration, for about eight-and-forty hours. In this respect, however, they vary much in different individuals; but, whether mild or severe, they must be borne with patience, and must not give rise to anxiety, since they are useful and salutary. If, indeed, they should be violent, they are under the control of medicine, which will accordingly be ordered for that purpose.

These pains rarely occur with first children. In case they should, and the medical adviser should not be at hand to prescribe, for the ease of the patient, it might be well to mention that common house sand, salt, or oats, well heated and tied up in a cloth, may be applied to the belly with benefit. Where the sand and salt are painful from their weight, the oats will be found free from that objection—a bottle of hot water is also useful.

OF THE PERIOD AFTER DELIVERY.

It is not my intention here to take notice of the many diseases that may arise subsequent to travail—those I leave to the medical practitioner in attendance—but merely to give that description of advice which a very good nurse should be able to give, but which few of them are capable of doing.

Faintness and Languor frequently occur immediately after the child is born, even in short and easy labors. The medical attendant will, in this case, order his patient wine, ale, or spirits, in the proportion that may be required.

The Bandage.—If this is not already passed round the body the medical man will do this, and make it as tight as he may think needful.

The Dress, Bed-Clothes, &c.—The petticoat worn during the labor may be removed soon after delivery, and the chemise, previously rolled around the waist, brought down. The wet clothes may also be cautiously removed (without it has been ordered otherwise); but in doing this great care must be taken not to move the patient roughly, or permit her to make any effort. She *must be perfectly passive*, and her attendants will on *no account* raise her from the recumbent position *in the least*, but one person taking the feet and another the head gently remove her as much as may be required to enable them to get away those things that are soiled. *Fatal flooding has been produced by raising the body to a sitting position.* (See "*Fainting*," last paragraph, p. 419, and "*Flooding*," p. 420.)

The Diet.—This should be light and of easy digestion, but a diet approaching to starvation is not necessary, although it has been recommended by some authors. Tea or cocoa, with dry toast, may be taken in the morning and evening; or a cup of sago, panada, &c., with dry toast, if preferred. Beef tea, veal, or chicken broth, may be taken for dinner, for the first few days; or if soups disagree, a little boiled chicken or fowl, or some light pudding, such as arrow root, sago, ground rice, maccaroni, &c. &c., may be substituted. Too great an indulgence in eating is worse than too great abstinence; but both extremes should be avoided. What I wish to inculcate by the above is, that it is not necessary to deluge the stomach of a lying-in woman with gruel and pap.

The use of wine, ale, or spirits, either in gruel or otherwise, is inadmissible, for the first three or four days, for they tend to increase fever and often cause an overflow of milk, and render the breasts full and painful; for generally at this period, more milk is secreted than the infant can consume. After the fourth or fifth day, *if the strength requires it*, the patient may have a little good ale, or a glass or two of old white wine, if she had been accustomed to its use. Port wine is generally inadmissible, inasmuch as it tends by its astringency to check the lochia or discharge. If, however, the strength is good, all stimulants had better be avoided for ten or twelve days at least.

There is generally in the first days after delivery considerable thirst. This is best relieved by drinking sparingly of toast and water, or barley-water; neither of these should be very cold; or what is still better, by sucking some subacid fruit, such as ripe oranges, grapes, currants, &c. (See "*Child-bed Fever*," p. 535.)

The Mind after delivery is often in a state of excitement, and highly susceptible of impressions. It is therefore obvious that any thing which could excite emotion *in health*, should be guarded against during confinement. For this reason the bed-room should be at the back of the house, or means should be taken to lessen the noise of the street. It is not well for this purpose to stop the ears with cotton, for the mind then becomes anxious, from a natural wish to hear what is said by the attendants.

Of the Bowels.—They should be opened within forty-eight hours of delivery, by two table-spoonsful of cold drawn castor oil, or a tea-spoonful or two of magnesia, or by a laxative lavement; but the medical attendant will direct in this case.

The Bladder.—If, after a tedious labor, the water passes with difficulty, or in very small quantities, and fomentations of poppies and camomiles, or the application of a spunge *wrung* out of *hot* water, does not speedily afford relief, the medical attendant should be immediately informed of the circumstance.

Ventilation of the Room.—It is necessary that the room be kept well ventilated, and pure air often admitted. For this purpose the windows should be opened from time to time, and the curtains round the bed should not be closed. Everything that can give rise to an unpleasant smell should be directly removed.

The Lochia, or Discharge.—This varies much as to quality, appearance, and duration in different women, and in the same woman in different confinements. It is sometimes scanty, and sometimes so profuse, especially in those who do not nurse, as to require medical treatment; but, without it runs into one extreme or the other, it need create no alarm. For two or three days it has the appearance of pure blood; it gradually changes to nearly white; then to a greenish or brownish cast; and at last entirely ceases. It does not always follow this course, but the red color may disappear and re-appear two or three times.

Sudden obstructions of the discharge may be occasioned by exposure to cold, or indicate some disease, and is always alarming; if attended by pain in the abdomen, fever, sickness, &c., the medical attendant must be sent for; but in the meantime let the lower part of the belly be well fomented, and let drink of some warm diluent, as whey, barley water, or thin gruel be given.

Extreme cleanliness during the continuance of the discharge is imperative. The nurse should foment the parts with warm milk and water, or decoction of poppy heads, &c., twice a day; and if the smell is offensive, a proper syringe should be procured, and the passage thoroughly cleared with the above fomentation two or three times a day; for if this fœtid discharge be allowed to accumulate and lodge in the passage, excoriation and inflammation, with all its evil consequences, may ensue. Ignorant nurses have a prejudice against cleanliness, professedly from a fear of giving cold, but really from idleness. There is no fear of cold, if the ablution be properly managed; besides, the lesser evil ought to be chosen.

General Remarks.—It is better that the nurse should not sit up at night; for if she does so she will be continually teazing the invalid with offers of refreshment, &c. &c., to evince that she is awake, and thus prevent her getting the rest she so much longs for and requires. If on the other hand she sleeps, which is the very usual custom, the noise she makes in performing that agreeable function very effectually prevents the sensitive newly-made mother from sharing in the same enjoyment.

It will be better, for the above reasons, and for the purpose of keeping the air of the chamber as pure as possible, that the nurse should take her rest in an adjoining room, into which a bell may be introduced from the bed, (or a piece of cord tied to the nurse's wrist will answer the same purpose,) so that if her services are required she may easily be summoned.

As it is well to avoid all noise, the infant should for a few days be washed and dressed in another room, unless the mother (which is sometimes the case) is very anxious to superintend the process.

It used to be the custom to keep women too long in bed; in these times we have gone to the opposite extreme; the best guide is the invalid's strength; if she feels equal to it, she may on the third or fourth day be *taken* out of bed, that it may be properly adjusted, and laid on a sofa in a recumbent position. If allowed to sit upright she will suffer considerable uneasiness from the weight of the womb pressing on the soft and tender parts within the pelvis, and may lay the foundation of the troublesome complaint called *prolapsus*, or the falling down of the womb; as also *whites*, and other disagreeable discharges.

So long as the discharge continues she should not walk even from one room to another, or ill consequences may ensue. Some persons boast that they have been all over the house in eight days after confinement; but they will frequently find, by having taken such liberties, they have laid the basis for many troublesome complaints, from which they suffer in after life. The invalid should for ten or twelve days keep her bed-room; after that she may *be carried in a reclining position* to a sofa in the drawing-room, and from that position she should not deviate for a week at least. She may then gradually sit upright, and then be allowed to walk across the floor.

After the fourth week she may go abroad; at first in an easy carriage, afterwards on foot. She should avoid all crowded and heated places; for impure air, from her long confinement, is likely to injure her.

Admission of Friends.—A *prudent*, *cheerful*, *and judicious* friend may be admitted on the third or fourth day. She will be kind enough to give an agreeable turn to her ideas, and to converse as much as possible on indifferent topics; and also be on her guard not to fatigue her friend, nor allow her to talk; and if she seems inclined to be at rest, to let her be so. The door must be kept closed to all *noisy*, *lively*, *rattling friends*, and to mere acquaintances, for at least ten or twelve days.

Of Suckling, Management of Breasts and Nipples. (See "*Nipples, Sore*," p. 522.)—The child should be put to the breast as soon as the mother's strength will admit, (always before twelve hours have elapsed since the labor,) be there milk or not; for if there is, and the child is not applied, distension of the breasts and flatness of the nipples supervene, and render it difficult for the infant to suck.

If there is *no* milk, the action of sucking promotes its secretion. The nipple should be washed with warm water, before applying the babe, to remove a bitter substance which the glands round the nipple furnish.

If, as often happens after the first confinement, the nipples are so flat that the infant cannot take hold of them, they should be well fomented and drawn out by a child a few weeks old, or by a proper breast-pump; but this must be used with great gentleness and care. When this has been practised two or three times, the child will generally be able to suck. The patient should not be fatigued by the long-continued or frequent application of the child, and she should place it in a position most *easy to herself*. If in bed, the child should take the breast as it lies, and not incommode the mother by obliging her to sit up, because, without any benefit to the infant, the mother's fatigue is greatly increased; but when sitting up she should *raise the child to the breast*, and not assume the distorted and painful position which is too often seen in suckling, and which causes much pain in the back. For a few days the breasts are frequently much distended with milk; it is better, if possible, to avoid drawing them. They should be well fomented, and frequently gently rubbed with warm sweet oil.

Sore Nipples.—If they are tender and fretted, the strong infusion of green tea, brandy, or the lotion of zinc before mentioned—using each daily in its turn, will quickly harden the skin, and remove its irritability. If not, try a lotion containing one grain of the nitrate of silver dissolved in one ounce of distilled rose-water, or, what is perhaps better than all, wash the nipple often with the tincture of catechu. These applications should be used freely and frequently during the day, and the part exposed to the air afterward.

If they are not only tender and fretted, but also hot, dry, and very painful to the touch, and yet not chapped, the stimulating applications before advised would only aggravate the mischief. A bread and water poultice should be first applied, changed every three hours, and fomentations of warm water, or decoction of poppy-heads, after each poultice is removed.

When the unnatural heat and great pain of the part is relieved, it must be dressed with a little spermaceti ointment spread upon thin linen or lint.

From the friction, however, of the child's tongue and gums, the skin may have become excoriated, and cracks formed upon the nipple, or around its base. Every time the infant sucks they bleed, and the mother suffers exquisite pain.

The first object in the treatment is this: that the infant shall obtain its nourishment from the breast without its mouth coming in contact with the nipple. This is accomplished by means of shields made of glass, wood, ivory, or silver. The shield is neatly covered with an artificial, or prepared cow's teat, through which the child sucks without biting or irritating the nipple.

But this contrivance frequently fails, not because it is not good, but, because it is badly managed. When the teat is sewn on the shield its extremity should not extend beyond its apex more than half or three quarters of an inch; for if it projects more, the child will get the teat between its gums, press the sides of the teat together, and thus prevent the passage of the milk through it. The teat should also closely cover all the orifices to which it is stitched; for if not, air will pass in, no vacuum will be formed, and the child will draw nothing but air.

The nipple should always be washed with a little milk and water, both before and after suckling, which is to be effected through the shield.

Overflow of the milk, when it occurs, is troublesome; almost every remedy fails; but the nipple may be washed with a lotion, containing one or two drachms of alum, to a pint of decoction of oak bark. The bowels should be kept open by Epsom or Rochelle salts. The breast should be very lightly covered. For her own comfort the mother will wear receiving-glasses.

If the milk, for a few weeks, is deficient in quantity, it is not to be increased by stimulants. The diet should be nutritious, and consist of nearly equal proportions of animal and vegetable food. This, with a pint of good ale a day, will generally afford sufficient milk for the support of the child; if not, it must have a little food. Two glasses of wine, if the mother has been accustomed to its use, may be taken instead of ale.

If it is necessary to dry *up the milk*, from delicacy of constitution, or other causes, the best way is for the lady to take little food, and that principally vegetable, with very little liquid of any description. If the breasts are only moderately hard, easy, and but little distended with milk, they must not be emptied; for this would encourage further secretion, and they would soon fill again. However, if they are very hard and painful, and give much uneasiness from their distension, they must be partially emptied, so as just to relieve the distension, but nothing more; and this is to be repeated as often as is absolutely necessary.

It is a frequent practice to apply cold evaporating lotions to the breast. It is true they may produce a rapid dispersion of the milk, but they ought never to be resorted to, as they frequently give rise to symptoms of an alarming and dangerous character. The best and safest local application consists in the following liniment:

Compound soap liniment, three ounces,
Laudanum, three drachms,
Camphor liniment, one drachm.
Or if this is found too irritating, compound soap liniment alone.

Either of these liniments must be applied warm, and constantly, by means of several layers of linen or flannel, covered by a piece of oiled silk; and the breast gently pressed or rubbed for five or ten minutes, every four or five hours, with warm almond oil.

A gentle aperient should be taken every morning, and, if necessary, at night, the object being to keep the bowels slightly relaxed.

ON SUCKLING, AND ON THE DIET DURING THAT PERIOD.

THE DIET, through the whole period of suckling, should be simple, nutritive, and such as is easy of digestion. If the food taken agrees well with the mother, it seldom, if ever, disagrees with the infant.

A lady suckling should make milk her chief beverage, instead of wine or ale, which tend, in too great a quantity, to cause the secretion of impure milk, that is sure to disagree with the tender stomach of the infant; but if her strength require it, she may, as before observed, take a pint of good sound ale in the course of the day.

She should avoid pastry, fat, and all rich and acid articles of food, and live on good plain animal food, with a due proportion of well-boiled vegetables and bread. Hired wet nurses always cry, "We must live well." By this they mean grossly; nothing can be worse; it renders the milk thick, gross, and indigestible.

Food should be taken frequently in small quantities, so that the milk, which is secreted in about five hours, may always be fresh, and thus best fitted for the infant; for if it remains long in the breast, the thinner part, or serum, is absorbed, and the thick and indigestible parts only are left.

There is no practice more fraught with evil than the foolish one of taking wine or spirits to relieve the languor consequent on suckling; the relief is very transient, and is followed by a much greater depression than before.

For the best positions while suckling, directions have already been given; and it is now necessary to add, that the child should draw its support from the fountain which nature has designed for its use.* It should have the breast given it about every third or fourth hour, and not at irregular intervals, or when it cries. If the infant sleeps with its mother, it should never be allowed to do so with the nipple in its mouth; children have been suffocated from this cause.

No food agrees with an infant so well as the natural; and for six months nothing else, except it be absolutely necessary, should be given. About that time it should be prepared for weaning, by having a little thin gruel, or sago, given to it two or three times a day. Weaning should take place when it is about ten months old. After that time the milk becomes vitiated in quality.

It is an error to suppose that the constitution suffers from suckling. Very many women have improved in their health, by perform-

* The mother's milk does not always flow immediately after birth; but suckling is the best way to bring it.

ing this most feminine of all offices. Many very delicate females have experienced the best effects from nursing their children; and many of the complaints incident to women are removed or alleviated by it. Excepting the period of gestation, fewer women die when nursing than at any other period. The spirits during this time are generally more lively and uniform, the temper milder and more even, and the general feelings more healthy and pleasant than before.

If a mother's own feelings for her infant alone will not lead her to nurse it, there is yet another reason to urge that she should do so. It is, that if not suckling, it is most probable that pregnancy will again speedily ensue, and instead of there being an interval of two or three years, she will be confined every year. Few constitutions can bear up long against this; the health soon becomes shattered, and a premature old age supervenes.

Fretfulness, agitation, and all violent emotions should be eschewed; they vitiate the milk. A fit of violent passion in the mother has produced convulsions in the infant, and even death.

Nursing Sore Mouth.—Many mothers while nursing their children are afflicted with extreme soreness of the mouth. In some cases the suffering is acute and without intermission; the patient can take no food but liquids without torture; she shrinks from the pain even of articulation, becomes disheartened, loses all elasticity of spirits and all fortitude, her strength fails and her flesh wastes away. Said one who had experienced it, "it is the most *wearing* suffering which I ever endured."

This affliction is *peculiar* to nursing mothers. They must endure it, wean their babes, or resort to *proper* medical treatment.

Its cause is to be found in a peculiar condition of the alimentary canal which often accompanies lactation. To the nature of the *cause*, then, we must adapt our means of cure. Hence it is evident that the application of lotions—such as borax, gold-thread, &c., to the mouth, where the *effect* merely is developed, must be unavailing. In most cases—especially in the early stages of the complaint—the *compound pill of rhubarb* will prove an effectual remedy. Should this fail, other remedial agents of a like kind should be resorted to.

ON THE CHOICE OF A WET NURSE.*

It sometimes unfortunately happens, that from ill health, or other

* Every mother should nurse her own offspring if possible. When providential hindrances prevent her from this, let a wet nurse be obtained. But be sure to secure one in vigorous health; one not nursing her own *first* child is certainly to be preferred. She

causes, a lady cannot suckle her own infant, which is always to be regretted, for no milk will agree with its constitution so well as that of the mother. It is then necessary to select a proper person to take upon herself the maternal office. Where it can be done, before engaging her she should be sent to the medical man for approval. But sometimes this is not convenient, and it is therefore necessary to describe who is, and who is not a proper person; for from one not fit for the office the infant will receive more hurt than benefit, and had better be brought up on artificial food.

The wet nurse should have an adequate supply of milk; which should be thin, and of a bluish white color, of a sweetish and faint taste; and should, on standing, be covered with a considerable quantity of cream. Her confinement should have taken place about the same time as the lady's who requires her services, so that her milk corresponds with the age of the child it is designed she should nourish.

Both breasts should be good; for if the child be suckled from only one breast, it is apt to contract strabismus or squint. A woman above thirty-five years of age should not be chosen; nor one of a petulant disposition; nor one with small breasts, or excoriated nipples, or who *is unwell* while suckling, who has any hereditary disease, who has nursed several months, as the milk may soon leave her, or become of bad quality; nor one of bad moral conduct; for one who drinks, or who is otherwise dissipated, will do the child harm.

If the nurse's child is alive, it should be examined, to see how it has thriven, and both it and the nipple of the woman should be inspected for fear of a taint.

The nurse's diet should be plain, and but little difference should be made in the quality of the food from that to which she has been accustomed. On no account pamper her. Let her be employed about the house, when not required by the child, or she will soon be overgrown and indolent.

The above is written under the supposition that the nurse is to reside in the house of the employer; and on no account should it be otherwise; for, if you put your child out to nurse, and the woman has an infant of her own, it is natural to suppose that she will, unconsciously, perhaps, favor her own offspring, and that yours will be, in a great measure, deprived of its nourishment. Besides, for the purpose of getting her own rest, the *kind* nurse, if not observed very

should also be a person of *gentle* and *patient* disposition, and of a pleasant countenance and voice.

closely, will give the infant soothing syrups or other preparation of opium, to make it sleep. Opium is a most dangerous medicine to give to infants, except when ordered by a competent medical man; it is then frequently the salvation of the infant. If a mother visiting her child at nurse finds it always asleep, she should remove it immediately; otherwise it may soon sleep its last.

If, however, circumstances compel you to send your infant to nurse, care should be taken tc see it as often as possible, and if instead of thriving it gets thinner, be assured the nursing is bad, and remove it immediately.

MANAGEMENT OF THE NEWLY-BORN INFANT.*

The infant warmly wrapped up in a flannel receiver by the medical man and given to the nurse, if it be cold weather, is to be dressed by a good fire. This is necessary, both because the temperature of the child's body at birth is several degrees below that of the adult, and because its power of retaining its warmth is also less.

The first thing to be done is to *wash* the child; and, as its body will be found covered with a white, greasy, curd-like substance, this must be removed, and with great care, particularly from the eyelids, groins, armpits, and from the folds in the skin. This is most easily accomplished with warm water, fine soap, and a soft sponge, the child having been previously well oiled. Sometimes the nurse will wish to use spirits of wine, or a little gin, especially to the head, under the idea that it prevents the taking of cold. It does neither good nor harm, so long as the head alone is bathed with it, but *warm* water is far preferable, and with a mild unirritating soap is fully efficient. If any of this secretion is not removed, it dries, hardens, irritates the delicate skin of the infant, and sometimes even produces severe excoriations.

The surface of the child's body having been thoroughly dried with a soft towel, the next thing is *to put up the remains of the navel string*. Having been examined by the medical man previous to his leaving the chamber, it is presumed that its vessels are properly secured, and it is now to be protected from injury, until it separates from the body of the child, an occurrence which usually takes place somewhere between the fifth and fifteenth day from delivery. The mode is as follows :—A piece of soft old linen rag doubled, and about four or five inches in diameter, is to be prepared, and a circular hole cut in its centre, through which the cord is to be drawn. The cord being carefully folded up in this envelope, is to be laid on

* For "Suspended Animation at Birth," See p. 235.

the abdomen of the child, and secured by what is called the belly-band, viz. a band of thin flannel, five or six inches broad, and long enough to go twice round the body. This ought to be fastened with strings, pins in any part of an infant's dress being objectionable.

The child is now to be dressed: and about this it is unnecessary to say more, than that it should be sufficiently warm, and not calculated to place the slightest restrictions upon the movements of the limbs; and in reference to the head-dress, that a thin muslin cap in summer, and a thick one in winter, is all that is required; and more than this, or anything that shall compress or restrain the free motion of the child's head is highly injurious.

At birth, or two or three days subsequently, the breast of the infant will frequently be found swollen, hard, and painful, containing a fluid much resembling milk. Nurses generally endeavor to squeeze this out, and thus do great mischief; for by this means inflammation is excited in the part, and sometimes abscess is the result.

If the breasts are simply slightly enlarged, it is unnecessary to do anything more than rub them occasionally, and very gently, with warm almond oil, and a little time will restore them to their proper size.

If, however, they are inflamed, hot, painful, with a red surface, and unusually large, a bread and water poultice must be applied every three or four hours, which will generally prevent either the formation of matter, or any other unpleasant consequence. In a few days, under this treatment, they will usually subside, and be quite well.

Of Injuries received in the Birth.—When the child has been long in the birth, it is not uncommon for it to have a tumor of the scalp which generally subsides in a few days, and only requires to be rubbed with a little camphorated spirit. But if the tumor continues two or three weeks, cloths dipped in lime water, or in spirit and water, should be applied to it. The shape of the head is frequently altered; but it is not needful to press it into shape, as is sometimes done by nurses, for it generally soon resumes its proper shape and proportions.

Scratches on the head, like the marks caused by whip-cord, frequently occur when the labor has been tedious. They do not require any treatment.

The face and eyelids, and many other parts may be much discolored when the labor has been very difficult; but these appearances generally go off in a few days when no violence has been used in the delivery.

Retention of Urine.—Occasionally an infant will not pass any urine for many hours after its birth. This most frequently arises from the fact of none being secreted. In the last case of this kind that I was called to, three days had elapsed since birth, and no urine had been passed: it proved that none had been secreted. Sometimes, however, it is the effect of another cause, which the use of the warm bath will be found to remove, which should always therefore be employed four-and-twenty hours after the birth of the infant, if it has not by that time passed any water.

It now and then happens, but fortunately very rarely, that some physical obstruction exists. It is always important, therefore, for the nurse to pay attention to the above point; and it is her duty to direct the attention of the medical man to the subject, if anything unusual or unnatural be present.

Food.—The new-born infant will not require any food, if put to the breast within a few hours after its birth; not longer than twelve, however, should be allowed to elapse without so doing.

If it is necessary to give the infant anything, a little sweetened barley-water, milk and water, or very thin and well strained gruel, are the best substitutes for the breast; these must, however, be given slowly, and but a few tea-spoonsful at a time; for an infant a few hours old would be a long time in sucking a tea-spoonful; and the person who may have it in charge must bear in mind, that its stomach will *not contain* more than two or three table-spoonsful. For the first month of the infant's life it requires feeding, (or putting to the breast, which is better than all other kinds of nourishment,) every two hours.

The stomach and bowels of a new-born infant are filled with a blackish colored matter, commonly called the *meconium*. This is generally passed soon after birth by the mere effort of nature. It is the custom, for the purpose of bringing away this, to cause the infant to devour a quantity of sugar and butter, as soon as it enters this world. Now, this is, perhaps, not positively hurtful, but it is an absurd custom. The mother's milk will generally purge it enough; for the first milk secreted, and called *colostrum*, is of a laxative nature. If, however, a purge is deemed necessary, from the *meconium* not coming away in a few hours, the following will be found best.

Take of cold-drawn castor oil, one drachm,
Syrup of roses, three drachms. Mix.

Give one tea-spoonful every four hours until the bowels are well opened, and repeat it afterwards when required. Or a little manna, or *magnesia-alba* may be given; or a common spoonful of whey, sweetened with a little honey or moist sugar. Whatever may cause pain should be avoided.

ON THE GENERAL MANAGEMENT OF INFANTS.

By the word "Infancy," is to be understood that period of the time included in the space from birth to the completion of the process of teething; when all the teeth have appeared, *childhood* commences.

The temperature of the nursery should be much the same as is agreeable to a healthy adult, during the whole of the first month; afterwards it should not be above 60 degrees. In winter the child should not leave this room for *the* month. It is the practice of nurses to carry the child away when the mother sleeps. This is frequently injurious; it renders the infant liable to cough, with fever, convulsions—and death has even taken place from this change of temperature. The room should be well ventilated, for the infant and mother both require pure air; but a current of air should not be allowed to pass over either of them.

Food.—The experience of ages is in favor of an infant's being nourished entirely on the breast milk for at least six months. After that time it is well to feed it once or twice a day with thin sago or arrow-root, to prepare for weaning.

Clothing.—The clothing of infants should be, as already stated, warm and light. The long clothes may be worn for about six months; after that time shortened one quarter, and progressively to the length which will enable the infant to walk. Permit the author again to reiterate, that warmth is most essential to an infant's well-doing and comfort; and this is best effected by using fine flannel next the skin.

Washing and Dressing, as before recommended, should be performed with great tenderness and care; for if done violently and hastily the child will scream and cry, and when this happens it is generally owing to the awkwardness of the nurse. The child should never be spoken to in a loud or angry tone, or it will fear being washed and dressed, and it exhibits this fear by violent screams, &c. If gentleness in washing is used, together with soothing and cheerful language, (for infants at a very early age are aware of alterations in the tones of the voice,) the infant, instead of dreading the ablution, will evince its pleasure by "*crowing*," and spreading forth its limbs.

The *whole* body of the infant should be washed night and morning, and those parts of the body liable to be soiled, after each evacuation. The parts most likely to become excoriated are the folds of the skin about the armpits, neck, and groins; and these, after each washing, should be well dusted with hair powder or starch finely powdered; or some other absorbent powder. If there are excoriations, and they do not yield to mere dusting, but discharge a thick matter, the parts should be washed with the following mixture, two or three times a day.

Take of sulphate of zinc, two grains,
Rose-water, one ounce.

Then dust with the following powder,

Take half a drachm of oxide of zinc,
One drachm of powdered orris-root,
Five drachms and a half of powdered starch. Mix.

To be used after each application of the lotion. Or, if preferred, the following ointment may be used in place of the powder.

Take calamine ointment, one drachm,
Spermaceti ointment, three drachms.

To be spread very thinly on lint, and applied after the above wash. Whilst pursuing these means, the bowels of the infant should be kept open with a little castor oil, manna, or magnesia. The above remarks apply principally to very early infancy, but even after the third month the whole body should be washed once a day; after the sixth month, every other day. During the whole period, from the third month to the end of the third or fourth year, children receive much benefit from the use of the tepid bath, two or three times a week for the first two years; and afterwards, if not delicate, from the cold bath, of sea-water.

Cleanliness.—The most scrupulous regard must be paid to this, not only for the comfort of the babe, but also from fear of cold, &c. The moment a napkin is soiled or wet, it should be, even in the night, instantly removed, and replaced by a dry and warm one; the parts if soiled, being first carefully washed with a sponge and warm water, and the groins freely dusted. If due attention is paid to "*holding out*," or the use of a small utensil, the infant will soon learn to "*give notice*," and will evince uneasiness even in sleep when it requires to pass either urine or fæces; but until it does so, the greatest attention must be paid to keeping it clean and dry.

Exercise.—For the first month the infant requires but little, the fatigue it undergoes from being washed and dressed twice a day, and the requisite *changing* is enough, together with being gently carried a few times across the room five or six times a day; but after the month, on every fair day, it may be carried out for an hour about noon with advantage. The person carrying it should hold it in the horizontal position, and walk slowly and gently, avoiding all running, jumping, or twisting round*; but she should never stand still, and especially avoid doing so at the corner of a street, because of the increased draught of air in that situation; for the same reason, standing in the lobby of a house, with the door open, is particularly injurious. As the infant advances in age and strength, the time of its being out should be prolonged gradually, until it almost lives the whole day in the open air; it should be carried horizontally, until it shows a disposition to *sit up*, and even then its head and back should be carefully supported. Infants generally begin to sit up about the third month, but some sooner or later. If the season be winter, the infant must be most carefully guarded against cold; with due precaution, in this respect, if it be in health, it may be carried in the open air, even in January, without fear of evil.

Perhaps it is hardly necessary to say, that until the infant is some months old, it should not be *tossed up;* for these tossings, from the fragile state of the bones, might occasion fracture. Gentle exercise in the arms, *often changing the position*, and nursing *on both arms*, is the best until it commences walking, though there is no objection to permitting the infant to roll on the carpet, &c.

Carriages of various kinds have been used to give exercise to infants. They are needless anywhere; and in the streets of a town quite inadmissible, in consequence of the jolting which must take place in crossing streets and which would be likely to produce disease of the brain, to say nothing of the chance there is of even the best constructed being overturned. Exercise is not less necessary to the health of infants than it is to those of older age; but on account of their tender and helpless condition, no small difficulty has

* "The nurse ought to be careful to keep the child in a proper position, as deformity is often the consequence of inattention to this circumstance. Its situation ought also to be frequently changed. A child's legs are sometimes bent all on one side, by the nurse carrying it constantly on one arm.

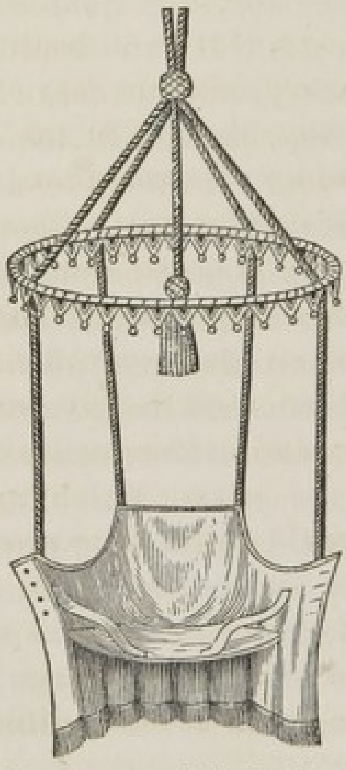
"Nothing can be more absurd than to set one child to keep another. This conduct has proved fatal to many infants, and has rendered others miserable for life.

"Mothers of the poorer sort think they are great gainers by making their children lie or sit while they themselves work. In this they are greatly mistaken. By neglecting to give their children exercise, they are obliged to keep them a long time before they can do anything for themselves, and to spend more on medicine than they would have paid for proper care."

The *moral* effects upon the child itself are sometimes serious when it suffers for want of exercise in the mother's arms or on her knees. An infant suffered for months to pass hours or half hours at a time, upon its back, crying and tossing (the only way in which it can signify its want of exercise) will be very apt to contract a sour, peevish, passionate temper, to the wreck perhaps, of its future happiness and that of the parent.

existed in finding a method of furnishing it in a way that is free from all objections. Carrying the child, in either the arms or a carriage, has but little to recommend it except that it gives the child fresh air. Sometimes, in truth, it may even be worse than useless, from the cramped position into which the infant is too often distorted by a nurse who may be ignorant, indifferent, or fatigued.

This difficulty appears to be, in a great measure, removed by the inventive genius of Mr. G. W. Tuttle of this city, who has contrived an article that is already coming into considerable use, known as a "Baby Jumper," or an "Elastic Infant Gymnasium." It



Baby Jumper, with the frock open.

Baby Jumper, with the child in it.

consists in straps of strong gum elastic, which serve as springs, concealed from the sight by a sheath made of any kind of cloth that taste or fancy may suggest. From these straps is dependent a doubled cord, which is joined to four other cords that diverge at equal distances apart, and are attached to a neatly covered iron hoop. Four other cords are suspended from the hoop, slightly converging, and are made fast, two in front of the shoulders, and two behind them, to a loose frock opening before, and without sleeves. From the waist of the frock behind, a broad well padded band passes downwards and then under the child, when it divides into two and the pieces rise between the legs, and are fastened, with buttons, one on either side of the waist in front. A very comfortable and secure saddle is thus made on which the infant rides. When placed in the "Jumper," which may be done in a moment, there is no drawing or pressure on the body or the arms—no part is constrained, the form is kept erect, and most of the muscles may be thrown into action at the will and pleasure of the child. By shortening or lengthening the cord, the weight of the infant and the elasticity of the springs may be so graduated to each other, that the child just comes to the floor with its toes. When it does this, it instantly bounds upward like an India rubber ball; and such actions and counteractions will go on as long as the child continues to make any exertion. The "Jumper" should be secured to the ceiling by a *screw* hook of sufficient size to sustain the weight of the child, without danger of drawing out.

This simple apparatus, the general appearance of which may be seen by referring to the accompanying cuts, seems fully to accomplish the purpose for which it was designed. Its advantages are indeed manifold. It furnishes the infant with recreation, exercise, and amusement, all of which contribute greatly to the improvement of its health, strength, and the equanimity of its temper. The danger of deformities by injuries done to the limbs or the spine, from accidental twists or falls, when carried, is quite obviated by this little contrivance. It is perfectly safe to the child and relieves the mother or hired nurse of much labor that she otherwise is obliged to undergo in the nursery.

We would suggest that the "Jumper" might be rendered more useful than it already is, if, instead of being suspended from the ceiling, it were suspended from a kind of crane, made to traverse the whole or part of a circle. It might be constructed of a strong upright shaft, firmly set to the floor, with a horizontal pole of tough, elastic wood, gradually tapering to its extremity, hung high upon it by means of a couple of large hinges, one of which should be connected with a brace that the pole would require, to give it substantial support. Persons living in secluded parts of the country, where the "Jumper" could not be procured, might carry this idea further, and, by adding a suspensory apparatus of home manufacture, which a little labor and ingenuity could soon produce, would be in possession of a very good substitute.

Such a moveable pole added to the "Jumper," would only be serviceable after the child had become old enough to bear its own weight with but little support. The springs should then be so adjusted that they would allow the child to maintain some footing on the floor. In this manner, while it was getting stronger exercise, it would also more readily learn to walk.

When infants show a disposition to get on their feet, they should be indulged and allowed to creep on the carpet, or to walk from one piece of furniture to another. It is unnecessary to hold their arms high above their heads, and it is dangerous to do so, for dislocation of the shoulder may easily take place. Support should be given by placing the hands under their arms.

When once an infant walks it will take enough exercise; but, nevertheless, it should be carried if it lives in a town, to the outskirts, so that it may have the benefit of fresh air along with exercise.

Sleep.—For the first month an infant naturally, when in health, sleeps nearly two-thirds of its time—afterwards rather less; but during the whole period of infancy it should be allowed to sleep twelve hours, or nearly, out of the twenty-four.* While speaking of this subject it is well to observe, that an infant in health should not be taken out of bed in the night, save to be *changed* when required. It should not be carried across the floor to lull it to sleep, nor spoken to or be allowed to look upon the light of a candle to please it; by so doing it will acquire a bad habit of waking in the night, injurious to itself, and troublesome to its attendant. It is not necessary to feed a child during the night, even when still being nourished at the breast. A mother who manages well, will soon bring her little one into the habit of taking the breast immediately before going to sleep, and not again until morning.†

The night clothes of the infant should be loose. Nothing can be worse than the custom of confining the limbs during the night.

* When the little one is in health, nature will probably dictate upon this point. If so, a good rule is to let it sleep as much as it pleases.

† Two points are here cursorily introduced which we think worthy of more emphatic notice; they may both be embraced under the word *habits*. These are beginning to form almost, perhaps (in some respects) quite as soon as birth. That which an infant is accustomed to it very soon *demands*, if it be an evil, and *is contented with* if it be a good. A slight degree of effort on the part of the mother or nurse will form the infant to the habit of nursing and of sleeping at *stated times*, and at stated times *only;* so much so that its calls for the gratification of these natural wants may *alone* almost indicate the hour of day. So it may be formed to the habit of going to sleep in any *particular mode*.

If so, how much of sleeplessness might mothers spare themselves by refusing the breast except at particular periods of time; by not imagining that for every whimper and for every token of restlessness on the part of the child the breast is the only remedy; and by making it sure that their hours of quiet repose shall not be stolen from them by the unseasonable wakefulness of their babes. How much wearing exhaustion might they avoid by insisting, even at the cost of a few tears from the infant, that they *must* go to sleep without being carried across the floor or rocked in the cradle.

I have known a *healthy* infant that for the first eighteen months or two years of its life never *would* go to sleep unless carried to and fro in the arms sometimes hour after hour. It had been trained to the *habit*, and would have the indulgence. Let young mothers, for their own sakes, think of this matter of infantile habits *in all its bearings.*

When the child sleeps in the day, it may be laid in the bed, or crib; but at night, at least for some months, it should sleep with its mother, whose bosom is its best and natural resting place. Nothing can be more cruel than to banish a sickly or delicate infant to a cot or crib during the night, there to wail and cry for lack of that heat which it cannot itself engender, and which its mother's bosom would impart: the reason often given for the use of the crib is, that the parent fears to *overlay* the infant. But the young mother soon becomes so accustomed to the presence of the child, that its slightest movement is perceived, even while she sleeps, and she will even alter its position without herself waking.

After the infant is five or six months old, especially in warm weather, it will generate enough heat, and may then sleep in a cot by the bedside.

The cradle is now out of fashion, and it is well it is so, for it often produced diseases of the brain by determining too much blood to that part.

It is too much the custom to give some nostrum or other to infants to procure sleep. They all contain opium in some form or other, and are very injurious to the infant, and ofttimes fatal. No *soothing* medicine whatever should be given to an infant, without it has been prescribed for the particular case by a medical man. That mother who follows the advice of a nurse or friend, in this particular, is highly culpable; and if the nostrum should prove fatal, (which is not an unfrequent event,) would, in a moral point of view, be guilty of its death.

OF ARTIFICIAL NURSING.

If it unfortunately happens that a mother cannot suckle, and is unable to procure a proper person to whom to dedicate the maternal office, it becomes requisite to consider what is the best food for an infant thus situated. It should of course be, especially in the earlier months, as nearly like the milk of the mother as possible. The milk of different animals varies much in the *quantities* of their component parts, though they all consist of cream, curd, sugar, and whey; thus there is more cream in the milk of the human female than that of the cow, and also more sugar and whey. It is stated by Van Helmont, Browzet, Burns, and others, that the milk of asses most nearly resembles that of women; after asses' milk, that of goats; but sometimes these are not to be easily procured. We must then change that of cows so as to diminish the proportion of curd, and increase that of sugar and cream, which is done by adding an equal quantity of new-made whey, and about a sixth part of fresh cream, (or less if rich,) and a little sugar. This to be mixed just before it is required, as by standing it acquires bad properties. A very good substitute also is one tea-spoonful of cream to four tea-spoonsful of tepid water, a little sweetened. Or what is more convenient, and more commonly used, is a mixture of the fresh milk of the cow, two parts; water, one part, and loaf sugar, in sufficient quantity to sweeten it. Milk, prepared in this way generally agrees very well with infants. On either of the above the child may be fed by means of a proper bottle, with a prepared cow's teat, or what is equally as good, a piece of soft wash-leather, with a little hole made in its extremity for the milk to flow through, tied over the mouth of the vessel. In preparing such an instrument for the mouth of the child, it is desirable to give it the shape and size of the natural nipple as nearly as possible. If wash-leather be employed, a new one should be used everyday, as it soon becomes foul, and will taint the food as it passes through it, unless this precaution be observed. It may be added, that a fine bit of sponge, cut in a proper form, will serve to give to the artificial nipple the proper figure, while it will, at the same time, prevent the milk from escaping too rapidly from the bottle.

The infant should always be made to *suck* its food; for in this way it will not only get it slower, and thus prevent the stomach from becoming overloaded, but it will stimulate the salivary glands to throw out their secretion, which is necessary to prepare the food to be digested by the stomach. If the boat or spoon is used, the stomach will generally be too full, from the child taking the food quickly, which will cause flatulency, spasms, &c. Indeed most of the disorders of the stomachs of infants arise from the great quantity of food given, and its being too thick for digestion.

The milk diet should be continued until the end of the third month. We may then, in addition, give a little chicken or veal broth; or beef-tea, thickened with a little oatmeal; or the child may have a little arrow root, oatmeal, or sago, which is one of the best diets for infants. These should be changed occasionally, from one to the other, as they may agree or disagree with the stomach and bowels. The oatmeal frequently purges; but if made in the following manner will generally be found to agree very well:—"Put two table-spoonsful of oatmeal into about a pint of cold water, let it stand ten minutes, and pour off the clear liquid, which boil until it is a thin jelly."—Whatever food is given to an infant for the first six months should be very thin, and not much sweetened. After the teeth are all cut, solid food may be given, as rice pudding, &c.; very little animal food should be given during childhood. Those children thrive best who have but little.

After the first teeth are cut, the child may have a light boiled egg, or a little calf's foot jelly, and may also drink new milk and water.

If care is taken, children soon learn to feed at regular hours; four times a day is sufficient after the sixth month.

WEANING.

This with all infants is a most important epoch in their existence, and frequently gives rise to disease, if not conducted with great caution. It is difficult to fix a period when weaning should be attempted; but it never should be done suddenly. The child should be prepared for the change by having, about the sixth month, some artificial food given it—at first once or twice a day, and afterwards oftener; so that it becomes *weaned from the breast in the day*, and has recourse to it only in the night. Let the process be accompanied with gentle carriage in the open air if the weather is mild.

Though, as before remarked, it is difficult to fix a precise time for weaning, most authors agree that after the tenth month of lactation the milk becomes deteriorated, and unfit for the infant; besides, after that time the mother's health, as well as that of the babe, will suffer by continuing the practice. It may, therefore, be cited as a general rule, that the infant should be weaned by, or soon after, its second birthday, provided it be in good health; if not the breast must be continued until the child is better. When an infant is cutting one or more teeth, it is not a favorable time to wean.

To effect weaning, the mother must be firm, and if the infant has been accustomed to artificial food for some time, it will not require any great display of this quality. It is worse than useless to take the breast away for a night or two and then indulge the infant, as is often said, "with a little drop of comfort." It is the custom with some to put aloes, &c. on the breast, to render it disgusting; it does this, but it is unnecessary if the mother is firm; if not, the child should sleep with some one else; for as soon as it tastes the aloes, or other nastiness, it will scream violently, and thus do itself much harm. The best time of the year for weaning is when the weather is neither very hot or cold.

After the infant is weaned, it is to be fed with sago, arrow root, gruel, beef-tea, &c. four times a day, taking but a little at a time; a table-spoonful or two is sufficient for an infant of six months old. Infants should never be fed in the night. There is no objection, after four to six teeth are cut, to let it suck a piece of fresh roasted or boiled meat. Potatoes, either with gravy or butter, are not fit for infants, until they have cut their double teeth. The same may be said of cakes, pastry, and fruits, either dry or fresh. They all give rise to disorders of the bowels or stomach.

When the lady has taken her infant from the breast she should live for a few days on vegetables, and take very little liquid of any kind. The bowels should be opened by Epsom or Rochelle salts; and if the milk is troublesome the breasts should be rubbed with soap liniment three parts, and laudanum one part, thrice a day. The breasts in a day or two may be covered with lead plaster spread on leather. It however not unfrequently happens that the milk is difficult to get rid of, and that more or less fever is the consequence. When such is the case, in addition to the cathartic already recommended, some medicine which will mitigate or remove fever, should be taken, as the following:

> Take potassio-tartrate of antimony, one grain,
> Solution of acetate of ammonia, two ounces,
> Camphor mixture, six ounces.
> Two table-spoonsful to be taken every four hours.

If an effervescing draught is preferred, take the following:

> Take bicarbonate of potash, three drachms,
> Potassio-tartrate of antimony, one grain,
> Syrup of mulberries, half an ounce,
> Distilled water, seven ounces and a half.
> Mix—two table-spoonsful to be taken with one of lemon juice every fourth hour.

The following embrocation will be found of considerable service in removing the milk:

> Take tincture of lytta, spirits of turpentine, of each, two drachms,
> Compound camphor liniment, one ounce.

The breast to be gently rubbed with this three times a day. Drawing the breasts should be avoided, if possible.

ON THE DISEASES OF INFANCY, AND SOME DISEASES OF CHILDHOOD.

By infancy is to be understood the period of time extending from birth to the cutting of the last tooth of the first set of teeth, or about two years and a half. It was only intended here to have given a sketch of the principal diseases of that period; but it was found that many diseases appertained to both Infancy and Childhood, as measles, fever, croup, &c., and it becomes necessary to take notice of them also.

The diseases of the skin and various eruptions are numberless, and could not be understood, even by a medical reader, without the aid of plates. It, therefore, will be found, that only those of the greatest moment, or most commonly met with are here taken notice of.

In the slighter indispositions the author has pointed out the simple modes of treatment, which are found generally of service. In the severer class of diseases he has contented himself with drawing a faithful picture of the appearance they present, and pointing out in some, what should be done whilst medical assistance is being summoned. To have laid down a plan of treatment for all the diseases mentioned, would have been hurtful and dangerous; because the treatment in many must be altered from day to day, or even from hour to hour, and must also be varied from considerations of age, sex, temperament, strength, &c. &c.

ON CONGENITAL AND SURGICAL DISEASES OF INFANTS.

Imperforations of various natural passages may take place, as imperforated *anus* (the lower bowel), nostril, eyelid, urethra, sexual organs of the female, &c.; or they may be malformed, or the exit of the natural evacuations may take place from unnatural openings. These all call for the immediate aid of the surgeon.

Imperforation of the Anus, (the natural external intestinal opening).—The want of this natural outlet is very generally occasioned by a thin membrane stretched across, and is apparent to the eye when the infant makes efforts to expel the *meconium*, in the form of a dusky soft tumor. The obstruction is generally complete, and is easily removed by the surgeon. In some cases the outlet is very well formed; but there is obstruction higher up in the bowel, called the *rectum*. This obstruction is generally from about two lines to an inch within the bowel, and is known to be present by the child's not passing the *meconium*, and the nurse being unable to throw up an injection; or by introducing the little finger, or a piece of oiled paper. This disease may generally be relieved. There are other and more serious malformations of these parts that the art of the surgeon sometimes fails to cure. When the *meconium* does not pass within twelve or twenty-four hours after the birth, the medical man should be requested to institute a careful examination. The same may be said when the child fails to pass its urine.

Nevi Materni (Mother's Marks) may be on any part of the body. When merely discolorations of the skin, and not elevated, they are not dangerous, but seldom admit of cure. But when they are elevated, and of a purple color and grow rapidly, an operation becomes needful for their removal; as they might burst, and cause so great a loss of blood as to prove fatal.

Distortions of various parts of the body, as Club-foot, &c.,

are not uncommon. They are to be treated by careful bandaging, &c., under the direction of a surgeon.

TONGUE-TIED may be known by the child not being able to suck. It is occasioned by the *frenum* or bridle of the tongue being attached too near the lips, and requires a simple operation for its removal

HARE-LIP is well known. If the child cannot suck in consequence of the cleft, an operation must soon be performed, though always attended with danger to very young infants. If it can take the breast freely, the operation had better be deferred for a year or more.

HYDROCELE is a collection of water in the bag of the male infant. It is generally to be cured by a lotion of muriate of ammonia and water; but if the fluid is not dispersed by these means, it (the bag) will require puncturing in after-life to let out the fluid.

PROLAPSUS ANI, (coming down of the anus.) When the child has a motion a portion of the gut protrudes. When this takes place it should be carefully returned by very gentle pressure. The bowels should be kept lax, and the child not allowed to strain or remain long at stool. If it comes down even when not at stool, after being returned it should be kept up by a compress and bandage.

BLUE DISEASE, OR CYNOPATHY, arises from imperfection or malformation of the heart. If the malformation is great it comes on immediately after birth; but generally it does not show itself until after the child begins to walk, or is teething. The skin of the child is dark, and looks dirty and leaden; the nails and lips are blue and livid; the breathing is difficult; there is a kind of asthmatic, suffocating cough, and sometimes convulsions. When cough and convulsions arise there is danger; but persons so affected have lived to adult age, and then died suddenly. There is no remedy in medicine for this disease; but all excitement of body and mind should be avoided; the child should have rest; its bowels are to be kept open, and care taken that the stomach is never overloaded with food.

DISCHARGES OF MUCUS, matter or blood sometimes takes place from the privates of *female infants*, but more generally from *female children*, and has sometimes given rise to unpleasant and uncalled for suspicions. If the discharge is white it generally goes off, by attention to cleanliness and keeping the bowels open, in a few days; but if bloody or greenish, it is obstinate, and requires a more complicated treatment, and professional attention is required. The cold bath is always of service, together with purging, and keeping the parts very clean by means of a sponge and warm water.

DYSURY, (difficulty of passing Water,) is to be relieved by warm fomentations, and a drop or two of sweet spirits of nitre.

Incontinence of Urine, (inability to retain the water,) especially in bed, is generally incurable until towards puberty. The best remedies are those that strengthen the habit of body, as country air, exercise, and sea bathing. A Burgundy pitch plaster may be applied as low as possible on the back. (See p. 652—"*Urine, Incontinence of.*")

Ear-ache is a frequent and painful disease, both of infants and children. If too young to tell what ails it, it may be suspected by its being seized with a sudden and severe fit of crying as if it had colic, and like it the pain seems to be easier at times, but it does not, as in colic, *spur* with its feet, nor is its belly hard; but the head is restless, and it complains if the ear is touched. In time the child sobs itself to sleep, and in the morning perhaps its cap is found stained by matter. Heat is the best remedy: a warm poultice, or warm oil should be applied to the ear, and the back of the ear should be rubbed with warm laudanum. If there is a fœtid discharge, the ear should be syringed carefully and gently every day with warm milk and water, and the bowels well opened. Some children, whenever they take cold, have a discharge from the ear, and are deaf. In this case the ear should be kept warm and frequently syringed, and the back of it rubbed with a little hartshorn and oil. (See p. 408—"*Inflammation of the Ear.*")

Opthalmia, or Inflammation of the Eyes.—This disease may arise from exposure to a fire soon after birth; it then generally disappears in two or three days by washing with milk and water. But it may be what is called Purulent Opthalmia, which is a very severe disease, and may cause loss of sight. It begins with a redness of the eyelids, which soon swell so that they cannot be opened, and discharge a large quantity of yellow, greenish matter, which excoriates the cheek. If allowed to continue, the globe of the eye becomes involved and dissolved, and the humors of the eye come away. It requires a very complicated treatment, which should be conducted by a skillful surgeon. The only advice I shall here offer is absolute obedience to his orders, and great attention to cleanliness. This disease generally arises in the infants of mothers who have had, during pregnancy, a discharge. When this has been the case, great care should be taken in washing the infant at first, not to expose it to light, and to remove every particle of matter from the eyes. The author prevented the fourth child of a lady being thus affected, (the three previous children having had the disease in a very dangerous form,) by attending to the foregoing and keeping it pretty constantly in bed, the room being darkened, having the eyes washed often with milk and water, and by the use of the following lotion four times a day:

Take acetate of zinc, eight grains,
Rose water, eight ounces.—Mix.

This was applied on lint to the eyelids, and a little allowed to fall into the eyes at each time of application. By persevering in this plan during the month, the child entirely escaped, though the mother had been more affected with *leucorrhœa* (whites) in this than any former pregnancy. (See "*Eye, Inflammation of*," pp. 412, 414.)

Rickets.—(See pp. 564–567.)

Burns and Scalds.—(See p. 227.)

ON CUTANEOUS AND ERUPTIVE DISEASES.

Strophulus Intertrinctus, or Red Gum, is a popular eruption of a vivid red color, on the face and neck of young infants, and somewhat resembles measles; but there is no cough or fever. It is of little consequence and arises from irritation of the bowels, and calls for a dose or two of magnesia. The child, during its continuance, should not be exposed to cold.

Strophulus Albidus, or White Gum.—This attacks older children than the former. It generally comes on after exposure to the sun, and has been mistaken for itch. It is a number of minute white specks on the neck, face, and breast. It requires no particular treatment.

Strophulus Confertus, and Strophulus Volaticus.—These are teething rashes. They consist of papulæ (or pimples), so close together as to form one patch. These patches vary in size, from a sixpence to a crown-piece,* and are generally on the face and arms if on the body, the papulæ are larger and flatter and surrounded by inflammation, and at a distance look like measles, and as they are sometimes preceded by sickness have been mistaken for that disease. But there is no cough, sneezing, &c., nor much fever. Gentle laxatives of magnesia and rhubarb, or senna and manna, are all that is required.

Strophulus Candidus.—The papulæ are paler than the surrounding skin, and of a smooth and shining appearance. It has been taken for itch, but it is not itchy. It comes out all over the body when teething, or occurs after some acute disease, and is then a favorable sign.

Itertrigo, or Chapings.—Is a small rash on the folds of the groin, arm-pits, &c. which soon forms a sore. The parts should be frequently washed with warm milk and water, and then well dusted with violet powder; or the following ointment may be used:

* From the size of a dime to a dollar coin.

Take sulphate of zinc, ten grains,
Simple cerate, one ounce.—Mix.

To be applied three times a day, or when wetted by urine, &c.

Eruptions, almost endless, attend teething, but are of little consequence if unattended by fever.

Infants who have artificial nourishment, or bad milk, are subject to troublesome successive crops of inflamed pimples, which slowly gather and burst, and form brown scabs which fall off. They may be on any part of the body, and sometimes are large enough to be called boils. The color of these boils differs according to the strength of the infant: in weakly infants it is purple; in stronger ones it is red. This eruption, called *Icthyma Infantile*, requires better diet or a new nurse, and great attention to the bowels, and removal to the country. The eruption may arise on the other hand from gross feeding. In this case lower and plainer diet, and purging, will effect a cure.

Pompholyx appears during teething. It consists of a number of vesicles, or pimples, of different sizes on the belly, ribs, and thighs, which contain an acrid water. These vesications are most common in summer. Lory considers them to be produced by the heat of the sun; they require no medicine, but the water should be let out with a small needle.

Pemphigus is a disease somewhat similar in appearance to the above, but is much more serious, and it attacks weakly infants soon after birth. The vesicles are at first small, but become large and oval, and the contents tinged. They are surrounded by a livid halo, and when broken the part ulcerates, and the ulcer spreads. The disease is attended by fever, sometimes with *Apthæ* (thrush), and is always very dangerous, and under the best plans of treatment frequently fatal. In all the foregoing cases the advice of a medical man should be taken; in this it is imperative.

Scabies, or true Itch.—*Psoriasis*, or Scaly tetter, sometimes called dry itch; *Porrigo*, or *Tinea*, called scald-head, or ringworm of the scalp, are well known by their appearance to most nurses. The treatment of any of these diseases is complicated, and should be entrusted only to a medical man. (See "*Itch*," p. 477.)

Dandriff, is a dry, scurfy, and scaly eruption amongst the hair near the forehead. The skin is covered with a thick white scurf, which can be removed like powder; further back large scabs are formed. The hair should be cut very close, or shaved, and the head washed with a brush and soap and water daily. The head at night should be smeared with the following ointment:

Take ointment of the nitrate of mercury, one drachm,
Simple cerate, seven drachms.—Mix.

The bowels should be kept freely open.

Lepra, Lepra Alphoides, Herpes Farinosus, (scurvy spots or ringworm.) The appearance of this disease is well known; it is very contagious and obstinate. The ointment ordered in the preceding is a good application, along with frequent ablution of the part; and the use of a lotion, as

Sulphate of zinc, twelve grains,
Rose-water, one ounce.

To be applied three or four times a day. The creosote ointment applied three times a day often effects a cure. (See p. 567, "*Ringworm.*")

Excoriations Behind the Ears take place during dentition. If slight, they only require to be kept well washed with milk and water, and covered with lint spread with simple ointment. If the discharge of matter is great, they should be washed with two grains of sulphate of zinc dissolved in an ounce of water. They should not be healed quickly, without the child is well purged. Sometimes the ulcerations are so severe and extensive that the irritation causes convulsions; even mortification may ensue. If therefore they assume a very formidable appearance a surgeon should be called in.

Spongy and Ulcerated Gums should often be touched with borax and honey, or muriatic acid and honey, made as sour as it can be borne. A very excellent wash is one composed of equal parts of tincture of myrrh, tincture of rhatany, and lime water. These ulcerations should never be neglected, or they may become malignant, and are even so from the first in some cases, and then form the ulcer called *canker*, which attacks and destroys the gums, cheeks, and palate, and sometimes even the bones of the mouth. It will be necessary to pay attention to the bowels, which should be opened by magnesia, or if the child is purged, treated as if for looseness. The diet should be thin but good, if the child has been taken from the breast.

Erysipelas.—(See p. 409.)

Apthæ, Thrush, Frog.—(See p. 271.)

Putrid Sore Throat.—This is another and highly malignant species of Apthæ, and one of the most formidable diseases of childhood. The child is at first suddenly sick, restless, and cold; the pulse is quick and feeble, the eye heavy, and face pale; the throat is seldom complained of, but on examination is of deep red, and ash-colored vesicles are seen on the tonsils; the breath is bad, the skin is hot, and for a short time the cheeks are flushed, but they soon become pale or livid; the tongue is brown and dry; the nostrils discharge an acrid matter; the breathing is difficult; there is hoarse cough and fits of suffocation. In so severe a disease as the above the practitioner must be immediately sent for, and even his skill in many cases will fail to save life.

NETTLE RASH.—(See p. 522.)

SCARLATINA, OR SCARLET FEVER.—(See pp. 571—578.)

RUBEOLA (MEASLES,)—(See pp. 496—499.)

VACCINATION.—(See pp. 655—658.)

TEETHING.—Generally the first teeth cut the gum from about the sixth to the eighth month, but some very delicate or rickety children have no teeth until a year and a half old. The two middle front teeth appear first, and in about a month the two opposite ones; then two side teeth in front, both above and below; about the twelfth or fourteenth month the first double tooth appears; about the sixteenth or twentieth month the eye teeth appear, and from that period to the thirtieth month the back double teeth come through. The child is about two years and a half old when it has all its first set of teeth, twenty in number. These continue to the sixth or seventh year, when they begin to fade and fall out, to make room for the permanent set.—(See pp. 623—625.)

SICKNESS AND VOMITING.

Vomiting is not unfrequent in young infants from over-fúlness of the stomach. This, when it takes place easily, and is merely curdled milk, is rather of service than otherwise; but if repeated often, though unattended by any other symptoms, it may do harm by robbing the child of too much food. The irritation of the stomach, on which it depends, will be allayed by putting a cloth dipped in spirit, and dusted with pepper, to the pit of the stomach, and giving a teaspoonful or two of white wine whey. If what is vomited is sour and ill-smelling, and firmly curdled like cheese, and the child still seems sick, some more probably remains in the stomach, which should be relieved by an emetic of Ipecac wine, (a tea-spoonful every ten minutes until the child vomits,) and afterwards a dose or two of the following medicine should be given, and the bowels kept open with magnesia.

Take of calcined magnesia, one scruple,
Sugar, one drachm,
Oil of aniseed, four drops,
Aromatic confection, a scruple,
Tincture of opium, four drops,
Cinnamon water, two ounces.

Mix. A teaspoonful to be given twice or three times a day to a child from about three to six months old.

If what is thrown up is green and bilious, the child should have an emetic, and afterwards small doses of calomel and the above mixture. The sickness which precedes vomiting is sometimes frightful to behold; the child is much oppressed, pants, is deadly pale, the limbs are relaxed and it seems as if it would die. It is immediately relieved by vomiting.

Vomiting, connected with fever or purging, is only a symptom of disease. It is however desirable to restrain it, which is done by small doses of saline mixture, made by taking bicarbonate of soda, 10 grains, tartaric acid, 15 grains, water, 8 ounces, and a little syrup to sweeten. A small tea-spoonful may occasionally be given.

Diarrhœa, or Purging, is often very severe, and at some seasons of the year fatal. In this disease the stools are of various appearances; as green, curdled, &c. Sometimes it is attended with inflammation and fever. It is common during the time of dentition.

When it does not proceed from dentition it generally arises from improper food, and the diet should be attended to. If the infant is at the breast, it should, if possible, have a change of breast, especially if the nurse has been out of order, and the diet of the mother or nurse should be attended to. The infant's strength is to be supported by beef-tea, animal jelly, &c.; the bowels should be cleared of all irritating matter by a tea-spoonful or two of castor oil, and afterwards the following mixture should be taken, (the infant is supposed to be six months old:)

Take chalk mixture, one ounce,
Tincture of opium, eight drops,
Aromatic confection, one scruple.

Mix. A tea-spoonful to be taken three times a day; the infant should be put into a warm bath night and morning.

When the number of stools are very great, much discolored, and offensive, a practitioner should be called in. In the diseases called *Lienteria*, or watery gripes, his presence is also required.

Constipation is best relieved by doses of calomel followed by castor oil, senna tea and manna, or magnesia; sometimes it is requisite to give more powerful medicines; in such cases medical advice should be taken. If the mother or nurse is of a costive habit, this habit must be changed. If the infant is taking food, barley meal porridge and veal broth will be the most laxative diet.

Colic.—(See p. 344.)

Marasmus, or Wasting.—In this disease there is costiveness, alternating with purging; the stools are fœtid and unnatural. There is lassitude, debility, loss of appetite or depraved appetite, bad breath, tumid belly, pale countenance and swelled upper lip; soon after there is fever, hot skin, thirst, an inclination to pick the nose, and disturbed sleep. The loss of flesh is very apparent. This disease is very dangerous, and is sometimes called "Remittent Fever;" when it arises from worms, "Worm Fever," and when from irritation of dentition, "Tooth Fever." The treatment is complicated, and cannot be trusted to any but a medical man.

WORMS.—These are of various kinds, and give rise to numberless morbid feelings and symptoms. There is pain in the belly, purging, variable and voracious appetite, the child is always hungry, has a bad breath, its complexion becomes pale, its lips swelled, a livid circle surrounds its eyes, the belly swells, and its sleep is disturbed; the child wakes terrified, has a dry cough, picks its nose, has a slow fever, occasionally headache, sometimes convulsions, and frequently grinds its teeth. Worm medicines are numerous, but more benefit is derived from a proper attention to the general health than any other plan. But a course of purgatives, as jalap, scammony, calomel, and senna, often do good; together with some bitter in the course of the day, as an infusion of wormwood, gentian, box leaves, or columba. I have found a tincture of the buds of the male fern very useful in expelling worms.—(See p. 668.)

GASTRITIS, ENTERITIS, AND PERITONITIS.—*Inflammation of the Stomach, Bowels, and Covering of the Bowels and inside of the muscles of the Abdomen, called Peritoneum.*—The first named is rather an uncommon disease of infancy: its symptoms are, considerable fever, red tongue, frequent vomitings of everything taken; the throat is inflamed and covered with "Thrush," which spreads to the mouth. The child cries much; the stomach is full and tender to the touch; the bowels are purged; the thirst is very urgent, although everything is rejected by the stomach; and there is commonly fever.

The two other diseases are more common. There is fever and violent pain in the belly (like colic,) which is tender to the touch; the bowels are generally costive, and the stools, when procured, slimy and fœtid. The other symptoms are the same as those above detailed. The warm bath should be instantly employed, and the medical man sent for immediately.

In the first named disease (inflammation of the stomach) if the child is of such an age as to be able to give an account of its feelings, he complains of heat or burning in the stomach and throat; if younger, pressure on the stomach increases the crying; but the disease is best known by the vomiting being constant. In the second and third named, the disease is often quickly fatal, or quickly removed; if not so the child may linger some weeks and the nature of the disease be mistaken. As already stated, in either of these diseases the warm bath should be immediately used, and in addition, a few leeches put on the pit of the stomach if there is much vomiting; on the belly, if much pain upon pressure, without vomiting; and afterwards, a fomentation of poppy heads and chamomile flowers made use of. These means may be safely used, if the medical attendant is tardy in making his appearance.

HOOPING COUGH.—(See p. 451.)

CATARRH, (Common Cold.)—Infants are subject to catarrh, either common or epidemic. There is fever and inquietude, redness of the cheeks, watery discharge from the eyes and nostrils, disposition to sleep, panting and shortness of breathing, with frequent cough but not severe. It generally goes off in a week by gentle purging; saline medicines, and the use of the warm bath: a few leeches to the chest are sometimes required.

BRONCHITIS—INFLAMMATION OF THE BRONCHIA, OR AIR TUBES OF THE LUNGS—is far from being uncommon; it begins with cough, and a good deal of phlegm is secreted, which the child swallows. The cough is frequent and comes on in fits; it is a *stifled* cough, and somewhat hoarse or shrill. The breathing is difficult, and on putting the ear to the chest a rattling is at times heard. Vomiting often takes place, the pit of the stomach is full, the stools are bad, the face pale, and the child sick and dull. It will take the breast, but no other food, the breathing becomes more and more difficult, the child appears choked with phlegm, the feet and hands swell, the body is emaciated, the cheeks in the evening are flushed, the cough is severe, and death ends the painful scene. This disease is lingering; in the commencement it resembles catarrh. If the child is to be saved it must be by prompt medical management.

CROUP.—(See p. 355.)

CONVULSIONS.—(See "*Convulsions in Children*," p. 237.)

HYDROCEPHALUS.—(See "*Dropsy of the Brain*," p. 386.)

ON THE MANAGEMENT OF CHILDREN.

The management of infants has already been laid down in the former part of this work; the author, however, is reluctant to take leave of his readers wlthout giving a few words of advice to them on the management of their older offspring. The virtue of cleanliness it is hardly necessary to dwell upon; suffice it to say, that children derive much benefit from being washed all over the body every morning, with tepid water. They should afterwards be rubbed dry with a coarse towel. This proceeding is very conducive to health, and much improves the personal appearance, as well as adds strength to the frame. If the child is of a scrofulous habit, sea water, or water in which salt is dissolved, is preferable.

The dress of children should be in some measure regulated by the season of the year; but it should always be easy and warm. Some authors have advised that children should wear thin shoes, and thus get wet feet to harden them. Unfortunately many lives are lost in this process of hardening; neither do we see that the children of the poor, who are barefooted, are at all in better health than those of the superior classes.

Children should be allowed to run about much, and be in the air the greater part of the day. They can hardly take too much exercise.

Parents should not be over anxious to commence the work of education. Many children are ruined in health, bodily and mentally, by the hot-bed system of education now in vogue. It is better that little creatures of four, five, or six years of age should be *dunces* than that they should have their bodily vigor lost, and their mental energy, in after life, endangered by being employed in the school-room, undergoing the process of manufacturing into precocious prodigies, when they should be remaining free as the air in the green fields and pleasant woods.

The diet of childhood should be simple, and consist for the most part of good bread, potatoes, a little meat, and milk; but the error in diet more frequently is in the quantity than in the quality of the food. Over feeding is a rife source of disease in childhood. Much fruit, or many cakes, and sweetmeats are injurious, as also are all wines, ale, porter, &c., in however small a quantity. Attention should be paid to the bowels of children; they should generally have two evacuations a day.

The true way then to have healthy children is to keep them clean and warm: give them plenty of air and exercise; few sweetmeats; sufficient, but not over much plain food; and attention to the bowels. If these hints are acted upon, the visits of the medical attendant will be much curtailed in number, and the health of children greatly improved.

PRESCRIPTIONS,

SELECTED FROM THE WRITINGS OF THE MOST DISTINGUISHED AUTHORS.*

CATHARTICS AND APERIENTS.

Medicines belonging to this class, have the property of exciting the bowels to increased action, and in this manner, promoting an evacuation of their contents. The medicines arranged in this class are very numerous, but they are not by any means all alike in the mode in which they effect the common result. While some strongly excite the intestines, and especially the muscular coat, others seem to direct their energy almost entirely to the mucous membrane with which they are lined. There are also other peculiarities in their action that it is useful to bear in mind. While some expend their chief force upon one division of the bowels, others select a different division over which to exercise their influence; while still others, act with very nearly equal power upon the whole extent. It is apparent from these facts, that it is not always enough to know that the general action of a catharatic is to purge the intestines—it is useful also to know its specific virtues, and to be able to determine, in advance, whether it is the one that is most likely to execute the end proposed, in the most salutary manner.

By taking a sufficiently large dose, purgative effects may be obtained from all, but the effects will not in all cases be equally efficient. If, for example, we select aloes, the action of which is almost wholly on the lower section of the alimentary passage, its operation will manifestly be very slow, because it can scarcely be felt until it reaches that portion of the intestines where it is most active. If it passes through the upper portions without producing

*The dose of each one is intended for an adult, unless the contrary is expressed under the formula.

commotion, it is evident that evacuations obtained by its use, will be chiefly from the lower, and therefore the general purgation of the bowels must be incomplete. It is not only ineffective, but it at the same time produces disagreeable, uneasy sensations, that may be avoided by using the remedy combined with other ingredients which may either assist or modify its properties. Thus, for instance, such being the effect of aloes, if we take rhubarb, which acts most energetically on the smaller and upper intestines, and add these two together, we have produced a compound medicine that acts pleasantly on every part of the digestive tube, and accomplishes all that may be expected of a thorough purgative.

Some cathartics stimulate the mucous membrane with so much moderation, that they appear to do no more than cause an evacuation of the bowels—resembling greatly the simple motion of nature alone. Among such may be reckoned castor-oil, sulphur, and rhubarb. Others act with more intensity, and promote copious watery secretions. Salts, and many others belong to this rank. There are still others that have a more complete action, and expend part of their force upon distinct organs, and excite secretions in distant parts; if in this way the liver be much aroused, a large quantity of bile will be poured into the upper intestine, which, possessing aperient properties itself, assists the operation of the medicine. Calomel is an example of cathartics of this type. Enough instances have been furnished to illustrate the idea with which we commenced,—that it is useful to know more than merely the *general* property of a medicine.

Cathartics are divided, for the sake of convenience, into three heads. 1st, *Aperients.*—2d, *Purgatives.*—3d, *Hydragogues.* The first, sometimes also called Laxatives, act very gently. The second act briskly, and cause a number of copious motions. The third act violently, and cause a large number of motions that are but little else than water. Each kind is appropriate to certain conditions of the system and particular diseases. The third division is most especially proper in acute diseases of an inflammatory nature, when either the lancet is inadequate to abate the high excitement, or when it may be thought inexpedient freely to use it. The large quantities of water discharged from the bowels, is subtracted from the blood vessels through the exhalents of the mucous membrane; and the volume of fluid circulating through the body, is, in this proportion, reduced. The heart and arteries, sensibly feeling the loss, are moderated in their force, and come nearer to the grade of health. It must, however, be observed, that it seldom is necessary, even in diseases of this high grade of excitement, to employ such kind of purgation.

Sometimes, as in fevers, to do so might be actually pernicious; for in such affections there is often a tendency to irritation or inflammation of either the stomach or bowels, or, as frequently occurs, of both. Violent cathartics in these cases, would only increase the difficulties already surrounding them, and render what is bad, in every respect much worse. It is in dropsies, while the system still possesses considerable strength, that hydragogue catharatics are commonly administered. When the blood becomes deficient in its watery parts, in obedience to a natural law of protection presiding over life, it endeavors to find some available means for regaining it. If, therefore, the water contained in the blood vessels is drained off by inordinate action in the intestines, with a kind of instinct they commence a search for fresh supplies, which they find in dropsical effusions, wherever the effusions may be. This water is sucked up by a sort of hydraulic apparatus, described as absorbents, and conveyed into the mass of the blood; and in this way accumulations of fluid are often speedily removed. Some medicines of this class, when given in large doses, operate with great intensity, but their effects rapidly subside, and leave the bowels in much the same condition that previously existed. Some others are more decidedly irritating, and in large doses, produce inflammation of the stomach and intestines. It is proper, therefore, to bear in mind that excessive doses are to be guarded against; and when such seem to be demanded, it is advisable that they be used under the direction of a professional man.

CATHARTICS, DECOCTIONS, INFUSIONS, MIXTURES, &c.

Compound Decoction of Aloes.

Take extract of liquorice, half an ounce,
Subcarbonate of potassa, two scruples,
Powdered aloes, one drachm,
" myrrh, one drachm,
Saffron, one drachm,
Water, one pint.

Boil until the water is nearly half boiled away, strain, and add four ounces of the compound tincture of cardamons.

This medicine is a gentle cathartic, tonic, and promoter of the *monthly sickness* in females. It may be given advantageously in *dyspepsia*, habitual *constipation*, and in deficient menstruation when it seems to depend on debility of the bowels and stomach. The dose is from one to four table-spoonsful.

Infusion of Senna, Salts, &c.

Take of senna, half an ounce,

Epsom salts, and manna, of each an ounce,
Fennel seed, a drachm,
Boiling water, half a pint.

Let it stand until cold, strain. One third may be taken for a dose, and repeated in three or four hours after, unless it has operated well. This is a mild and very certain medicine, and is especially useful in *diseases of excitement.* It is an excellent cathartic to follow the use of calomel.

Infusion of Pink Root and Senna.

Take of pink root, half an ounce,
Senna leaves, half an ounce,
Boiling water, one pint.

Let it stand for two hours in a covered vessel, and strain. The dose for a child two or three years old, is from four tea-spoonsful, to two table-spoonsful, morning and evening. This is an excellent remedy for *worms.*

If a tea-spoonful or two of the tincture of rhubarb be added to the dose, it improves the effects when the bowels are flatulent.

Mixture of Tartrate of Potash and Manna.

Take tartrate of potash, half an ounce,
Manna, one ounce.
Warm water, three ounces.
Cinnamon water, half an ounce.

Mix them, and take half for a dose, which may be repeated at the end of three hours, if the bowels have not been sufficiently moved.

This is a mild aperient, cooling in its effects, and may be advantageously used in *fevers.*

Castor Oil Mixture.

Take castor oil, one ounce,
Gum Arabic, two drachms,
Peppermint water, one ounce.

The oil and gum should be well rubbed together, and the mint water added to them gradually. The whole may be taken for a dose. When there is irritation of the bowels, and it is necessary to employ a purgative, nothing can be milder and more suitable than this. To have still gentler action, part of the above may be taken at a time.

Tincture of Senna, &c.

Take of compound tincture of senna, one ounce,
Tincture of jalap, one drachm. Mix them for a dose.

This may be taken when purgative effects are desired, and the bowels are torpid (provided there be no fever,) as in cases of *colic.*

Olive Oil.

Take a gill of this oil, or more, in the *colic* of *painters.* It is said by painters who use it, to act like a charm.

Solution of Epsom Salts, nearly tasteless.

Take of Epsom salts, half an ounce,
Tincture of jalap, one drachm,
Nitric acid, two drops,
Mint water, two ounces.

This may be taken at a dose, when active purgation is required.

Glauber Salts, nearly tasteless.

Take sulphate of soda, (glauber salts,) one ounce,
Cream of tartar, one scruple.
Mint water, two ounces.

After standing until the soda is dissolved, the whole may be taken for a dose, if a strong effect be desired, taking care previously to shake up the cream of tartar. This remedy is cooling, and may be used in cases when there is *arterial excitement.* It is also a good remedy in *bleeding from the lungs*, especially if the pulse is quick, and the system full of blood.

Compound Mixture with Lime Water, &c.

Take of aloes, one drachm,
Rhubarb and liquorice, of each, half an ounce,
Compound spirit of lavender, half a drachm,
Lime water, eight ounces.

Let them stand and infuse for twelve hours, and then strain. Dose: two table-spoonsful two or three times a day. This is a good remedy in *dyspepsia* dependent on debility of the stomach and bowels.

Iufusion of Chamomiles, &c.

Take of infusion of chamomiles, four ounces,
Wine of aloes, four drachms,
Solution of the carbonate of potash, one drachm.

Dose: two table-spoonsful, when an aperient effect is desired, in *dyspepsia* of the duodenum, or upper intestine.

Mixture of Colchicum, Senna, &c.

Take of infusion of senna, (See Prescription 2,) five ounces,
Powdered colchicum, 30 grains,
Tincture of jalap, four drachms,
Syrup of ginger, four drachms.

This may be divided into four equal doses, and given to act briskly on the bowels, in *rheumatism* accompanied with fever.

Epsom Salts with Colchicum.

Take of Epsom salts, four drachms,
Calcined magnesia, thirty grains,
Wine of Colchicum, eighty drops,
Mint water, five ounces.

This is to be divided into four equal doses, one of which, after the bottle is shaken, may be given every six hours, in *rheumatism* accompanied with fever.

Mixture of Oil of Turpentine, &c.

Take of castor oil, one and a half ounce,
Yolk of one egg,
White sugar two drachms,
Rectified oil of turpentine, half an ounce,
Peppermint water, four ounces.

Mix well. Dose: a table-spoonful every hour, or as circumstances may demand.

This is a good purgative, when brisk action is required; and in cases in which the head is affected, as *fits* or *apoplexy*, is peculiarly applicable.

Mixture of Croton Oil.

Take of Croton oil, two drops,
Gum Arabic, in powder, half an ounce,
Hot water, two ounces.

Mix the gum and water together gradually, then add the oil, and incorporate all. In *obstinate constipation of the bowels*, the whole of this may be taken at once. If only moderate effects are desired, a tea-spoonful every two hours until it operates, will be enough.

Mixture of Turpentine and Castor Oil.

Take oil of turpentine, two drachms,
Castor oil, one ounce.

Mix. Take all for a dose. This makes an excellent purgative when quick and decided action is required, as in *affections* of the *brain.*

Cream of Tartar.

Take of glauber salts, six drachms,
Cream of tartar, two scruples,
Boiling water, sufficient to dissolve the salts.

The cream of tartar disguises the bitter taste of the salts very much, and makes a pleasant medicine that sits well on the stomach.

If a laxative effect only is desired, the half of the above quantity is sufficient for a dose. If free action is needed, take the whole of it. It may be used in any *inflammatory* disease, when the system requires reducing. If preferred, Epsom salts may be substituted for the glauber.

Mixture of Syrup of Rhubarb and Soda.

Take aromatic syrup of rhubarb, four ounces,
Bi-carbonate of soda, thirty grains,
Water, one ounce.

Mix. Dose: thirty to sixty drops, according to age, in the *bowel complaints* of children so common in summer.

Mixture of Magnesia, Rhubarb, &c.

Take of calcined magnesia, half a drachm,
Powdered rhubarb, two grains,
Powdered white sugar, one drachm,
Essence of peppermint, six drops,
Water, one and a half ounce.

Mix. A tea-spoonful to be given every two hours to young children, when they need an aperient, especially during the period of suckling and teething. It corrects the *acidity of the stomach.*

Warner's Gout Cordial.

Take of tincture of rhubarb and senna, half an ounce to four ounces, for a dose. It is very useful when a warm aperient is required, as in *gout* in the stomach, or other violent pain in the same part without inflammation. It should be added to double the quantity of warm water.

Decoction of Prunes.

Take of prunes three ounces,
Water, three pints, boil to two pints. Drank as a cooling laxative.

Tincture of Aloes, &c.

Take of powdered socotorine aloes, two ounces,
Powdered aniseed, two ounces,
French brandy, two pints.

Make a tincture. Dose: one-third to half a wine-glassful, three times a day. This has been very highly commended in *piles.*

Electuary of Sulphur, Senna, &c.

Take of sublimed sulphur, half an ounce,
Confection of senna, twelve drachms.

Simple syrup, enough to make the whole into a soft mass. Dose: a tea-spoonful of it night and morning in *piles.*

Electuary of Jalap, Nitrate of Potash, &c.

Take of cream of tartar, four drachms,
Powdered jalap, four drachms,
Powdered nitrate of potash, half an ounce,
Confection of senna, one ounce.
Simple syrup, enough to make the whole into a soft mass.

Dose: a quantity equal to the bulk of a hazle-nut, may be taken four times a day. Very useful, like the preceding, in *piles.*

Confection of Senna.

Take of senna, eight ounces,
Coriander seed, four ounces,
Liquorice root, bruised, three ounces,
Figs, one pound,
Pulp of prunes, half a pound,
Pulp of tamarinds, half a pound,
Sugar, two pounds and a half,
Water, four pints.

Rub the senna and coriander together, and separate ten ounces of the powder with a seive. Boil what remains with the figs and liquorice root, in the water, down to one half, then press out the liquor and strain it. Evaporate the strained liquor, by putting the vessel containing it into another vessel of boiling water, to a pint and a half, then add the sugar and form a syrup. Finally, rub the pulps gradually with the syrup, and having thrown in the sifted powder, beat the whole together until they are thoroughly mixed.— If the prunes and tamarinds are too dry for such use, they may be boiled in a small quantity of water to soften them, pressed through a hair seive, and evaporated to a proper consistence.

This is an excellent and most agreeable laxative, and is well adapted to cases of habitual *constipation* in pregnant women and persons suffering from *piles.* When the object is merely to give gentle action to the bowels, it may be used in almost any condition of the system. This confection may be obtained from the apothecary in all the considerable towns of the country.

PILLS.

Pills of Rhubarb and Aloes.

Take powdered rhubarb, half a drachm,
Aloes, twenty-five grains,
Castile soap, half a drachm,
Simple syrup to make the whole into a suitable mass.

Divide into twenty pills; two for a dose. This makes a very good aperient, and is suitable for *sluggish bowels* that habitually demand medicine. The best time for taking them is on going to bed.

Pill containing Mercury.

Take extract of gentian, half a drachm,
Compound extract of colocynth, fifty grains,
Powdered ipecacuanha, eight grains,
Blue mass, one scruple,
Extract of henbane, two scruples,
Castile soap, twelve grains.

Make it into a mass, and divide into thirty pills; two or three for a dose. This is a good pill when the *liver is disordered*, and there is a foul taste in the mouth.

Pill containing Antimonial Powder.

Take calomel, one scruple,
Antimonial powder, one scruple,
Compound extract of colocynth, fifteen grains.

Make ten pills; take two as a dose. Useful as a purgative in *fever*, when the skin is dry and hot. It may also be advantageously used in *acute inflammation of the liver*, as a purgative.

Compound Colocynth Pill.

Take compound extract of colocynth, one drachm,
Extract of jalap, half a drachm,
Tartarized antimony, four grains,
Soap, one drachm,
Oil of carraway, twelve drops,
Syrup of buckthorn, a sufficient quantity to form the mass into forty pills.

Persons of a *bilious* habit, and who are at the same time *constipated*, will find much benefit by taking two or three of these pills at night, as necessity may require.

Griffith's Cathartic Pills.

Take powdered jalap, thirty grains,
" rhubarb, thirty grains,
Soap, thirty grains,
Calomel, twenty grains,
Tartrate of antimony, one and a half grain,
Water, as much as necessary to make a mass.

Divide it into twenty-five pills. Dose: two may be taken at once, and repeated at the end of five hours if they have not operated. This is an excellent *anti-bilious* remedy, and in cases of fever, prepares the way for the reception of other medicines.

Pills of Blue Mass, Soda, &c.

Take of blue mass, nine grains,
Powdered rhubarb, twelve grains,
Bicarbonate of soda, twelve grains,
Aromatic syrup of rhubarb, a sufficient quantity to make a mass.

Divide into twelve pills. One to be taken twice a day in *disordered liver.*

Lee's Bilious Pills.

Take powdered socotorine aloes, four drachms,
Powdered Aleppo scammony, ten drachms,
Gamboge, four drachms,
Calomel, ten drachms,
Powdered jalap, six drachms,
Castile soap, two drachms,
Powdered gum arabic, one and half ounce,
Syrup of buckthorn, a sufficient quantity to make the whole into a mass.

This should be divided into pills of five grains each. Dose, two to four. Useful when *bilious symptoms* are present.

Rhubarb Pill.

Take powdered rhubarb, one drachm,
Powdered ipecacuanha, one scruple,
Syrup, sufficient quantity to make into pilular mass.

Divide into twenty pills. One may be taken at bed-time, in *costiveness;* this is peculiarly mild.

Pills of Rhubarb, Iron, &c.

Take powdered rhubarb, ninety grains,
Sulphate of iron, (green vitriol,) thirty grains,
White soap, two scruples,
Water, enough to make a mass.

Dose, three or four at bed-time. This pill is intended to remove *costiveness.* They are most properly applicable to *pale* and *debilitated* patients.

Pills of Extract of Butternut, &c.

Take extract of butternut, thirty grains,
Powdered jalap, twenty grains,
Soap, ten grains,

Mix. Make fifteen pills. Dose, three or four. The extract of butternut is esteemed one of the best cathartics in *fevers,* &c.

Pills of Croton Oil.

Take of croton oil, one drop,
Crumb of bread, enough for four pills.

Mix them together and divide. Dose, one every hour until they operate. This is a very powerful medicine, but if taken in a proper dose, acts kindly.

Bucher's Pills.

Take extract of black hellebore, one ounce,
Solution of myrrh, one ounce,
Powder of blessed thistle, one hundred and forty grains.

Mix. Let the mass be dried in dry air, until fit for forming pills, each of six grains. Dose, three may be given three times a day, in *dropsy*. Powerfully purgative, and acts as a hydragogue. Instead of the blessed thistle, chamomile may be substituted.

Elaterium Pills.

Take calomel, five grains,
Elaterium, one fourth of a grain,
Compound extract of colocynth, four grains,
Cayenne pepper, one grain.

Mix, and divide into two pills. To be taken night and morning in *dropsy*.

Another Elaterium Pill.

Take extract of gentian, five grains,
Extract of elaterium, half a grain.

Make a pill : one is to be taken every hour until liquid stools are obtained. In *dropsy*.

Dandelion Pills.

Take extract of dandelion, thirty grains,
Calomel, six grains.

Mix. Divide into ten pills. Dose : two are to be taken three times a day. Useful in *dropsy* of the belly from obstructions in the liver.

Pills containing Ox Gall.

Take powdered ipecacuanha, twelve grains,
Powdered cayenne pepper, twenty grains,
Powdered rhubarb, two scruples,
Extract of aloes, one scruple,
Extract of ox gall, two scruples,
Hard soap, one scruple,
Oil of cajeput, enough to make a mass.

Divide it into forty pills. Dose, one, two, or three, every night. This is an excellent *stomachic aperient*, peculiarly suitable in *gout* and *rheumatism*.

Colocynth and Calomel Pills.

Take of compound extract of colocynth, two scruples,
Powdered jalap, half a drachm,
Calomel, half a drachm,
Powdered gamboge, seven grains.

Mix the powders together, then with water form it into a mass, which is to be worked up with the extract of colocynth, and the whole divided into thirty pills. Dose, one to four pills, according to the effects required. This is an admirable purgative, especially when the liver is disordered. In full doses, they act vigorously on the bowels, producing bilious stools, generally without pain or uneasiness of the stomach. They may be employed in the early stage of *bilious fevers* with great benefit, in *jaundice*, and in *inflammation of the liver, &c.*

POWDERS.

Powder of Rhubarb and Magnesia.

Take powdered rhubarb, four drachms,
Calcined magnesia, six drachms,
Powdered ginger, two drachms,

Mix. Dose, two tea-spoonsful. This is a good remedy in *dyspeptic* head-ache, when the stomach is suffering from *acidity*.

Powder of Calomel and Antimony.

Take calomel, eighteen grains,
Antimonial powder, twelve grains.

Mix, and divide into six powders. Dose, one every three hours, in a little syrup or molasses. Useful in *fevers*, when it is desirable to arouse the secretion of the liver, and promote action on the skin.

Powder of Calomel and Scammony.

Take calomel, two grains,
Powdered scammony, four grains,
Powdered sugar, four grains.

Mix. This is often a good purgative for children.

Powder of Calomel and Jalap.

Take calomel, five grains,
Powdered jalap, one scruple.

Mix with syrup or molasses. Purgative in *fever*.

Cream of Tartar and Jalap.

Take of cream of tartar, two drachms,
Powdered jalap, one drachm.

Mix. Divide in six powders. One may be taken every two or three hours, in molasses or syrup.

A watery purgative, that is much used in *dropsy*. Whenever it is wished to use a purgative to reduce *inflammatory* action, if the bowels are sound, this prescription may be given.

Powder of Sulphur and Cream of Tartar.

Take of sublimed sulphur, four drachms,
Cream of tartar, one ounce.

Mix. Dose, for children, a tea-spoonful, and for adults a table-spoonful, mixed in molasses or syrup, three times a day. This will be found very serviceable in *piles*, some diseases of the skin, as *itch*, and by reducing the quantity of cream of tartar to two drachms, it affords a very valuable remedy in *chronic rheumatism*.

Seidlitz Powders.

Take tartrate of soda and potash, two drachms,
Bicarbonate of soda, two scruples,
Make one powder.
Take powdered tartaric acid, twenty-five grains.

The two powders are to be dissolved in separate tumblers, each about one-third full of cold water. Pour one into the other and drink while they are effervescing.

This is an aperient very grateful to the stomach, and will often quiet *nausea* when other medicines would be rejected.

Powder of Sulphate of Potash, &c.

Take sulphate of potash, sixty grains,
Powdered rhubarb, forty grains.

Divide in six equal parts, and take one twice a day in syrup. Useful in *dyspepsia* and when the bowels are sluggish.

ENEMATA, OR PURGATIVE INJECTIONS.

The quantity of fluid proper for different ages is about four to six ounces, for a child between one and six years of age; a half a pint, for the age between ten and fifteen years; and a pint or more for an adult.

Injection of Table Salt.

Take of table salt, a table-spoonful,
Tepid water, or gruel, one pint,
Sweet oil, a table-spoonful.

All to be used at once for an adult.

Injection of Epsom Salts.

Take of Epsom salts, an ounce and a half,
Tepid gruel, one pint,
Turpentine, one table spoonful.

This is more powerful than the preceding. It may be used in preference to the other when the head is much affected, as in *apoplexy* or *convulsions.*

Injection for a Child.

Take of warm gruel, five ounces,
Table salt, two tea-spoonsful,
Sweet oil, six tea-spoonsful.

If the bowels contain much wind, or if there be convulsions, add a tea-spoonful or two of turpentine.

Almost any of the purgatives may be used for injections, in the proportion of three times more than is necessary when taken by the mouth. Common sea water makes as good a purgative injection as can be compounded when the object is merely to open the bowels. In many cases, a *large* injection of water alone is sufficient, when the intention is merely to obtain a motion for the relief of ordinary constipation. In such cases, water at the temperature of 60 degrees is better than if it is warmer, as it imparts tone to the lower intestines, and thus diminishes the necessity of resorting to artificial means for relief.

EMETICS.

This is a class of medicines that act especially on the stomach, and cause it to discharge its contents by vomiting. There are a large number of medicines which are capable of producing such effects, if given in sufficient doses, but many of them are uncertain in their operation, or violent in their action. Those of this character, are not usually employed as emetics, and those only we recognize as belonging to the class, the action of which is prompt, moderate, and which generally follows a uniform dose. Most of the cathartics, under peculiar conditions, may cause nausea and vomiting; and we often experience difficulty in administering them, on account of the disturbance they excite in the stomach. Whatever is capable of irritating the stomach, is also capable of acting as an emetic. But some medicines appear to be more disposed to affect the stomach than others, and they seem inclined to operate on this rather than on other organs.

Before administering emetics, the condition of the patient ought carefully to be considered. Should there be an undue determination of blood to the head, with a strong pulse, it is advisable, in the first instance to bleed, and modify this condition; for the act of vomiting increases the flow of blood by the violent straining that accompanies it. For the same reason it is injudicious to give an emetic when there is an active bleeding from the lungs, or womb. Emetics are also improper in rupture, pregnancy, or in any case in which a strong physical effort might cause injury. They should not be resorted to when there is inflammation of the stomach; nor can they be given with propriety when there is great exhaustion of the powers of life.

If the vomiting is excessive, the means which are efficacious in allaying it when induced by disease, may be had recourse to, and will prove equally useful at this time.

Stimulants applied over the region of the stomach, of which perhaps the best is a mustard poultice, will usually afford relief. A little brandy and water, spiced; a little cold tea; a tea-spoonful of camphor-water occasionally given; a table-spoonful of lime-water, and the same quantity of milk, mixed together and drank cold, every fifteen minutes; an effervescing draught, made by adding two tea-spoonsful of lemon juice, or ten grains of tartaric acid to twelve grains of the bicarbonate of potash or soda; or, finally, small quantities of cold iced water, or small bits of ice to dissolve in the mouth, will generally accomplish the object for which they are given, and check the violent throes of the stomach.

To promote vomiting, large draughts of warm water; or chamomile tea; or tickling the inside of the mouth with a feather, as far back as can be reached with the finger, will be found of service in assisting the action of the medicine.

MIXTURES, &c.

Ipecacuanha Wine and Antimony.

Take of wine of ipecacuanha, one ounce,
Tartrate of antimony, one grain.

Dissolve the antimony in the wine, and give a tea-spoonful every ten minutes, until vomiting is excited.

Antimonial Wine.

Take of antimonial wine, one ounce. Give a tea-spoonful every ten minutes, or a half ounce may be taken at once, and if necessary be followed with small doses.

Solution of Tartrate of Antimony.

Take tartrate of antimony, four grains,
Sugar, thirty grains,
Water, four ounces.

Dissolve, and give a table-spoonful every ten minutes until free vomiting occurs. This formula is perhaps preferable to the wine, as we are always sure of its strength.

Mixture of Ipecacuanha, &c.

Take powdered ipecacuanha, thirty grains,
Tartrate of antimony, one grain,
Tincture of squills, one ounce,
Water, seven and a half ounces.

Make a mixture. Four table-spoonsful, may be taken in the first mixture, and every ten minutes afterwards, two, until the end desired is attained.

This emetic is recommended in *dropsies*, before giving digitalis.

Hive Syrup.

Take compound syrup of squills, one ounce.

Ten drops may be given to a young child, and the dose should be increased with age, and repeated every twenty or thirty minutes.

This is a remedy of great celebrity for children having the *croup*, or an affection of the throat resembling it.

Mustard.

Take of powdered mustard, one drachm,
Warm water, half a pint.

Mix, and swallow it all at one draught. This produces prompt vomiting, and is a good emetic.

Solution of Table Salt.

Take of table salt, one table-spoonful,
Warm water, half a pint.

Dissolve and drink it at once.

Like the preceding one, this is an emetic that is generally at hand, ready for any emergency. It is prompt in its action, and causes free vomiting without much retching. They both may be used in preference to others, when the *stomach* is *languid*, and the system is suffering from food that it is unable to digest, causing, often, *sick head-ache*.

Solution of Sulphate of Zinc.

Take sulphate of zinc, ninety grains,
Alum in powder, half a drachm,
Boiling water, half a pint.

Mix, and filter. Dose: a tea-spoonful for a child six months of age, or a table-spoonful for an adult person. For those of intermediate age the quantity proportional. This remedy has been used in *consumption* with advantage, by taking it every morning upon an empty stomach.

POWDERS.

Powder of Ipecaçuanha.

Take the powder of ipecacuanha, two scruples.

This is to be divided into two doses, one of which may be given mixed with syrup or molasses, and succeeded by a tumbler-full of warm water. If one powder does not answer, in twenty minutes, the second may be taken in the same manner.

This is one of the most useful emetics that we possess. It is always safe to give it, when, from the tendency to irritation in the stomach, many other substances of this class might do injury. There is, besides, but little danger of administering too much; for whether twenty grains, or fifty, or one hundred be taken, the first effect of vomiting will bring most of it up again, so that the subsequent effects will not be much varied by the quantity.

Powder of Sulphate of Copper.

Take of sulphate of copper, two grains.

Give it in a little syrup and water.

This medicine is very rarely employed for this purpose, except in cases of poisoning, when the sensibility of the stomach has been greatly impaired, and after other articles have failed. It should be followed immediately with a large draught of warm water.

Powder of Sulphate of Zinc.

Take sulphate of zinc, fifteen grains.

Mixed with syrup or molasses: all of it should be taken at once, if strong effects are desired, as in *poisoning*. Copious draughts of warm water should immediately be drank upon it. It is supposed to act as a tonic to the stomach.

DIAPHORETICS.

This class of medicines act by promoting the exhalation of the surface of the body. It is a very important class of remedies, and is useful in a great variety of cases. The free action of the skin is always necessary to sound health; and if this be interfered with, as it generally is when the body is suffering from disease, it is a matter of much importance to have it re-established. Suddenly checking perspiration when the body is in health, as every one knows, is a very common cause of disease; and this commonly falls most heavily upon such organs, as, either from accidental or hereditary conditions, are least able to contend with the changes that take place in consequence of the suppression of an excretion so essential to health. This is not a suitable place for an exposition of the physiological uses of the perspiratory functions; but when I state that the skin of a person of ordinary size, daily exhales from two to five pounds—the quantity varying with circumstances—it will readily be inferred that it cannot be suspended with impunity, and that it has some great end to subserve.

To promote perspiration, the patient should get into bed, and be moderately covered with clothing. Warm drinks freely used, will also conduce to this purpose; and there are certain other methods by the application of artificial heat—as with hot bricks, bottles of hot water, hot sand bags, hot vapor introduced under the bed clothes through a suitable tube, or hot air conducted to the body in a similar manner—that are often employed in particular exigencies.

In fevers, it would be a great mistake to increase the external heat, whether by an increase of bed covering, or by warmth directly conveyed to the surface. In such cases, the skin is already too hot, and it often happens that a reduction of the temperature is the best means for obtaining moisture. When the heat is great and the skin dry, the body should be cooled by withdrawing as much covering as may be necessary to lower the morbid temperature to that point at which the patient feels comfortable. Even sponging with cold water, in many instances, when the warmth is very distressing, has been found good practice.

It often occurs, after diaphoretic medicines have been administered in vain, that cooling the surface by any such means as have been mentioned, acts with magical power; and a remedy which previously, was worse than useless, will now cover the skin with a life-giving dew.

It must also be remembered that diaphoretics are inefficient if there be much disturbance of the bowels. It is therefore injudicious to combine medicines with the two-fold intention of exciting perspiration and purgation simultaneously. The same remark is applicable, though not equally, to the use of diuretics.

DIAPHORETICS.

Mixture of Camphor-water, Antimony, &c.

Take camphor water, two ounces,
Sweet almond mixture, two ounces,
Solution of the acetate of ammonia, one and a half ounce,
Sweet spirits of nitre, three drachms,
Antimonial wine, three drachms,
Syrup, one and a half drachm.

Mix. Dose: two table-spoonsful every two hours. This may be given in *colds* and *coughs*, especially if there be fever.

Or,

Take solution of acetate of ammonia, four ounces,
Antimonial wine, half an ounce,
Ipecacuanha wine, two drachms,
Syrup of poppies, half an ounce,
Distilled water, fourteen ounces.

Mix. Dose: one to four tea-spoonsful every three hours. In severe *coughs* and *colds*, when the skin is dry.

Infusion of Herbs.

Take of marsh mallows, one ounce,
Balm, and spearmint, of each one ounce,
Elder flowers, and arnica flowers, of each one ounce,
Anise seed, half an ounce.

Pour boiling water on it, and use as a common drink. May be advantageously drank in *colds* and *slight fevers.* It is useful to promote the action of other more powerful remedies of this class.

Mixture of Nitre, Ammonia, &c.

Take sweet spirits of nitre, three drachms,
Solution of acetate of ammonia, three ounces,
Nitrate of potash, two scruples,
Camphor water, four and a half ounces,
Lemon syrup, two drachms.

Mix. Dose: two table-spoonsful every four hours, in *fevers.* Proportional doses to children, in the collapsed stage, when the head is much affected, and they are inclined to *sleep.*

Mixture of Sulphur, Ipecacuanha, &c.

Take solution of acetate of ammonia, four ounces,
Sublimed sulphur, one ounce,
Ipecacuanha wine, one drachm,
Watery extract of opium, two grains,
Peppermint water, and syrup, of each two ounces.

Mix. Dose: two table-spoonsful every hour. A diaphoretic in *dropsy*.

Mixture of Carbonate of Ammonia, &c.

Take carbonate of ammonia, half a drachm,
Camphor water, six ounces.

Mix. Dose: two table-spoonsful every hour. Useful in *fevers*, when the powers of life are low, and in *dropsy*, when stimulants are needed.

Draught of Carbonate of Ammonia and Lemon Juice.

Take carbonate of ammonia, fifteen grains,
Fresh lemon juice, half a drachm,
Water, pure, seven drachms,
Syrup, two tea-spoonsful.

Mix. Take all at a dose, and repeat it every six hours. This is a cooling diaphoretic, and may be given in *fevers*, when the *skin is hot*.

Draught of Carbonate of Potash and Lemon Juice.

Take of carbonate of potash, one scruple,
Fresh lemon juice, half an ounce,
Water, pure, one ounce,
Antimonial wine, twenty drops,
White sugar, one scruple.

Mix. Use as in the preceding prescription. It possesses more decidedly diaphoretic properties.

Infusion of Pleurisy Root.

Take of pleurisy root, one ounce,
Boiling water, one and a half pint.

Infuse. Dose: a tea-spoonful to be taken warm as frequently as it can be borne by the stomach. This is considered a very good diaphoretic, and may be given in any case when fever is present.

Infusion of Boneset.

Take of boneset, one ounce,
Boiling water, one pint.

Infuse for half an hour. Dose: a wine-glassful every half hour as hot as possible.

Infusion of Pipsisseway.

Take of pipsisseway, (or winter green,) two ounces,
Boiling water, one quart.

Infuse. Dose: a pint may be taken in the course of twenty-four hours. It is highly esteemed by some persons in *scrofula* before and after ulceration, in ill conditioned *ulcers*, and in *cutaneous affections*, connected with a scrofulous taint.

Infusion of Blessed Thistle.

Take of the leaves of blessed thistle, one ounce,
Boiling water, one pint.

Infuse. Dose: a wine-glassful as frequently as the stomach will allow without vomiting, will produce copious perspiration and may be used in slight *fevers* and *colds.*

Decoction of Mezereon.

Take of mezereon, four drachms,
Liquorice-root, one ounce,
Water, three-quarts.

Boil slowly until it is reduced to two quarts, and strain. Dose: a tea-cupful three times a day. A stimulating diaphoretic, useful in *diseases* of *the skin*, especially when connected with *syphilis.*

Decoction of Sarsaparilla.

Take of sarsaparilla, sliced and bruised, six ounces,
Water, six pints.

Boil to four pints and strain. Dose: a tea-cupful, four times a day. May be used in *skin diseases* and *scrofula* complicated with *syphilis.*

Infusion of Virginia Snakeroot.

Take of Virginia snakeroot, one ounce,
Boiling water, two pints.

Infuse for two hours in a covered vessel and strain. Dose: two to four table-spoonsful every two hours in *low forms of fever*, when the system requires support. It is useful in *fever and ague*, and is frequently employed in *measles*, when the eruption has receded, or is tardy in making its appearance. In this latter case it is best to give it warm.

Compound Decoction of Sarsaparilla.

Take of sarsaparilla, sliced and bruised, six ounces,
Bark of sassafras root, sliced, one ounce,
Guaiacum wood, rasped, one ounce,
Liquorice root, bruised, one ounce,
Mezereon sliced, three drachms
Yellow dock, three ounces,
Water, eight pints.

Boil for an hour and strain. Dose: a wine-glassful four times a day. Useful in *scrofula*, *cutaneous diseases*, *secondary syphilis*, and in *chronic-rheumatism*. During its use the patient should wear flannel, and avoid exposure.

Effervescing Draught.

Take of carbonate of potash, two drachms,
Water, four ounces. Dissolve.

Fresh lemon juice, two ounces,
Water, two ounces. Mix, and keep in separate vessels.

Dose: two table spoonsful of the acidulated water is to be mixed with one of the potash solution, and the whole drank while it is foaming. When lemon juice cannot be obtained, eighty grains of tartaric acid dissolved in four ounces of water, a table-spoonful of which is to be used at a time, will answer as a substitute for it. This is a pleasant diaphoretic in *fevers*, and is admirable in allaying *nausea* and *cholera morbus.*

Opiate Draught.

Take of camphor water, one ounce,
Antimonial wine, fifteen drops,
Laudanum, twenty drops,
Syrup of ginger, two drachms.

Take all at once, early in the evening to produce sleep, in *typhus* and nervous fevers, when there is *delirium*, and low muttering, with wakefulness.

PILLS.

Pills of James' Powder, &c.

Take of James' powder, eight grains,
Powdered camphor, six grains,
Extract of henbane, twelve grains,
Syrup, sufficient to make a proper mass.

Divide it into six pills. Dose: two at bed-time. In *fevers*, when the patient is restless, and unable to sleep.

Calomel and Opium Pills.

Take of calomel, four grains,
Opium, one grain,
Syrup, enough to make a pill.

Take one like this morning and evening. Useful in *inflammatory rheumatism*, and in other affections in which there is much pain, with derangement of the system.

Plummer's Pills.

Take of calomel, thirty grains,
Sulphuret of antimony, thirty grains,
Powdered guaiacum, one drachm,
Alcohol, eight drops.

Rub together and make sixty pills. Dose: two or three night and morning. Good in the treatment of *chronic rheumatism, eruptive diseases, old ulcers, &c.* A purgative should generally be given every two or three days, during their use.

Opium and Nitre Pills.

Take of extract of opium, fifteen grains,
Nitrate of potash, two scruples,
Precipitated sulphuret of antimony, eighteen grains,
Syrup, enough to make a mass for pills.

Divide into nine pills. Dose: one on going to bed, in *rheumatism*, to allay pain and excite perspiration.

Bolus of Carbonate of Ammonia.

Take of Carbonate of ammonia, eight grains,
Antimonial powder, two grains,
Confection of roses, to make it of the proper consistence for making a pill.

This may be taken every four hours, in *rheumatism*, after the bowels have been properly moved.

POWDERS.

Powder of Ipecacuanha and Opium.

Take of ipecacuanha, powdered, half a drachm,
Powdered opium, half a drachm,
Sulphate of potash, half an ounce.

Dose: ten or fifteen grains of this powder, known commonly as Dover's powder, may be given for a dose. It is an admirable diaphoretic and anodyne, and is applicable to all cases when the head is not affected, and the stomach will bear its use. It is especially useful in *rheumatism, inflammation of the lungs*, and other inflammatory affections, after the patient has been properly prepared for it by bleeding and purgation. It is useful in *diarrhœa, dysentery*, and *bleeding* from internal organs. Ten grains of the powder contains one grain of opium.

Nitre Powders.

Take of powdered nitre, two drachms,
Tartrate of antimony, one grain,
Calomel, twelve grains.

Divide into twelve powders. Dose. One may be taken every two hours, in *fevers*. This powder is greatly valued by some excellent practitioners. It is an excellent mode of administering calomel in febrile affections.

Opium and Dover's Powders.

Take of Dover's powder, one drachm,
Calomel, twelve grains,
Nitrate of potash, two scruples.

Divide into twelve powders. Dose : one every four hours. Used as the preceding prescription, after the bowels have been well cleansed.

Antimonial Powder.

Take of antimonial powder five to ten grains for a dose, in syrup, every three hours. Very useful in febrile affections.

Powders of Guaiacum, &c.

Take of gum-guaiacum, two drachms,
Powdered opium, half a drachm,
Powdered ipecacuanha, two scruples,
Powdered camphor, one drachm,
Calomel, ten grains.

Mix. Divide into twenty powders. Give one every hour in *rheumatism*, until relief be obtained.

DIURETICS.

Medicines of this class stimulate the kidneys, and increase the secretion of urine. They act best when the skin is cool, and the bowels are quiet. If there be active purging, or copious sweating, the secretion of the kidneys will be very sensibly diminished. A medicine, therefore, possessing diuretic properties, if administered in quantities, or combined with purgatives, so as to produce a cathartic effect, will no longer excite the kidneys; and its influence will either be wholly lost, or directed to the bowels. When combined with diaphoretics, they in the same manner lose their specific properties, and either aid the medicines with which they are conjoined, in promoting the cutaneous exhalation, or answer no good purpose whatever. In compounding medicines, these facts should be kept in view; for an attempt to accomplish every thing by uniting medicines, having what may be called antagonistic actions, will only be successful in rendering the dose unnecessarily large, and often much more disgusting. The effect of diuretics is increased by drinking largely of water or any other bland fluid; but in some cases, as in dropsy, the object for which the remedy is taken would be defeated, if the blood-vessels were kept full of water by large potations.

MIXTURES, DECOCTIONS, &c.

Mixture of Digitalis, Acetate of Potash, &c.

Take infusion of digitalis, three and a half ounces,
Cinnamon water, three and a half ounces,
Acetate of potash, two and a half drachms,
Vinegar of squills, three drachms,
Tincture of opium, ten drops.

Mix. Dose: two table-spoonsful three times a day. May be used in any form of *dropsy*.

Mixture of Horse Radish, Juniper, &c.

Take compound infusion of gentian, five ounces,
Acetate of potash, half a drachm,
Compound spirit of juniper, half an ounce,
Compound spirit of horse radish, half an ounce,
Sweet spirits of nitre, two drachms.

Mix. Dose: two table-spoonsful three times a day. Useful in *dropsy*, when the system is much debilitated, and requires strengthening.

Mixture of Gum Ammoniac, &c.

Take ammoniac mixture, six ounces,
Nitrate of potash, one drachm,
Vinegar of squills, six drachms,
Compound spirits of juniper, one and a half ounce.

Mix. Dose: two or three table-spoonsful four times a day. This may be given in *dropsy*, or in chronic affections of the mucous membrane of the lungs, when it may be thought advisable to relieve them by increasing the secretion of the kidneys.

Mixture of Squills, &c.

Take oxymel of squills, four drachms,
Hyssop water, three ounces,
Peppermint water, one ounce,
Sweet spirits of nitre, half an ounce.

Mix. Dose: two table-spoonsful three or four times a day. This may be employed in *coughs*, *asthma*, &c. of the lungs. Like the preceding, it relieves the lungs by acting on the kidneys.

Decoction of Bearberry.

Take of leaves of bearberry one ounce,
Water, one pint.

Boil it until about one-fifth of the fluid is evaporated, and strain. Dose: two to four table-spoonsful three or four times a day. Useful in *gravel*, *chronic inflammation* of the *kidneys*, *catarrh* of the *bladder*, and most other affections of these organs. It has also been very highly extolled by an English physician in *consumption of the lungs*.

Mixture of Carbonate of Potash, &c.

Take decoction of bearberry, seven ounces,
Carbonate of potash, two drachms,
Extract of hemlock, twenty grains,
Syrup of poppies, one ounce,
Tincture of ginger, three drachms.

Mix. Dose: two to three table-spoonsful three times a day. In chronic diseases of the *urinary organs*.

Mixture of Nitrate of Potash, &c.

Take nitrate of potash, (salt-petre,) three drachms,
Peppermint water, ten and a half ounces,
Sweet spirits of nitre, three drachms,
Lemon syrup, one ounce.

Dose: one to two table-spoonsful in *dropsy*.

Mixture with Tincture of Cantharides, &c.

Take tincture of cantharides, (Spanish flies,) sixty drops,
Sweet spirits of nitre, sixty drops,
White sugar, one drachm,
Peppermint water, two ounces.

Dose: a tea-spoonful every three hours.

Mix. This medicine is highly stimulating, and if not carefully administered may cause inflammation of the bladder, and retention of urine. Should there be considerable uneasiness felt in the bladder, its use must be desisted from, and if necessary, barley water, or slippery elm tea should be freely drank to relieve the irritation. It may be used in *dropsy*, when the system is debilitated, and the vessels of the kidneys feeble. It is also serviceable in that variety of *dropsy* which succeeds *scarlet fever*, and in incontinence of urine that arises from debility or partial paralysis of the neck of the bladder.

Mixture of the Acetate of Ammonia, &c.

Take of the solution of the acetate of ammonia, two ounces,
Acetate of potash, two drachms.

Mix. Dose: a table-spoonful every three hours.

This may be given in *dropsical affections*, and in *gravel*, when the deposit has a brick-dust color, evincing uric acid in the urine.

Infusion of Parsley Root.

Take parsley root, one ounce,
Boiling water, one pint.

Let it stand a few hours, and strain. Dose: a tea-cup full every three or four hours. A tea-spoonful of the sweet spirits of nitre may be added to each dose. A very good diuretic, and may be used in *irritation of the bladder*, caused by Spanish flies.

Infusion of Juniper Berries.

Take of bruised juniper berries, one and a half ounce,
Cream of tartar, one ounce,
Boiling water, one pint.

Infuse. Dose: a tea-cupful six times a day. Used in *dropsy*.

Infusion of Juniper Berries in Cider.

Take of juniper berries, half an ounce,
Mustard seed, half an ounce
Ginger root, half an ounce,
Bruised horse radish, one ounce,
Parsley root, one ounce,
Fermented cider, two pints.

Infuse. Dose: a wine-glassful may be taken three or four times a day. Useful in general *dropsy*, when stimulation is needed.

Mixture of Oil of Juniper, &c.

Take oil of juniper, eight drops,
White sugar, one and a half drachm,
Gum Arabic, one and a half drachm,
Water, four ounces.

Mix. Dose: a table-spoonful every hour or two.

Mixture of Wine of Colchicum, &c.

Take of colchicum wine, one drachm,
Carbonate of magnesia, one drachm,
Cinnamon water, three ounces,
Water, three ounces.

Mix. Dose: a table-spoonful three times a day. Good in *gout* or *rheumatism*.

Solution of Cream of Tartar.

Take of cream of tartar, one ounce,
Boiling water, one quart.

Let it stand until it becomes cold, and then drink freely of it during the day. Very grateful when the system is inflammatory, and requires a little reducing.

Mixture of Balsam of Copaiba, &c.

Take copaiba, half an ounce;
Sweet spirits of nitre, half an ounce,
Gum Arabic, powdered, one drachm,
Sugar, powdered, one drachm,
Spirits of lavender, two drachms,
Tincture of opium, one drachm,
Water, four ounces.

Mix. Dose: a table-spoonful three or four times a day. A remedy in *gonorrhœa*, a specific disease of the urinary organs.

Mixture of Oil of Turpentine, &c.

Take oil of turpentine, one hundred drops,
Gum Arabic, powdered, two drachms,
Sugar, powdered, two drachms,
Peppermint water, four ounces.

Mix. Dose: a table-spoonful several times a day. Useful in disease of the *kidneys*, and when a *stone* is passing from the kidneys to the bladder; in *rheumatism*, and in *bleeding* from the stomach or lungs, when there is no arterial excitement.

Infusion of Dandelion, &c.

Take infusion of dandelion, four ounces,
Extract of dandelion, two drachms,
Carbonate of soda, half a drachm,
Tartrate of potash, three drachms,
Tincture of rhubarb, three drachms,
Tincture of henbane, twenty drops.

Mix. Dose: one-third part to be taken three times a day. Good in *dropsy*, especially if it depends upon obstruction in the liver, and in *dyspepsia*.

Infusion of Dandelion.

Take of dandelion root, broken small, two ounces,
Boiling water, one pint.

Let it stand twenty-four hours and strain. Dose: two table-spoonsful, four times a day. Used in such cases as the preceding formula.

Decoction of Pipsisseway.

Take of pipsisseway, (winter green,) one ounce.
Water, one quart.

Let it soak for twelve hours, and slowly boil it down to one-half. Dose: a wine-glassful three or four times a day. In *dropsy*, in which there is debility of the stomach and bowels. It is also serviceable in *gravel*, and disease of the *kidneys*, and has been thought particularly valuable in *scrofula*, and in some kinds of *eruptions* on the skin.

Infusion of Henbane.

Take henbane, one ounce,
Boiling water, one pint.

Let it infuse for twelve hours. Dose: the whole of this in one day. Useful in *inflammatory dropsy*, and in affections of the *urinary organs.*

Mixture of Calumbo, Æther, &c.

Take tincture of digitalis, one and a half drachm,
Tincture of calumbo, one and a half ounce,
Spirits of sulphuric æther, four drachms,
Laudanum, forty drops,
Camphor water, seven ounces.

Mix. Dose: two table-spoonsful twice a day may be employed when the patient is low, and the action of a diuretic is required.

EXPECTORANTS.

This class of medicines are designed to relieve the mucous membrane of the lungs, by increasing the secretion of mucus. In this way inflammation and congestion of the membrane is removed. Many remedies are expectorants under peculiar circumstances—thus even blood-letting, when the lungs are suffering from an inflammation of an acute kind, and the ordinary secretion is consequently suspended, may act as a remedy of this description. But there are certain medicines that more directly belong to the class of expectorants, and appear to have a kind of specific tendency to the lungs. When expectorants are used, the body should be kept well protected from atmospheric changes, and from severe cold. The patient should also avoid, so far as possible, the breathing of cold air. If such precautions be neglected, the purpose for which the remedy is administered, will be partially if not wholly defeated.

MIXTURES.

Mixture of Antimonial Wine, &c.

Take of antimonial wine, half an ounce,
Ipecacuanha wine, two drachms,
Solution of acetate of ammonia, four ounces,
Laudanum, two and a half drachms,
Syrup, one ounce,
Water, fourteen ounces.

Mix. Dose: one to six tea-spoonsful occasionally. This may be advantageously used in a fresh *cold* when there is fever.

Mixture of Sweet Spirits of Nitre, &c.

Take of ipecacuanha wine, one and a half drachm,
Sweet spirits of nitre, two and a half drachms,
Solution of the acetate of ammonia, two ounces,
Antimonial wine, one and a half drachm,
Camphor water, four and a half ounces,
Laudanum, one drachm,
Syrup, one ounce.

Mix. Dose: a table-spoonful every two or three hours. Used in *cold* accompanied with fever.

Mixture of Ipecacuanha Wine, &c.

Take of wine of ipecacuanha, three drachms,
Syrup of tolu, five drachms,
Powdered gum Arabic one drachm,
Water, one ounce.

Rub the gum and water first together, and then add the other ingredients. Dose: a tea-spoonful every hour. For common *cold*, with tightness of the chest. In smaller doses, this is a very good mixture for children.

Mixture of Syrup of Squills, &c.

Take of paregoric elixir, half an ounce,
Syrup of squills, one ounce,
Antimonial wine, two drachms,
Water, six ounces.

Mix. Dose: a tea-spoonful every fifteen minutes, until the cough is relieved. For *influenza.*

Mixture of Paregoric and Ipecac wine.

Take of paregoric elixir, two ounces,
Ipecacuanha wine, one ounce.

Mix. Dose: a tea-spoonful occasionally, in a *dry cough* threatening consumption.

Mixture of Seneka Snake Root, &c.

Take of seneka snake root, three drachms,
Anise seed, three drachms,
Liquorice, two drachms.

Boil in eight ounces of water, strain, and add,

Paregoric elixir, one and a half ounce,
Syrup of squills, one ounce.

Dose: a table-spoonful three or four times a day. This should be used in *cough* when there is no fever, and the system is languid.

Mixture of Spermaceti, &c.

Take of spermaceti, two drachms,
Yelk of egg, one,
Powdered gum arabic, two drachms,
Paregoric elixir, six drachms,
Antimonial wine, half an ounce,
White sugar, three drachms,
Water, six ounces.

Mix. Dose: a table spoonful every two or three hours, until the cough is relieved. Recommended as an excellent remedy in the cough of *measles*, as well as in others.

Mixture of Liquorice, &c.

Take of powdered extract of liquorice, two drachms,
Powdered gum arabic, two drachms,
Hot water, four ounces. Dissolve and add,
Antimonial wine, two drachms,
Laudanum, half a drachm.

Mix all together. Dose: a table-spoonful to be taken occasionally in *influenza*.

Mixture of Squills, Antimony, &c.

Take of tartrate of antimony, one grain,
Syrup of squills, half an ounce;
Sulphate of morphia, one grain,
Powdered gum arabic, two drachms,
Water, four ounces.

Make a mixture by rubbing all together in a mortar. Dose: a table-spoonful occasionally in *catarrhal affections*.

Mixture of Bicarbonate of Soda, &c.

Take of mint tea, one and a half ounce,
Ipecacuanha wine, one a half drachm,
Bicarbonate of soda, twelve grains,
Orange syrup, two drachms,
Laudanum, four drops.

Mix. Dose: a tea-spoonful or two every second hour. To allay the *cough* in children when attended with *intestinal irritation.*

Mixture of Tartrate of Antimony, &c. for Children.

Take of mint water, one ounce,
Gum arabic, one drachm,
Antimonial wine, one drachm,
Lemon syrup, two drachms,
Laudanum, two drops.

Mix. Dose: three tea-spoonsful every two hours.

For children in *inflammation* of the lungs. When much depression attends its use, a few drops of spirits of lavender, or tincture of cinnamon, may be added.

Mixture of Saffron, &c.

Take of fennel water, one and a half ounce,
Tincture of squills, one and a half drachm,
Carbonate of soda, twelve grains,
Syrup of tolu, half a drachm,
Syrup of saffron, two drachms,
Paregoric elixir, half a drachm.

Mix. Dose: one to two tea-spoonsful, every three hours. In the *spasmodic cough* of children, with *chronic bronchitis* and a secretion of *thick phlegm.*

Coxe's Hive Syrup.

Take of squills, one ounce,
Seneka snake root, one ounce,
Water, one pint.
Boil down one-half, and strain, Add

Clarified honey, half a pound,
Tartrate of antimony, twelve grains.

Mix. Dose: ten drops to a tea-spoonful, for a child, according to age. This is a celebrated remedy in *croup*, and may be advantageously used in other affections of the lungs.

Mixture of Extract of Hemlock, &c.

Take of extract of hemlock, one drachm,
Paregoric elixir, half an ounce,
Syrup of tolu, half an ounce,
Water, four ounces.

Mix. Dose: for a child a year old, half to a one tea-spoonful may be given every four hours. Recommended in *hooping cough.* Its effects must be watched, as it is a remedy that may affect the head very much.

Mixture of Gum Ammoniac, &c.

Take of gum ammoniac, one drachm,
Water, four ounces,
Dissolve by rubbing in a mortar,
Syrup of squills, two ounces,
Paregoric elixir, half an ounce.

Mix. Dose: a table-spoonful four times a day. Useful in *chronic cough*, *asthma*, and other pectoral affections, attended with a deficient expectoration, without acute inflammation, or when there is too copious an expectoration of mucus, caused by debility of the mucous membrane.

Mixture of Cochineal, &c.

Take of carbonate of potash, one scruple,
Powdered cochineal, half a drachm,
Powdered sugar, one drachm,
Water, four ounces.

Make a solution. Dose: a tea-spoonful every two or three hours to children in *hooping cough*. Thought by some to be almost a specific for it.

Mixture of Fox Glove, &c.

Take of tincture of fox glove, two drachms,
Laudanum, two ounces,
Essence of peppermint, fifty drops.
Mix. Dose: from forty to seventy drops.
In *consumption* when there is an excited pulse.

Tincture of Blood Root.

Take of the saturated tincture of blood root, one ounce. Dose: twenty-five to forty drops two or three times a day. Highly recommended in *consumption.*

Syrup of Blood Root, &c.

Take of blood root, one ounce,
Anise seed, half an ounce,
Liquorice, half an ounce,
Boiling water, two pints.

Boil down to one pint, then add four ounces of honey. Dose: a table-spoonful three or four times a day. In *consumption* attended with *dyspeptic* symptoms, it may be used in preference to the preceding.

Griffith's Mixture.

Take of powdered myrrh, one drachm,
Carbonate of potash, twenty-five grains,
Water, half a pint,
Sulphate of iron, powdered, one scruple,
Spirit of lavender, half an ounce,
Sugar, one drachm.

Rub together the myrrh, carbonate of potash and sugar, and during the process, gradually add the water, lavender, and lastly the iron. Pour it immediately into a bottle and stop it. Dose: two to four table-spoonsful two or three times a day. This remedy is much employed in the *hectic* fever of *consumption.* If there be severe acute pain in the chest, indicating active inflammation, or if there be irritation of the stomach, its use will be improper, until this objection is removed.

Infusion of Cherry Bark.

Take of wild cherry bark, bruised, half an ounce,
Water, one pint.

Let it stand for twelve hours and strain. Dose: a wine-glassful three times a day. It calms the pulse in the *hectic* of *consumption*, and acts as a *tonic* at the same time.

Mixture of Infusion of Wild Cherry.

Take of the infusion of wild cherry, one pint,
Ipecacuanha wine, one ounce,
Laudanum, two drachms,
Syrup, two ounces.

Mix. Dose: a wine-glassful three times a day. Preferable, in most cases, to the preceding, in *consumptive* diseases.

Tar Water.

Take of tar, one pint,
Water, four pints.

Stir them together in the most thorough manner, then let the tar settle, and strain the water off. Dose: a wine-glassful may be taken four times a day. In *consumption.*

Decoction of Iceland Moss.

Take of Iceland moss, one ounce,
Water, one and a half pint.

Boil to one pint and strain. Drink freely of it. It is mucilaginous and tonic, and has often been found very useful in *chronic coughs* when there is copious and debilitating expectoration, especially when the matter discharged is of a purulent character.

Infusion of Flaxseed.

Take of flaxseed, one ounce,
Liquorice root, half an ounce,
Boiling water, two pints.

Let it stand two or three hours near the fire and strain. Add what is agreeable to flavor. A common drink in *influenza*.

Decoction of Bran.

Take wheat-bran, one pint,
Raisins, mashed, half a pint,
Water, four pints,
Honey, six table-spoonsful.

Simmer for three or four hours, and strain. Dose: a wine-glassful four or five times a day, or it may be used as a common drink, in *coughs*.

Mixture of Bitter Almonds, &c.

Take of mixture of gum ammonia, three ounces,
Mixture of bitter almonds, three ounces,
Tincture of squills, forty drops.

Mix. Dose: three table-spoonsful twice a day. In *dry, hoarse cough*.

Ætherial Tincture of Lobelia.

Take of dried lobelia, four ounces,
Alcohol, one pint,
Sweet spirits of nitre, one pint,
Spirit of sulphuric æther, one ounce.

Let it stand for fourteen days in a dark place, and then filter. Dose: five drops to twenty. This is an excellent remedy in *asthma*, and in *bronchial* affections of the lungs.

PILLS.

Pills of Ipecacuanha.

Take of ipecacuanha, fifteen grains,
Soap, sufficient to make fifteen pills.

Dose. One, three times a day. In *catarrh* and the first stage of *consumption*.

Pills of Gum Ammoniac, Myrrh, &c.

Take of powdered gum myrrh, one drachm,
Gum ammoniac, half a drachm,
Powdered squills, ten grains,
Syrup, a sufficient quantity to make pills.

Divide in twenty pills. Dose: two, morning and evening.

Useful in the *chronic cough* of the feeble and the old, when the lungs become loaded with mucus that the patient is unable to get rid of.

Pills of Tartrate of Antimony, &c.

Take of tartrate of antimony, one and a half grains,
Powdered opium, one and a half grains,
Gum arabic, ten grains,
Syrup, sufficient quantity.

Divide into twenty-five pills. Dose: two, morning and night in *chronic cough.*

Pills of Sulphate of Zinc, &c.

Take of sulphate of zinc, ten grains,
Powdered myrrh, one and a half drachm,
Rose confection, sufficient quantity.

Divide into twenty pills. Dose: two, thrice a day. Given in *hooping cough.*

Pills of Squills, Hemlock, &c.

Take of extract of hemlock, half a drachm,
Powdered squills, ten grains,
ipecacuanha, five grains.

Divide into ten pills. Dose: one, three times a day, in severe *cough.*

EMMENAGOGUES.

Emmenagogues are medicines that excite the menstrual or monthly discharge of women. There is a very considerable variety of remedies that conduce to this end, and it is necessary that some discrimination should be exercised in employing them. Patients may be suffering from either a partial or total suppression of this function, in wholly opposite conditions of the system. Some are debilitated, pale, and almost bloodless, while others exhibit an appearance the very reverse. One requires, before emmanagogues can properly be given, to have the quantity of blood reduced,—the other demands an immediate resort to strengthening means.

Tincture of Guaiacum, &c.

Take of powdered guaiacum, six ounces,
Carbonate of soda, eight scruples,
Powdered allspice, one and a half ounce,
Diluted alcohol, one and a half pint.

Let it stand for a few days. Dose: a tea-spoonful to be taken three times a day in a little sweetened water. To every four ounces of the above tincture, a tea-spoonful of the spirit of ammonia should be added.

Tincture of Aloes, &c.

Take of aloes, powdered, one and a half ounce,
Saffron, one and a half ounce,
Tincture of myrrh, one pint.

After standing for two weeks, filter through paper. Dose: from one to two tea-spoonsful daily. This will act somewhat on the bowels, and is especially applicable to cases in which the system is feeble and *sluggish*, and the bowels *constipated.*

Tincture of Black Hellebore, &c.

Take of the compound tincture of aloes, one and a half ounce,
Tincture of black hellebore, two drachms,
Tincture of Spanish flies, thirty drops.

Mix. Dose: a tea-spoonful to be taken morning, noon and night. This may be used in those cases in which there is considerable vigor and the patient is too plethoric to take any of the preparations of iron.

Iron Filings and Potash.

Take of iron filings, one ounce,
Bi-tartrate of potash, one ounce,
Boiling water, two pints.

Let it stand a few hours. Dose: two to four table-spoonsful three times a day. When the patient is feeble and the face is pale this may be used.

Tincture of the Muriate of Iron.

Take of the tincture of muriate of iron, one ounce.

Dose: thirty to sixty drops twice a day, in two table-spoonsful of water. This is a powerful preparation of iron, and should only be used when the stomach is sound, and body feeble.

Decoction of Seneka Snake Root.

Take of seneka snake root, bruised, two ounces.
Allspice, bruised, one drachm,
Water, two pints.

Let it stand and simmer until reduced one third, and then strain. Dose: two table-spoonsful four times a day.

Decoction of Madder.

Take of powdered madder, one ounce,
Boiling water, one pint.
Simmer for a few minutes, and add
Bruised cloves, one drachm.
Strain. Dose: one to two table-spoonsful four times a day.

PILLS.

Pills of Sulphate of Iron, &c.

Take of sulphate of iron, two drachms,
Water, eight drachms,
Aloes, ten drachms,
White canella, powdered, one and a half drachm,
Powdered myrrh, half a drachm.

Make a mass, and divide into pills of three grains each. Dose: one, night and morning.

Pills of Aloes and Myrrh.

Take of aloes, two ounces,
Saffron, one ounce,
Myrrh, one ounce,
Syrup, to mix.

Divide in pills of five grains each. Dose: one, twice a day. This will act on the bowels and may properly be used when they are sluggish, in obstructed or deficient monthly discharge.

Pills of Iron and Myrrh.

Take of myrrh, two drachms,
Carbonate of soda, one drachm.
Rub together in mortar, and add,
Sulphate of iron, one drachm.
Rub again, and add,
Molasses.

And beat all together in a warm mortar. Divide in pills of five grains each. Dose: one, three times a day. For *feeble constitutions.*

Pills of Aloes and Iron.

Take of sulphate of iron, three drachms,
Aloes, two drachms,
Aromatic powder, six drachms,
Conserve of roses, sufficient quantity to make a mass.

Divide into pills of five grains each. Dose: one, morning and evening; when the patient is *pale*, and the *bowels languid.*

ANTHELMINTICS.

Anthelmintics or vermifuges, are medicines possessing the property of destroying or expelling worms from the intestinal canal. Many medicines are capable of accomplishing this result, but there is a class that specifically manifest such a power. It is customary to combine remedies of this class with some one or more of those having purgative action, by which means their effects are much improved. As the action of these medicines, however, is merely temporary, it is proper, as soon as the worms are dislodged, to employ means calculated to restore the digestive organs to a healthy condition, and to correct that peculiar state which favors their production. The means best adapted to this purpose, are such as improve the general health. The body should be kept warm with suitable clothing; the diet should be nutritious, and if necessary to invigorate by medical agency, bitter tonics with gentle aperients, may be administered. In some cases, when the system is nearly bloodless, as is known by the pallid countenance, the preparations of iron prove to be the most suitable tonics that can be given.

It is perhaps more difficult to ascertain when worms exist in the stomach and bowels, than it is to destroy them. It is very much the fashion to assume, whenever a child is mopish, that it is tormented with these vermin. Sometimes the conjecture proves to be correct, but more frequently it is wrong. Worm medicines, in either case are had recourse to, and should there be no worms to rout, the chances are that the child will really be made worse by the quantities of remedies it is unhappily compelled to take.

We throw out these hints to save children from being unnecessarily tortured. If there be good reason for believing that a child has worms, and especially if they have been passed at stool, then the remedies of this class should be judiciously tried. But if the opinion is merely a doubtful guess, it is better, after making a moderate experiment, without any confirming result, to abandon their use, and if necessary, take the advice of a physician.

Decoction of Pomegranate.

Take of bark of root of pomegranate, two ounces,
Water, two pints.

Boil to one and a half pint. Dose: two ounces every hour. Three or four doses are generally sufficient to expel the worms. This is intended for the *tape-worm*, an animal of immense length, that is most common to adults.

Mixture of Turpentine.

Take of oil of turpentine, half an ounce,
Yelk of egg, one,
Peppermint water, two ounces.

Mix. Take all for a dose, for *tape-worm;* or it may be given in smaller doses, and repeated three or four times in twenty-four hours. This medicine is perhaps the best that can be used for any kind of worms. For a child, between two and five years of age, a tea-spoonful of oil of turpentine, mixed as directed, will be sufficient. Turpentine is less likely to act on the urinary organs, when taken in a large dose than when taken in a small one, as it passes off through the bowels as a purgative. It may also be mixed with castor oil. Thus, for a child,

Take oil of turpentine, half an ounce,
Castor oil, one ounce.

Mix, and give three tea-spoonsful three times a day.

Infusion of Pink Root, &c.

Take of Carolina pink root, half an ounce,
Senna, two drachms,
Manna, one ounce,
Fennel seed, two drachms,
Boiling water, one pint.

Let it infuse in a covered vessel for an hour, and then strain. A wine-glassful may be given to a child from two to four years old, three times a day. This is an excellent remedy against the common round worm resembling the earth worm.

Mixture of Worm-seed Oil.

Take of worm-seed oil, one drachm,
Sugar, one and a half drachm,
Gum arabic, powdered, two drachms.

Mix, and then add,

Peppermint-water, two and a half ounces.

Dose: a tea-spoonful three times a day, for two or three days, then to be followed by some brisk cathartic. For children this is a good anthelmintic, and is much used in some parts of the Southern states.

Worm-Seed and Molasses.

Take of seeds of worm-seed, thirty grains,
Molasses, a sufficient quantity.

This quantity may be administered to a child every night for three successive nights, and followed up each succeeding morning by a brisk cathartic. Or five to eight drops of the Oil of Worm Seed, may be substituted for the seeds, and administered in the same manner.

Cowhage (or cowitch,) and Honey.

Take of cowhage, one drachm,
Honey, sufficient quantity.

Mix well together. Dose: a tea-spoonful to a child two or three years of age, given before eating in the morning, for three days in succession, and then followed by an active cathartic. This is a very good vermifuge for the common worm.

Syrup of Garlic.

Take of garlic, one part,
Water, eight parts,
Sugar, sixteen parts.

Boil to a syrup. Dose: one to two table-spoonsful several times a day. This often proves a good remedy for the common worm.

Infusion of Tansy.

Take of tansy leaves, one ounce,
Boiling water, one pint.

Let it infuse for one hour. Dose: two table-spoonsful four times a day for a child from three to seven years of age.

Aloes Injection.

Take of aloes, twenty grains,
Milk, four to six ounces.

Dissolve the aloes, and use it for an injection. This is suitable for the destruction of the *ascarides*, a little worm that generally inhabits the lower bowel in great numbers. For a child five to ten years of age.

Camphor Injection.

Take of camphor, one drachm,
Sweet oil, two ounces.

Mix. Use as an injection for *ascarides*. It may be used several successive times, and allays the itching that is almost intolerable.

Almost any of the common purgative injections will answer to destroy worms in the lower bowel, and a solution of common salt is often used with success. A brisk purgative of calomel and jalap, or indeed, any other active cathartic, will frequently be sufficient to expel worms from the stomach and upper intestines, without the aid of any specific anthelmintic.

STIMULANTS.

Stimulants are a class of remedies that excite, in a transient way, the vital powers. They increase the vigor of the body, and some of them exalt the intellectual faculties. They have different modes of action, some producing strong effects on both the nervous and arterial systems, and arousing every organ of the body, while others appear to affect more especially the brain, spinal marrow, and the nerves proceeding from them.

MIXTURES, &c.

Ammonia, &c.,

Take of camphor water, six ounces,
Carbonate of ammonia, one drachm,
Sweet spirits of nitre, three drachms.

Mix. Dose: one table-spoonful may be taken frequently when there is *fainting*.

Infusion of Mint, Camphor, &c.

Take infusion of spear mint, six ounces,
Burnt brandy, one ounce,
Paregoric elixir, one drachm,
Sugar, half an ounce.

Mix. Dose: a table-spoonful frequently taken until the vomiting ceases. To stop long continued *vomiting* and *retching*.

Mixture of Sulphuric Æther, &c.

Take of sulphuric æther, one drachm,
Water, six ounces,
Oil of caraway, six drops,
Peppermint water, one ounce,
Sugar, three drachms.

Mix. Dose: a table-spoonful occasionally, in *flatulence* of the stomach.

Mixture of Oil of Turpentine, &c.

Take of aniseed water, one ounce,
Gum arabic, one drachm,
Oil of turpentine, half a drachm,
Oil of lemon, four drops,
Syrup of cloves, four drachms.

Mix. Dose: one to two tea-spoonsful every third hour. This is a good *stimulant* and *antispasmodic* for young children, and may be given in *colic*, or when there is a tendency to *convulsions* from irritation of the bowels.

Mixture of Oil of Cajeput, &c.

Take of caraway water, one ounce,
Powdered gum arabic, half an ounce,
Calcined magnesia, one scruple,
Oil of cajeput, four drops,
Saffron syrup, half an ounce,
Spirit of ammonia, half a drachm.

Mix. Dose: one to two tea-spoonsful, three times a day. To relieve *flatulency* and *griping* in children.

Mixture of Spirit of Ammonia, &c.

Take of peppermint water, one and a half ounce,
Aromatic spirit of ammonia, half a drachm,
Sweet spirits of nitre, twelve drops,
Compound spirit of lavender, one drachm,
Syrup of cloves, half an ounce.

Mix. Dose: a tea-spoonful every two hours. A stimulant for young children, when *restlessness* or *convulsions* seem to arise from exhaustion.

The foregoing recipes may be used by persons of all ages, increasing the dose to suit the age.

Draught of Tincture of Horse Radish, &c.

Take of compound tincture of horse radish, two drachms,
Fœtid spirit of ammonia, sixteen drops,
Tincture of valerian, one drachm,
Aniseed water, one ounce.

Mix. Take all at once, and repeat it three times a day. In *paralysis.*

Draught of Arnica, &c.

Take of arnica flowers, three drachms,
Boiling water, ten ounces,

Let it stand for an hour in a close vessel, and strain it, then add,

Liquorice powder, one ounce,
Compound tincture of cardamons, two drachms,
Syrup of ginger, one drachm.

Mix. Take this at a dose, and repeat it three times a day. In *paralysis.*

Mixture of Sulphuric Æther, Laudanum, &c.

Take of camphor water, seven ounces,
Laudanum, four drachms,
Compound spirit of æther, four drachms.

Mix. Dose: take two table-spoonsful, during the *cold stage* of fever and ague, and in *low fevers.*

Mixture of Yeast, Camphor, &c.

Take of beer yeast, six ounces,
Camphor water, six ounces,
Tincture of arnica, two drachms.

Mix. Dose: three table-spoonsful every third hour. In the advanced stage of *fever*, when *nervous symptoms* predominate.

Mixture of French Brandy, &c.

Take of French brandy, four ounces,
Cinnamon water, four ounces,
Yelk of eggs, two,
Sugar, half an ounce,
Oil of cinnamon, two drops.

Mix. Dose: one to three table-spoonsful, repeated every two hours when necessary. An excellent remedy in the debility consequent upon protracted disease, when the patient appears to be sinking from exhaustion.

Camphor Emulsion.

Take of camphor, one scruple,
Almonds, half an ounce,
Sugar, half an ounce,
Water, one and a half pint.

Beat the almonds in a stone mortar with the camphor and sugar previously well rubbed together, then pour the water on gradually and strain. Dose: two to four table-spoonsful, when there is a feeling of exhaustion.

Draught of Valerian and Ammonia.

Take of valerian, one scruple,
Carbonate of ammonia, ten grains,
Cinnamon water, two ounces.

Take the whole at once, and it may be repeated every fourth hour. In *nervous head ache*, and *low spirits.*

Infusion of Virginia Snake Root.

Take of snake root, half an ounce,
Boiling water, one pint.

Let it stand for four hours, and strain. Dose: two to four table-spoonsful three times a day. Useful in low *fevers, fever and ague, gangrene, &c.*

Confection of Black Pepper, &c.

Take of black pepper, four ounces,
Elecampane root, four ounces,
Fennel seeds, twelve ounces,
Honey and white sugar, of each, eight ounces:

Rub the dry ingredients together to a very fine powder, add four ounces of water, and beat into an uniform mass. This is a remedy that is known as Ward's Paste, and is very efficacious in *piles* when they occur in the weak and debilitated. Dose: mass as large as a hazle-nut, three times a day.

Balm Tea.

Take of fresh balm, two ounces,
Boiling water, half a pint.

Let it stand for a quarter of an hour. Dose: a wine-glassful to a tea-cupful, frequently. It may be drank warm to promote the operation of sweating medicines. If the balm is dry, one half the above quantity is sufficient. *Spearmint Tea* may be prepared in the same manner and proportions, and taken in half the dose of the balm tea.

Wine Whey.

Take of fresh milk, half a pint,
Madeira wine, one to two ounces,

Boil the milk, and then add the wine. Used in *fevers*, when the system requires support. It is a mild stimulant.

Pills of Cayenne Pepper.

Take of cayenne pepper, one drachm,
Crumb of bread and water, a sufficient quantity to make the whole into a pilular mass.

Divide into twelve pills. Dose: one, three or four times a day. In *debility of the stomach.*

NARCOTICS.

The medicines of this class are very numerous, and for practical purposes, in this place, may embrace sedatives, anodynes, and soporifics. Most of them primarily produce a stimulating effect on the nervous and vascular systems; but this is soon succeeded by a depression of the vital powers and sleep. If the stimulating effect only be desired they should be administered in only small doses, and frequently repeated. When given with the intention of causing sleep, the dose ought to be larger, and repeated at more distant intervals.

Some individuals are nearly insensible to their action, while others can scarcely endure the smallest quantities, becoming either stupified, or excessively excited.

Habit influences the action of narcotics on the system more than any other circumstance, their power being diminished in a remarkable degree by repetition; it is therefore necessary, where their continued use is required, gradually to augment the dose, in order to obtain their proper effects.

MIXTURES, DRAUGHTS, &c.

Mixture of Belladonna, &c.

Take of tincture of belladonna, half a drachm,
Camphor water, six ounces.

Mix. Dose: a table-spoonful every six hours. An excellent anodyne in *neuralgia* and *tic-doloureux.*

Liniment of Belladonna, &c.

Take of tincture of belladonna, two drachms,
Soap and opium liniment, eight ounces.

Mix. To rub on the parts affected, in *neuralgic pains* and in painful *glandular enlargements.*

Draught of Henbane, &c.

Take of tincture of henbane, one drachm,
Camphor water, two ounces.

Mix. To be all taken at once at bed-time, and repeat it in two hours if the patient does not sleep. An excellent narcotic draught where from any cause opium is inadmissible.

Mixture of Tincture of Lettuce, &c.

Take of tincture of lettuce, six drachms,
Distilled water, six drachms,
Water of cherry laurel, two drachms,
Simple syrup, one and a half ounce.

Mix. Dose: a table-spoonful morning and evening. An anodyne draught, preferable to an opiate, in *consumption.*

Draught of Sulphate of Morphia, &c.

Take of sulphate of morphia, half a grain,
Diluted sulphuric acid, two drops,
Water, two ounces,
Syrup, half an ounce.

Mix. Take the whole at once, when the patient is unable to sleep from *restlessness.*

Mixture of Thorn Apple, &c.

Take of tincture of thorn apple, one and a half drachm,
Water, six ounces,
Syrup of lemon, three ounces.

Mix. Dose: three table-spoonsful every third hour, until the pain abates, in *tic-doloureux*, *sciatica*, or any other chronic disease accompanied with severe pain.

Mixture of Fox Glove, &c.

Take of tincture of purple fox glove, three drachms,
Camphor water, six ounces,
Orange syrup, one and a half ounce,
Prussic acid, six drops.

Mix. Dose: two table-spoonsful two or three times a day. An excellent remedy in *nervous palpitations.* It is a powerful medicine, and must only be used with great care.

Anodyne Draught.

Take of laudanum, twenty drops,
Syrup of poppies, two drachms,
Tincture of cinnamon, one drachm,
Water, one and a half ounce.

Mix. All to be taken at once. This is designed to allay pain and produce sleep.

Tincture of Opium and Turpentine.

Take of tincture of opium, one ounce,
Oil of turpentine, half an ounce.

Mix. Dose: a tea-spoonful may be given every hour or two, (but its effects must be closely watched,) in *delirium tremens.*

PILLS.

Pills of Morphia.

Take of sulphate of morphia, three grains,
Conserve of roses, sufficient to make pills, and divide into twelve.

Dose: one pill, (which is equivalent to a grain of opium) when necessary.

Pills of Lettuce.

Take of extract of lettuce, ten grains,
Divide in five pills.

Dose: one, which may be repeated at the end of two hours if sleep be not procured.

Pills of Camphor.

Take of camphor, half a drachm,
Gum and alcohol, sufficient quantity to make pills.

Divide into fifteen. Dose: a pill every two hours. To quiet *nervousness*, and to act gently on the skin.

Pills of Henbane and Ipecacuanha.

Take of extract of henbane, fifteen grains,
Powdered ipecacuanha, seven and a half grains.

Mix, and divide into fifteen pills. One every two hours, until ease is obtained, in *irritable bowels.*

Opium Pill.

Take of powdered opium, twenty grains,
Castile soap, four scruples.

Beat together, and divide into five grain pills. Useful when an opiate is required. Each pill contains one grain of opium.

Stoerck's Pills.

Take of extract of hemlock, one drachm,
Powdered hemlock, enough to make a pilular mass.

Divide into pills of ten grains each. Dose: one to four twice a day in various *enlargements* of *glands*, *pulmonary affections*, *cancer*, *scrofula*, *&c.*

Pills of Storax, &c.

Take of strained storax, three drachms,
Powdered opium, one drachm,
Powdered saffron, one drachm.

Divide into five grain pills. Dose: one pill in *chronic coughs*, taken at bed-time to procure sleep, and one in the morning if the cough be very distressing.

ANTISPASMODICS.

These are medicines that counteract irregular or involuntary muscular action, which is known as spasm. This deranged state of the system depends on so many different causes, and is produced by so many different sources of irritation, that its successful treatment will very frequently depend on the employment of remedies calculated to remove the more immediate cause or source of irritation by which the spasmodic affection is produced. It hence follows, that under peculiar circumstances, the remedies which will be found most successful in counteracting spasm, must be derived from very distinct divisions of the Materia Medica; and thus the term antispasmodic may become applicable to a narcotic, a sedative, a stimulant, a cathartic, a tonic, and several other kinds of medicines. There are, however, certain substances which exercise a direct control over spasmodic action, independent of any influence upon its exciting causes, and these are meant when antispasmodics are spoken of.

MIXTURES, DRAUGHTS, &c.

Take of carbonate of magnesia, two scruples,
Aniseed-water, two ounces and a half,
Compound spirit of sulphuric æther, two drachms,
Tincture of castor, two drachms,
Oil of aniseed, eight drops.

Mix. Take one half for a dose. May be taken in *general convulsions*, or in *spasmodic pains of the stomach*, &c.

Mixture of Tincture of Columbo, Camphor, &c.

Take of camphor, ten grains,
Tincture of columbo, three drachms,
Spirit of aniseed, three drachms,
Spearmint-water, ten drachms.

Rub the camphor with the tincture and spirit, then gradually add the water. One half to be taken at bed time, when there is much fidgetty *nervousness* in those who are feeble.

Mixture of Valerian, Æther, &c.

Take of aniseed-water, two ounces,
Ammoniated tincture of valerian, thirty drops,
Spirit of sulphuric æther, one drachm.

Mix. Take one half of this for a dose, and repeat it two or three times a day. In *hysterics*, *epilepsy*, &c.

Draught of Valerian, Castor, &c.

Take of infusion of valerian, eleven drachms,
Fœtid spirit of ammonia, half a drachm,
Tincture of castor, half a drachm.

Mix, and take all at a draught, two or three times a day, a short time before an anticipated attack of *epilepsy*.

Draught of Caustic Ammonia, &c

Take of sulphuric æther, half a drachm,
Tincture of valerian, one drachm,
Solution of caustic ammonia, twenty drops,
Water, one ounce.

Mix. To *prevent an epileptic fit*, it must be taken just before its occurrence.

Tincture of Wood-Soot.

Take of pure wood-soot, two ounces,
Assafœtida, one ounce,
Proof spirit, thirty-two ounces.

Let it stand for three days, and strain. Dose: one tea-spoonful, three or four times a day. For children it must be proportionally reduced.

Mixture of Wood-Soot Tincture, Camphor, &c.

Take of tincture of wood-soot, half an ounce,
Camphor and magnesia-water, six ounces,
Orange syrup, one and a half ounce.

Mix. Dose: two table-spoonsful, every hour, until the spasms abate. In the *hysterics* of females.

Mixture of Wood-Soot Tincture, Carbonate of Soda, &c.

Take of tincture of wood-soot, twenty drops,
Solution of carbonate of soda, two drachms,
Orange syrup, one and a half drachm,
Mint water, one and a half ounce.

Mix. Dose: for a child from four to eight years of age, a dessert-spoonful every fourth hour; for an infant, a tea-spoonful—in the advanced stages of *hooping-cough.*

Mixture of Hoffman's Anodyne, &c.

Take of Hoffman's anodyne, three drachms,
Tincture of opium, one and a half drachm,
Cinnamon water, six ounces.

Mix. Dose: table-spoonful every one or two hours. In *hysterics*, or *cramp* in the *stomach.*

Mixture of Assafœtida, &c.

Take of assafœtida, one drachm,
Peppermint water, three ounces.

Dissolve and add,

Ammoniated tincture of valerian, two drachms,
Tincture of castor, three drachms,
Sulphuric æther, one drachm.

Mix. Dose: a table-spoonful (with plenty of water,) every second hour. In *hysterics.*

PILLS.

Pills of Assafœtida, &c.

Take of assafœtida, one drachm,
Soap, ten grains,
Water, sufficient, and make twenty pills.

Dose: one or two, three times a day. To relieve *hysterical* symptoms.

Pills of Ammoniated Copper, &c.

Take of ammoniated copper, one part,
Bread crumb, six parts,
Solution of carbonate of ammonia, sufficient quantity to make a pill mass. Divide in pills of three and a half grains each.

Dose: one pill night and morning, gradually increased in *epilepsy*, and some other spasmodic diseases.

Pills of Nitrate of Silver.

Take of lunar caustic, four grains,
Dissolve in a few drops of distilled water.
Bread crumb, a sufficient quantity to make a mass.

Divide in twenty-four pills. Dose: one or two twice a day. In *epilepsy*. This is one of the best remedies for this disease, but when persevered in for more than two months, there is danger that it may darken the skin.

TONICS.

Tonics constitute a class of medicines, the continued administration of which, in debilitated and relaxed conditions of the body, imparts strength and a more vigorous feeling, without producing, as stimulants do, any sudden excitement. To a certain extent, tonics are stimulants, inasmuch as they arouse the vital energies, but the excitement has more the character of health, and is permanent. If, however, they are given when the system is unimpaired by disease, their primary action, like that of stimulants, is followed by prostration.

There is no class of remedial agents that requires more discrimination in their administration than tonics; nor any, the injudicious use of which more frequently produces evil consequences. The diseases in which this class of substances should be principally employed, are evidently those of diminished power. But diminished power is often the consequence or concomitant of irritation or inflammation of the organs of digestion, and under such circumstances, tonics will rather aggravate than mitigate the affection. To be used with effect, this condition must first be removed by such means as are pointed out in other parts of this work. Independent of their tonic properties, some of the medicines of this class possess the power of arresting those diseases that are distinguished by regular paroxysms. Peruvian bark is an example of this kind of remedies, and from its universal application to fever and ague, is called a *febrifuge*, or a medicine that checks fever. It cannot, however, be imagined that either this, or the other remedies having the same specific power over periodical fever, are *directly* antagonistic to its phenomena, for they are equally efficacious in other periodical diseases, in which febrile excitement may be altogether absent. This subject of antiperiodic remedies is one of great interest, and is involved in much obscurity; but as this is not the place for its investigation, we can do no more than merely refer to it, as has been done, and pass it by.

MIXTURES, DECOCTIONS, &c.

Mixture of Sulphate of Quinine, &c.

Take of sulphate of quinine, twenty grains,
Diluted sulphuric acid, twenty-five drops,
Orange syrup, one ounce,
Water, five ounces.

Mix. Take a table-spoonful four times a day. To be taken during the intermission in fever and ague. In some cases the dose may be doubled with advantage. It may also be used as a tonic in convalescence after a fever.

Decoction of Peruvian Bark.

Take of Peruvian bark, bruised, one ounce,
Water, one pint.

Boil for ten minutes, and strain while the liquor is hot. Dose: four table-spoonsful, to be repeated more or less frequently, according to the nature of the case. It may be given as a tonic in almost any case in which a tonic is needed. If two drachms of orange peel be added to the decoction while it is still hot, the flavor is improved, and it sits better on the stomach.

Mixture of Bark and Ammonia.

Take of the decoction of Peruvian bark, (see preceding prescription,) eight ounces.
Solution of the acetate of ammonia, two ounces,
Sweet spirits of nitre, one ounce.

Mix. Dose: four table-spoonsful. In *fevers* in which the intermission is not perfect.

Mixture of Quinine, Ginger, &c.

Take of sulphate of quinine, twenty-four grains,
Diluted sulphuric acid, forty drops,
Tincture of ginger, one ounce,
Mint water, seven ounces.

Mix. Dose: two table-spoonsful three or four times a day. In *fever and ague*, when the patient is weak and requires stimulating. It is, perhaps, better to double the dose, in obstinate cases, and administer it about half an hour previous to the anticipated chill.

Decoction of Dog Wood Bark.

Take of dog wood bark, bruised, one ounce,
Water, one pint.

Boil for ten minutes and strain while hot. Dose: two ounces, frequently repeated. Substitute for Peruvian bark in *fever and ague*, and as a general tonic. It answers a very good purpose, and in parts of the country where no other remedy can be obtained, may be resorted to with every hope of success.

Decoction of Willow Bark.

Take of willow bark, one ounce,
Water, one pint.

Boil for ten minutes, and strain. Dose: four table-spoonsful four or five times a day. This is another substitute for Peruvian bark in *fever and ague*, and is thought by many to be very little inferior to it.

Infusion of Virginia Snake Root.

Take of Virginia snake root, one ounce,
Boiling water, one pint.

Infuse for a few hours, and strain. Dose: one or two table-spoonsful four times a day in *low forms of fever*; in chronic diseases, the quantity may be less. If given for fever and ague, for which it is strongly recommended, the dose may be increased. It is also successfully employed in promoting the monthly discharge of females; in this case it must be used all the time during the intervals.

Infusion of Boneset or Thoroughwort.

Take of the boneset leaves, dried, one ounce,
Boiling water, one pint.

Let it stand for two hours, and then strain. This is another medicine that has been employed as a substitute for Peruvian bark in the treatment of fever and ague. It is not equal to it, but will often cure. In all cases of debility, when a tonic is required, it may be used; and if there be also some fever, perhaps no better can be employed. Dose: for *ague*, as much as the stomach will bear, and should be drank *warm*.

Compound Infusion of Gentian.

Take of bruised gentian, half an ounce,
Dried orange peel, one drachm,
Coriander, bruised, one drachm,
Alcohol, diluted, four fluid ounces,
Water, cold, twelve ounces.

Let it stand for twelve hours, and strain. Dose: two tablespoonsful, three times a day. This is an excellent tonic, and may be used in all cases of debility of the *digestive organs*, if there be no irritation or inflammation of the stomach. It is very good to correct the acid secretions.

Infusion of Colomba, Ginger, &c.

Take of colomba, bruised, half an ounce,
Ginger, bruised, half an ounce,
Senna, two drachms, 7
Boiling water, one pint.

Let it stand for an hour, and strain. Dose: a wine-glassful, three times a day. An excellent remedy in *dyspepsia* with constipation and flatulence.

Infusion of Wild Cherry Bark.

Take of wild cherry bark, one ounce,
Orange peel, two drachms,
Water, one pint.

Infuse the bark for an hour and then add the orange peel. Dose: a wine-glassful every hour or two. It is highly useful in the *hectic fever* of scrofula and consumption. In the general debility often succeeding inflammatory diseases, it has been found advantageous, and is adapted to many cases of *dyspepsia*.

Infusion of Hops.

Take of hops, one ounce,
Boiling water, one pint.

Infuse for two hours, press and strain. Dose: a wine-glassful, three or four times a day. In *dyspepsia*.

Infusion of Chamomile.

Take of Chamomile, one ounce,
Orange peel, half an ounce,
Water, three pints.

Let it stand for twenty-four hours. Dose: a tea-cupful, three or four times a day. Made with cold water, it is generally more grateful to the stomach than when made with hot water. A tonic for weak stomach.

Mixture of Peruvian Bark, in Wine.

Take of powdered bark, half an ounce,
Lemon juice, two drachms,
Port wine, four ounces.

Mix. Dose: a wine-glassful every two hours, during the intermission of *fever*.

Huxham's Tincture of Bark.

Take of Peruvian bark, in powder, two ounces,
Orange peel, one and a half ounce,
Virginia snake-root, bruised, three drachms,
Saffron and red saunders, rasped, each one drachm.
Alcohol, diluted, twenty ounces.

Let it stand for fourteen days, and filter through paper. Dose: from one to four tea-spoonsful. This is an excellent *stomachic cordial*. If a grain or two of quinine be added to each dose, it is a very excellent remedy for *fever and ague*, and will often succeed when the other preparations of bark have failed.

Mixture of Green Vitriol, &c.

Take of green vitriol, four grains,
Aromatic sulphuric acid, twenty drops,
Syrup, half an ounce,
Water, one ounce.

Mix. Dose: a tea-spoonful to be taken three times a day in a wine-glass of water. A very good tonic when there are no inflammatory symptoms present. None of the preparations of iron should be administered when the patient is plethoric or inclined to fever. Good in *chlorosis* or *green sickness*, and for restoring *monthly sickness.*

Tincture of Iron.

Take of tincture of muriate of iron, one ounce.

Dose: ten to twenty drops, three times a day, in a wine-glass of water. Used as the preceding prescription. It is also astringent, and is employed to check *passive hemorrhages*.

Tincture of Iron and Orange.

Take of iron filings, four ounces,
Seville oranges, four.

Remove the peel, the white and the seeds; beat the pulp with the filings in a stone mortar, and let the whole stand for two days, then pour upon it

Madeira wine, ten ounces,
Tincture of orange peel, two ounces.

Let it stand for seven days, express, and filter. This is described as one of the most agreeable of all the preparations of iron. Dose: a tea-spoonful to four, two or three times a day. May be used to promote *monthly sickness*, or in any case in which iron is admissible.

Decoction of Black Snake Root.

Take of black snake root, one ounce,
Water, one and a half pint.

Boil down to a pint, and strain. Dose: one to two table-spoonsful, five or six times a day. This is a good remedy for *dropsy*, *rheumatism*, *hysterics*, and above all for *St. Vitus' Dance*, in which obstinate disease, it is reported to have been remarkably successful.

PILLS.

Pills of Extract of Quassia.

Take of extract of quassia, one drachm,
Powdered ginger, enough to make a mass and divide into 20 pills.

Dose: one, three or four times a day. This is a pure tonic, and may be given in all cases when a mere tonic effect is desired. It is particularly useful as a stomachic, when the stomach has been injured by *hard drinking*.

Pills of Sulphate of Iron.

Take of sulphate of iron, one drachm,
Extract of gentian, sufficient quantity.

Make a mass, and divide into thirty pills. Dose: one, morning and night, in *dyspepsia*, &c., and most of the cases in which chalybeates are administered.

Pills of Oxide of Zinc.

Take of oxide of zinc, two scruples,
Confection of roses, sufficient quantity.

Make ten pills. Dose: one, three times a day. This is often employed with success in *St. Vitus' Dance*, *epilepsy*, and other similar nervous affections.

Pills of Iron and Aloes.

Take of sulphate of iron, three parts,
Aloes, two parts,
Aromatic powder, six parts,
Conserve of roses, eight parts.

Mix. Divide into five-grain pills. Dose: one to three. This is a good pill in *green sickness* and *interrupted menstruation.*

Pills of Rhubarb and Iron.

Take of sulphate of iron, four parts,
Extract of rhubarb, ten parts,
Conserve of roses, five parts.

Mix. Divide into five-grain pills. Dose: two to four. A *stomachic.*

Pills of Nitrate of Silver.

Take of nitrate of silver, five grains,
Powdered opium, half a drachm,
Powdered camphor, one scruple,
Powdered nux vomica, one scruple,
Powdered gum arabic and water, sufficient quantity.

Make a mass, and divide into twenty pills. Dose: one, morning and night, in *epilepsy* and *St. Vitus' Dance.*

Pills of Oxide of Bismuth.

Take of oxide of bismuth, two scruples,
Gum arabic and water, sufficient quantity.

Make a mass and divide into thirty pills. Two for a dose, four times a day. A very good remedy in *dyspepsia,* when there is much *pain* in the stomach.

POWDERS.

Powders of Carbonate of Iron.

Take of carbonate of iron, one drachm,
Powdered rhubarb, half a drachm,
Powdered ginger, two scruples.

Mix. Divide into twelve powders. One to be taken, three times a day, in syrup or molasses. This is an excellent remedy in *neuralgia,* and many other painful affections of a nervous kind. It requires to be persevered in for some time before the full benefit of it will be derived. The dose of iron may be increased, up to twenty grains, and it is advisable, when used for the diseases mentioned above, to take it in considerable quantities.

Powder of Peruvian Bark, &c.

Take of Peruvian bark, in powder, one ounce,
Virginia snake root, powdered, three drachms,
Bicarbonate of soda, two drachms,
Powdered ginger, two scruples.

Divide in eight powders. Dose: one every three hours, in syrup or molasses. This will often succeed in *fever* and *ague*, when other remedies fail.

ASTRINGENTS.

This is a class of medicines, which, when applied to a sensible or visible part of the body, is found to produce a contraction or condensation. It is impossible to explain why such results take place, but it is probable that they are generally chemical phenomena. The consequence of their action is a diminished secretion; and most if not all of them act, finally, as tonics.

It is for their property of constringing the tissues that they are arranged under this head, regardless of any other qualities they may possess. Astringents have the power not only of checking secretions of the part with which they are directly in contact, but also that of parts more or less remote.

Remedies of this class cannot solely be resorted to in every case in which a discharge is too great. It is only when diseases are of long standing, and have become chronic, or when there is no accompanying constitutional excitement, that they can properly be employed. They otherwise may be expected to cause general reaction, and induce a train of symptoms more aggravated than those which existed in the first instance.

There are certain other medicines, though not belonging to the class of astringents, that are equally powerful in arresting internal secretions. They do this by establishing a new train of actions incompatible with the secreting functions. Some of the narcotics have this property. Opium furnishes a striking example of such substances. Ipecacuanha, acting by a different process, will also cause a similar general result. We only allow ourselves, in this place, to state certain facts, and therefore cannot enter into an explanation of them.

MIXTURES, DECOCTIONS, &c.

Chalk Mixture, &c.

Take cinnamon water, one ounce,
Chalk mixture, half an ounce,
Tincture of kino, two drachms,
Laudanum, eight drops,
Orange syrup, two drachms.

Mix. Dose: one to two tea-spoonsful, in the *purging* of *children* when there is no fever.

Mixture of Catechu, &c.

Take of infusion of mint, one ounce,
Cinnamon water, one ounce,
Tincture of catechu, two drachms,
Aromatic spirit of ammonia, one drachm,
Laudanum, twelve drops,
Orange syrup, two drachms.

Mix. Dose: a tea-spoonful every hour. In *cholera infantum*, or *vomiting* and *purging* of infants.

Chalk Mixture.

Take of prepared carbonate of lime, half an ounce,
Refined sugar, two drachms,
Powdered gum arabic, two drachms,
Cinnamon water, four ounces,
Water, four ounces.

Rub them together until they are mixed. Dose: one or two tea-spoonsful for young children every hour or two. One or two table-spoonsful for adults. This is an excellent preparation for *looseness of the bowels* accompanied with *acidity.* It is often combined with laudanum or kino, or both, to increase its astringency.

Draught of Cascarilla, &c.

Take of infusion of cascarilla, six drachms,
Cinnamon water, two drachms,
Compound powder of kino, ten grains,
Laudanum, eight drops.

Mix. Dose: all at once,—to be taken twice a day. In relaxation of the bowels after *dysentery.* For a young child, one-fourth of this quantity.

Mixture of Ammonia, Chalk, &c.

Take of chalk mixture, six ounces,
Aromatic spirit of ammonia, eighty drops,
Laudanum, twenty drops.

Mix. Dose: three table-spoonsful, repeated every three hours, or oftener, according to the necessity of the case. In *diarrhœa.*

Infusion of Catechu.

Take of extract of catechu, two and a half drachms,
Bruised cinnamon, half a drachm.
Boiling water, half a pint.

Let it stand for one hour, and then strain. Dose: one to three ounces, repeated three or four times a day. Useful in *diarrhœa*, dependent on debility or relaxation of the bowels, and *passive hemorrhages*, particularly of the *womb*. It is also useful in *gleet* and *whites*, used as an injection.

Infusion of Angustura Bark.

Take of angustura bark, bruised, half an ounce,
Boiling water, one pint.

Let it stand for two hours, and strain. Dose: two ounces, repeated every three hours. This has high recommendations as a remedy for *bilious diarrhœa* and *dysenteries*, especially of southern latitudes.

Decoction of Logwood.

Take of rasped logwood, one ounce,
Cinnamon, one drachm,
Water, two pints.

Boil down to a pint and strain. Dose: two ounces repeated several times a day; for a child, two years of age, two tea-spoonsful. This is an excellent astringent in *chronic diarrhœa* and *dysentery*, for which it is peculiarly suitable, as while it checks the discharge it does not produce the opposite condition—constipation. It has also been used in the sweating of *consumption.*

Decoction of Avens.

Take of avens root, bruised, one ounce,
Water, one pint.

Boil down one-third. Dose: one to two table-spoonsful, several times a day. Useful in such cases and circumstances as the foregoing. It is perhaps one of the best domestic astringents we possess, and is much used in some parts of the country.

Infusion of Rhatany.

Take of rhatany, one ounce,
Boiling water, one pint.

Let it stand for four hours, and then strain. Dose: two to four table-spoonsful. This is a powerful astringent and tonic, and is much employed in the treatment of *chronic diarrhœa* and *dysentery*, in *passive hemorrhages*, in *bleeding* from the *womb*, and *kidneys*, and in *mucous discharges*, that seem kept up by debility of the part.

Decoction of Oak Bark.

Take of oak bark, one ounce,
Water, two pints.

Boil to one pint, and strain. Dose: one to four ounces. Used like the preceding. Very good and always at hand. It is also a useful injection for *whites*, and is sometimes serviceable, employed in this way, in *falling of the womb.*

Decoction of Bearberry.

Take of bearberry, one ounce,
Water, one and a half pint.

Boil to one pint, and strain. Dose: one to three ounces, every four hours. Chiefly used in mucous discharges of the *urinary organs*, as catarrh of the bladder, gleet, and in *whites.*

Infusion of Galls.

Take of bruised galls, half an ounce,
Cinnamon bruised, two drachms,
Boiling water, one pint.

Let it stand for three hours, and strain. Dose: a table-spoonful every two hours. This is a very powerful astringent, and may be used, when milder means have failed.

Mixture of Galls and Chalk.

Take infusion of galls, eight ounces,
Prepared chalk, one ounce,
Laudanum, one drachm,
Gum arabic, powdered, two drachms.

Mix. Dose: a table-spoonful every two hours. Used as the foregoing, especially if there be signs of *acidity in the bowels.*

Solution of Alum.

Take of powdered alum, four drachms,
Water, eight ounces.

Dissolve. Dose: one table-spoonful every hour. An admirable astringent in *internal bleedings.* We know of nothing more to be relied on in bleeding from the *lungs* and *stomach.* Two drachms of cinnamon water may be added to render it more agreeable to the stomach.

Hope's Mixture.

Take of camphor water, four ounces,
Nitric acid, four drops,
Laudanum, fifty drops.

Mix. Dose: a table-spoonful every two hours. In *diarrhœa* and *dysentery.* This mixture is somewhat celebrated, and is much employed by medical men.

PILLS.

Pills of Sugar of Lead and Opium.

Take of sugar of lead, powdered, one scruple,
Opium, ten grains,
Gum arabic and water, sufficient quantity.

Divide in ten pills. Dose: one pill every two hours. In bleeding from the *lungs*, and other internal organs. These may be used even when there is considerable excitement of the pulse, as they have the effect of a sedative. It is well to remember that the *carbonate* of lead, *may* produce the painter's colic. In taking this medicine, therefore, it is advisable to drink a little vinegar and water between the doses, to prevent any such serious consequences. The sugar of lead and opium is also an admirable remedy, reducing the quantity of opium one half, in *chronic diarrhœa* and *dysentery;* and it is recommended by some practitioners very highly in *Asiatic cholera.*

Pills of Alum, Catechu, &c.

Take of alum, half a drachm,
Powdered opium, five grains,
Catechu, five grains.

Divide into thirty pills. Dose: one, every two or three hours. In *passive* hemorrhages, and *chronic mucous discharges.*

Pills of Tannin and Opium.

Take of tannin, thirty grains,
Powdered opium, six grains,
Gum arabic and water, sufficient quantity.

Divide into fifteen pills. Dose: one, every two or three hours. In *chronic diarrhœa* and *dysentery.*

GARGLES.

Gargle of Borax. X

Take of borax, one drachm,
Tincture of myrrh, half an ounce,
Pure honey, one ounce,
Water, four ounces.

Mix. Useful in *scorbutic affections* of the gums, and for cleansing the mouth.

Gargle of Sulphate of Zinc.

Take of sulphate of zinc, one drachm,
Honey, half an ounce,
Tincture of myrrh, half an ounce,
Brandy, one ounce,
Water, six ounces.

Mix. For *spongy gums*, *thrush* in children, ulcerated gums occasioned by *salivation*, and various other kinds of unhealthy ulcers.

Gargle of Alum.

Take of alum, powdered, two scruples,
Water, four ounces.

Mix. In *relaxation* of the *palate*, and *bleeding gums.*

Gargle of Chloride of Soda.

Take chlorine water, half an ounce,
Syrup, one ounce,
Water, five ounces.

Mix. In *putrid* sore *throat*, and *scarlet fever*. It is also highly useful in severe *salivation*. If it should be too stimulating, add a little more water to it.

Gargle of Muriatic Acid.

Take of muriatic acid, thirty drops,
+ Honey, two ounces,
Barley water, six ounces.

Mix. In *inflammatory sore throat.*

Gargle of Oak Bark.

Take of oak bark, two drachms,
Water, boiling, six ounces.

Let it stand for an hour, and strain. Ten grains of alum added to it increases its astringency. In *relaxation* of the *palate.*

Gargle of Nitre, &c.

Take of nitre, one drachm,
Honey, one ounce,
Water six ounces.

Dissolve. For *common sore throat.*

Antiseptic Gargle.

Take of decoction of oak bark, six ounces,
Camphor, twenty grains,
Sal ammoniac, six grains,

Mix. For *putrid sore throat*, and to correct *offensive breath.*

Gargle of Vinegar.

Take of barley water, five ounces,
Vinegar pure, eight ounces,
Honey, six drachms.

Mix. For common *sore throat*, and as a wash to *cleanse* the mouth.

Gargle of Mercury.

Take of corrosive sublimate, one grain,
Honey, half an ounce,
Water, pure, four ounces.

Dissolve. For *venereal sore throat.*

EYE WASHES.

Wash of Sugar of Lead.

Take of sugar of lead, twenty grains,
Laudanum, forty drops,
Pure water, four ounces,
Vinegar, two drachms.

Dissolve. As a common wash, to be frequently used in *inflammation* of the *eye.*

Wash of Alum.

Take of alum, powdered, fifteen grains,
Rose water, four ounces.

Dissolve. For the eye in *chronic inflammation.*

Wash of the Acetate of Zinc.

Take of white vitrol, six grains,
Sugar of lead, six grains,
Pure water, four ounces.

Mix. Double decomposition occurs in this mixture; the acetate of zinc remains in solution, while the sulphate of lead that is formed, falls to the bottom. Previous to using, it should be filtered. A wash for ordinary *inflammation* of the eye, and it is generally thought to be preferable to the sugar of lead wash.

Wash of Nitrate of Silver.

Take of lunar caustic, two grains,
Pure water, two ounces,

Dissolve. In *acute inflammation* or in *chronic.*

Another of the same.

Take of nitrate of silver, ten grains,
Pure water, one ounce.

Dissolve. Useful in the *purulent opthalmia* of young infants. One or two drops to be introduced into the eye three or four times a day, which previously should be washed as clean as possible.

INJECTIONS.

Injection of Nitrate of Silver.

Take of nitrate of silver, twelve grains,
Water, pure, six ounces.

Dissolve, and use as an injection in the *whites.*

Injection of Sulphate of Zinc.

Take of white vitrol, ten grains,
Powdered gum arabic, two drachms,
Laudanum, one drachm,
Water, eight ounces.

Use, for a injection in *acute gonorrhœa.*

Injection of Corrosive Sublimate.

Take of corrosive sublimate, two grains,
Pure water, four ounces.

Dissolve. Use in *chronic gonorrhœa*, and in *gleet.*

Injection of Sulphate of Copper.

Take of blue vitriol, six grains,
Pure water, six ounces.

Dissolve. Used for the same purpose as the preceding. Laudanum may be added to any of them if thought proper, and it is often of service.

The foregoing may all be employed as injections for *whites*, by increasing the quantities.

OINTMENTS.

Ointment of Galls, &c.

Take of powdered galls, one ounce,
Camphor, half a drachm,
Laudanum, two drachms,
Spermaceti, or lard, one ounce.

Make an ointment. An astringent ointment for *piles*, after the inflammatory stage has passed away.

Ointment of Tar, &c.

Take of tar, one ounce,
Powdered opium, two drachms,

Make an ointment. For *piles.* It may also be used for *scald head.*

Ointment of Sugar of Lead.

Take of sugar of lead, in very fine powder, one part,
Simple ointment, twenty parts.

Mix them thoroughly. This is an excellent ointment in *burns*, *blisters* in *an inflamed state*, and other *excoriated* or *ulcerated* surfaces.

Ointment of Nitrate of Silver.

Take of lunar caustic, reduced to fine powder, five grains,
Lard, one ounce.

Mix. Good in violent *opthalmia*, when the discharge from the eyes is purulent.

Simple Ointment.

Take of lard, one pound,
White wax, four ounces.

Melt together and stir till cold. Useful as a common dressing to *sores* and *inflamed surfaces.*

Ointment of Oxide of Zinc.

Take of oxide of zinc, one ounce,
Lard, six ounces.

Mix. A drying ointment; used in *burns*, *blisters*, *excoriations*, various *skin diseases*, and in chronic inflammation of the *eye-lids*.

Ointment of Pitch and Sulphur.

Take of tar, half a pound.
Wax, half an ounce,
Flowers of sulphur, two ounces.

Mix. Used in *itch*, *tetter*, and *scaly* diseases of the skin, *ring-worm*, *&c*.

Ointment for Piles.

Take of carbonate of lead, four drachms,
Sulphate of morphia, fifteen grains,
Stramonium ointment, one ounce,
Olive oil, sufficient quantity.

Mix. To allay *pain* and *inflammation.*

Ointment of Stavesacre.

Take of powdered stavesacre, one ounce,
Lard, three ounces.

Melt together, let it stand for three hours, and strain. In *itch* and to destroy *vermin* on the body.

Ointment of Thorn Apple.

Take of thorn apple leaves, fresh, two ounces,
Lard, five ounces.

Boil until the leaves become crisp, and then strain through linen. Melt an ounce of wax, and mix all together while they are in a fluid state. If the fresh leaves cannot be obtained, an ounce of dry powdered leaves may be substituted for them. Useful to dress *irritable ulcers*, and as an application to *painful piles*.

Ointment of Iodine.

Take of iodine, half a drachm.
Iodide of potassium, one drachm,
Rectified spirit, (alcohol,) one drachm.

Rub together, and add two ounces of lard. Used in *enlarged glands, scrofulous sores, &c.*

Ointment of Calomel.

Take of calomel, one drachm,
Lard, one ounce.

Mix. Useful in most kinds of *skin diseases.*

Itch Ointment.

Take flowers of sulphur, two ounces,
Sulphate of zinc, two drachms,
Powdered hellebore, four drachms,
Soft soap, four ounces,
Lard, eight ounces.

Mix.

Ointment of Henbane.

Take of fresh leaves of henbane, two ounces,
Lard, two ounces.

Boil till the leaves are crisp, and strain through a cloth with pressure. An anodyne application to *painful swellings*, and *piles*, and *irritable ulcers*, and in *neuralgic* pains, &c.

Tartar Emetic Ointment.

Take of tartrate of antimony, one drachm,
Lard, one ounce.

Mix. This is the antimonial ointment so much used to produce a pustular eruption on the skin. It may be applied by brisk rubbing three or four times a day, until pimples begin to appear, when it must be put on in a very small quantity. If the sores from it become intolerably painful or distressing, they may be dressed with either the simple or the lead ointment, or if necessary, a poultice of bread and milk may be employed to reduce the inflammation.

Cerate of Savin.

Take of savin, in powder, half an ounce,
Resin cerate, four ounces.

Soften the cerate with heat, and mix the powder with it. This is much employed for dressing *blistered* surfaces to prevent them from healing.

Resin Cerate.

Take of resin, four ounces,
Yellow wax, two ounces,
Lard, eight ounces.

Melt. Useful to bring deep inflammations to a *head*, as *boils*, &c.

LINIMENTS.

Liniment for Burns.

Take of olive or linseed oil, and lime water, equal parts.

Mix, and agitate well. For severe *burns*.

Volatile Liniment.

Take of the solution of carbonate of ammonia, one ounce,
Olive oil, three ounces.

Mix, and agitate. Stimulant to the skin. Useful in *rheumatic* pains; and whenever it is desirable to produce mild counter-irritation.

Camphor Liniment.

Take of camphor, one drachm,
Olive oil, four ounces.

Gently heat the oil, add the camphor, reduced as small as possible, and agitate until dissolved. Used in *sprains, bruises, rheumatic pains, glandular swellings*, &c.

Soap Liniment.

Take of castile soap, four ounces,
Oil of rosemary, five drachms,
Camphor, two ounces,
Alcohol, one and a half pint.

Mix and dissolve. This is used in *rheumatism, swellings, bruises, sprains, local pains*, &c.

Opium Liniment.

Take of soap liniment, six ounces,
Laudanum, two ounces.

Mix. An excellent anodyne, in *rheumatism, neuralgia, sprains*, &c.

Creosote Liniment.

Take of creosote, ten drops,
Olive oil, one ounce.

Mix. In *tetter* and other dry eruptions of the skin.

POULTICES.

Mustard Poultice.

Take of powdered mustard, two ounces,
Vinegar, as much as necessary to make a poultice.

This may be too strong for young children or persons having very thin skins. In such case, from one-third to one-half of flour or Indian meal may be added, and instead of vinegar, water may be employed. It is seldom that they can be borne longer than half an hour.

Poultice of Flaxseed.

Take of ground flaxseed, one part,
Barley meal, one part,
Water, enough to make a poultice.

Used for *painful inflammations* of all kinds.

Yeast Poultice.

Take of flour, one pound,
Yeast, half a pint.

Mix. To be applied warm to *foul-smelling* and *gangrenous* sores.

Charcoal Poultice.

Take bread and milk poultice, and stir into it as much fine powdered charcoal as it will allow. Used to old and *foul ulcers* that have a *fœtid* smell, and to *gangrenous sores.*

Slippery Elm Poultice.

Take any quantity of slippery elm, and moisten it with hot water. This is a poultice that is excellent for *irritable sores*, when a soothing effect is desired.

If a more sedative effect be wished, half an ounce of *laudanum* may be added to either the bread, flaxseed, or slippery elm poultice.

It may be added, that poultices should never be made unnecessarily heavy nor thick, and they should be frequently repeated. They always ought to be put on warm, and as moist as they can be made without being so soft as to flow when placed upon the skin. When they become dry, and the temperature falls, they can do but little, if any good, and may possibly cause more injury than service.

The common poultices are useful in all cases of inflammation that cannot be cut short, to assist the process of suppuration, and the tendency of matter to the surface.

MISCELLANEOUS RECIPES.

DRINKS, BEVERAGES, &c.

Aniseed Cordial.

Take of bruised aniseeds, one pound,
Proof spirit, six gallons,
Water, half a gallon.

Put it into a still, and draw off by distillation five gallons with a moderate fire.

Caraway Cordial.

Take oil of caraway, six drachms,
Sugar, four pounds,
Oil of cinnamon, ten drops,
Oils of orange and lemon, of each two drops,
Alcohol, six gallons,
Water, two gallons.

Fine with alum.

Cinnamon Cordial.

Take of oil of cinnamon, thirty drops,
Sugar, refined, three pounds,
Alcohol, fifteen ounces.
Orange and lemon, of each half an ounce,
Cardamon seeds, half an ounce,
Water, one gallon.

Fine with alum, and if it is wished colored, add burned sugar.

Citron Cordial.

Take of essence of lemons, half an ounce,
Essence of oranges, half an ounce,
Refined sugar, four pounds.

Beat all up together, add

Dried lemon and orange peel, of each, four ounces.

Infuse all in six gallons of alcohol that has stood upon seven pounds of figs for a week. If required, water may be added.

The cordials may be made either by distillation, as in the first recipe, or they may be made by dissolving the oils, as in the last. Distillation is preferable, but it is not always convenient.

Orgeat.

Take of sweet almonds, three ounces,
Bitter almonds, two,
Orange flower water, one table-spoonful,
Milk, one quart,
Sugar, one pound.

Beat all up together in a mortar. Some persons add a little brandy: strain; a table-spoonful dissolved in a tumbler of water makes a very pleasant drink.

Raspberry Vinegar.

Take of raspberries, three quarts,
Vinegar, one quart.

Squeeze the juice of the raspberries into the vinegar. The vinegar is to be simmered now, for about a quarter of an hour with two pounds of sugar, in an earthen vessel not glazed with lead. When cold, it is to be corked. A small spoonful added to a glass of water, makes a very refreshing drink, especially in hot weather.

Ginger Beer.

White sugar, twenty pounds,
Lemon juice, eighteen ounces,
Honey, one pound,
Bruised ginger, seventeen ounces,
Water, eighteen gallons.

Boil the ginger in three gallons of the water for half an hour, then add the sugar, the juice, and the honey, with the remainder of the water, and strain through a cloth. When cold add the white of an egg, and half an ounce of the essence of lemon: after standing four days, bottle. This affords a very superior beverage, and one that will keep for many months. A very refreshing drink in warm weather.

Lemon Syrup.

Take oil of lemon, six drachms,
Refined sugar, twelve pounds,
Water, one gallon.

Boil the sugar and water over a moderate fire, and remove the scum. While hot stir in the oil, and a quarter of an ounce of tartaric acid. When cold, bottle and cork. This is the lemon syrup that is in common use at the shops, and among the confectioners.

PERFUMERY, &c.

Cologne Water.

Take of alcohol, one gallon,
Oil of bergamot, one ounce,
Oil of rosemary, one ounce,
Oil of lemon, two drachms,
Oil of lavender, four drachms,
Oil of cassia, and cloves, of each, five drops.
Otta of rose, twenty drops. Mix and filter.

There are many formulæ for making this water, and the ingredients may be varied to suit individual tastes. It should be known that it is essential that the spirit be of the purest kind, *scentless* and *tasteless*, and that the oils be genuine and *fresh*.

Lavender Water.

Take oil of lavender, eight ounces,
Essence of bergamot, one and a half ounce,
Essence of musk, four ounces,
Alcohol, two gallons.

Mix well. This is very fine.

Hungary Water.

Take oil of rosemary, three drachms,
Oil of lemon, one drachm,
Fresh sage leaves, two drachms.

Digest three days with occasional agitation, and strain.

Rose Water.

Take otta of roses, twenty-five drops.

Rub it in with an ounce of white sugar, and four drachms of carbonate of magnesia, then add gradually half a gallon of water and four ounces of proof spirit.

Stimulant for the Hair.

Take of spirits of hartshorn, two ounces,
Lard oil, twelve ounces.

Shake well together, and take care that it is kept tightly bottled.

Powder to Remove Hair.

Take of fresh lime, one ounce,
Pure potash, one drachm,
Sulphuret of potash, one drachm.

Reduce them to a fine powder in a mortar. If the hair be first soaked or washed in warm water, for ten minutes, this article, formed into a thin paste, with warm water, and applied while warm, will so thoroughly destroy the hair in five or six minutes, that it may be removed by washing the skin with a rough cloth. It is a powerful caustic, and should therefore be removed as soon as it begins to inflame the skin, by washing it off with vinegar. It softens the skin and greatly improves its appearance.

Pearl Powder.

Take of fine starch, well sifted, four ounces,
White oxide of bismuth, one ounce.

Mix well together. For the skin.

Lip Salve.

Take of white wax, one ounce,
Sweet oil, one ounce,
Spermaceti, one drachm.

Melt all together, adding a little alkanet root to color, and while cooling add oil of rose to perfume.

White Liniment for Chapped Hands, &c.

Take of oil of turpentine, two ounces,
Soap liniment, three ounces,
Distilled vinegar, eight ounces,
Ammonia water, two ounces,
Spirit of rosemary, one ounce.

The ingredients to be mixed in the above order.

Cold Cream.

Take of oil of almonds, two ounces,
Spermaceti, half an ounce,
White wax, one drachm.

Melt together, and while cooling, add two ounces of rose water, stirring it until cold.

Milk of Roses.

Take of sweet almonds, half a pound,
Rose water, four pints,
White wax, and white soap, of each, six drachms,
Oil of almonds, six drachms,
Alcohol, twelve ounces.

Mix. Add oil of lavender, oil of rose, &c., to please the fancy.

Hair Oil.

Take of olive oil, sixteen ounces,
Cognac brandy, sixteen ounces,
Oil of bergamot, half an ounce,
Otta of rose, ten drops.

Mix.

Macassar Oil.

Take of olive oil, one pound,
Oil of origanum, one ounce,
Oil of rosemary, one scruple.

Mix.

Tooth Powder.

Take of prepared chalk, two ounces,
Myrrh, one drachm,
Powdered peruvian bark, half an ounce,
White sugar, one ounce,
Rose pink, one ounce.

Mix.

Or,

Take of prepared chalk, four ounces,
Powdered alum, two drachms,
Cream of tartar, two ounces,
White sugar, one ounce.
Powdered orris-root, one and a half ounce.

Mix. This is a very good dentifrice.

Fumigating Pastiles.

Take powdered gum benzoin, sixteen parts,
Balsam of peru, four parts,
Powdered sandal-wood, four parts,
Light charcoal, forty-eight parts,
Powdered tragacanth, one part,
Powdered nitre, two parts,
Gum arabic, two parts,
Cinnamon water, twelve parts.

Heat to a smooth ductile mass, form into small cones, with a flat base, and dry in the air.

Or,

Take of benzoin, two ounces,
Cascarilla, two drachms,
Nitre, one and a half drachm,
Myrrh, half a drachm,
Oils of nutmeg and clove, of each fifteen drops.
Charcoal, three ounces.

Adopt the process directed in the preceding. The addition of a little camphor renders them more suitable for a sick chamber.

LOZENGES.

Lozenges of Antimony.

Take of sulphuret of antimony, one ounce,
Powdered cardamon seeds, one ounce,
Blanched almonds, two ounces,
Powdered white sugar, twelve ounces,
Powdered cinnamon, four drachms,
Mucilage of tragacanth, sufficient quantity.

Mix, and beat into a paste, roll out to a proper thickness, and cut into pieces of the desired shape, by means of a small cylinder, or any other convenient method. Dry them by placing them on a seive in a dry airy place, and frequently turning them, until they become hard and brittle. To prevent them from sticking to the fingers, a little powdered starch may be used. Divide into lozenges of fifteen grains. These lozenges are excellent in many *diseases* of *the skin*, and they afford the best form for administering the sulphuret of antimony.

Bismuth Lozenges.

Take of white oxide of bismuth, two drachms,
White sugar, two and a half ounces,
Mucilage of tragacanth.

Mix, and proceed as in the first recipe. Divide into one hundred and twenty lozenges. Tonic and antispasmodic. One to three may be sucked two or three times a day, in *dyspepsia* accompanied with pain in the stomach.

Calomel Lozenges.

Take of calomel, one drachm,
Powdered sugar, eleven drachms,
Mucilage of tragacanth, sufficient quantity.

Mix, and proceed as in the first recipe. Divide into twelve grain lozenges. A good way of introducing calomel into the system. During their use, salt food and acids should be avoided.

Chalk Lozenges.

Take of powdered chalk, four ounces,
Powdered gum arabic, one ounce,
Powdered nutmeg, one drachm,
White sugar, six ounces,

Beat to a mass with rose or orange flower water, proceed as directed in the first one, and divide into lozenges. Dose: as many as may be desired. An excellent remedy for *sour stomach, heartburn, dyspepsia, diarrhœa, &c.*

Iron Lozenges.

Take of ammonio-citrate of iron, one drachm,
Water, half an ounce,
Dissolve, and add,
Sugar, two ounces and a half.

Evaporate to dryness; powder, make a mass with mucilage of tragacanth, and divide into fifteen grain lozenges. Dose: one may be taken three times a day. A very good *tonic* for pale and *weakly* females, or in any case where iron is proper.

Cough Lozenges.

Take of powdered gum arabic, eight ounces,
Oil of aniseed, six drops,
Extract of opium, twelve grains,
Kermes' mineral one drachm,
Pure extract of liquorice, two ounces,
White sugar, thirty-two ounces.

Mix with water and divide into small lozenges, after preparing the mass, agreeably to the direction in the first prescription. Dose: one may be sucked frequently through the day.

Ginger Lozenges.

Take of finely powdered Jamaica ginger, one ounce,
White sugar, one pound,
Mucilage of tragacanth, to mix.

Prepare as in the first one, and divide into fifteen-grain lozenges. Useful in *flatulency* and *dyspepsia.* A good stomachic.

Lozenges of Nitre.

Take of nitre, three ounces,
White sugar, nine ounces,
Mucilage of tragacanth, to mix.

Proceed as in the others to prepare the mass. Divide into lozenges of twelve grains each, and take one every two hours. A *diuretic.* It is a good remedy for *inflammation* of the *mouth* and *throat.*

Rhubarb Lozenges.

Take of powdered rhubarb, one ounce,
Sugar, eleven ounces.

Mucilage, to mix, and prepare in the same way as the preceding ones. Divide into lozenges of twelve grains each. *Stomachic* and *laxative.* For those who are habitually constipated, this is a very neat and agreeable way of taking medicine for relief.

All other medicines in powder, may be administered in the shape of lozenges, and unless their taste is so strong and nauseous that it cannot be disguised, it is often a very agreeable way of taking them.

For Corns.

Take sal ammoniac, one ounce,
Spirit, four ounces.

Dissolve. Moisten the corn with this lotion morning and evening.

Or,

Take of white diachylon, two ounces,
Yellow rosin, two ounces.

Melt and add finely powdered verdigris, one ounce. Spread it on paper, linen, or leather, and apply a small piece to the corn.

Chilblain Lotion.

Take alum, two drachms,
Distilled vinegar, half a pint,
Alcohol, half a pint.

Dissolve, and use as a lotion.

Chilblain Ointment.

Take of lard, nine ounces,
Oil of almonds, three and a half ounces,
White wax, one and a half ounce,
Camphor, powdered, one and a half ounce.

Mix, and apply to the chilblain.

Tooth Ache Powder.

Take Spanish snuff (sibella.) This will clean the teeth as well as any other powder, and totally cure the tooth ache. Make a regular practice of washing thoroughly behind the ears every morning with cold water. The remedy is said to be infallible.

SUPPLEMENTARY ARTICLE ON CHOLERA.

The Asiatic or epidemic cholera is again making its devastating visit over the earth, filling nations with gloom, and robing them in the garments of mourning.* When or where the scourge will be stayed, no man can foretell. It may linger among us for a year or two, as it did when here before, or it may remain permanently. We may at least reasonably anticipate a return of it at longer or shorter intervals of time, and there is therefore an evident propriety in adding something more to what has already been said on this subject, commencing on page 331.

Every possible precaution for preventing, as well as every probable means of curing the disease, should be familiar to the public as well as to the medical profession. In many parts of the country professional aid cannot be obtained at all—in other parts, a disastrous delay must necessarily occur. The disease is sudden in its attack, rapid in its progress, and, according to statistics, in one case out of two, fatal in its effects. It is therefore only common wisdom to guard against it by unusual care, and to arrest the first symptoms by a prompt resort to remedies. Ths following rules, if strictly observed, will greatly contribute to personal security, and to check the epidemic.

1. Let immediate relief be sought in any disorder of the bowels, however slight: the invasion of cholera may thus readily and at once be prevented.

2. Let every impurity, animal or vegetable, be removed as soon as possible from human habitations.

3. Let all uncovered drains be frequently and carefully cleaned, and let the grounds around dwelling houses be so drained as effectually to carry off the moisture that otherwise might be in excess.

4. Let all the rooms of the house be thoroughly ventilated every day when the weather is dry, and let dry scrubbing be substituted for wet.

5. Avoid exposure to damp and cold, and excessive fatigue.

* May, 1849.

6. Let the use of cold drinks, and acid liquors, especially under fatigue, or when the body is heated, be avoided.

7. Avoid the use of cold acid fruits, and indigestible vegetables.

8. Let excess in ardent or fermented liquors, and the use of impure water in cooking or drinking be avoided.

9. Use a healthy and nourishing diet that will preserve the strength of the body, and enable it to resist as far as possible, the attacks of deleterious agents.

10. Avoid wearing wet or insufficient clothing.

11. Wear a flannel shirt, or at least a woolen belt around the belly. This has been found serviceable in checking the tendency to bowel complaints so common during the prevalence of the cholera.

12. Let personal cleanliness be scrupulously observed.

13. Avoid every cause tending to depress the moral energies.

14. Let the crowding of persons within houses or apartments, and sleeping in low damp rooms, be avoided.

15. If the weather be moist or chilly, let small fires be kept up day and night, although out of season for them.

16. Finally, as every form and variety of indisposition during the prevalence of the epidemic has a tendency to merge itself in the prevailing disease, take immediate steps for relief, whatever may be the nature of the malady with which you are affected.

The first striking symptoms which manifest themselves being those that indicate a superabundance of blood in the internal organs and a deficiency of it on the external surface, it is natural that this condition should, as speedily as possible, be counteracted. The circulation must be equalized. To do this, it is better, in the first place, to evacuate and cleanse the stomach with an emetic, if there be reason for believing that it is loaded with undigested food. Should the patient have eaten heartily not long before the uneasiness was first felt, it may be conjectured that digestion has been suspended, and that the stomach is oppressed with its contents. An emetic in this case, administered early, will answer a two-fold purpose. One purpose we have already alluded to—the other is the tendency that the act of vomiting has to drive the blood towards the skin. It is not wholly a matter of indifference what article be selected to effect this end. Such as are highly stimulating are to be preferred.

Take of common table-salt, two table-spoonsful,
Warm water, a tumblerful.

Dissolve, and drink all at once.

Take of powdered mustard, a table-spoonful,
Warm water, a tumblerful.

Mix, and take all at once.

Either of these prescriptions may be used, and will cause immediate and most thorough vomiting, with less retching and distress than antimony or ipecacuanha. They are both, therefore, preferable, not more because they may be had in every family at a moment's notice, than because of their especial suitableness to the case.

The stomach being well emptied, the patient should be covered up warmly in bed, and there may now be administered to him one grain of opium in pill, or twenty drops of laudanum. This, if done very early in the disease will probably arrest it. If the purging continue, and there be vomiting, put a large mustard poultice over the stomach, and let it remain as long as it can be borne. The poultice may be rendered more effectual by mixing it with spirits of turpentine, or adding to it a quantity of cayenne pepper. Let it be remembered, that *heat or strong stimulants must constantly be applied to the stomach and bowels until there is a mitigation of the symptoms.* If the vomiting be so severe that the medicines taken internally are at once rejected, repeat the dose again and again, and at length perseverance may be rewarded by a state of tranquillity. Opium, powdered, may also be sprinkled well over the mustard poultice, or two or three tea-spoonsful of laudanum may be mixed with it. When other means fail, try five drops of diluted sulphuric or nitric acid, mixed in a wine-glass of water. This often is singularly useful in quieting a sick stomach; or mix two drops of creasot in half a tumbler of syrup water, and give a table-spoonful every five minutes.

The purging must be checked as early as possible. If there has been no vomiting, laudanum alone will perhaps be sufficient; or the following will be still better, if it be violent:

Take of sugar of lead, twenty grains,
Opium, powdered, one grain. Mix.

Divide in twelve pills. A pill to be taken every hour until benefit is derived, after which, one may be administered every two hours; or, if more convenient,

Take of spirits of camphor, five drops,
Compound spirits of lavender, fifteen drops,
Laudanum, six drops.

Mix this with sugar and a little water, and give it once every hour, until relief is procured; or you may give

Prepared chalk, one and a half drachm,
White sugar, and gum arabic, of each four ounces,
Water, pure four ounces,
Oil of cinnamon, two drops,
Laudanum, fifty drops. Mix.

The dose is two table-spoonsful every hour or two. Three drachms of the tincture of catechu or the tincture of kino, will increase its power, and may properly be added, with six drops of the oil of peppermint, if the case be unusually obstinate. If the disease refuse to yield to this treatment, after a reasonable time, recourse must now be had to a new method. There should be an attempt to get the system, as soon as possible, under the influence of mercury. For this purpose, give every five minutes,

Of calomel, one grain,
Opium, one-twentieth of a grain, made into a pill.

There is great reliance to be placed in this plan, according to the report of cases published by a physician of Hull, England. He indeed regards it as almost infallible, and declares that the most desperate cases soon begin to amend under it. When this happens, the pill is to be administered at more and more distant intervals, until the necessity for its longer use has ceased to exist.

If the stage of collapse, or the intensely cold stage, have come on, then, as we have before enjoined, heat must be assiduously employed. The patient may be surrounded with bottles of hot water, with bags of hot salt, sand, or bran, or with hot air conveyed through a tube, which, at one end should be made in the shape of a funnel, to cover a burning spirit lamp, and, being bent into an elbow, passed under the bed clothes at the other end. Turpentine by means of woollen cloths may also be tried, and it is possible that this application would often prove of the greatest service, not only for its irritating effects upon the skin, but, if it should be absorbed, for its action upon the circulation as a diffusible stimulant. Friction with hot spirits, turpentine, mustard, or with cayenne pepper, is also an excellent mode of restoring warmth to the surface, and if it can be possibly made, is better than any other method.

Friction is not more useful in promoting the circulation upon the surface than in relieving the cramps that occur in the muscles of the legs, arms, abdomen, &c. Take the naked hand, and rub diligently, being careful not to tear up the skin; or take a cloth, and dip it in a mixture of soap liniment, turpentine and laudanum, and with this keep up constant friction upon all of the limbs, and the body. If practicable, four persons must be engaged at once in this employment; and it should not be desisted from until the patient is better, or has passed beyond the reach of human assistance.

If the treatment be rewarded with success, and the heat return, and the pulse rise—evincing signs of reaction—it must not be supposed that all danger is at an end. Instead of the stage of chill, there will now probably be one of high excitement. This may gradually subside. The various organs, the functions of which had been prevented or entirely suspended, will assume their proper actions, and health be completely restored. But, instead of this fortunate termination, all the signs of fever may set in. There will then be stupor, headache, delirium, twitching of the muscles of the hands, and there may be inflammation of different internal organs. These symptoms are to be treated as fevers that exhibit the same kind of phenomena. There will possibly be all the signs of excessive debility, constituting what, in medical language, is called a *typhoid* state. Guarding against internal inflammation, the patient will now require a judicious use of stimulants to sustain the powers of life; and the whole treatment will no longer be that of Cholera, but that of a dangerous febrile disease.

DOMESTIC DISPENSATORY.

SHOWING THE PROPERTIES, USES, AND DOSES OF MEDICINES.

In every instance, unless otherwise expressed, the dose is for an adult. The usual rule for apportioning doses to different ages is given upon page 5, to which we beg to refer.

ACID ACETIC, diluted. *Vinegar.*—It is a refrigerant and diuretic. It is sometimes administered in those affections of the urinary organs, in which there is a white deposite in the urine, caused by phosphatic salts. Employed as a lotion, externally, in bruises and sprains. Dose: one to four teaspoonsful in a little water.

ACID CITRIC.—Refrigerant or cooling, like lemon juice. To prepare a solution of the strength of lemon juice, eight and a half drachms are to be dissolved in sixteen ounces of water. It is employed to form effervescing draughts. Dose: a tablespoonful of lemon juice, or an equivalent solution of citric acid.

ACID MURIATIC, diluted, or *Hydrochloric Acid.*—A refrigerant, and preventive of putresency. Employed in low fevers, malignant scarlet fever, when there is gangrenous ulceration of the throat, in debility of the digestive organs, when there is a tendency to produce worms, &c. Dose: twenty to forty drops, largely diluted with water, or an infusion of quassia.

ACID NITRIC, diluted.—A tonic. Used internally, principally in chronic inflammation of the liver, and secondary syphilis. Dose: ten to thirty drops, administered in the same form as muriatic acid.

ACID NITRO-MURIATIC, diluted.—Employed in chronic diseases of the liver, chronic cutaneous diseases, and in debilitated and syphilitic constitutions. It may cause salivation. Dose: ten to thirty drops, largely diluted.

Acid Sulphuric, diluted.—It is a tonic, refrigerant and astringent. Used in low fevers, in internal bleedings, and in the excessive sweating of consumption. Dose: ten drops to thirty, in a wine-glass of water, repeated three times a day.

Acid Sulphuric, aromatic. *Elixir of vitriol.*—Medical properties and dose the same as the preceding, and used in the same kind of cases. Most agreeable form for administering the acid.

Acid Tannic.—Astringent. Used in various forms of hemorrhage when there is no fever, and in the night-sweats and diarrhœa of consumption. Also as a gargle, injectionrand lotion. Dose: half a grain to two grains, in pill, or dissolved in water, several times a day.

Acid Tartaric.—Properties and uses the same as those of citric acid. Dose: ten grains to thirty, dissolved in a large quantity of water.

Aconite. *Monkshood.*—A narcotic and sedative. Used in a large number of nervous and painful diseases, as rheumatism, neuralgia, and tic-doloureux, paralysis, and epilepsy. It is very powerful and must be employed with great caution. Dose: the powder of the roots or leaves, may be given in doses of three grains to twelve, thrice a day; of the extract, one to two grains, gradually increased.

Æther Nitric. *Sweet spirits of nitre.*—A diaphoretic, diuretic, antispasmodic, and stimulant. Employed in fevers, and in affections of the kidneys. Dose: twenty drops to a tea-spoonful every two hours, in a small portion of water.

Æther Sulphuric.—A powerful diffusible stimulant and antispasmodic. Used in low fevers, hysterics, nervous headache, cramp in the stomach, flatulent colic, fainting, &c. Dose: half a tea-spoonful to two tea-spoonsful, in water.

Æther Sulphuric compound. *Hoffman's Anodyne.*—The effects the same as the preceding. Dose: the same. This is a preparation much used.

Aloes.—Cathartic. Used in habitual constipation, except when there are piles, and in deficient menstruation. It is generally combined with other medicines. Dose: two grains to five, made into pill.

Alum.—Astringent. Used in chronic diarrhœa and dysentery, chronic mucous discharges, passive hemorrhages, sweating of hectic fever, and in some affections of the stomach. Also used as a gargle. Dose: ten grains to thirty, several times a day. It is best given in solution in some aromatic water.

Ammonia Acetate, solution of *Spirit of Mindererus.*—A diaphoretic. Employed very generally in febrile and inflammatory affections. Dose: half an ounce to two ounces, repeated every six hours. Commonly added to mixtures.

Ammonia Bicarbonate.—An antacid. Used to neutralize acid in the stomach. Free from the stimulating properties of carbonate of ammonia. Dose: five grains to twenty-five, dissolved in *cold* water, or bitter infusions. The carbonate of ammonia may be used for the same purpose, and in the same dose.

Ammonia Muriate, *of Sal Ammoniac.*—Stimulant and alterative. Employed in Europe in hooping cough, mucous diarrhœa, chronic rheumatism and gout, dropsy, visceral obstructions, and in serous inflammations. It is there highly esteemed, and probably deserves to be more used in this country than it has hitherto been. Dose: from five to thirty grains, combined with gum or sugar, or in syrup. It is applied externally, as a lotion, for the cold it produces during its solution with water.

Ammoniac Gum.—Stimulant and Expectorant. Used in chronic catarrh, asthma and other affections of the lungs. Dose: two to thirty grains, three or four times a day. It is commonly adminstered as an *emulsion.*

Angelica.—A very pleasant aromatic tonic. Dose: of the root or seed, is from thirty grains to one drachm.

Angustura Bark.—A stimulant tonic. It has been found particularly serviceable in the bilious diarrhœas and dysenteries of hot climates; it has also been very successfully employed in the malignant fevers of the tropics. Dose: from ten to thirty grains. It is also given in infusion, tincture and extract.

Aniseed.—A pleasant aromatic carminative, that relieves pain in the bowels from flatulence, and may be used whenever the stomach requires stimulating. Used much for flavoring liquors and for making a cordial. Dose: in powder, twenty to thirty grains.

Antimonial Powder. *James' Powder.*—A diaphoretic. Employed in the early stages of febrile diseases and inflammatory affections, and combined with calomel and opium, in acute rheumatism. It is not a very certain medicine in its effects. Dose: in powder, from three grains to ten, every four or five hours.

Antimony, Sulphuret of.—A good diaphoretic and alterative. The golden sulphuret is the kind now altogether used. It is employed in diseases of the skin. Its combination with calomel and guaicum, formed into a pill known as the *compound calomel pill*, is the most popular form of administering it. Dose: five grains to ten, three times a day: of the pill the same.

Antimony Tartarized. *Tartar Emetic.*—An alterative, diaphoretic, diuretic, expectorant and emetic. Its different effects are produced by difference of dose, and accidental circumstances. Added to purgatives, it greatly promotes their operation. There is indeed scarcely a remedy in the Materia Medica of so wide an application, and of such great usefulness. It is found useful in diseases of the skin, the lungs, in fevers, inflammations, and as an emetic in various diseases in which vomiting is indicated. Dose: as an alterative, frequently repeated, is from the sixteenth to the eighth of a grain; as a diaphoretic or expectorant, from an eighth to a sixth of a grain, as a nauseating sudorific, from one fourth to one half a grain; repeated every two hours. As an emetic, the dose is from two to three grains, given in divided portions every fifteen minutes, until free vomiting is induced.

Antimonial Wine.—Properties, the same as the preceding. Dose: as an expectorant or diaphoretic is from ten to thirty drops, frequently repeated. As an emetic for *infants*, from thirty drops to a tea-spoonful.

Arnica. *Leopard's Bane.*—A nervous stimulant, much used on the Continent of Europe in many nervous and painful affections. It is said to produce diuretic, diaphoretic and emmenagogue effects. The tincture of it is much employed to allay inflammations of the skin, and in bruises and other injuries. It is a great homœopathic remedy. Dose: in powder from thirty grains to a drachm. The dose of the infusion, (one ounce to a pint of water,) one to two tablespoonsful every two or three hours.

Arsenic. *Ratsbane.*—A poison and tonic. Has been used in scirrhus and cancer, diseases of the skin, fever and ague, chronic rheumatism, diseases of the bones, frontal neuralgia, in epilepsy, in secondary syphilis, and many other diseases of the constitution. It is unquestionably a remedy of great value, but it should only be administered when other medicines have failed, and then with the greatest care. Dose: one-sixteenth to one-eighth of a grain, made into a pill with crumbs of bread.

ARSENICAL SOLUTION. *Fowler's Solution.*—In this the arsenic is combined with potash, forming the arsenite of potassa. The properties of this preparation appear to be the same as those of arsenic, and it is commonly used as a substitute for that, on account of the greater ease and safety in apportioning the dose. Dose: five drops to ten, two or three times a day. Sometimes, if too much be given, a dropsical swelling is produced. This will subside in a few days on withholding the medicine, and using gentle purgatives and diuretics.

ASSAFŒTIDA.—A powerful stimulating antispasmodic. Employed in the nervous diseases of females, in epilepsy, St. Vitus' dance, in the convulsions of infants, when dependent, especially, on flatulence, and indeed in almost every variety of spasmodic disease. In hysterics there is no remedy equal to it, and it has been found highly efficacious in chronic colds, and other affections of the lungs. In truth, looking at the immense number of affections in which it has been successfully administered, there is scarcely another remedy of such varied application. It is given in several forms. Dose: ten grains or more, made into pills. It is often used as an injection in spasms. One or two drachms, rubbed up with warm water into an emulsion, may be administered at once in this way. Assafœtida is frequently combined with other medicines.

AVENS.—A tonic and powerful astringent. A native plant, used in chronic or passive hemorrhages, in whites, and in diarrhœa, in dyspepsia, and in the debility of consumption. Dose: of the powdered root, one scruple to one drachm, three times a day. The decoction is made by boiling one ounce in a pint of water; and it is given in doses of one to two fluid ounces.

BEARBERRY.—Astringent and tonic. Given in diseases of the urinary organs of nearly every kind, in the chronic stage. Dose: of the powder, one scruple to one drachm, three or four times a day.

BELLADONNA. *Deadly Nightshade.*—Narcotic. Used in neuralgia, convulsions, epilepsy, rheumatism, dropsy, jaundice, and in a large number of nervous and painful diseases. It is a medicine of great value, when judiciously used. Dose: one grain of the powdered leaves, once a day, and increased gradually. Dose of the *extract*, half a grain to two grains.

Bismuth. *White oxide of Bismuth.*—A tonic and antispasmodic. It is particularly useful in painful affections of the stomach. When there is an aching pain of the stomach, it is a very valuable remedy. Dose: three to six grains, combined with an equal quantity of powdered ginger, three times a day.

Bitter Sweet.—Narcotic and alterative. Commonly used in cutaneous eruptions of the scaly kind. *Decoction*, in which form it is generally used, is made by boiling one ounce in a pint and a half of water, until there is left but a pint of fluid. Dose of this is two to four table-spoonsful three or four times a day.

Blackberry Root.—Tonic and astringent. Employed in chronic diarrhœa. Used generally in the form of a *decoction*, which is made by boiling one ounce of the root, in a pint and a half of water down to a pint. Dose: two ounces several times a day.

Blood Root.—Narcotic, stimulant and emetic. This article is getting into very general use in affections of the lungs, rheumatism, jaundice, &c. Generally given in the form of *tincture*. Dose of tincture, from thirty to sixty drops, three times a day.

Boneset. *Thoroughwort.*—Diaphoretic and tonic. Used in ague, dyspepsia, and general debility. Dose: twenty grains in powder, three times a day, or it may be given in infusion. Infuse one ounce in a pint of hot water. Dose: three or four table-spoonsful.

Bugle Weed.—A narcotic, tonic and astringent. Used in consumption, bleeding at the lungs, quieting irritation and allaying cough. Given in infusion, which is made by infusing one ounce of the herb in a pint of boiling water. Dose: the whole of this quantity daily.

Burdock.—Diaphoretic and aperient. Used in scrofulous, venereal, cutaneous, gouty and urinary affections. The *decoction* is made by boiling two ounces of the root, seeds or leaves, in three pints of water down to two. Dose: one pint daily.

Butterfly Weed.—(See "*Pleurisy Root.*")

Butternut. *White Walnut.*—Cathartic. An excellent purgative. Dose: from five grains to twenty-five.

Calamus. *Sweet Flag.*—An aromatic. Dose: one scruple to one drachm.

Calomel.—(See "*Mercury.*")

Columbo.—Tonic. One of the best tonics we possess after acute diseases. It is used in hectic fever, and, combined with aromatics, in flatulent bowels. Dose, in powder, from ten to thirty grains, three or four times a day. Infusion is the best form in which to administer it.

CAMPHOR.—A diffusible stimulant, in moderate doses; in larger, a narcotic. This remedy is given advantageously in the advanced stages of typhoid fever, when nervous symptoms predominate. In all other nervous diseases, it is often useful. As a liniment, it is very beneficial in local pains, and it enters into the combination of a large number of officinal preparations. Dose: two to ten grains, according to circumstances.

CANTHARIDES.—(See "*Spanish Flies.*")

CARAWAY SEEDS. A pleasant stomachic and carminative. Used to relieve flatulence, &c. Dose: in substance, from one scruple to one drachm. It is generally used combined with other medicines.

CARDAMON SEEDS.—A stomachic and aromatic like the preceding, and used under similar circumstances and in like manner.

CAROLINA PINK.—See ("*Pink Root.*")

CARROT.—Stimulant and diuretic. Used in affections of the kidneys and dropsy. Generally given in infusion, which is made by taking an ounce of the seeds or root, and infusing in a pint of boiling water. Dose: a pint during the day. Carrots are also much used as poultices in foul ulcers, the fœtor of which they are thought to correct.

CLOVES.—Stimulant and stomachic. Used in flatulence, and defective digestion. Dose: five grains to ten, in powder.

CASCARILLA.—Aromatic and tonic. Used in dyspepsia, chronic dysentery and diarrhœa, &c. It has a very pleasant odor. Dose: one scruple to half a drachm, several times a day. It is also administered in infusion, tincture, and extract.

CASTOR OIL.—Mild, but effectual cathartic. Used in inflammatory and spasmodic diseases of the bowels or of the urinary organs, in diseases of infancy and childhood, and during pregnancy and after delivery. If castor oil be at all rancid, it is very acrimonious, and causes much irritation. Dose: half an ounce to two ounces. It is best administered floating on the surface of water to which some aromatic tincture has been added.

CATECHU.—Powerfully astringent and gently tonic. Used in chronic diarrhœa and dysentery, and in hemorrhages unaccompanied with excitement. Dose: ten grains to thirty, frequently repeated. It is best administered with sugar, gum arabic and water.

CAYENNE PEPPER.—A powerful stimulant. Used in dyspepsia, dependent on debility of the stomach. It is sometimes added to tonic medicines. Its most important application is in malignant sore throat and scarlet fever. The following is the formula as it is commonly administered in these cases. Two table-spoonsful of the powdered pepper, and a tea-spoonful of table salt are infused for an hour in one pint of equal parts of boiling water and vinegar. It is then to be strained. Dose: a table-spoonful every half hour. This infusion is also used as a gargle at the same time. Dose of the powder, is five to ten grains, given in pill.

CENTAURY, AMERICAN.—Stomachic, tonic, and febrifuge. Used in dyspepsia, fever and ague, remittent fevers, and as a tonic during convalescence from acute diseases. It is generally given in infusions, made by pouring a pint of boiling water on an ounce of the herb. Dose: of infusion, two fluid ounces, frequently repeated.

CHALK, PREPARED.—An antacid. Used to correct acidity of the stomach. It is commonly used in diarrhœa, in the form of mixture, when it is supposed an acid is causing the irritation. Dose of the powder, from ten to forty grains. Dose of *chalk mixture*, a table-spoonful, often repeated.

CHAMOMILE FLOWERS.—Aromatic and bitter tonic. Used chiefly in dyspepsia depending on debility of the stomach, in which it is very efficacious. It is generally given in infusion, which is made by taking two drachms of chamomile, and boiling water half a pint, infusing for twenty hours and straining. Dose: of infusion, one to two ounces, several times a day.

CHERRY BARK, *wild*.—Tonic and sedative. This is a remedy that has become very popular in the hectic fever of scrofula and consumption. It is also used in ague, dyspepsia, &c. Dose: of powder, thirty grains to one drachm. It is better given in infusion. Take of the bark, bruised, half an ounce, cold water, one pint. Let it infuse for twelve hours, and strain. Dose: of infusion, three or four fluid ounces, several times a day.

CINNAMON.—A very grateful aromatic. It is generally used in combination with other medicines. Dose, in powder, is from ten grains to one scruple.

COLCHICUM. *Meadow Saffron.*—Cathartic and sedative. Used with great success in gout and rheumatism. It is seldom given in substance. The wine is most employed. Dose of the wine is from thirty drops to two drachms. Small doses should be administered to commence with.

COLOCYNTH.—A powerful cathartic. It is never used alone. A form, known as the *compound extract of colocynth*, is an excellent purgative and much used. The dose of this extract is five to fifteen grains, according to the effects desired.

COLTSFOOT.—Expectorant. Used in coughs, and consumption. Generally given in infusion, made by infusing one ounce in one pint of water. Dose: tea-cupful often repeated.

COPAIBA.—Stimulant, diuretic and laxative. Used in whites, gleet, chronic dysentery, chronic coughs, chronic inflammation of the bladder, and especially in gonorrhœa. Dose: twenty to thirty drops, three times a day. It is very nauseous, and therefore is best mixed with gum mucilage and aromatic water to conceal, as much as possible, its taste.

COPPER, SULPHATE.—In small doses, tonic, and astringent; in large, emetic. It is employed very successfully in obstinate cases of chronic diarrhœa. Dose, as a tonic, one quarter to one grain; as an emetic, from two to five grains. In large doses it is a poison.

COPPERAS.—(See "*Iron.*")

CORROSIVE SUBLIMATE—(See "*Mercury.*")

COWHAGE, or *Cowitch.*—Vermifuge. Used to destroy worms in the bowels. For mode of administering and its dose, see "*Anthelmentics,*" under the head of "*Prescriptions.*"

CRANESBILL.—A powerful astringent. Used in diarrhœas, and all chronic discharges. A very popular medicine and a very good one, and may be employed in all cases when an astringent is required. It is best given in decoction. Boil an ounce of the root in a pint and a half of water to one pint. Dose, from two to four table-spoonsful, four times a day.

CREAM OF TARTAR.—A cathartic and diuretic. It is used in dropsy, and in some febrile complaints, and, combined with sulphur, in piles. Dose, as a cathartic, from half an ounce to an ounce; one or two drachms will act as an aperient. It is generally mixed with molasses when it is administered.

CROTON OIL.—A powerful purgative. It acts with great rapidity. It is generally used in obstinate constipation, when other medicines have failed. Dose: one or two drops, mixed with crumbs of bread and made into a pill.

Cubebs.—Stimulant and diuretic. Used in disease of the urinary organs. Dose, in powder, one to three drachms, repeated four times a day.

Cucumber Tree. *Magnolia.*—Gently stimulant, aromatic, tonic, and diaphoretic. Used in chronic rheumatism, and in ague. Dose, in powder, half a drachm to one drachm.

Dewberry Root.—Used like "*Blackberry Root*," which see.

Dandelion.—Diuretic and laxative. Used with much benefit in disorder of the liver and stomach. It promotes the secretion of bile. It is usually given in decoction. Two ounces of fresh, or one ounce of dried root, sliced, is to be boiled with a pint of water down to half a pint. Dose: four table-spoonsful three times a day.

Deadly Nightshade.—(See "*Belladonna.*")

Digitalis. *Purple Fox Glove.*—Diuretic, sedative, and narcotic. Used in dropsy consumption, disease of the heart, epilepsy, spasmodic asthma, &c. Dose of the powder is one grain, two or three times a day. It is a powerful medicine, and its effects must be closely watched.

Dock, Yellow, and Water.—Tonic and astringent. Used very much in affections of the skin. The two kinds possess similar properties, and are used alike. The decoction is made by boiling one ounce of dried root or two ounces of fresh, in a pint of water, four table-spoonsful of which may be given, at a dose, four times a day.

Dog Wood Bark.—Tonic and astringent. Used sometimes as a substitute for Peruvian bark in ague. Administered commonly in decoction. Take of the bark, bruised, one ounce, water, one pint. Boil ten or fifteen minutes, and strain. Dose: four table-spoonsful, four times or oftener, during the day.

Elaterium.---See (*wild Cucumber.*)

Elder Berries.---Diaphoretic and aperient. Used in gouty, rheumatic and eruptive diseases. Dose: of the dried juice, from one drachm to half an ounce.

Elecampane Root.—Tonic, stimulant and diaphoretic. Much used formerly in suppressed menstruation, and is now often employed in diseases of the skin. Dose of the powder, is one scruple to one drachm. The decoction is made by boiling half an ounce in a pint of water, the dose of which is two to four table-spoonsful, three times a day.

Ergot. *Spurred Rye.*—This medicine is specific in its action. It is almost wholly employed as a stimulant to the womb for promoting contraction during and directly after labor. It has also been employed successfully to check internal bleedings. Dose in powder, to a woman in labor, is fifteen or twenty grains, to be repeated every twenty minutes, until its effects are manifested, or until a drachm has been given.

FENNEL SEED.—A pleasant aromatic. Much used to correct the harshness and griping operations of other medicines. Dose: twenty to thirty grains, of the bruised or powdered seed.

FLEABANE.—A diuretic. Used in dropsy. Highly esteemed by some practitioners for this purpose. Administered in decoction, made by boiling one ounce in a pint of water. Dose: a wine-glassful every three hours.

FOXGLOVE.—(See "*Digitalis*.")

GAMBOGE.—A powerful cathartic, and much employed in dropsy, generally combined with other strong purgatives; alone, it is seldom used. Dose: from two to six grains.

GENTIAN ROOT.—Tonic. It is much used when a mild and agreeable tonic is desired. Dose of the powder, is from ten to forty grains. The tincture or infusion is the form in which it is usually administered.

GINGER.—An excellent stimulant and carminative, and is frequently given in dyspepsia, flatulence, and to correct other medicines. Dose of the powder, is from five grains to twenty. An infusion may be made by pouring a pint of boiling water upon half an ounce of the powder, or bruised root, the dose of which is two to four table-spoonsful.

GLAUBER'S SALT. (See "*Soda*.")

GOLDEN ROD.—Aromatic and carminative. Used in flatulence, &c. It is generally given in infusion—one pint of water to the ounce of leaves. Dose: two ounces.

GOLD THREAD ROOT.—Tonic. Useful whenever a tonic is needed, especially after fevers. Dose of the powder, ten to thirty grains. A tincture may be made by adding a pint of diluted alcohol to an ounce of the root, the dose of which is a tea-spoonful.

GUAIAC.—Stimulant and diaphoretic. Used much in rheumatism, gout, secondary syphilis, scrofula, cutaneous eruptions, and in suppressed menstruation. Dose, in powder, is from ten to thirty grains; of the tincture, one to three tea-spoonsful.

GUM AMMONIAC.—(See "*Ammoniac*.")

HARDHACK ROOT.—Tonic and astringent. Used in diarrhœa, cholera infantum, dyspepsia, &c. It is thought to be superior to many other astringents, in ordinary cases. A decoction is made by boiling an ounce of the root in a pint of water, the dose of which is one to two ounces, three or four times a day.

Hellebore, Black.—Powerful cathartic. Used in dropsy, and in promoting the monthly discharge of females, for which it is highly esteemed. It has been used in diseases of the brain, and of the skin. Dose of tincture, one to two drachms; of powder, five to fifteen grains, as a cathartic.

Hemlock. *Conium.*—A narcotic. Used in diseases of the skin, scrofula, chronic rheumatism, neuralgia, chronic coughs, &c. Dose of the powdered leaves, three or four grains, twice a day. As the system soon becomes accustomed to its use, it is necessary gradually to increase the dose, that its effects may be maintained.

Henbane.—A narcotic, acting occasionally on the skin or kidneys, and bowels. Used in all kinds of painful nervous diseases, in chronic rheumatism, chronic coughs, in hysterics, and in short, in every kind of case in which opium is employed. It is not so potent as opium, and it is sometimes borne when opium cannot be tolerated. Dose of powdered leaves, five to ten grains. Dose of the tincture is a tea-spoonful for ordinary effects.

Hops.—Tonic and narcotic. Used in dyspepsia, the nervousness of drunkards, and to allay pain. They may be used in an infusion, made by pouring a pint of boiling water on half an ounce, in the dose of four table-spoonsful four times a day. Dose of the tincture is half a tea-spoonful to two tea-spoonsful.

Horehound.—Tonic. Used much in common practice in coughs, colds, &c., and in cases of debility. Generally given in infusion, made with an ounce of the herb to a pint of boiling water. Dose: a wine-glassful several times a day.

Hydriodate of Potassa.—(See "*Potassium.*")

Iodine.—Special stimulant of the glandular system. Used in glandular enlargements, scrofula of every variety, chronic enlargement of the liver, spleen, and ovaries, in cutaneous diseases and in consumption. As an ointment, it is applied to many diseases of the skin, enlarged glands, chronic swellings of the joints, &c. It is not administered in substance. The dose of the *tincture* is five to twenty drops, two or three times a day, in half an ounce of water syrup. The *iodide* *of potassium* is generally employed in preference to this preparation.

Ipecacuanha.—In large doses, emetic; in smaller, diaphoretic and expectorant; and in minute doses it acts as a stimulant to the stomach. As an emetic it is preferable to all others when there is irritation of the stomach, or for children and persons who are feeble. It may be given in very large doses without causing any dangerous consequences. In small doses, especially when combined with opium, it acts with great certainty on the skin. It appears to possess some specific tendency to the mucous membranes, by which their secretions are improved. It has been used with much success in dysenteries and diarrhœas, and it is an admirable expectorant, not always by increasing expectoration, but by bringing the lining membrane of the lungs to the condition of health. Dose, as an emetic, twenty to thirty grains, which may be repeated in twenty minutes; as a diaphoretic and expectorant, half to one grain, every three hours.

Iron.—The general effects of all the different preparations of iron employed for medical purposes are powerfully tonic, exciting the pulse, increasing the secretions, and adding to the coloring material of the blood. They are used in most female affections that are characterized by paleness and debility, in all exhausting discharges, in restoring the menstrual evacuation, in scrofula, rickets, neuralgia, &c. Iron should not be employed when active inflammation exists, nor in diseases of excitement.

Iron, Black Oxide of.—Possesses the general properties described above as belonging to iron. Dose, from five to twenty grains, three times a day.

Iron, Precipitated Carbonate of.—This is a very mild and excellent preparation. In addition to the diseases already enumerated in which iron is useful, it has been strongly recommended in cancer, and in St. Vitus' dance. It is the best of all remedies for neuralgia. Dose: as a tonic and for ordinary cases, five to twenty grains; in neuralgia, half a drachm to a drachm or more, three times a day. It is a good plan to add a few grains of ginger, and a grain or two of rhubarb to each dose. It may be administered in syrup or molasses.

Iron, Ammonio-tartrate of.—This preparation is nearly void of all astringency, and is more agreeable to the taste than many others. Dose: five to eight grains in powder, pill, or solution.

IRON, AMMONIO, CITRATE OF.—Another agreeable preparation that is getting into very general use, as it answers all the ordinary purposes of iron, while it is less offensive to the palate than most of the others. Dose: five to eight grains, always in solution.

IRON, IODIDE OF.—This preparation is better suited to scrofula, and other cases in which iodine is indicated, combined with a tonic. Dose: two to five grains, gradually increased, three times a day.

IRON, THE MURIATE TINCTURE OF.—Strongly astringent. Used, in addition to the common purposes, in affections of the urinary organs, and in the chronic mucous discharges of females, and in passive hemorrhages from the kidneys and bladder. Dose: ten to thirty drops, gradually increased to one drachm, in a little water.

JALAP.—An active cathartic, causing watery stools. It is usually combined with other cathartics, as calomel, for bilious fevers; and cream of tartar, for dropsy. Dose, in powder: ten to twenty grains.

JAMES' POWDER.—(See "*Antimonial Powder.*")

JAMESTOWN WEED.—(See "*Thorn Apple.*")

JERUSALEM OAK.—(See "*Wormseed.*")

JUNIPER BERRIES.—Stimulant and diuretic. Used in dropsy, disease of the bladder, and diseases of the skin. Best given in infusion, which is made by pouring a pint of boiling water on an ounce of the bruised berries. Dose: the pint in twenty-four hours.

JUNIPER OIL.—(See "*Oils.*")

KINO.—An intense astringent. Used in chronic dysentery, whites, and in hemorrhages, when there is no excitement. It is generally combined with opium, chalk mixture, &c. Dose of the powder: from ten to thirty grains. It may be given in infusion.

LAUDANUM.—(See "*Opium.*")

LAVENDER.—An aromatic and stimulant. It is generally used to render other medicines more grateful, and in perfumery.

LEAD, SUGAR OF.—Powerfully astringent and sedative. Used in bleedings from the lungs, stomach, and womb, (in which it is an excellent remedy) in chronic dysentery, diarrhœa, and cholera infantum, and Asiatic cholera. It sometimes has been known to cause *painter's colic*, and *lead palsy*, when long continued. It is perhaps judicious, while using it, to take small quantities of vinegar for preventing its decomposition. It is nearly always combined with opium. Dose: one to two grains in pill, which may be repeated every two or three hours.

Lettuce.—A narcotic. It lulls pain and produces sleep. Its action is much like that of opium, without affecting the head, or causing constipation, like that drug. It is mostly used to allay cough and quiet nervous excitement. It is used as a kind of extract, the dose of which is two grains.

Lime.—There are several preparations of this alkali, employed in medicine. It is generally used to correct acidity of the stomach.

Lime Water.—Antacid, tonic, and astringent. Used in dyspepsia, with acidity of the stomach, diarrhœa, sick stomach, and externally as a wash to eruptions, foul ulcers, &c. When employed internally, it is best given combined with an equal quantity of milk, which quite conceals its disagreeable taste. Dose: two to four ounces, several times a day. For nausea, a table-spoonful, mixed with milk, may be given every fifteen minutes.

Lime, Carbonate of.—*Chalk.*—An antacid. Nearly always given combined with other medicines. It is much used in chalk mixture. Dose: from ten grains to a drachm.

Liverwort.—Mild tonic, astringent and diuretic. Much used in bleeding from the lungs, consumptions, cough and liver complaints. It may be drank in infusion, in any quantity, as a common beverage.

Lobelia.—*Indian Tobacco.*—Emetic, diaphoretic, expectorant, and sometimes cathartic. It has been much used in coughs, asthma, hooping cough, and in the latter stages of croup. Dose of the powder, five to twenty grains. It is seldom given in this form, the tincture being much more agreeable. This is made by taking four ounces of lobelia, and two pints of diluted alcohol, leaving them to stand together fourteen days, and then straining. Dose: thirty drops to two tea-spoonsful, every three or four hours.

Logwood.—A pleasant astringent. Used in chronic diarrhœa, chronic dysentery, and in the chronic bowel complaints of young children. It is a very good remedy, and much employed. The decoction, in which form it is best given, is made of one ounce of rasped logwood, and two pints of water boiled to one pint. The dose is four table-spoonsful; for a child two years of age, two tea-spoonsful, several times a day.

MAGNESIA, CARBONATE OF.—An antacid. Used in sour stomach. By combining with the acid in the stomach it is slightly purgative. Dose: half a drachm to two drachms, mixed with milk or water, and a little syrup.

MAGNESIA, CALCINED.—This is used for the same purposes and in the same manner as the carbonate of magnesia.

MAGNESIA, SULPHATE OF. *Epsom Salts.*—An excellent cathartic, producing watery stools, without pain; used generally in inflammatory diseases and fevers. Dose: one ounce, or more.

MALE FERN.—Tonic and astringent. It has had a high reputation for destroying worms, especially the tape-worm. Dose of the powder is from one to three drachms, to be given with molasses, every morning and evening, for one or two successive days. It is customary to administer a brisk cathartic directly afterwards.

MALLOWS.—Used in colds, dysenteries, and complaints of the kidneys and bladder, for its demulcent properties. The decoction may be drank in any quantity.

MANNA.—A mild laxative, but producing sometimes flatulence. It is usually given to children and pregnant women. It is commonly combined with senna, rhubarb, salts, &c., the taste of which it conceals. Dose: from one to two ounces; for children, one to two drachms. It may be dissolved in water.

MAY APPLE ROOT.—An active cathartic. It acts much like jalap, and is generally used in the same manner and for the same purposes. Dose, of powder, ten to twenty grains. There is also an *extract*.

MAY WEED. *Wild Chamomile.*—Given in nervous diseases, and in coughs and colds, to produce perspiration. It may be drank in infusion freely. Dose: four table-spoonsful several times a day.

MEADOW SAFFRON.—(See "*Colchicum.*")

MERCURY, OXYMURIATE OF. *Corrosive Sublimate.*—In large doses it acts on the bowels; in smaller, it produces the specific action of all the mercurial medicines. It is less liable to salivate than calomel. It is generally used internally as an anti-venereal, combined with other medicines, and in many diseases of the skin, and in obstinate chronic rheumatism. Dose: from one-eighth to one-fourth of a grain, repeated three or four times a day. It is a *corrosive poison* in large doses.

MERCURY, MURIATE OF. *Calomel.*—Cathartic, although seldom employed alone. It stimulates the liver, and every secreting organ in the body, and increases their action. It is useful in bilious fevers, jaundice, bilious colic, dysentery of hot climates, and indeed, in nearly every disease in which there is a derangement of the secretions. Dose, as a purgative, from five to fifteen grains; to produce a constitutional effect, half a grain to a grain every night, followed in the morning by a gentle cathartic.

MERCURY, PILL OF. *Blue mass.*—This is one of the mildest preparations of mercury, and is commonly used to obtain the alterative effects. Dose: one pill of five grains, may be given night and morning, with an occasional laxative.

MERCURY WITH CHALK.—This is also a very mild combination. It is generally given to children, and to persons of irritable bowels. Dose: for a child, five grains, twice a day, mixed with thick syrup.

MORPHIA.—There are several sorts of morphia, but the *sulphate* and *acetate* are most commonly used. Obtained from opium, and possessing most of its properties. For its effects and use, see "*Opium.*" It is thought to constipate less than opium, and cause less unpleasant effects on the brain. Dose: one-eighth to one-fourth of a grain.

MUSK.—Stimulant and antispasmodic. Used in all spasmodic diseases, and in typhus, when there is twitching and tremors. It is not much employed on account of its high price. Dose: ten grains every two or three hours.

MUSTARD.—A stimulant. Has been used in dyspepsia, particularly the white mustard seed taken whole in the quantity of a table-spoonful, two or three times a day. Two tea-spoonsful or more make an excellent emetic in cases of narcotic poisoning, by being mixed with a tumbler of warm water. It is also an excellent emetic in the beginning of Asiatic cholera, when the stomach is oppressed with undigested food.

MYRRH.—Stimulant tonic. Used in chronic coughs, consumption, asthma, and in various affections connected with disordered function of the womb. It is generally combined with iron, or aloes, or other medicines. Dose: from ten to thirty grains. There is a large number of formulæ into which it enters in the Pharmacopœia.

NITRATE OF POTASH. *Nitre.*—A diuretic, and diaphoretic. It is used in active hemorrhages, fevers, and all diseases of excitement. Dose: five to fifteen grains, dissolved in water.

NITRATE OF SILVER. *Lunar Caustic.*—A tonic and antispasmodic. It has been chiefly employed, beneficially, in epilepsy, and dyspepsia, when there is irritation of the stomach. It is much used by surgeons externally. Dose: one-eighth of a grain, gradually increased to four or five grains, three times a day, in a pill. It should not be continued longer than two months.

OAK BARK.—Astringent and tonic. This bark is obtained from the white oak. It has been given internally, in chronic diarrhœa, and hemorrhages, when there is no excitement. It is best administered in a *decoction*, made by boiling one ounce of bark in a pint of water. Dose: two to four table-spoonsful, four times a day. It is, however, generally used externally, and as injections for whites, &c.

OIL OF ANISE.—Stimulant. This, and nearly all the other volatile oils, are chiefly used to flavor or to improve and correct the griping action of other remedies. They are generally useful in flatulence and pain in the stomach, when a stimulant is required. Dose: five to ten drops.

OIL OF CARAWAY.—Stimulant. Dose: one to ten drops.

OIL OF CINNAMON.—Stimulant and cordial. Dose: one to two drops.

OIL OF CLOVES—Stimulant. Dose: two to six drops.

OIL OF JUNIPER.—Stimulant and diuretic. This oil is used sometimes, in connection with other medicines, in dropsies of debilitated subjects. Dose: five to fifteen drops, three times a day.

OIL OF PARTRIDGE BERRY.—Stimulant. Used to flavor, having that of *winter-green.*

OIL OF PENNY ROYAL. Stimulant, &c. Dose: two to ten drops.

OIL OF PEPPERMINT.—Dose: one to three drops. Essence of peppermint is made from it. Dose: ten to twenty drops.

OIL OF RUE.—Stimulant and antispasmodic. Has been used in hysterics and convulsions. Dose: two to five drops.

OIL OF SASSAFRAS.—Stimulant, &c. Much used. Dose: two to ten drops.

OIL OF SAVINE.—Stimulant. It has been much employed by empirics to restore the monthly discharges of females, and to produce abortion, and sometimes with fatal consequences. Dose: two to five drops.

OIL OF TURPENTINE.—Stimulant, antispasmodic, diuretic, and vermifuge. It is used in chronic diseases of the urinary passages, and in whites, gleet, ulcerations, particularly in typhoid fever, rheumatism, and bleeding from the stomach and lungs. It is an excellent remedy also for worms in the bowels, and given conjoined with castor oil, when free purging is desired, will be of much advantage. In convulsions it is often the best remedy we possess, in which case it may be used as an injection; hysterics it will frequently relieve almost instantly, administered in the same manner. It sometimes occasions much irritation of the kidneys and bladder, if given in an over dose. Dose: five drops to twenty drops as a diuretic; as a vermifuge, it may be given in an ounce dose. As an injection, an ounce may be used with starch-water, &c.

Oil of Vitriol.—(See "*Acid, Sulphuric.*")

Opium.—A stimulant and narcotic. It is impossible, here to allude to all the diseases in which this drug has been found serviceable. There is scarcely any malady, in which, under certain conditions, it has not been useful. Its most common applications are to allay pain, to tranquilize the nervous system, and to produce sleep. If given in small doses, it acts as a decided stimulant; in larger doses it acts as a sedative and causes sleep. It generally causes constipation, and in chronic diarrhœas it is much employed to relieve the pain and check the discharge. It is a valuable remedy in rheumatism, in gout, in inflammatory diseases, after the system has been prepared for it by reducing, in cholera, in spasmodic affections, &c. Dose: half to one grain, is the usual quantity; of *laudanum*, twenty drops. It is an ingredient in a very large number of preparations directed in the Pharmacopœia.

Paregoric Elixir. *Camphorated Tincture of Opium.*—This is an agreeable anodyne and antispasmodic, and much used to quiet cough, to relieve pain in the bowels, and is given to infants to induce sleep. The dose for an infant is from five to twenty drops; for an adult, one to two teaspoonsful.

Parsley Root.—Aperient and diuretic. Used in affections of the kidneys, and in dropsy. It is well spoken of by high authorities. It is administered in infusion. Two ounces may be added to one pint of boiling water, and allowed to stand for two or three hours. Dose: two to four tablespoonsful, frequently repeated.

Penny Royal.—Stimulant and aromatic. When taken as a warm tea it promotes perspiration. It is given in flatulent colic and sick stomach, and it is sometimes used in domestic practice to promote the monthly discharge. A large cupful may be taken at bed-time for this purpose.

PEPPER, BLACK.—A warm stimulant. It is given in debility of the stomach, and has been accounted a good remedy in ague. Dose: five to twenty grains.

PEPPERMINT.—A stimulant and aromatic. It is useful to relieve pains in the stomach and flatulence, and for giving an agreeable flavor to other medicines. It may be given in infusion, but the essence or oil is more in common use.

PERUVIAN BARK.—An admirable tonic and febrifuge. There is no medicine belonging to the class of tonics so extensively used as this. It may be given in any of the diseases of debility in which tonics are indicated; but its chief value is derived from its power in checking fever, especially ague, and relieving all affections of a *periodical character.* Dose, in ague, one drachm, to be repeated every four hours, during the intermission; in other affections, as a tonic, ten to thirty grains. Quinine, which is prepared from it, being so much more convenient to administer, has nearly superseded its employment. It is also given in decoction, infusion and tincture.

PINK ROOT. *Carolina Pink.*—A vermifuge. For destroying worms we have in this country perhaps no remedy equal to it. Dose of the powdered root for a child three or four years of age, from ten to twenty grains; for an adult from one to two drachms, to be repeated morning and evening for several successive days, after which an active cathartic should be administered. It is more generally, however, given in infusion, for a form of which see "*Prescriptions*," under the head of "*Anthelmintics.*"

PIPSISSEWAY. *Winter Green.*—Diuretic, astringent, and tonic. Used in dropsy, and affections of the kidneys and gravel, scrofula, ulcers, and diseases of the skin. It is a very popular remedy, and is much employed in all the empirical preparations recommended for diseases of the blood. Its flavor is particularly pleasant. The decoction is made by boiling two ounces of fresh leaves with three pints of water down to a quart. Dose: a tea-cupful, three times a day.

PLEURISY ROOT.—Expectorant and diaphoretic. It is much used in some parts of the country in common colds, pleurisy, consumption, and other affections of the lungs; also in rheumatism, in dysentery, flatulence and indigestion. *Decoction,* made by boiling one ounce in a quart of water; a tea-cupful may be taken every three hours, until it produces its effects.

POKE BERRY.—It is purgative and emetic, in large doses. Used chiefly in chronic rheumatism, for which it has a high character. Generally administered in *tincture*, made by saturating brandy with the berries. Dose: a tea-spoonful thrice daily. Poke berries have also been used externally as an ointment in piles, and diseases of the skin.

POTASH, ACETATE OF.—Diuretic and cathartic. Used in dropsies. Dose: one scruple to two drachms.

POTASH, BICARBONATE OF.—An antacid and diuretic. Used in acid stomach, and in gravel when the deposit is *red* sand. It is commonly used, also, for making an *effervescing draught*. Dose: ten to forty grains.

POTASH, SULPHATE OF.—Cathartic. Used when there are glandular obstructions in the abdomen, especially in children, indicated by swelling. It is advantageous to combine it with aloes, rhubarb, or some other similar purgative. Dose: a scruple to half a drachm for an adult; five grains to ten for a child three or four years old.

POTASH, SUPERTARTRATE OF.—(See "*Cream of Tartar.*")

POTASSIUM, IODIDE OF. *Hydriodate of Potash.*—Used in cases similar to those in which *iodine* is employed. It is, however, more convenient to administer, and therefore more generally prescribed for internal use. Dose: one to two grains, dissolved in water, twice a day, in all scrofulous complaints and glandular enlargements. It is applied externally as an ointment.

PRICKLY ASH.—A stimulant and diaphoretic. Used in chronic rheumatism, and diseases of the skin. Dose: ten grains to half a drachm, in powder, three times a day.

PUCCOON.—(See "*Blood Root.*")

QUASSIA.—A tonic. Used when a mere tonic is required, in dyspepsia and in the debility succeeding fevers. Given in infusion, which is made by infusing two drachms of quassia chips in a pint of cold water for twelve hours. Strain, and give four table-spoonsful, three or four times a day.

QUININE, SULPHATE OF.—Prepared from Peruvian bark, which see for ascertaining its medicinal properties and uses. Twelve grains of quinine are considered equal to an ounce of bark. Dose as a tonic, one grain three or four times a day; in ague, it may be given in two to five-grain doses every three hours, during the intermission of the disease.

Rhatany.—A powerful astringent, and moderate tonic. Used in chronic diarrhœa and dysentery, hemorrhage without excitement, especially from the kidneys, whites, and in every case in which the vegetable astringents may be employed. It is usually administered in decoction, which may be prepared by boiling an ounce of the root, bruised, in a pint of water. Dose: two to four table-spoonsful, repeated according to the necessity of the case. In Europe this is regarded as the most valuable astringent that they possess.

Rhubarb.—Tonic, cathartic, and astringent. This is one of the best of cathartics when the bowels are in a debilitated condition, but from its astringency it is calculated to induce constipation; for this reason it is often useful in diarhœas that are caused by irritating matter in the intestines, and is highly serviceable in the bowel affections of infancy and early childhood. It is generally given in combination with other medicines, as calomel, aloes, magnesia, &c. In fevers it is inferior to other cathartics, unless in the advanced stages, when the system is much reduced. Dose: twenty to thirty grains as a purgative; as a laxative, five to ten. For infants the syrup may be used, the dose of which is a tea-spoonful or two.

Rochelle Salt.—A cooling purgative, more agreeable than the common cathartic salts. Dose: one ounce or more.

Rue.—Stimulant, antispasmodic, and diaphoretic. Used in hysterics, flatulent colic, and suppressed menstruation. On account of its irritating properties, it requires to be administered with caution. Dose of powder, fifteen to thirty grains, three times a day. It may be given in infusion, made by adding a pint of hot water to one ounce of the leaves. Dose: two table-spoonsful three times a day.

Saffron.—Stimulant, antispasmodic, and it is thought to possess the property of stimulating the womb and causing the menstrual flux. It is now chiefly used in domestic practice to promote the eruption in measles, &c. Dose: ten to thirty grains.

Sal Æratus.—(See "*Bicarbonate of Potash.*")

Salicin.—(See "*Willow Bark.*")

Salt, Epsom.—(See "*Magnesia, Sulphate of.*")

Saltpetre.—(See "*Nitrate of Potash.*")

Sarsaparilla.—Diaphoretic. Used in cutaneous eruptions, and secondary syphilis. It has become, through the agency of advertised nostrums, a medicine of great repute in a large variety of affections. It is given in infusion or decoction, combined with other ingredients. Dose: of powder, from one to three drachms. See "*Prescriptions*," under the head of "*Diaphoretics*," for a recipe for decoction.

SASSAFRAS ROOT.—Diaphoretic. Never prescribed alone, but it is generally added to the sarsaparilla preparations.

SCAMMONY.—Powerful cathartic. In consequence of the difficulty of obtaining it pure, it is now but little used. Dose: eight to ten grains.

SCURVY GRASS.—Gently stimulant, aperient, and diuretic. Used in sea-scurvy, chronic rheumatism, &c. It may be eaten as a salad, or it may be administered in tincture, in the dose of thirty or forty drops, several times a day.

SENNA.—An active cathartic. It may be used in all cases requiring a thorough purging, especially in the early stage of fevers, and in inflammatory affections. It is commonly combined with epsom salts, manna, &c. As it has a tendency to gripe, some aromatic should always be added to it. The infusion is prepared by pouring two ounces of boiling water on two to four drachms of the leaves and allowing it to stand for thirty minutes. The whole for a dose. It may be sweetened with sugar to render it more palateable.

SILK WEED.—*Milk Weed.* Its effects, uses and doses are the same as those of the "*Butterfly Weed*," which see.

SKUNK CABBAGE ROOT.—Stimulant and anti-spasmodic. Used in asthma, hysterics, rheumatism, and chronic cough. Dose of the powder, from ten to twenty grains, four times a day.

SNAKE ROOT, BLACK.—Tonic, diaphoretic, diuretic, and anti-spasmodic. Used in dropsy, rheumatism, hysterics, and in St. Vitus' dance, for which it is highly commended. It is probably one of the most valuable of our native plants. The decoction is made by boiling for ten minutes, an ounce of the bruised root in a pint of water. Dose: two to four table-spoonsful, several times a day.

SNAKEROOT, SENECA.—Stimulating expectorant, and diaphoretic. It is much used in affections of the lungs, and, in large doses, it has been successful in rheumatism. Dose, of the powder is ten to twenty grains, but it is usually given in decoction or prepared as a syrup, with squills and antimony. To make the decoction, take bruised seneka, one ounce, water, two pints; boil down to a pint and strain. Liquorice root may be added before boiling, to improve the taste. Dose: four table-spoonsful three times a day.

SNAKEROOT, VIRGINIA.—Stimulant tonic, diaphoretic, and diuretic. It is used in typhoid fevers, in ague, in obstructed menstruation, and for promoting the eruption in measles, scarlet fever, &c. Administered generally in infusion and tincture. To make the infusion, take half an ounce of snake-root, and a pint of boiling water, infuse for two hours and strain. Dose: two to four table-spoonsful, repeated every hour or two in low fever; three times a day or oftener, in other affections.

SODA, BICARBONATE.—An antacid. Used in gravel, when the deposite is *red*, and in acidity of the stomach. Dose: ten grains to one drachm, dissolved in a little water.

SODA, CARBONATE.—Like the preceding in its general properties. It has been administered in scrofulous affections, hooping cough, gravel, dyspepsia, &c. Dose: from five to fifteen grains, three times a day.

SODA, MURIATE OF.—*Table Salt.* Mild stimulant to the stomach in moderate doses, in larger, it causes cathartic effects, and in still larger, it acts as an emetic. It is only for this latter purpose that it is used as a medicine. Dose: one to two table-spoonsful in a tumbler of water. It may be properly employed to excite vomiting in cases of narcotic poisoning, and in cholera, &c.

SODA, SULPHATE OF.—*Glauber's Salt.*—An active cathartic, increasing very much the intestinal secretion. Used chiefly in the early stage of fevers and in inflammatory diseases. It has also been found peculiarly serviceable in hemorrhages when given in small doses, frequently repeated, that resist the ordinary remedies. Dose: half an ounce to an ounce and a half, dissolved in water. A little cream of tartar added very much conceals its taste.

SODA, PHOSPHATE OF.—Cathartic, and resembles Epsom or Glauber salt in its general effects. Its taste is like that of common table salt, and it may be given in broth or soup, as it imparts to it the proper agreeable saline taste. Dose: half an ounce to an ounce and a half.

SPANISH FLIES.—*Cantharides.* Powerfully stimulant, and diuretic. In large doses they produce violent irritation of the kidneys and bladder, strangury, and bloody urine. In still larger, they will cause death from inflammation of the bowels. Irritation of the urinary organs may be relieved readily by an injection of laudanum, or the internal administration of laudanum, or camphor, together with a free use of mucilaginous drinks. They are used internally in dropsy, suppressed menstruation, gleet, whites, and in the incontinence of urine consequent upon debility of the neck of the bladder. Dose: one or two grains, powdered and made into pills, twice a day. Dose of the tincture, twenty drops to a tea-spoonful, three times a day, administered in two table-spoonsful of mucilaginous fluid.

Spurred Rye.—(See "*Ergot.*")

Squills.—Expectorant, diuretic, and, in larger doses, emetic. Used in affections of the lungs after the stage of excitement has passed away, in dropsy, combined with calomel or digitalis, and in the croup of children, combined with seneka snake root and tartar emetic. See "*Prescriptions*," under the head of "*Expectorants*," for Coxe's Hive Syrup. Dose as a diuretic or expectorant, is one grain, repeated three times a day.

Sulphur.—Laxative and diaphoretic. Used in piles, diseases of the skin, especially itch, chronic rheumatism, catarrh, asthma, &c. It is often combined with cream of tartar. Dose: one to three drachms a day, mixed with syrup, molasses or milk.

Sumach Berries.—Astringent and cooling. Used for making a cooling drink in fevers, and as a gargle in inflammation of the throat. Strongly recommended in mercurial salivation.

Sweet Flag.—*Calamus.*—A stimulant, tonic and aromatic. Used in dyspepsia and debility of the stomach and intestines. Dose: one scruple to one drachm. It may be taken in infusion, to be drank freely.

Tamarinds.—A cooling laxative. They are often used for making a drink in diseases of excitement.

Tansy.—Aromatic and tonic. Used for worms, hysterics, &c. An ounce of tansy and a pint of hot water, will make an infusion, a half a tea-cupful of which may be taken several times a day.

Tar.—Stimulant and diuretic. Used in chronic coughs. Tar-water has been thought a remedy for consumption. Tar is also used for piles. For the mode of preparing tar-water, see "*Prescriptions*," under the head of "*Expectorants.*" The dose of tar is half a tea-spoonful, three or four times a day. It may be made into pills with flour, or mixed with sugar.

Turpentine.—(See "*Oil of Turpentine.*")

Thorn Apple. *Jamestown Weed.*—A narcotic, which, in large doses, will cause death. Used beneficially in neuralgia, rheumatism, cancer, asthma, &c. In this last disease it is commonly smoked in a pipe. It is also used for many purposes externally, in a poultice or as an ointment. Dose of the powdered leaves, two grains. The extract is given in a dose of one grain.

Tulip Tree. *Wild Poplar.*—Diaphoretic and tonic. Used as a substitute for Peruvian bark in ague, in chronic rheumatism, and dyspepsia. Dose of bark in powder, half a drachm, three times or oftener in a day. A saturated tincture may be made, the dose of which will be a tea-spoonful.

Valerian.—Stimulant and antispasmodic. Used in hysterics, epilepsy, and low fevers in which there is great nervous disturbance. Dose of powder, from thirty to sixty grains. It is often administered in tincture, the dose of which is one to four tea-spoonsful. In some cases the quantity of spirit may be an objection to the use of the tinctnre, when an infusion may be employed in preference.

Violets.—They are diuretic and slightly laxative, and have been successfully used in diseases of the lungs, kidneys, and skin, and some of the varieties are thought to possess remarkable virtue in gravel complaints. They may be administered in the shape of an infusion, made by adding a pint of hot water to an ounce of the herb. Dose: two to four table-spoonsful, three times a day.

Wild Cucumber. *Elaterium.*—An active cathartic. Used in dropsy, in which disease it possesses great power. It causes copious watery motions, and unless given with care, may do much mischief by the violence of its action. Dose: half a grain, repeated once in an hour until it operates.

Willow.—Tonic and astringent. Is used as a substitute for Peruvian bark in ague. *Salicin*, an active principle of willow bark is getting into very general use, and by some is considered but little inferior to quinine. One ounce of the bark, infused in a pint of hot water for three hours, will make an infusion which may be drank during the intermission of the paroxysms. Dose of the salicin is from two ten grains.

Winter Green.—(See "*Pipsisseway.*")

Worm Seed. *Jerusalem Oak.*—An excellent vermifuge. Dose for a child two or three years of age, is one to two scruples of the seeds in powder, mixed in molasses, and given morning and evening for three days. A brisk cathartic should then be administered.

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