A new systematic table of the materia medica : with a preliminary dissertation, historical, critical, and explanatory, on the operation of medicines / [Andrew Ure].

A

NEW SYSTEMATIC TABLE

OF THE

MATERIA MEDICA;

WITH A PRELIMINARY DISSERTATION,

HISTORICAL, CRITICAL, AND EXPLANATORY,

ON THE

Operation of Medicines.

BY ANDREW URE, M. D.

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His autem omnibus, et simplicibus, et permixtis, varie Medici utuntur, ut magis, quid quisque persuaserit sibi, appareat, quam quid evidenter compererit.

CELSUS.

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1813.

To the President and Members of the Faculty of Physicians and Surgeons of Glasgow.

GENTLEMEN,

IN publishing this Systematic Table under your auspices, agreeably to the intention which I announced at a public meeting of the Faculty, a few months ago, my object is two-fold. I was desirous of availing myself of this opportunity, of expressing my admiration of that reciprocal delicacy, in the discharge of professional duties, which for nearly ten years, I have observed to regulate the deportment of my fellow members. It may be affirmed with much probability, that there are few cities of equal magnitude, where equal harmony prevails among rival practitioners of the healing art.

My second purpose, was to solicit your observations, on what I consider, merely as the outline of an extensive plan, to be carefully filled up; provided, leisure and encouragement be afforded. It is a subject of sincere regret, to every friend of medical improvement, that there does not exist in our language, and perhaps not at all, a collection on philosophical principles, of the most important and well attested facts, concerning the origin, nature and use of medicines.

The execution of such a task, is perhaps, beyond the powers of an individual; yet aided by your advice and experience, the attempt, though not fully successful, might partially conduce to so desirable an end.

The public avocations, which for some years it has been my duty to perform, are well known to you. I hope their multiplicity will apologize, in some measure, for many imperfections in the following Essay and Table. It was in fact, meant at first, merely as a clue, to guide my students through my course of Lectures on Materia Medica; but it oc-

curred to me, in the progress of writing, that a methodical distribution on just principles, with a commentary prefixed, might be a convenient manual to the practitioner; enabling him by a rapid inspection, to call to mind, and compare the various *succedanea* to any medicine, which had disappointed expectation.

The grounds on which the Table was framed, are briefly stated in the preliminary essay. If they be well founded, and unconnected, as I believe they are, with any Pathological hypothesis, the classification ought to exhibit at one view, all the principal medicines really possessed of analogous powers, and ranged in each groupe, in the order of their efficacy. On the justness of this progression, I anticipate a variety of opinion. With regard to the *number* of the articles, it has been my wish to steer a middle course—to avoid credulity and scepticism—neither extending the list with frivolous substances, nor omitting others, which, though not greatly confided in, may be occasionally resorted to with some advantage.

I beg, finally, to present this work to your

learned body, as an earnest of my future devotion to medical pursuits, from which some public scientific arrangements, now completed, have too long detained me. I am,

GENTLEMEN,

With the highest consideration,

Your faithful Servant,

THE AUTHOR.

Institution Buildings,
Nov. 4th, 1812.

PRELIMINARY DISSERTATION.

No sooner had mankind begun to reason, concerning the different substances recommended for the alleviation or cure of disease, than they naturally arranged them in groupes according to certain points of resemblance and dissimilitude. The means of comparison employed for this purpose, were necessarily derived from the three following sources; first, from their sensible qualities of taste, and smell; secondly, from their efficacy in relieving similar morbid symptoms; and thirdly, from their obvious effects on particular living functions.

The structure, and actions of the animal organs, being in the early periods of physic entirely unknown, it was chiefly on the two first grounds, that their rude classification of medicines was established. Accordingly where a similar symptom presented itself to the practitioner, he seldom inquired into its nature or origin, but like the vulgar of the present day, had immediate recourse to that specific practice, which on a supposed similar occasion had proved efficacious. Thus the list of substances, composing his Materia Medica, would be virtually, if not formally, arranged according to the ailments over which they exerted, or were imagined to exert, a sanative power.

It is nearly in this condition, that we find the distribution of remedies in the classical writings of Celsus.

Every disease, nay almost every symptom, is provided with a peculiar train of prescriptions. In the cure of fever, for example, he assigns one chapter to the treatment of headache, inflammation of the precordia, dryness and foulness of the tongue; a second contains the remedies against the sense of chilliness which precedes a paroxysm; and a third is occupied with the medicines to cure febrile *horror*. Aware of the extremely defective and erroneous state of human Anatomy and Pathology in his time, he well knew that the physician, who should have endeavoured by his knowledge in these studies, to develope the essence of disease, and the proper plan of treatment, would be led into fantastic or dangerous practice. He therefore, prudently confines himself to particular details; and though in order to give somewhat of a philosophical aspect to his curative methods, he divides them into those which are common to many diseases, and those appropriate to one, he makes little use of the former plan.

His *common* remedies of disease may serve to give us an idea of the first plausible attempt, at classification. "Omne vero auxilium corporis, (says he) aut demit aliquam materiam, aut adjicit, aut evocat, aut reprimit, aut refrigerat, aut calefacit, simulque aut durat aut mollit." Thus, he limits the operation of medicines, to the abstraction of matter from the body—to the addition of matter—to derivation from a part—to the faculty of repressing—cooling—heating—hardening—and softening. These eight classes are afterwards subdivided and filled up, with a vast multitude of individual substances, crowded together with little discrimination. We shall be

able to appreciate the justness of this observation, if we inspect only one of his lists. According to Celsus, the following substances have at once a repressing and refrigerant power: " Pellitory, wild thyme, Basil royal, bloodwort, purslain, leaves of poppy, tendrils of the vine, leaves of coriander, henbane, moss, white carrot, parsley, Nightshade, cabbage leaves, endive, plantain, fennel seed, bruised pears or apples, and especially quinces, lentils, cold, particularly rain water, wine, vinegar, &c.; for he enumerates about twenty other articles equally incongruous and inapplicable.

Incorrect, therefore, as this writer's information and views undoubtedly are, on the Materia Medica, let not the student conceive, that Celsus deserves to be studied only as a model of pure and elegant style. In the description of individual diseases, and in pourtraying especially the minute changes which betoken an auspicious or unfavourable termination, he has transcribed and methodized Hippocrates, and the other faithful observers of Nature. Hence his treatise *de Re Medica*, should be carefully perused, in preference to many of those hypothetical writings of modern times, which, in accommodating the histories of disease to some cherished system, withdraw the mind from the contemplation of reality, and give it a distaste for the patient examination and sober comparison of facts.

The vanity of Galen, endeavoured to complete, what the modest genius of Celsus merely indicated, without wishing to carry into execution. This celebrated physician, confiding in the fancied extent and

accuracy of his knowledge, of every branch of his art, framed a comprehensive system of Physiology and Pathology—on which he founded general indications of cure, and a novel classification of medicines.—These doctrines of Galen, captivating from their simplicity, from the apparent universality of their application to all the phenomena of health and disease, and from their introducing an easy arrangement of all the essential articles of the Materia Medica, completely gained the ascendancy over every preceding theory, and obtained not only the veneration of his own age, but continued to govern medical speculations and practice for fifteen hundred years.

From the notion of the four elements, Fire, Air, Water and Earth, so fashionable in Greek philosophy, he borrowed his idea of four corresponding temperaments; the hot, the dry, the moist, the cold. To one or other of these four heads, he referred all, that variety of bodily frame and constitution observable among mankind. Perfect health was the result of a happy union of the four principles. A slight predominance of any one gave the character to the individual; and a considerable excess formed the constitutional disease. Each temperament displayed its influence on a peculiar order of animal functions; each deviation might exist in any degree; and might also be modified by intermixture with another temperament. As there were four great classes, so he assigned to each, four successive degrees of force.

While this pliant system afforded the sophist a ready mode of accounting for the nature of every disease, it promised at the same time to point out the suitable

remedy. Since medicines must, according to him, owe all their qualities to the same four elements, it was only necessary to ascertain, whether they were cold or hot, moist or dry, and determine the degree in which this virtue existed, in order to guide the physician, in the art of preparing and administering them with success. Galen with singular boldness completed an arrangement of the Materia Medica on these simple principles. Furnished with this manual, the herd of practitioners entered fearlessly on the career of their profession, prescribing dry medicines against cases of moisture, moist against dry—and a complex farrago against those diseases, in the formation of which two or more temperaments were blended.

That a system so fantastic and visionary; so discordant with the phenomena of Nature, and so vague, obscure and inept in its applications, should have gained currency among sober thinking men, we now find some difficulty in believing. That it was received by all the regular physicians of Europe, and also by the Arabians, long the depositaries of that learning, which this part of the globe neither possessed nor could appreciate, affords a most humiliating lesson to the pride of human intellect; one peculiarly instructive to the medical world. Unfortunately for the latter, it is neither the only, nor the least plausible chimera, which has led them astray from the laborious but sure path, of observation and experiment.

After passing over that abyss of credulity and ignorance, into which the human mind had sunk during those ages, emphatically styled the dark, the first object which solicits the attention of the medical inqui-

rer, is the contest just beginning with the sixteenth century, between the alchemists, and the Galenical doctors. The latter, though they had after a slight resistance, admitted into their recipes the distilled waters, the essences, and tinctures of the Arabian School, declared open war against the mineral preparations announced by Basil Valentine, in his Currus Triumphalis Antimonii. As the object of these observations, however, is not a history of the Materia Medica, but to examine into the operation of medicines, it is unnecessary to give any detailed view of the argument between the Galenical and chemical practitioners, remarkable for the virulence with which it was conducted, and for the importance of its results. In vain did the gowned and solemn disciples of Galen, call in the aid of the secular power, to protect their professorial right to be reverenced as the oracles of physic, and to assist them in repressing the growing heresies. The splendid success obtained by antimony, mercury, and an extended use of opium, when administered even by empirical practitioners, counteracted all the machinations of the regular physicians, and compelled them finally in self-defence, to incorporate some of these potent remedies with their comparatively inert list of infusions, decoctions, and electuaries.

In our brief sketch of Galen's doctrines of the temperaments, we have seen how completely his distribution and administration of remedies, depended on his preconceived physiological notions. The historical period to which we are now arrived, presents us with some more interesting and instructive proofs, of the intimate relation which has always subsisted, between the fashion-

able ideas entertained concerning the vital functions, the prevailing arrangements of medicines and the opinions concerning their mode of action in the cure of disease. Hence, to ascertain the character which any remedy bore, at a particular era, it is more important to inquire, who was the leading pathologist, than to investigate either its sensible qualities, or ordinary effects on the animal economy. It is to be feared, that this unphilosophical spirit still exerts a baneful influence on the Materia Medica.

Few men have established better claims to the esteem and gratitude of posterity, than Dr. William Harvey. The circulation of the blood, unquestionably the most beautiful fact which the naturalist can contemplate, was a discovery of infinite importance, to the dignity and success of medicine, a discovery by which the comfort and happiness of the whole human race were eminently promoted. Without this fundamental knowledge, due to the fine genius of Harvey, physic and surgery must have remained a prey to incessant errors and delusions, arts unprofitable or dangerous to the sick, and conferring little respectability on their professors.

When after a painful struggle with bigotry and ignorance, the fiery ordeal assigned to truth; the doctrine of the circulation had acquired its merited ascendancy, over the ancient fancy of flux and reflux, it excited such genuine admiration as to induce physicians to look for the origin and essence of every disease in the affections of the sanguiferous system. Entirely absorbed by this idea, they contemplated the human body merely as a hydraulic machine,

liable to have its pump, its valves, and its conduits disordered from the slightest causes. This notion received confirmation from the perpetual fluctuations of the pulse, with every variation of health. Hence it was supposed, that mathematical calculations alone could guide the researches of the pathologist, and enlighten the practice of the physician. The chief object of the latter, therefore, consisted in determining the cases in which the actions were violent, requiring to be repressed, or from languor, demanded excitement. The two main classes of medicines were accordingly, the Sedantia and Tonica.

Soon after this great medical epoch, the attention of Physiologists was powerfully attracted to those subtile channels, hitherto unknown and unthought of, by which the blood passed from the arterial into the venous system. The art of anatomical injection, practised by Ruysch and his contemporaries, proved the wonderful minuteness of these sanguiferous communications. Pathologists were thereby led to believe, that not only external tumours were occasioned by obstruction of these ultimate capillary ramifications of the blood vessels, but likewise, that the various derangements of the internal organs, and, in fine, every morbid phenomenon of the animal economy, were owing to similar interrupted circulation.

This plausible anatomical notion of the leading cause of disease, made them ransack their collection of medicines, to find substances endowed with the faculty of projecting through the capillaries, the stagnating fluids. Accordingly, we perceive the favourite mode of practice, then consisted in prescribing

the classes of Anastomotica, Aperientia, and Deobstruentia, ideal remedies for ideal causes of disease. Inflammatory ailments, the phlegmasiæ of the present day, unhappily for the sick, were referred to this head; and as their principal way of subduing obstruction, was by administering substances of an acrid and heating quality, the danger from the Doctor, frequently exceeded that from the disease.

But these mechanical doctrines were about to be superseded. Chemistry now emerging from the smoke of transmutation, boasted of her services in lues venerea, and claimed high pretensions in explaining and removing the essence of disease. The successive conversion of food into chyle, of chyle into blood, and of blood into the various secretions and excretions appeared to be the result of a fermentation. This action was said to be carried on in the viscera and vessels, in the same manner as vegetable and animal juices spontaneously ferment, when kept some time heated to the temperature of the living body.

Van Helmont was the founder of this chemical Pathology. He observed in such processes, besides the disengagement of a vast quantity of air, a copious light scum rise to the surface, whilst a grosser sediment was found at the bottom of the vessel. His imagination was easily persuaded into a belief that simple fevers, that the Exanthemata, or eruptive fevers, and that many of the Profluviæ, or increased discharges accompanied with fever, displayed in every stage of their progress, the clearest demonstrations of fermentative action. The first and the unfailing indication of this chemical process in dead matter is increased tempera-

ture. Heat is an equally uniform attendant on fever. Fermentation requires a definite period for its completion. In like manner, many acute diseases are known to follow regular intervals of attack, and to observe limited stages of duration. Different substances, called ferments, have the power of modifying the phenomena of fermentation; accelerating, retarding, or changing them from the vinous, into the acetous or putrefactive form. Similar differences of effect are seen to arise, from different miasmata, and morbid poisons, in exciting the great diversity of contagious diseases.

Finally, the resolution of many febrile ailments by copious discharges, of an aeriform, liquid, or more consistent nature, from the different outlets of the body, were said to render the resemblance perfect. Having thus interwoven their hypothesis with the venerable doctrine of critical days taught by Hippocrates and Galen, and having associated it with so many popular analogies, the early chemical school acquired no mean celebrity.

Their modes of expression, as well as their practice, were adopted to a considerable extent by Sydenham, the most acute observer, and accurate describer of disease, in modern times. Though their indications of cure, were built on a foundation, still more unsound than that of the preceding pathologists, they were by a singular concurrence of circumstances less pernicious in the application. The chemical Physician conceived his chief duty consisted in watching silently the progress of the fermentation, till he saw clearly by what outlet or excretory, the impure results tended to escape:

whether by the skin, the kidneys, the lungs, the liver, the intestines, or the subcutaneous glands. His obvious task was then to aid this discharge by suitable means adapted to the different emunctories. Sometimes, indeed, when the morbific ferment by its force threatened in the onset to oppress the powers of life, alexipharmacs, or antidotes to the poison, were prescribed at an early period—and towards the end should the ripening of the process flag, *maturantia* were had recourse to. The subsequent purification of the system was accomplished by the *abluentia*, or simple washing, if the matter was quite detached; but if it adhered to the passages with any force, *abstergentia*, or scourers, were called into play.—Occasionally, the fermentative action was supposed to tend to the putrid type. To counteract this baneful result, antiseptics of various kinds were prescribed. When the alexipharmacs failed to expel or to correct the morbid matter, they satisfied themselves with enveloping the acrimony in bland sheathes, which the *Obtundentia* and *Demulcentia* readily furnished.

The contents of the Materia Medica were thus reduced to very few and simple classes. Of the absurdity of the system, little need be said. It is now known, that fermentation never takes place, unless to a small degree, in the stomach and intestines, when these are disordered; and of course, all the showy speculations concerning the phenomena of eruptive and other fevers, are destitute of foundation.

After this chemical pathology had reigned for a considerable time, Pitcairn endeavoured to revive and new model the Mathematical School of Medicine.

Despising the vats and ferments of the chemists, he expressed astonishment at the blindness or perverseness of their understandings. The living body should obviously be viewed as an assemblage of bags and tubes, of prodigious contractile force, capable of reducing their contents by compression and triture to the finest pulp, and of thus attenuating into blood and the thinner fluids, the gross nourishment which the stomach receives. The animal economy now became merely an elaborate mill, furnished with a vast variety of grinding compartments, fitted to the condition and purpose of every species of *ingesta*. When the wheels of the machine moved with difficulty, the *humectantia* were applied to diminish friction; and the rigidity of vessels was removed by the *emollientia*. If their powers of triture became unnecessarily strong, *relaxantia* reduced them to the healthy standard. The contrary state of weakness in the springs, was obviated by the *Indurantia* and *Consolidantia*.

In this mode of talking, there was however too little of the mysterious or marvellous, to render the theory fashionable. Besides, the previous acquaintance with Geometry, which its successful study required, must have limited extremely the numbers of Mathematical Physicians, compared with the early chemical practitioners from whom no severe mental discipline was required.

Kaaw Boerrhaave, educated at first to Scholastic Philosophy and Mathematics, but afterwards, an enthusiast in chemistry, sought celebrity by attempting to unite in one body of doctrine, the discordant principles of the two prevailing medical sects. Eloquent, ingenious and profound, he gave to every subject

which he discussed, an air of plausibility and novelty. As a Mathematical Physiologist, he refined on the former simple views. The dimensions and forms of the vascular systems, were in his opinion, nicely adjusted, so as to receive and transmit only an appropriate train of particles floating in the circulating mass. The exact correspondence of these particles in size and configuration, to the particular order of containing vessels, constituted health; their displacement into a series of tubes not adapted for their reception, was the frequent origin of disease. His chemical learning taught him to view, the fluid mass itself, as subject to many variations in tenuity and spissitude. When the consistence became unusually great, the freedom of circulation was consequently impaired, and the state which he denominated *lentor* arose. This was in particular the essence of fever.

Whilst the importance which he attached to the figures and contractile force of the hollow cylinders, and prisms, of which the animal body was in a great measure composed, delighted the Mechanicians, the intestine changes which the circulating mass was incessantly subject to, ingratiated Boerrhaave no less with the chemists. Each was pleased to discover the leading features of his own offspring set off to advantage, and their respective blemishes either veiled, or turned to some subsidiary purpose. Hence all concurred in proclaiming the praises of the Leyden Physician. Partly, no doubt, from intrinsic learning and worth, but principally from this master-stroke of policy, he was placed by general consent on the throne of Hippocrates. He is indeed the only example in the

history of modern physic, where professional envy seems for a time to have been lulled asleep.—The fashionable classification of medicines under such a system, was obviously into such as could change the consistence of the animal fluids, and into such as might facilitate the passage of unsorted particles, along the unaccommodating tubes. Hence a long list of *Attenuantia* was presented to the apothecary, accompanied by their counteracting *Incrassantia*. The refractory molecules of a spherical, cubical, cylindrical, or pyramidal shape, having a tendency at times from mutual attraction, to cohere, *Incidentia* were summoned to dissever this deleterious union.

Besides these great divisions peculiar to his modification of the existing doctrines, Boerrhaave courteously gave a place to most of the other classes, which we have previously described.

It was his notion of viscidity of the fluids that led him to discourage the use of Cinchona, or Peruvian Bark, in febrile maladies, from the apprehension that this substance, though it might give a flattering relief, yet by increasing the morbid spissitude, would eventually occasion great and perhaps incurable obstructions of the viscera. Hence enlarged and indurated liver and spleen, the frequent consequence of severe or mismanaged intermittents, were always ascribed to this concretion of the humours; an event supposed inevitable, if the patient had unluckily swallowed a single dose, of what unprejudiced experience now ranks, among the safest and most efficacious of medicines.

The reign of this discordant jargon was prolonged beyond its natural date, by the industry and learning

of Van Swieten, Boerrhaave's most faithful and distinguished disciple.—The merit of finally entombing this premature eclectic system is due to the celebrated Cullen.

It is not my intention to trace the successive steps, by which the spiritual or nervous Pathology, advanced from its first rude condition to its present state. Van Helmont, and his presiding intellectual Archeus; the more refined autocrateia and nervous fluid of Stahl and Hoffman; Cullen's skilful application of vascular spasm, and the reacting Vis Medicatrix Naturæ; and lastly, the ceaseless flow of vital irritability, and nicely poised excitement of Brown. Each has introduced a peculiar classification of the Materia Medica adapted not to the nature of the articles, but to the peculiar views of the sect; and each has accordingly discovered in Medicines only those properties and effects which would coincide with their preconceived notions of the animal Economy.—Thus we have *Archealia*, substances pleasing to Archeus; capable of rousing him to his superintending duty, when an organic derangement shews that he has been remiss, or of enticing him to return to his post, when playful or capricious. The efficacy of medicines of this kind seems never to have been sincerely confided in, even by the visionary Van Helmont; far less by Stahl, whose plan of cure consisted for the most part, in waiting patiently for the result of the struggle between the disease, and this intelligible protector of health, residing in the living frame. As the bowels afforded a convenient passage, through which the Autocrateia might expel the disease, their state was attended

to with anxious diligence, and when necessary, regular evacuations were procured. It is curious to observe an extravagant hypothesis leading Stahl, a century ago, to the same salutary practice, which has been recently illustrated on simple and rational principles by Dr. Hamilton.

The above remarks may probably induce some to suppose, that the doctrines of Stahl were at least innocent in their practical tendency. If we contemplate them a little more in detail, we shall perceive them giving rise to no trivial errors, in the selection and administration of medicines.—Stahl maintained, that the rational soul of man exercised two very different functions; one constituting the ordinary intellectual operations, of which the individual is conscious; the other conversant in superintending the organic affections of its animated mansion, and conducting its various actions towards the well being of the whole.

This last is the true Autocrateia, or Anima Medica, which incessantly directs, modifies, and defends from injuries, the functions of vitality. The great contest, which by the frail constitution of our organs, this animal soul is destined to wage, proceeds from a perpetual tendency to *plethora* and *cacochymy*. Or to speak in plain language, the salutary exertions of this Intelligence, are ever apt to be oppressed by redundance of the humours, or to be obstructed by their vitiated condition. Its native energies are however so strong, that the safest conduct which a physician can pursue, is like Hippocrates, to cure by expectation; at most, to encourage its efforts by gentle applications, but from no rash presumption, to resort to potent drugs, which

might thwart or supersede the wiser plans of the Autocrateia. Hence the Stahlians had a decided aversion, to Opium and Cinchona. Surely that theoretical phantom which could banish the two most valuable articles of the Materia Medica, has no claim to the appellation of harmless.

The views and methods of Cullen must be approached with respect, and touched with a gentle hand. His plans of gaining proselytes to his doctrines were so artfully devised, and so ardently prosecuted, that a large proportion of the senior practitioners of the present day, belong to his school, and revere his maxims, as the truths of a superior mind.

When stripped of its superfluous, though pleasing attire, the Cullenian Pathology is seen, essentially to consist in a reaction of the conservative power against morbific impressions. These impressions operate chiefly in inducing atony, and a spasmodic constriction, more or less powerful and continued, of the extreme arterial ramifications; which morbid atony and spasm, it is the steady aim of the Vis Medicatrix Naturæ to subdue. An idea little different from this, was previously advanced by Hoffman, but disfigured by the gross conceptions of the Humoral Pathology prevailing in his time.

Cullen further maintained, that there was an intimate consent or nervous sympathy, between the stomach and surface of the body, whence all conditions of the one were necessarily communicated to the other. Thus, *superficial* atony and spasm excited similar affections in the *interior;* and the means which invigorated and resolved the latter, removed at the same time the former.

This atony of the extreme vessels, he supposed to depend on diminished energy of the brain.

In the forty-sixth paragraph of his First Lines of the Practice of Physic, he gives a condensed view of his doctrine of fever, which, with slight modifications, formed his general system of Pathology.

" The remote causes, are certain sedative powers, applied to the nervous system, which, diminishing the energy of the brain, thereby produce a debility in the whole of the functions, and particularly in the action of the extreme vessels. Such, however, is at the same time, the nature of the animal economy, that this debility proves an indirect stimulus to the sanguiferous system; whence by the intervention of the cold stage, and spasm connected with it, the action of the heart and larger arteries is increased, and continues so, till it has had the effect of restoring the energy of the brain; of extending this energy to the extreme vessels; of restoring, therefore, their action, and thereby especially, overcoming the spasm affecting them; upon the removing of which, the excretion of sweat, and other marks of the relaxation of excretories take place." His theory of inflammation is delivered in the following words: " To relieve the congestion from an unusual quantity of blood being thrown into particular vessels, the *Vis Medicatrix Naturæ* increases still more the action of these vessels; and which, as in all other febrile diseases, it effects by the formation of a spasm on their extremities."

It is foreign to the purport of this discussion, to enter into a minute examination of the preceding theory. It evidently rests on so many assumptions, that

the readiest mode of refutation, would be to require proofs of the premises, which a Cullenian would find it difficult to adduce. We may ask, why diminished energy of the brain, arising from sedative powers, should operate less forcibly on one part of the living system than another? Why should this convenient monopoly of atony belong to the extreme vessels alone? In fact, the phenomena of fever demonstrate as great a debility in the heart, as in the ultimate sanguiferous branches. Why does not interior spasm, then accompany or follow this interior atony, as well as it does the exterior? Since no imaginable reason can be assigned against this equal distribution of atony and spasm, the loss of balance in the system, from which Cullen deduces the subsequent train of morbid phenomena, is a gratuitous supposition. As to the Vis Medicatrix Naturæ, it is obviously an imaginary power, conjured up for the occasion; a mode of reasoning, which, however pardonable in Hippocrates, and the ancients, who were wont to ascribe every physical effect to a particular efficient intelligence, is without doubt strangely misplaced, in a philosophical work long posterior to the principia of Newton, and contemporary nearly with the elements of Lavoisier.

In inflamed actions, the *Vis Medicatrix*, has a remarkable duty to perform, namely, to create a vascular spasm, which aggravates the disease. In other cases, spasm is the morbid condition, which the same conservative power kindly endeavours to remove.

It is in reality the *solus spasmus*, and *simplex atonia* of Hoffman*, freed from a few obvious blemishes, and

* Medicina Rationalis Systematica.

set off with new embellishments, which constitute the whole theory of Cullen. There is much less invention in the FIRST LINES of this celebrated Professor, than readers of class-books, have usually imagined. Hoffman, moreover, though still trammelled with the Humoral Pathology in detail, deserves the credit of having clearly seen, and distinctly laid down, the position, that all changes primarily arise from a change in the living solid. This pathological principle, has since been claimed as a discovery by Cullen, John Hunter, and Brown. "Demum omnia quoque eximiæ virtutis medicamenta, non tam in partes fluidas, earum crasin ac intemperiem corrigendo, quam potius in solidas et nervosas, eorundem motus alterando ac moderando, suam edunt operationem." †

In a word, says he, all medicines of distinguished efficacy, exert their action, not so much in correcting the constitution, and acrimony of the fluids, as in altering, and moderating the movements of the solid and sentient parts.

The Materia Medica was now principally consulted, with the intention of discovering substances capable of removing spasmodic action. It was no difficult task for the pliant imagination of Cullen, to recognize a virtue of this kind, in medicines hitherto judged of a very different, nay, opposite nature. Fœtid substances from whatever quarter derived, opium and all narcotics, a draught of cold or of hot water, antimony, ipecacuan, emetics in general, cinchona, essential oils, volatile alkali, wine, &c. all

† Ibidem, Tom. III. Cap. 4.

cured a variety of diseases by their antispasmodic faculty alone.

Agreeably to his favorite doctrine, of nervous sympathy between the bowels and the skin, the stomach could no sooner feel the nauseating, and hence antispasmodic powers of antimony, than the cutaneous exhalants would with common consent unfold their shrunk sides, and become pervious to every exhalation. It might naturally be imagined, that when once spasmodic stricture was fully resolved, the disease occasioned by its presence would also depart. No, truly. Like a demon laid to rest by some mighty spell, spasm only disappeared for an instant, to start forth again in all its horrors, whenever the charm that repelled it, was withdrawn. It perpetually resumed its station, in the arterial capillaries, nor quitted the febrile patient till he died. Colliquative sweats, would indeed persuade an uninitiated observer, that the cutaneous excretories were not spasm-bound. But the adept, would not allow himself to be seduced from his allegiance to his master's theory, by appearances, however imposing to a common judgment. Even should sinking nature sigh for a cordial, the nauseating antimonial draught, the grand specific of spasm, could by no means be remitted. The victim of hypothesis, had finally the supreme consolation, of dying *secundum artem.*

This picture less closely resembles, we readily allow, the practice of the discerning author of the spasmodic theory, than the indiscriminate routine of his admiring disciples. *Quæque ipse miserrima vidi.* It is one of the many examples, with which, alas! the history of medicine teems, where the obvious lessons of ex-

perience, and the safety of the sick, are sacrificed, to a plausible hypothesis. We shall here introduce Cullen's General Table of the Materia Medica.

MEDICAMENTA AGUNT IN

- Solida.
  - Simplicia.
    - *Astringentia.*
    - *Tonica.*
    - *Emollientia.*
    - *Erodentia.*
  - Viva.
    - *Stimulantia.*
    - *Sedantia.*
      - *Narcotica.*
      - *Refrigerantia.*
    - *Antispasmodica.*
- Fluida.
  - Immutantia.
    - Fluiditatem.
      - *Attenuantia.*
      - *Inspissantia.*
    - Misturam.
      - Acrimoniam corrigentia.
        - In genere.
          - *Demulcentia.*
        - In specie.
          - *Antacida.*
          - *Antalkalina.*
          - *Antiseptica.*
  - Evacuantia.
    - *Errhina.*
    - *Sialogoga.*
    - *Expectorantia.*
    - *Emetica.*
    - *Cathartica.*
    - *Diuretica.*
    - *Diaphoretica.*
    - *Menagoga.*

When Cullen began to compare his spasmodic theory, with the general arrangements and operations of medicines, he no longer felt that correspondence between fact and hypothesis, which the phenomena of intermittents had first led him to believe. In this wide field, he could not fail to observe a multitude of objects, which would not quadrate with his general views. This was accordingly the true touchstone; and by consulting his tabular synopsis of the Materia Medica, we shall learn, that here his confidence in his system of Therapeutics forsook him. His candour and long experience on this occasion, burst the shackles of hypothesis.

It may be also observed, that deference to the authority of preceding writers, operated more powerfully on his mind in this particular work, than in his Practice of Physic; since it has led him to abandon his favourite maxim drawn from the school of Hoffman—that the fluids do not suffer change, except through the medium of a changed action of the solids. In fact, his great division of medicines into such as act on the solids, and such as act on the fluids, is an admission of the truth of the Humoral Pathology, which it had been the object of his most vigorous writings to controvert. † And, again, his subdivision of the first class, into those which operate a change on the simple solids, viewed as inanimate; corrugating, strengthening, softening, and corroding them, according to the laws of dead matter; and into those which affect the vital principle; is, to say the least of it, an absurdity, which no person could have expected from the mind of Cullen.

Just as Hume's history of England
invalidated his Deal Theory of Man

Under the head of fluids, we find him restoring the views of Boerrhaave, which he had long laboured to explode. Here he exhibits medicines, as directly altering the consistence of the humours—rendering them thinner or thicker—attenuants and inspissants; or changing their qualities; mollifying their *general* acrimony by demulcents, or correcting three *particular* species of it, the acid, alkaline, and putrid. The alkaline condition seems to have been uppermost in his thoughts, for he is willing to trace the varied qualities even of the nutrientia, or articles of diet, to a combined alkali.

In fine, we cannot help considering the treatise on Materia Medica, which was the work of his latter years, as presenting to a certain degree, a recantation, after mature experience, of those peculiar theoretical views, to which youthful fancy, and an ardent love of celebrity, had given birth. The tabular arrangement, plainly indicates a disposition, rather to relapse into the venerable doctrines of the Leyden school, than by referring every thing to the vital solid, to give countenance to the obnoxious speculations of Brown, which already threatened to drive Spasm out of the field.

It is to be lamented, that the above voluminous publication, should contain so few definite particulars concerning the qualities, and effects of the different medicines; and that it should avowedly want the descriptions of their appearance, and the account of their composition. The prolix dissertations, which introduce his various classes, have now ceased to interest, when the spasmodic fashion is no more. Hence, meagre in the detail of facts, and false, for the most

part, in general views, few modern works can be named of equal bulk and expectation, so injurious to the character of the author, and so unprofitable to the student.

It is here we ought to notice the methodical distribution of medicines of Dr. Francis Home, the venerable Professor of Materia Medica, in the University of Edinburgh. In the new edition of his work, entitled Methodus Materiæ Medicæ, published so late as the year 1792, he has adopted a classification, in which all pathological systems seem incorporated into one promiscuous mass. Resolved to please all palates, he has gathered from every quarter, whatever herbalists and system builders have imagined concerning the powers and affinities of drugs. In the detail, he does not seem to aim at judicious selection. The tendency of his book indeed, is rather to display the vast resources of our art, and the endless diversity of subjects for public discussion, than to exhibit, as might be expected, a *catalogue raisonnée* of remedies, in whose operation confidence might be reposed.

The truth of these remarks on a recent publication from respectable authority, will appear by inspecting the following sketch of its outlines.

His general table consists of two parts; one relating to simple, the other to compound medicines.

The simple are distributed into these nine classes.

1st. Remedies adding to the body. 2 Orders. Food and drink.

2d. ——— Evacuating. 4 Orders. Evacg.
- 1. Secretions.
- 2. Excretions from intestines.
- 3. ——— from vessels.
- 4. Artificial evacuations.

3d. Remedies Changing Fluids.	2 Orders.	1. In consistence. 2. In acrimony.
4th. ——— Changing Solids.	2 Orders.	1. In rigidity. 2. In weakness.
5th. ——— Changing motions of solids and fluids.	2 Orders.	1. Exciting torpid motions. 2. Repressing violent motions.
6th. Remedies affecting the senses.	2 Orders.	1. Temperature. 2. Too great nervous sensibility.
7th. Internal topical remedies.	2 Orders.	1. Of the non-secretory organs. 2. Of the secretory organs.
8th. External topical remedies.	3 Orders.	1. Repellents. 2. Attrahents. 3. Consolidants.
9th. Remedies expelling or destroying extraneous bodies.	2 Orders. Expelling.	1. Inanimate bodies. 2. Animate bodies.

From the medical rank of the author of the above table, as well as from its recent date and apparent completeness, we must surely endeavour to derive some instruction from its perusal.

Home's first class of medicines is evidently accommodated to the notions of Sanctorius, and those Physicians, who propose to cure all diseases by diet alone. Had not some such idea been present to his mind, his fondness for subdivision, would probably have led him to place the Materia Alimentaria, apart from the Materia Medica, as Cullen, and most systematists have properly done. Judicious regimen is unquestionably capable of relieving, and even thoroughly removing, many formidable disorders of the human frame; and when our wished-for object can be thus obtained, less injury is done to the func-

tions, and a more durable state of health is insured, than when it is procured by the less congenial operation of drugs. Yet it is an evident solecism, to enumerate the ordinary food and drink of man, among the articles of the *Materia Medica*.

Of food, he presents three genera; weak, middle, and strong; but between small and potent drink, he admits no mean; judging probably, that in the matter of potation, extremes are unavoidable. Celsus, from whom he borrowed this distribution, does not, however, reject drink of middle strength.

His second and third classes, contain the indications of the Humoral Pathology—which represented diseases, as consisting in plethora and cacochymy—redundance, and ill-condition of the humours. Twelve genera are assigned by Home, to the simple office of lightening the fluid burden; and only six to the more difficult task of ameliorating the depraved state. It is now well ascertained, that the species of morbid change, not long since generally believed in, and taught by the most famous Professors, have no existence in nature. They were merely pathological fictions, suited to the imperfect physiology, and chemistry of the time.

We are next favoured in the fourth class, with the simple practice of the mechanicians, as demonstrated with mathematical parade, by Pitcairn. The human machine, has its rigidity counteracted by two relaxing genera; and its springs restored to their pristine force, by two genera of roborants. The elementary studies of the Physician, under this system, were indeed some-

what laborious; but this labour, was amply compensated by the subsequent facilities of practice.

The *simplex Atonia*, and *solus Spasmus* of Hoffman, lay claim to Home's fifth class of remedies. By an easy transition, it will suit equally well the more modern, and less unfashionable *Asthenia* and *Sthenia* of Brown.

The sixth, seventh, and eighth classes, are wrapt in such obscurity, that I find it difficult to form any definite conception of their objects. They seem entirely independent on any set of medical doctrines ever entertained. What shall we think for example, in considering his eighth class, of three genera of repellents, each containing a copious list of medicines, for driving from the surface to the interior of the body; of three genera, for reversing this order, or warranted to draw outwards; and also of three genera of consolidants. The repellents are of three kinds: Discutients, Cosmetics, and Styptics. The Discutients are ranged as follows;—Sempervivum tectorum; Tremella auricula; Laurus; Sambucus; Bryonia; Astringentia; Camphor; Caranna, Resina; Lacca, Gum, Res; Animi Res; Fex vini Rubri; Acetum; Sp. vini; Albumen ovi; Urina putrida; Lapis calaminaris; Tutia; Pompholix; Plumbum; Mercurius; Sulphur; Ferrum. The Cosmetics are,—Convallaria polygonatum, or Solomon's seal, Ranunculus ficaria, Opobalsum, Benzoin, Ol. Tartari per deliquium.

It is presumed, that this extraordinary jumble, to which the other details of the work under examination, bear too faithful a resemblance, will fully justify the observations with which we commenced. We

may truly say of it, that it combines in a moderate compass, almost every hypothetical delusion, and practical error, to be found in the previous history of medicine.

Darwin's Metaphysical Pathology, I shall not consider. It has been ably refuted by Dr. Thomas Brown.

To complete our historical review of the false and imaginary principles, from which the operation of medicines has been inferred by different systematists, there remains to be discussed only, the peculiar views of pathology, the novel indications of cure, and classification of remedies, consequent to the promulgation of the Brunonian theory.

The principle of *irritability*, which the illustrious Haller demonstrated by numberless experiments, and an ample collation of facts, to be the great and universal characteristic of living beings, was made with certain modifications, the ground-work of the Elementa Medicinæ of Brown. He maintained, that to every animal at the instant of its formation, a definite portion of this vital principle was assigned. The union or association of this substance or quality, however, with matter, organized or susceptible of organization, bestowed merely a *potential* life. *Actual* vitality was a phenomenon resulting from the action on this principle, of certain objects called *stimuli*, from their function of provoking or eliciting, the energies of this otherwise latent power.

About the time when this theory of medicine was framed, the science of electricity had become the leading subject of philosophical pursuit and admiration. If the electrical phenomena did not at first

suggest to Brown, his fundamental notions of the nature of vitality, they at least can afford some apposite illustrations. Idio-electrics, as glass, amber, sulphur, may be said to possess an excitable principle, dormant however and inert, till various excitants be applied, such as the friction of different rubbers. Then excitement takes place, constituting, so to speak, electrical activity and life. This excitement is known to correspond in degree, to the force and extent of the exciting power, and the excitability of the particular electric.

The exercise of thought, the blood and other animal fluids, heat, light, various solid and liquid matters received in the stomach, the air applied to the surface of the lungs, are examples of the stimuli of Brown. When these are withdrawn or cease to operate, first the *actual* phenomena of life vanish, and soon the *potential* life or irritability also disappears. This constitutes irrecoverable death.

To give an air of complete originality to his system, or to obtain a general and expressive nomenclature, Brown exchanged Haller's term of *Irritability*, for *Excitability*, or the excitable principle. It is the office of the various stimuli to *excite* this principle. Hence arises the state of *excitement* or actual life.

The diurnal action of the *stimuli* exhausts, to a certain degree, the excitable principle. During sleep, it is accumulated or restored, against the demands of a new day. Redundant in infancy, it becomes deficient in old age. Hence the excessive mobility of the one, and the comparative torpor of the other, even when the most powerful incentives are applied.

When the number and force of the stimuli bear an

exact proportion to the vigour or abundance of the excitable principle, that due state of excitement is produced, which is denominated health. Yet since every age and person differs as to excitability, each therefore requires a peculiar adjustment of the exciting agents, to constitute the health of the individual. Should the stimuli exceed or fall under this proportion, the excitement rises or falls, so as to verge on the confines of disease. This state is called morbid predisposition.

A considerable increase of *excitement* forms the inflammatory ailments, *phlogistic* of Cullen, and *sthenic* of Brown. The converse of this, or decrease of excitement, either from abstraction, or violent operation of the stimuli, constitutes the atonic or asthenic maladies, by far the larger division of the two, according to the Brunonian arrangement. When the diseased state results from the abstraction of stimuli, and consentaneous accumulation of *excitability*, the debility is termed *direct;* to distinguish it from that morbid condition of *indirect* debility of the functions, into which violent sthenic diseases are apt, when neglected, to precipitate the patient. This last state is occasioned by a great and sudden exhaustion of the excitability. The morbid phenomena, or symptoms in both cases, are however nearly the same.

Various illustrations of these doctrines have been offered by the zeal of Brown and his disciples, a quality for which his school has been preeminent. Excitement has been compared to a graduated scale—the middle point is perfect health—or the just balance between the excitable faculty and the exciting powers.

This state unfortunately is seldom attained, and is of little duration; for mental emotions and surrounding circumstances produce a continual fluctuation in the number and force of the *stimuli*. In vigorous manhood, however, a very considerable rise or fall, if transient, of the excitement-scale, is not incompatible with tolerable health. The poise is more ticklish in infancy and old age. Hence their greater proneness to disease. Like the definitions of weather in the common Barometer, every point in the Brunonian scale beyond the happy mean, has the title of a certain disease affixed.

These doctrines resemble closely in form, and rival in simplicity, if not in clearness, the mechanical position of Pitcairn, that all disorders proceed from undue force or weakness in the organical moving powers. The plan of cure is equally simple. Of this we shall first give a comprehensive sketch, taken from that commentary on the elements of Brown, written by himself, but published anonymously; and then make a few observations on its truth and utility.

"LXXXIV. The indication of the cure of sthenic diathesis is to diminish, that of the asthenic, to increase the excitement; and to go on doing so, till that degree of it, which is a medium betwixt the extremes, and suitable to health, be restored. Universal remedies admit no other indication.

"LXXXV. As both diatheses arise from the same operation of the exciting hurtful powers, varying only in degree; they are also both prevented and removed by an action of the remedies, which is the same, only opposite in degree to that which produced the disease.

The same debilitating powers, which cure any one sthenic disease, cure every one; the same stimulant powers, which remove any one asthenic disease, remove them all. (Elem. LXVII.) Are not palsy, in so far as it is curable, and dropsy in so far as it is an universal disease (LXXIII.); and the gout and fevers, both relieved and removed by the same remedies? And are not the remedies the same also, by which peripneumony, the small pox, the measles, rheumatism, and catarrh, are cured. (Elem. CCCCLIII.) All these remedies are such as in the asthenic case increase, in the sthenic diminish, the powers of life. The operation in both cases is a common one; all the difference is in words, not in the nature of the thing.

" LXXXVI. The remedies of the sthenic diathesis are powers (Elem. XC.) that excite by a stimulus, weaker than that which is suited to health, to be distinguished in the cure, for the sake of shortness of expression, by the appellation of debilitating powers, The remedies of asthenic diathesis are powers that excite with more force, than is requisite to the best state of health; to be denominated stimulants in the practice, for the greater convenience of distinguishing them from the others. (Elem. XCI.) In fine, the application of the remedies is never to be directed to any one place in preference to the rest, as if that were the seat of the disease, in the vain expectation of being of service.

" LXXXVIII. Since every disease, every predisposition, depends upon increase or diminution of excitement, and is removed by the conversion of that, into the middle state betwixt them: to prevent, therefore, as well as cure diseases, we must always practise the

indication proposed, (LXXXIV.) we must always stimulate or debilitate, never desist from acting, nor trust to the powers of nature, which without the external powers are nothing." *

The preceding conceptions of the nature of animal life, of the deviations from the healthy state, and of the means of restoration, are unquestionable proofs of a bold and aspiring genius. They present, moreover, to the student, in a few splendid generalities, such an apparent fund of medical speculation and practice, and they divest the healing art so perfectly, of all its complicated cares, promising to relieve the practitioner at once, of every doubt and ambiguity, concerning the nature and treatment of diseases, that we need not wonder at the rapid diffusion of the Brunonian theory, and its ready reception in particular among ardent minds, impatient of the labour and tediousness of minute research.

Two general forms of disease alone are possible; two general plans are adequate to cure them all. Henceforth, Anatomy becomes merely a curious, but almost superfluous, study to the Physician; and Chemistry in vain offers to analyse, and to direct the composition of medicines. The theorist, delighted to find himself at once possessed of the universal pass-key to all necessary learning, disdains the hackneyed, servile mode, of obtaining a knowledge of the many elements of Medical Science. The minute acquaintance with the structure of parts in the sound and morbid state,

* Observations on the principles of the old system of Physic, exhibiting a compend of the new doctrine.

he leaves to the Surgeon. Wine, alkohol, ether, opium, compose nearly the whole Materia Medica of the Brunonian adept. With these, he declares, that at least nine-tenths of bodily ailments may be combated. Diseases of the sthenic type are, in his eyes, of rare occurrence; and require for their cure, only cool air, a purge, moderate diet, and sometimes a sparing use of the lancet.

Let us now consider how far these pathological notions, and the limitation of the action of remedies, solely to a variable force of stimulation, correspond with the phenomena of disease, and the well ascertained operation of medicines.

And in the first place, though it be sufficiently evident, that the animal maintains at all times, an intimate and necessary relation with numerous exterior objects, no proof whatever is adduced, that the excitement of Brown, or the phenomena of life, are a balanced middle state, resulting from the mutual action of these objects, and the unknown vital principle. This idea is at best a mere hypothesis. We observe the living frame, to consist of a series of organic actions, each perfectly distinct in its origin, nature, and objects. We also perceive, that violent or too long continued exercise of these various functions, is followed by fatigue, exhaustion, and weakness; and that during the subsequent quiescence or repose, the vigour of the different organs of motion and sense, is speedily repaired. Would not an unbiassed mind thence infer, that the excitable principle, to use the Brunonian term, is not a power or substance originally bestowed in a definite degree, at the instant of our formation, other-

wise its exhaustion would be irreparable? Would he not be led to imagine, either that some particular organ enjoys the noble privilege of restoring energy to the whole; or perhaps, that during rest, the unceasing operation of the circulating fluids, replaces every thing nearly in its previous condition?

If we examine the subject more closely, we shall find every different part of the body endowed with a peculiar irritability. The lungs are adapted to the action of atmospheric air alone; the arteries to crimson, and the veins to purple blood; the bladder to urine; and the gall-bladder to bile. One uniform principle of irritability, ought, according to Brown's doctrines, to pervade every animal fibre; and the stimulus of excitability for one part, ought to suit universally, if that power be the same in all. Indeed, the modifications, and particular gradations of excitability, evinced in the above examples, are entirely incompatible with the first principles, of the doctrine of general excitement.

In consequence of the instantaneous diffusibility of the excitable power, it is no sooner abstracted by stimulation of any kind, from one point of the animal, than the general amount is affected, and a new scale of the equilibrium of excitement takes place throughout the whole. This idea of Brown, is evidently borrowed from the well known doctrine of the equilibrium of temperature. In a connected system of bodies, when caloric is added to, or abstracted from any one, the whole suffer change, and acquire a new scale of uniform temperature. But surely no sound reasoner would venture to assert, that caloric, and irritability,

are governed by the same laws. It is, however, by such loose popular analogies, that the progress of rational physic, and particularly of the Materia Medica, has been hitherto so grievously retarded.

In the living animal, we cannot recognize the establishment of any such common equilibrium. We perceive the fatigue or disorder of that particular organ, which has been severely exercised; whilst the other neighbouring functions frequently proceed with unimpaired vigour.

While the excitability of the stomach is exhausted, by the stimulation of the food, in its conversion into chyle, the contiguous intestines with their lacteal vessels, reserve their excitability unimpaired, for the ensuing process of forming and absorbing the chyle. These, after a period of excitement, falling into repose, leave to the adjoining great guts, their undrained stock of excitable principle, as is evinced by the vigorous peristaltic motion, whereby they propel the fæcal matter. In this and similar phenomena, there appears an inherent irritability of each particular region, a *partial* excitement, rather than the diffusible equilibrium of Brown; which requires that the exhaustion or excitement of any one organ, should speedily induce a corresponding exhaustion or excitement over all.

Undue excitement and its consequence, indirect debility of the organ of sight, should enfeeble and blunt the senses of hearing, smelling, taste, and touch. On the contrary, it is often found, that when one organ is exhausted by violent exertion, the others acquire additional force and mobility. Brown's theory of

equilibrium derives all its plausibility from the intimate consent, existing between the stomach and the rest of the system; it fails of course, when we attempt to apply it to the functions in general.

If we next compare the Brunonian hypothesis with morbid phenomena, we shall find this equilibrium of excitement, equally unsupported by facts. When for example, the system has long been labouring under the direct debility of Brown; when it has been enfeebled by cold, low diet, grief, and other depressing powers; when it has even been exhausted during the course of intermittent or Typhus fever; it is no uncommon thing, for some particular organ, from sudden alternation of heat and cold, to pass into a state of acute inflammation. The chest, the fauces, the muscles round the great joints, the eyes, various parts of the surface of the body, are all subject to such morbid attacks. This sudden supervention of sthenic diseases, on extreme asthenic diathesis, without any possible means, whereby the excitement could be raised through such an intermediate range of the scale, is a fact certainly fatal to the Brunonian doctrine; according to which every subordinate or local disease, must participate in the sthenic or asthenic nature of the constitutional affection.

That the above inflammatory ailments, are truly opposite in their essence to the general disease, is clearly proved, by their yielding readily to the antiphlogistic or asthenic plan of cure, topical blood-letting, vesication, purging, &c. and being aggravated by wine, opium and other stimulants.

Catarrh, a pure sthenic disease, according to Brown, and its formidable train of pulmonary disorders, fre-

quently seize the poor labourer, whose diathesis is that of direct debility, as is evident from his wan and emaciated countenance, his relaxed frame, and feeble pulse. The usual cause, moreover, cold with moisture, is such, as ought rather to aggravate the asthenic state, than to change it into the opposite condition of exalted excitement.

By the Brunonian hypothesis, when the excitement is morbidly increased or diminished, there ought to be exhibited always at the same point of the scale, the same forms of general derangement. Now, intermittent and Typhus are ranked merely as two successive stages in the same diathesis of direct debility. If we use the contigrade division, and style the middle point fifty, that of health; then thirty, may be supposed to represent the degree, of a moderate intermittent fever; and twenty that of Typhus. But Typhus fever, in favourable circumstances, may be so mild as to stand in the excitement scale, much nearer to the point of health. It is obvious, therefore, that when it rises, suppose to thirty, it should constantly assume the form of disease corresponding to that point, namely, intermittent; or in plain language, no person should recover from Typhus, without passing through the intermediate modifications of disease, in the ascending scale of excitement, between twenty and health. Brown himself employed, for the sake of popular illustration, Reaumeur's division of the scale into eighty parts; forty constituted health; rising above which to seventy, was sthenic diathesis; above this, existed the diseases of indirect debility. The range below forty, compre-

hended direct debility. The beginning and end of the scale were death.

The descriptions of diseases, faithfully copied from the sick bed by Hippocrates, Sydenham, and Heberden, demonstrate to every unprejudiced mind, that these successive morbid transitions, are altogether fictitious; unlike in every respect to the appearances in nature. Hence alone, a satisfactory refutation of the above hypothesis.

All medicines were viewed by Brown, as having a common stimulant operation, on the living body; but each as exerting it in a different degree. Opium affected the excitability, or raised the excitement most strongly, whence it was placed at the head of his list of exciters or stimulants:—Next came ether, then alkohol, and so forth, in the order of their exciting powers. An over-dose of any one carried the excitement beyond the sthenic point, into the range of indirect debility. Thus was accounted for, the state of languor and stupefaction, consequent to undue stimulation from opium and intoxicating liquors. Since there existed in reality, no other means of affecting the principle of life, but by stimulating the excitability, and since their different faculty of performing this, formed the sole difference of medicines, any one might evidently, by a suitable proportion of its dose, become a substitute for every other. Hence it was a matter of indifference, whether the cure of asthenic diathesis, was attempted by wine, alkohol, ether, or opium; provided the Physician carefully kept in mind, that a grain of the last, was equivalent to a pint of the first, to two ounces of the second, and to a drachm of the

third. Behold, at length, the mystery of Physic reduced to the simple prescription, of drams of different intoxicating powers! The practice in asthenic disease was equally palpable and uniform; the abstraction of the ordinary stimuli; blood, food, heat, light.

Brown's association of medicines into a single class of stimulants, pervades, more or less, all the recent tables and systems of the Materia Medica; such is the precipitate love of plausible method, and of ideal simplicity in the medical world.

In commenting on this corollary of the Brunonian system, for the right comprehension of which, our preceding pathological sketch was indispensible, it is needless to inform any person at all conversant in the administration of medicines, that his fundamental doctrine of their possessing no difference of operation, except that of degree, is altogether false. So remote from the truth is this position, (the only one compatible with his theory) that there exists no useful medicine, which does not exhibit a marked peculiarity of action. This peculiarity is hostile, and, indeed, totally irreconcileable, to his views of an universal and indivisible excitement.

Further, as the indirect debility occasioned by a considerable dose of opium, alkohol, &c. is the inevitable sequel of a preceding state of inordinate excitement, and as all effects are proportional to their causes, so this asthenic condition ought to correspond exactly in degree, to the amount of the previous excitement. A minute quantity of opium, however, which produces hardly any perceptible exhilaration of mind, or stimulation of the arterial system, will rea-

dily induce a soporific languor, far greater than what follows a high intellectual and corporeal excitement from wine.

Compare alkohol and tincture of digitalis. Will the latter, by any dilution or modification of dose, prove a succedaneum to the former? But shall it be said, that digitalis is not a stimulant? This language cannot be held by a Brunonian; for whatever power it exerts on the excitability, must be only that of an exciter or stimulant. Like opium, it produces depression and torpor of the functions, or indirect debility, a state unattainable without previous excitement.

But this stimulant, digitalis, is capable of inducing and maintaining a permanent asthenic condition, beneficial in sthenic and phthisical ailments. Will opium supply its place here? will not its copious and repeated use quicken, instead of retarding, the pulse? Again, digitalis frequently acts with such efficacy on the lymphatic or urinary system, as to procure the discharge, in a day or two, of the liquid of hydrothorax, or anasarca, which has been accumulating for months. Shall we administer opium with similar hopes and intentions? The physician who should do so, would certainly become a laughing-stock to his brethren.

We may next compare the action of Cayenne pepper, or ginger, with opium. That the two former articles are stimulating, even common language testifies; they *must* operate, like every other medicine, on the excitable principle; they *must* raise the excitement; and, if administered in a large dose, *must* precipitate the system from the high sthenic into the asthenic diathesis, just as opium is known to do.

Hence the constitutional state being identical, the feelings and symptoms from both must correspond. Experience, however, proves the effects to be extremely dissimilar. The pepper and spices will excite strongly the epigastric region, will diffuse a glow of heat over the frame, will accelerate and sharpen the pulse, and will eventually weaken the stomach; but, alas! in no dose will they create, like opium, the ecstacy, delirium, and oblivious torpor of intoxication.

These examples, which might be multiplied at pleasure, by a particular survey of the Materia Medica, are utterly irreconcileable with the Brunonian account of the operation of medicines, and are, at the same time, subversive of the first principles of the system.

We must not conceal, that some attempts have of late years been made, to accommodate the doctrines of universal excitement, with the partial and diversified action of different medicines. Accordingly, we are presented with medicines possessed of a diffusible or partial, permanent or transient, power of stimulation. This contrivance reminds us of the ancient tyrant, who stretched or curtailed the victim of his rage, to suit the measure of his iron bed. Let us revert a moment to the standard of the Brunonian creed. There we are told, that excitability is a simple, universal, and indivisible principle; in its essence eminently diffusible; that, therefore, it can be neither redundant nor deficient in a single part, for any space of time; and that, finally, it can be operated on only in one way, that is, by stimulation, of greater or less intensity. Hence, the operation of medicines

is necessarily restricted to difference of intensity, and not to difference of kind; for this would imply different kinds or modifications of the excitable principle; an opinion diametrically opposite to that of Brown.

That all substances, common as well as medicinal, can act only by raising excitement, is an assumption equally gratuitous and arrogant, with that of a purblind philosopher, who should insist, that all the phenomena of vision consisted in the stronger or weaker impulses of light. With regard to the vital springs of the Animal Economy, we are, it must be owned, nearly in the predicament of this theorising optician. His system of optics would be accommodated to the limited stock of his ideas; and though it took no cognizance either of colours, or of the configuration of bodies, which are the main objects of vision, yet he would probably maintain, that, from the stronger and weaker impressions of light alone, all the phenomena of vision, all the functions of the eye, could be accounted for in a satisfactory way. With a little eloquence and address, he might also succeed in gaining some purblind proselytes to his opinions. It will readily be acknowledged by all men of candour, who have made the science of Medicine their particular study, that the above illustration is perfectly applicable to the latest theories of vitality; a subject concerning which we are still too much in the dark, to make it the ground-work of a general system of Pathology and Therapeutics.

In entering into so detailed an examination of the system of excitement, our only object was to put students on their guard, against that seductive exterior,

which has too often induced them to quit the only solid foundation of professional eminence and respectability,—an accurate acquaintance with the various sciences, subservient to the practice of Physic. This indispensible knowledge can be obtained only by elaborate research, and earnest application to particular facts; whether these relate to the structure of the body, to the history of disease, or to the nature, composition and administration of remedies.

The skilful management of disease, demands all the information which the utmost diligence can procure in a series of years; and, therefore, nothing can be more fatal to youth than to squander, in the admiration of a pleasing bauble, that leisure, and those meditations, which ought to be given to the cultivation of substantial science. There is no department of Medicine, to which the Brunonian hypothesis has been so injurious as to the Materia Medica. Here its direct tendency was to supersede the necessity of study altogether, by representing all the articles it contains, as belonging to one family: and by maintaining, that the minute differences in their nature and action, were unworthy of regard. The consequence was, that cinchona, and many other remedies, possessed of the most valuable powers, were neglected and vilified, not only by the *inexperienced* author of the system, but, what was of more consequence to mankind, by his practising disciples.

It is universally allowed, that methodical arrangements, when cautiously framed on philosophical principles, eminently facilitate the acquisition, retention, and application of science. Botany and Chemistry afford the noblest proofs of this position.

Having taken a deliberate survey of the principal classifications of the Materia Medica, which have flourished in the different periods of the history of Medicine, we have uniformly observed, that crude conceptions of Pathology have been the source of their innumerable errors and imperfections. Systematists have continually inverted the natural order of proceeding. Instead of ascertaining, first of all, by repeated trials, the precise effects of each substance on the human body, in health, and in its various morbid states, they contented themselves with guessing at some ideal virtues, which would suit their favourite doctrines.

Deeply impressed with this important truth, let us endeavour to pursue the inductive method of investigation so earnestly inculcated by Lord Bacon, but heretofore, too seldom employed in medical researches.

When we begin to compare together, the ascertained effects of different medicines on the body, the first circumstance which solicits our regard, is the difference in the extent and suddenness of their operation. The influence of one, is speedily extended over the whole system, while that of another, seems to be slow, and concentrated to a particular region. Aloes and opium furnish excellent illustrations of the preceding remark. The former, even when taken in solution, which, when practicable, is the proper state for all comparative trials of medicines, seems, for some time, to be inert; no new sensation whatever is experienced; the stomach, pulse, and other functions, remain as before; till, after the lapse of a few hours, slight gripes and pressure in the lower belly indicate the

result of its secret operation. This is limited, in a great measure, to the last portions of the intestinal tube; for the stomach and small guts seem callous to its impression, as it slowly passes through them. Not so with opium. In substance or solution, to whatever point it be applied, but particularly if received in moderate dose into the stomach, the most distant parts immediately feel its energy. It is, however, on the mind that its impression seems strongest. The train of ideas proceeds with increased celerity, every conception is unusually vivid, the various external senses become more acute, the heart throbs quicker and fuller, and the whole moving fibres feel possessed of extraordinary force and mobility. This invigorated tension of mind and body, is soon to be succeeded by general relaxation and torpor, conspicuous chiefly in the sensorium and voluntary muscles. The functions, independent of will, as circulation, respiration, and secretion, are, meanwhile, affected in a comparatively slight degree.

Many substances, besides opium, exhibit, but with shades of difference peculiar to themselves, this power of steeping the senses in forgetfulness, usually preceded by the pleasurable feelings of intoxication. It is to be carefully noted, however, that, in many cases, the exalted state of exhilaration is very transient, bearing no proportion, either in degree or duration, to the subsequent stupor; nay, sometimes this apoplectic condition appears to be the direct and instantaneous result of the administration of the drug. The atropa belladonna, or deadly nightshade, for instance, whether internally exhibited, or externally

applied, produces almost immediately paralytic symptoms. In the former case, tremulous tongue, babbling speech, faculty of deglutition impaired, or entirely suspended; anxious efforts to vomit, but unavailing from the defect of muscular power; wild wandering of the thoughts—all demonstrate the cerebral and nervous system, the fountain of sense and voluntary motion, to be directly exhausted or enchained. And in the latter circumstance of external use, a drop of its infusion, insinuated within the eye-lids, speedily deprives the pupil, while the sensorium remains unaffected, of the faculty of contracting on the impulse of light, a faculty which, without consciousness or fatigue to us, is exercised many thousand times in the day. Yet it has been attempted to turn these deleterious qualities to advantage. Reimarus employed this paralysing plant to prepare the eye, by dilatation of the pupil, for the easier passage of the crystalline lens through it, in the extraction of the cataract.

The preceding observations fully justify us in asserting, that there exist, among the most analogous medicines, differences sufficient to entitle them to a more scrutinous investigation of their individual powers, than has been heretofore bestowed. Nothing has been so hostile to this research, as the practice which has been almost invariably adopted, of contemplating the Materia Medica through the dark and distorting medium of system.

The classification now respectfully submitted to practitioners and students of Medicine, has been accommodated to no views of Pathology, but framed

from the Materia Medica itself, by a deliberate comparison of the usual, and authenticated operation of its several constituents. It is presumed, that an inductive plan of this kind carefully executed, may be of considerable service to the acquirement and practice of the healing art. By ranging together substances of similar powers, we shall be more easily able to determine, both the qualities in which they agree, and their specific differences. This discrimination may lead to a more skilful appropriation of medicines, to peculiar shades and modifications of disease. It may also enable us to make a juster estimate of their relative efficacy; and when the usual practice fails, to multiply the chances of cure, by a well directed substitution of corresponding remedies. It may contribute essentially, to counteract the formation of that monotonous routine, into which too many practitioners are apt to fall. The bare inspection of the table of classification, will tend to keep in mind, or to suggest those diversities of constitution and disease, which require a peculiar nicety of treatment.

The various functions are so closely interwoven, that it appears at first sight impossible to operate a change on any one, without affecting the whole. Though this position is undoubtedly true; yet there are some limitations worthy of notice. Thus, for example, many mild cathartics scarcely affect the exquisite sensibility, even of the stomach; and concentrate their action on the intestinal tube, without producing any direct effect on the general system. Squills and cantharides in minute quantity, act powerfully on the urinary organs alone. These substances, and many

more which might be enumerated, exhibit a determinate locality of action. A great proportion, however, operate on the system at large.

Hence, two natural divisions of medicines; the first division containing those which diffuse their efficacy, pretty equably over the whole frame; the second, those which manifest a determination to some particular region. If we again diligently inspect our list of general, or as we may term them, systematic medicines, we shall find several well marked differences between them. Many, like opium, whether applied to the stomach, the rectum, or even to the external surface, speedily affect the cerebral functions, or sentient principle, with universal torpor, while the sanguiferous functions, of equally general importance, to the animal economy, proceed without disorder or diminution.

And again, the motive organs, comprehending the vascular and muscular systems, may suffer change from medicines, which have little or no effect on the brain and nerves. Alterative courses of mercury, arsenic, guaiac, affect very powerfully the heart and arterial ramifications, without any perceptible alteration of the sensorial functions. Lemon juice, iron and catechu, remedies which give no perceptible cerebral excitement, are capable of removing very formidable degrees of muscular weakness and relaxation.

The phenomena of some diseases too, as well as the operation of the above and similar medicines, evince a mutual independence, greater than their apparent mutual connection and subserviency in the healthy state, would warrant us to expect. The paralytic limb, over which the cerebral power acts very feebly, as is

evident from the total loss of feeling and voluntary exertion, still displays with inconsiderable diminution, the vigour of the vascular system, comprehending under this title, arteries, veins, and lymphatics.

Considerations of this kind naturally lead us to arrange *general* medicines into two orders, according as they exert their primary and principal action, on one or other of these two great functions of life, the sentient and the motive. Under the first, we would place all medicines which speedily affect the mind and nerves. Under the second, all those which operate a change more slow, but also more durable, on the motive functions.

The SENSORIAL order may be subdivided into three classes.

The FIRST class comprehends those well characterized substances, denominated Narcotics; whose regular effect is to produce general torpor of the sentient system, commonly preceded by an evanescent state of exalted energy of thought and feeling. This previous condition is not indispensible however, for laurel water, digitalis and hydrosulphuret of ammonia, seem to be direct narcotics.

A great variety of vegetables are endued with this torpifying, or to use the synonymous term derived from the Greek language, this *narcotic* virtue. It chiefly resides in the leaves, root, flowers, seeds, capsules and kernels of fruit. The bark and wood seldom contain it. Water extracts it completely. In one case only, does it rise in distillation; that is, from bay laurel; disclosing the singular fact, that this plant owes its fragrance and dangerous properties, to that

chemical product called Prussic acid, usually obtained from the igneous decomposition of animal matter, in contact with alkali.

The narcotic vegetables differ remarkably in smell. The odorous effluvia of some, as poppy and hops, are capable alone, of inducing drowsiness and sleep. Others, for instance, deadly nightshade, and yellow leaved rhododendron, have hardly any odour. The smell of a few is fragrant; in the greater number, however, it is disagreeable and oppressive.

The primary curative indication of narcotics is to allay morbid irritability. This constitutes the essence of some diseases, and when it occurs as a symptom, always aggravates the danger and distress. When the irritability proceeds from increased action of the vascular system, or from active inflammation of any organ, narcotics ought either to be avoided entirely, or should be administered with caution, and after the main disorder has been considerably subdued.

In Typhus fever it requires nice discrimination to ascertain, when the subsultus tendinum and other marks of disordered sensibility, are connected with vascular affection of the brain, or result merely from nervous disease. In the former case, narcotics, opium and camphor, for example, are extremely prejudicial; in the latter, if administered liberally, they operate like a charm. With the above exception, there is hardly any disease, in which narcotics may not at times be beneficially prescribed. In intermittent and Typhus fevers; in the advanced stage of exanthemata, where extensive irritation prevails; in retrocedent gout; in severe coughs; in asthma; phthisis; mania; tetanus;

hydrophobia; paralysis; hysteria; in all passive profluvia and hæmorrhagies; in gangrene; and a multitude of local ailments. Most narcotics are virulent poisons; yet some of the most dangerous have been prescribed with apparent benefit in desperate maladies. Stoerk of Vienna, was the first who administered such medicines extensively. From varieties in the plants, in the mode of gathering or preserving them, or from some fallacy in his observations, the pleasing expectations raised by his account of their virtues, have been rarely realized in this country. That they are deserving of a more minute investigation, is evident from the singular powers displayed by that vegetable infusion, the empirical eau medicinale D'Husson. Besides the predominant narcotic quality, many of them have particular determinations, acting powerfully on the stomach, intestines, or kidneys.

A number of substances are capable of speedily heightening the general sensibility, without being followed by much, and sometimes scarcely by any perceptible, languor or stupefaction. Of this, we have examples in ether, ammonia, some of the pungent volatile oils, carbonic acid, coffee, tea, &c. The above difference is of such importance, as to entitle them to be ranged in a separate class. They may be denominated Exhilarants.

In sudden or great depression of the sensibility, exhilarants may be liberally used. They serve also to counteract the disagreeable influence of many medicines on the stomach, and therefore, may properly be combined with them in mixtures, powders, electuaries, or pills. The operation of exhilarants being

of little duration, they can seldom be confided in, alone, for the cure of disease. The relief of urgent symptoms, of the nature above described, is all we can expect from their use. The old class of carminatives possessed analogous powers. They may be continued for a considerable length of time, with much less injury to the general health, than the preceding class, which are apt to create a habitual desire of indulging in them, very hurtful to the vigour of the system, and particularly detrimental to the digestive organs.

Besides these two definite classes of medicines, acting conspicuously on the sentient system, there is a third family which claims a similar position. The groupe alluded to, combines with a pungent and heating operation of a diffusible nature, a peculiarly fœtid smell. As the morbid condition which they have been thought capable of removing, is often accompanied with inordinate or spasmodic actions of certain parts, they have been styled Antispasmodics. Hysteria, with its long train of anomalous affections, Typhus, subsultus tendinum, pertussis, hiccup, vomitings, are the cases in which they have been principally employed. Great obscurity unquestionably prevails concerning their mode of acting; yet their nature is sufficiently characterized to require a distinct collocation.

Our SECOND great division of general medicines, exercises a particular action on the vascular and muscular systems. We do not pretend to define the precise number of modes, in which these functions may be affected by different medicines, or the variety of

changes of which they may be susceptible, either from disease, or by the art of the Physician. The only justifiable plan of procedure in this important inquiry, is to ascertain the unequivocal operation of different medicines, and when we find a certain number produce, with tolerable uniformity, a similar result, to range them together, and give them a characteristic appellation.

Two distinctions of some consequence must be mentioned, relative to their action. One set are prompt in their operation, instantly exciting a glow, which spreads from the stomach, the point to which the substance is first applied, over the whole frame, raising the temperature of the body for a considerable time, and quickening the motions of the heart. They are easily distinguishable from the exhilarants, which they most nearly resemble, by the diffusion, though quick, being less immediate, and by its having nothing of that thrilling feel which the exhilarants produce. Likewise, though the removal of languor, and the production of genial warmth, which this new groupe effects, be pleasurable sensations, yet they want the character of hilarity, which the former class generally displays.

The assortment to which we now allude, usually occasions a lively pungency in the mouth and fauces. Hence, as well as from the nature of their ulterior operation, the term Stimulant seems unexceptionable. Arsenic and mercury, when slowly and cautiously administered as alteratives of morbid condition, exhibit the characteristic qualities of the class. While they enliven the moving fibres, no person can suspect

them of exerting any narcotic, exhilarant, or antispasmodic power. It is, however, in the vegetable kingdom, that the features of this groupe are most perfect. Mezereon, the peppers and spices, ginger, guaiac, canella alba, and the hot balsams, will serve as examples. The stimulants are accordingly defined; medicines exciting strongly, and somewhat durably, the moving fibres, particularly the arterial system, and raising the animal temperature.

The diseases in which this class may be peculiarly beneficial, are those of the chronic and lethargic type, unaccompanied by organic congestion or enlargement: dyspepsia, chronic rheumatism, atonic gout, partial paralysis, the sequelæ of typhus, intermittents, exanthemata of the typhoid type, gangrene, &c. The vegetable stimulants, are well adapted to rouse speedily the vascular system. From the peculiar force of their impression on the stomach, and from their general stimulation being of little permanence, though much less fleeting, than that of our first great division of medicines, they ought to be used, chiefly to prepare for, or to assist other remedies of a power more durable, and more congenial to the ordinary functions of life.

These last desirable qualities are enjoyed in perfection, by our next class—the Tonics; medicines, which without any sudden or manifest action, increase the strength of the system. In vegetables, this invigorating power is connected with the presence of bitterness, a proximate principle, existing in a tolerably pure form, in gentian, colombo, quassia. The curative indications, which this class is capable of accom-

plishing, coincide nearly with the preceding. They are peculiarly calculated to remove morbid relaxation of the moving fibres, indicated by general flaccidity of the flesh, sense of weakness, by feeble pulsation, either unusually rapid or slow, pale or sallow complexion, dull eyes, sunk features, emaciated frame and a digestion weak or depraved.

The diseases in which such symptoms predominate, are of the most common occurrence; and fortunately for mankind, the Materia Medica is peculiarly rich in their appropriate antidotes. Sometimes the bitter principle is united in plants, with a certain degree of the aromatic and astringent quality, and this native combination furnishes the most elegant and efficacious remedy. It is impossible for us, in the present state of our knowledge, to give any satisfactory explanation of the nature of that salutary change, which tonics induce on the system. That they are general in their operation, is proved by the almost instantaneous power displayed by cinchona, the most valuable substance of this class, in suspending or entirely preventing an approaching paroxysm of intermittent. To obtain the full effect of cinchona, and analogous medicines, they ought to be administered, if possible, in substance, or if their powder should disagree with the stomach, in the form of watery infusion, warm or cold, the latter being the more grateful of the two. Besides intermittent fever, the disease for which cinchona was long deemed a specific, though it is now ascertained, that a mixture of any bitter with an astringent, will form a tolerable substitute, tonics are prescribed with eminent success in a vast number of diseases. In inflam-

matory diathesis, their use is very questionable, though Dr. Haygarth, an experienced practitioner, has recently celebrated the virtues of cinchona, even during the unabated violence of acute rheumatism. In all visceral inflammations of the head, chest or abdomen, they are certainly prejudicial.

To enter into a detail of the various diseases, for which tonics may be advantageously prescribed, would, with the above exception, lead me to enumerate, almost every disease, general or local, to which the human body is subject. The great obstacle to their exhibition, is their bitter taste, repulsive to many patients, particularly as they must be used for some time, and in considerable quantities. We hope the practitioner may derive advantage by consulting the progressive series, in our table, since it will enable him to reconcile the palate and stomach by diversified substitution, a circumstance in itself of consequence, since habitual use is apt to impair the efficacy of the most valuable medicines of this class. By varying the individual, the species exhibits its happiest effects. It may appear strange, that we have terminated our list of tonics, with vegetable acids. Their extraordinary and well attested virtue, in curing the lowest state of chronic atony and relaxation, to which the human body is liable, namely, sea scurvy, fully entitles them to this place in our arrangement.

The moving fibres are invigorated also, or morbid debility is removed, by several substances of the mineral kingdom. A number of the metallic oxides, salts and the mineral acids, enjoy this faculty in pre-eminence. The cure of obstinate agues by ar-

senic, the relief of gastrodynia by bismuth, the occasional benefit derived from preparations of silver, copper, and zinc, in epilepsy, and above all, the propitious agency of iron, in its various chemical forms, on the debilitated frame, concur in claiming a subdivision for mineral tonics. Subjoined to these, are some subsidiary adjuvants, possessing no mean tonic powers. The cold bath, and well regulated exercise in the open air, form the most powerful of these aids.

The preceding two classes of our second grand division, though they comprise the most prominent agents on the moving fibres, do not by any means present the whole modes, in which it is possible by medicines, to affect this department of the animal economy.

That proximate principle of vegetables, from its chemical action on the skin of dead animals, denominated *Tan*, has also a considerable and peculiar effect on the living system. The generality of this operation, is inferred from the diffusive power speedily exerted, of corrugating, and condensing the relaxed vascular system, in passive hæmorrhagies and profluvia. By what medium, whether of the nerves, muscular fibres, or blood vessels, this astringent power is communicated from the stomach, to the remoter parts of the body, it is needless to conjecture. We know, that substances strongly possessed of this quality, whether from the vegetable or mineral kingdom, if held even in the mouth, excite a feeling of corrugation or shrinking, which soon extends over the frame. Who can pretend to explain the disagreeable sensation, which arises in the teeth of many persons, on hear-

ing that hissing sound produced by sliding the finger across glass, or a smooth table? In delicate constitutions, the effect of this apparently trifling cause, if continued, is capable of inducing even general convulsions.

Let us therefore rest satisfied with the simple fact though obscurely accounted for, or perhaps not at all, that some substances can counteract relaxation of the living fibres. We shall therefore have, under the title of astringents, a class, divided like the preceding, into two subordinate parts, according as the ingredients are furnished by the vegetable or mineral kingdom. Catechu, which is, according to Sir H. Davy, almost pure tan, as also kino, are the most convenient and agreeable of the vegetable astringents. Of the mineral substances employed to corrugate and condense, common alum is the safest internal remedy. The salt of lead can only be had recourse to, in extreme cases of intestinal or uterine hæmorrhage. In diarrhea, when the evacuation seems to be occasioned rather by morbid irritability, than by diminished tension of the vessels, narcotics, either alone or conjoined with astringents, must be resorted to.

The next mode in which the sanguiferous system is distinctly affected with a curative view, is the allaying of morbid heat. This has been attempted, but on illusory grounds, by various saline preparations. At present, little confidence is reposed, by well-informed practitioners, in any means for effecting this important purpose, except the free affusion of cold or tepid water over the surface of the body, or the liberal use of cold and acidulous drinks. Under the

following conditions, first clearly stated by Dr. Currie of Liverpool:—1st, that the temperature be steadily above the natural standard of 98, by 2 or 3 degrees; 2d, that there be no sense of chilliness present; and 3d, that there be no perspiration; the use of aqueous affusion is eminently beneficial.

The diseases in which heat is morbidly accumulated, are all of the febrile tribe: Typhus, scarlatina, the incipient stage of measles and small pox. This remedy is contra-indicated by organic inflammation. Its use is also questionable in phlegmasiæ, in which the desired object of refrigeration, is generally sought by copious depletions of the sanguiferous and exhalant systems, by the lancet, cathartics, diaphoretics, and the free access of cool air on Sydenham's plan.

To dilute the mass of circulating fluids, formed once a celebrated plan of cure, under the preposterous name of the Diæta Aquea. The state of the blood drawn from the vessels of persons labouring under the phlegmasiæ, indicates a deficiency of the serous parts of this compound fluid. Whether this morbid redundance of the crassamentum, which certainly augments the vascular action, can be diminished by swallowing diluents largely, I do not pretend to determine. Those who wish to investigate this subject, will find some ingenious observations on it, in Dr. Pearson's elaborate Treatise on Mineral Waters. Cullen and others have given an extensive list of diluents. There is, in fact, however, only one diluent, namely, water, which we may disguise by various acids, or mucilaginous additions.

Our second tabular division contains those articles of the Materia Medica, which have their action directed or concentrated to a particular organ. And while we willingly admit, that in the vital circle, nothing is insulated, nothing can be changed, without the whole body participating more or less in the change; yet, certain and powerful actions may unquestionably be excited in certain regions, whilst the rest of the system is comparatively undisturbed. The substances capable of producing this limited operation, have occasionally been termed topical remedies. We cannot however affirm, that either diaphoretics or emetics are local, since their effects extend over the whole body. The appellation of organic, seems free from any ambiguity or objection of this kind, since each groupe of our second division has a characteristic reference to a particular *organ*.

We begin with the most extensive organ, the cutaneous, or the organ of perspiration. Emetics, combined with opium, are the leading individuals of our ninth class. Some pungent saline preparations, particularly of ammonia, as well as several stimulants, exert also an operation of this kind. They all require to be aided by external heat, in order to obtain the full effect of sweating. The chief object of this operation seems to be, to restore the free action of the exhalants. Many diseases, as catarrh and rheumatism, probably derive their origin from suppressed perspiration. Exhalation is the grand process employed by nature, for moderating the temperature of the animal body, and it is, at the same time, an extensive excretory of matter from the circulating sys-

tem. When incautiously checked, heat will morbidly accumulate, and the fluid matter which previously escaped from the skin, will either continue in the vessels, and by its mass, augment their action, or else it will be attempted to be thrown off by the exhalants, in the lungs or intestines. From the first cause, that muscular and membranous disorder, called rheumatism, and, from both conjoined, catarrh and colic may proceed. Whatever probability may be in these observations, it is well ascertained, that diaphoretic medicines are capable of relieving and removing the above diseases. In many eruptions without fever, the same curative method is beneficial. For the particular conduct of diaphoresis, we refer to the directions at the end of the ninth class.

In acute inflammation, bleeding, and other depletions, ought generally to be premised.

The 10th, 11th, 12th, 13th, 14th, 15th and 16th classes, do not seem to require any particular comments. Their distinctions and definitions, it is hoped, are sufficiently correct and appropriate. Our order of progression is, after cutaneous remedies, to proceed to the organs in the superior part of the body, and thence downwards.

The stomach may be considered either as a living organ, or as a mere receptacle. Under the first view we treat of emetics—under the second antacids. The manner in which the various vegetable and mineral substances, denominated emetics, produce that singular series of actions in the stomach, diaphragm and abdominal muscles, which we style vomiting, is al-

together unknown. Various hypotheses have been advanced by ingenious men, but they are all unsatisfactory.—That the muscular fibres of the stomach, and even of the duodenum, have the ordinary direction of their motions inverted, is sufficiently obvious; but no person can assign any reason why this change should be effected, by the active matter of ipecacuan, whilst the no less active matter of jalap, has precisely the opposite power of quickening the direct peristaltic motion of the alimentary canal.

Leaving this inquiry, which is more curious than profitable, let us see what those morbid conditions are, for which emetics are indicated.—The first and most obvious, is to procure the discharge of poisons, and other noxious matters directly from the stomach. There is a depraved state of this viscus, called Dyspepsia, in which the ordinary food is often converted into fermented products, instead of healthy chyme. The evacuation of this matter by a gentle emetic gives such relief, that the sufferer is willing to repeat the remedy too often, whereby the vigour of the stomach, and even of the whole body, is in a great measure destroyed. It will be found that regular exercise in the open air, light food, and laxatives, will supersede the necessity of this abuse of emetics.

The first symptoms, subsequent to swallowing an emetic are nausea, diminished action of the heart, general prostration of strength, and paleness of the countenance. At this period the muscular fibres throughout the whole system are relaxed. Soon, however, the violent efforts of vomiting commence, the convulsive energy of the diaphragm, is communicated to the heart, which now beating strong and frequent, revives the heat

and tone of the system. The sudden and irregular motion of the thorax, and the pressure on the great blood-vessels, tend also to accumulate the blood in the head, and in the surface of body. Hence a feeling of turgescense in the brain, flushing of the face, and general diaphoresis. To account for the latter result of emetic action; recourse has been had to imaginary spasms and peculiar sympathies, but one would think very superfluously. The state of the matter appears to be simply this. During the nauseating stage, the vascular system is greatly relaxed; a sudden convulsion supervenes, and drives with extraordinary energy the circulating fluid, from the centre to the circumference; the unresisting tubes give free egress to the lymphatic exudation. The same phenomenon will occur in the exhalants, scattered through the bronchia of the lungs. If viscid mucus, has been obstructing the play of air in the cells, the convulsive agitation of the thorax, will blend it with this thin transudation. In this detached or dissolved state, a fit of coughing excited by the increased bulk of mucus in the lungs, and favoured by the vigorous contraction of the expiratory muscles, will be eminently serviceable in catarrh, phthisis, and asthma. The superficial exudation, will remove the hot and parched state of the skin, in incipient Typhus, and in some phlegmasiæ.

The inverted peristaltic action, and concussion of vomiting, are frequently useful in jaundice. Emetics have also been administered, with a view to excite absorption of the effused liquid in dropsy, and of indolent tumours. Active hæmorrhagy is successfully combated, with nauseating doses of emetics; the durable

feebleness of the heart, and great arteries which they produce, favouring the coagulation of the blood, and final closing of the lacerated orifice of the vessel. Emetics are improper in all plethoric habits, attended with a determination of blood to the head; in advanced pregnancy; in persons labouring under hernia; and in all inflammatory ailments of the abdominal viscera.

The eighteenth class, or Antacids, are of too simple a nature to need any remarks. We may merely observe, that lime water must be very feeble, in a chemical point of view, since it contains only one grain of lime, in an ounce of liquid.

The nineteenth class, contains a pretty complete catalogue, we hope, of all the valuable Cathartics, from elaterium down to the tamarind. Their selection and arrangement, have been the result of a deliberate and extensive review, of many ancient as well as modern lists.

It might be imagined, that quickening the natural peristaltic motion of the intestines, is an action of too simple a kind to require explanation. Yet the precise nature of the purgative quality, so abundantly diffused through the vegetable and mineral kingdom, and its mode of action on the living fibre, are as great mysteries, as sensation or muscular motion. It is a simple way of cutting this gordian knot, to affirm, that they stimulate the intestines to increased peristaltic motion. This is merely stating the fact or result; instead of assigning the specific cause. If pungent stimulation, of the primæ viæ, be the sole requisite to purgative action, why is not this object attainable by the exhibition of cascarilla, horseradish, pepper, gin-

ger, &c. all surely more promising in this point of view than rhubarb, senna, and sulphur? Why may the pungent muriate of potash, be taken with little purgative operation, and muriate of magnesia, a salt apparently of less stimulant power, be so efficacious in this respect? Why does the resin of jalap acrimoniously excite the stomach, and intestinal canal, as is evinced by the severest colic pains, and yet scarcely produce any evacuation; while a few grains of jalap in substance, or what is still more to our purpose, bland castor oil, and cassia pulp, almost invariably occasion copious stools? Compare also in this respect, hyosciamus, and opium, the former promoting, the latter counteracting the alvine discharge. Enough has now been said to prove, even in what has been supposed the clearest case, the fallacy of Pathological ratiocinations.

We shall now turn our thoughts to a more useful inquiry—the indications of cure to be accomplished by cathartic medicines. Of these, the first is obviously to remove noxious matters, collected in the intestines. The earlier Greeks, frequently prescribed very violent purgatives, hellebore for instance, with a view of discharging the atrabilis, or morbid bile, at that time the suppositious cause of many diseases. Purgation, regarded as a general indication, has fluctuated remarkably since, being sometimes nearly exploded, and at other times extolled as an infallible remedy. The medical world, has but recently acquired just and decisive views on the subject; for which they are indebted to the sagacity of Dr. Hamilton. This experienced Physician, has established by an ample induction of facts, definite rules to guide the practitioner,

in administering this powerful class of remedies, with signal success, in many maladies, previously deemed of a complex and intractable nature.

Persons who enjoy ordinary health, and whose mode of life is not sedentary, usually acquire the habit of a diurnal alvine evacuation. In infirm health, and in many diseases, however, the bowels become to a considerable degree torpid. The fæcal matter then accumulates, and by the mutual re-action of its component parts, speedily undergoes a series of chemical changes, of a fermentative or putrefactive nature. A morbid poison is thus generated, which progressively augmenting and deteriorating, eventually undermines the health, occasioning a hideous and distressing train of diseases. Hysteria, chorea sancti viti, or Saint Vitus's dance, marasmus, or the general wasting of flesh and strength, incident to children indulged in improper food, or too much secluded from air and exercise, the chlorosis of females; these are some of the chronic disorders of a dangerous nature, which have been successfully traced to the above cause. The intestinal torpor, with consequent fæcal remora, which often precedes, and usually accompanies Typhus fever, and Hydrocephalus, either may be held as the genuine source, or at least is proved uniformly to aggravate these diseases. In all these cases, as also in scarlet fever, and measles, it becomes, therefore, a primary duty with the Physician, a duty he has too much neglected, to investigate most carefully, the state of the bowels; and not to rest satisfied with the vague reports of attendants, or nurses. He will commonly discover satisfactory evidence of the accuracy of Dr. Hamilton's views.

The indication of cure, though apparently simple and obvious, requires no little attention and firmness in the practitioner. In the febrile state, and in the confirmed stages of the above chronic disorders, there is so much seeming debility of the system, that the patients, and their friends, reluctantly submit to that decided plan of steady artificial evacuation, which the urgency of danger demands. We can now avail ourselves of all our variety of purgative medicines; for the disgust, easily excited by a particular substance in the palate or stomach of delicate patients, as well as the diminution of effect from the frequent repetition of the same cathartic, call for a perpetual variety, in order to accomplish the cure. The object is merely to expel noxious matter, and to prevent its re-accumulation. Whatever is beyond this in purgative operation, as it might increase debility, without essentially promoting the end in view, ought to be avoided.

Within these rational limits, this mode of treatment forms one of the greatest practical improvements, which the healing art has ever received; frequently enabling us to accomplish, in a few weeks, the cure of disorders, which, under the ordinary practice, may resist the systematic Physician for many months, or may ultimately baffle his skill, and prove fatal to his patient.

The operation of brisk purging, is accompanied by a copious discharge from the exhalants, on the inner surface of the intestinal tube. Hence, it may be employed with advantage in counteracting inflammatory diseases, and dropsy. In visceral inflammation of

the abdomen, and during pregnancy, great caution is required in their administration; and the mildest species that will procure evacuation, ought to be preferred.

The order in which the purgatives are placed, will serve as a sufficient guide, in the selection of the substances adapted to the peculiar nature of the disease. There is one maxim which ought to be kept in mind; that of all medicines, cathartics are those which require to be diversified and combined. Hence, one considerable advantage to be derived from a tabular arrangement, in the ratio of individual efficiency.

The twentieth class contains the principal substances, recommended by medical authors, for the expulsion of intestinal worms. At their head justly stands oil of turpentine, lately celebrated for a virtue, almost specific, of destroying the tape worm, the most formidable inmate of man. Much weeding has been employed in the formation of this, and the preceding class. In a very voluminous work on medicine, published a few years ago, the author assumes much praise to himself, for his table of the Materia Medica. With what propriety, the reader may guess from the following specimen of his cathartics: alum, wine, soap, olive oil, infusion of coffee.

The twenty-first class exhibits a list of Diuretic medicines, or those which increase the urinary discharge. Dropsy is the chief disease in which these substances are employed. It would be an idle attempt, in the present state of pathology, to extend this commentary on the Table, by an inquiry into a subject so obscure and anomalous, as the action of the different diure-

tics. The *salts* enumerated under this title are, probably, carried by the lacteals into the circulation, and, being thus conveyed to the kidneys, increase their action by a local stimulus. Cantharides have been purposely omitted, since we find, that though this insect operates powerfully on the urinary passages, creating incessant desire to evacuate the bladder, it is seldom or never known to increase the quantity of urine excreted.

The theory of Expectorants, which compose the twenty-second class, has been anticipated, as far as we can understand their action, in treating of diaphoretics.

Emmenagogues are the title of the twenty-third class. It might probably be expunged without inconvenience. Those cathartics which operate chiefly on the great intestines, approach nearest to the indication required.

The last, or twenty-fourth class, contains the supposed solvents of stone. It is to be lamented, that this interesting subject of research, though cultivated with a zeal and success honourable to the chemist, should have hitherto been productive of little benefit to mankind. Fourcroy's scheme of injecting menstrua directly into the bladder, is dangerous. The great, we may almost say marvellous, advancement of Chemical Science in our own day, justifies the hope, that ere long it will enable us to remedy, not only this, but many other sources of human suffering, which have been rather harshly denominated the *opprobria Medicinæ*.

A

NEW SYSTEMATIC TABLE

OF THE

MATERIA MEDICA,

EXHIBITING at one view, all the important remedies at present employed in the Cure of Disease, arranged into Classes, corresponding to their most probable modes of action on the Human System, and placed in each Class, as nearly as could be determined in the order of their efficacy.

Though, strictly speaking, no Medicinal substance exerts on the Living Body an action either purely *general*, or purely *topical*, yet such a difference of this kind exists, as to entitle Medicines to be arranged, for the sake of study and recollection at least, into those which act chiefly on the *General* System, and those which have a characteristic reference to *particular Organs*. Hence

MEDICINES ARE

SYSTEMATIC.

ORDER I.—Operating *principally* and *primarily* on the Cerebral or Sensitive System.

Class 1*st*. Narcotics.
—— 2*d*. Exhilarants.
—— 3*d*. Antispasmodics.

ORDER II.—Exerting their principal force on the Muscular and Vascular Systems.

Class 4*th*. Stimulants.
—— 5*th*. Tonics.
—— 6*th*. Astringents.
—— 7*th*. Refrigerants.
—— 8*th*. Diluents.

ORGANIC.

Class 9*th*. Diaphoretics.
—— 10*th*. Epispastics.
—— 11*th*. Escharotics.
—— 12*th*. Emollients.
—— 13*th*. Antipustulous.
—— 14*th*. Errhines.
—— 15*th*. Sialogogues.
—— 16*th*. Demulcents.
—— 17*th*. Emetics.
—— 18*th*. Antacids.
—— 19*th*. Cathartics.
—— 20*th*. Anthelmintics.
—— 21*st*. Expectorants.
—— 22*d*. Diuretics.
—— 23*d*. Lithontriptics.
—— 24*th*. Emmenagogues.

ABBREVIATIONS.

B. Balsamum. Balsam.

C. Cortex. Bark.

Dec. Decoctum. Decoction.

F. Folia. Leaves.

Fl. Flores. Flowers.

Fr. Fructus. The Fruit.

G. R. Gummi Resina. Gum Resin.

Inf. Infusum. Infusion.

L. Lignum. Wood.

O. V. Oleum Volatile. Volatile Oil.

R. Radix. Root.

S. Semen. Seed.

Sum. Fl. Summitas Florens. Flowering Head.

S. S. Succus Spissatus. Inspissated Juice of a Vegetable.

! Dangerous Remedy.

? Dose uncertain.

a. l. ad libitum. Dose regulated by the feelings of the patient.

gtt. guttæ. drops.

DIVISION I.

SYSTEMATIC REMEDIES.

ORDER I.

Class 1*st.*—NARCOTICS.—Inducing torpor, usually preceded by a transient state of exalted sensorial power.

	DOSE.
Papaver Somniferum. S. S. Opium.	1 *gr.*
Hyosciamus Niger. S. S. Henbane.	2 to 5 *gr.*
Aconitum Napellus. S. S. Wolfsbane.	1 to 3 *gr.* !
Eau Medicinale D'Husson, a Vinous tincture, probably of Aconite. Empir. Medicine.	30 to 60 *gtt.*
Atropa Belladonna. S. S. Deadly Nightshade.	1 to 4 *gr.* !
Datura Stramonium. Thorn apple.	½ to 5 *gr.* !
Conium Maculatum. S. S. Hemlock.	1 to 3 *gr.* !
Rhus Toxicodendron. Poison Oak.	½ to 2 *gr.* !
Digitalis Purpurea. Fox glove.	1 to 3 *gr.*
Nicotiana Tabacum. Tobacco.	1 to 5 *gr.*
Lactuca Virosa. S. S. Strong scented Lettuce.	10 to 20 *gr.*
Rhododendron Chrysanthum. Yellow leaved Rhod.	4 to 12 *gr.*
Humulus Lupulus. S. S. Hop.	5 to 20 *gr.*
Acidum Prussicum. Bay Laurel Water.	? !
Hydrosulphuretum Ammoniæ. Hydrosulphuret of Ammonia.	5 to 10 *gtt.*
Laurus Camphora. Camphor.	4 to 20 *gr.*
Alcohol. Alcohol.	?
Oxide of Azote, or Intoxicating Gas. 4 *pints.*—Breathed for 2 or 3 minutes.	

	DOSE.
Class 2d.—EXHILARANTS.—Rapidly diffusible, but fleeting excitants, not followed by insensibility.	
Ether Sulphuricus. Sulphuric Ether.	10 to 50 *gtt.*
Ammoniæ { Carb. Carb. / Aqua. Water / Spiritus. Spirit } of Ammonia	5 to 20 *gr.*
	10 to 30 *gtt.*
	10 to 30 *gtt.*
Laurus Cinnamomum. O. V. Oil of Cinnamon.	1 to 5 *gtt.*
Melaleuca Leucadendron. O. V. Cajeput Oil.	1 to 5 *gtt.*
Mentha Piperita. O. V. Oil of Peppermint.	1 to 5 *gtt.*
——— Sativa. O. V. Oil of Spearmint.	1 to 5 *gtt.*
——— Pulegium. O. V. Oil of Pennyroyal.	2 to 6 *gtt.*
Lavandula Spica. O. V. Oil of Lavender.	2 to 6 *gtt.*
Caryophilus Aromaticus. O. V. Oil of Cloves.	2 to 6 *gtt.*
Origanum Vulgare. O. V. Oil of Origanum.	2 to 6 *gtt.*
Rosmarinus Officinalis. O. V. Oil of Rosemary.	3 to 8 *gtt.*
Pimpinella Anisum. O. V. Oil of Aniseed.	5 to 10 *gtt.*
Carum Carui. O. V. Oil of Caraway.	5 to 10 *gtt.*
Bitumen Petroleum. Rectified Petroleum.	10 to 30 *gtt.*
Oleum Volatile Pini. Oil of Turpentine.	20 to 60 *gtt.*
Supercarb. Aq. Potassæ et Sodæ. } Supcarbt. of Potash / Soda.	6 to 12 *oz.*
Electricity { Common. / Galvanic.	
Thea. Tea.	
Coffæa. Coffee.	
β. Some Narcotics in small doses.	
Class 3d.—ANTISPASMODICS.—Removing Spasm: their specific identity questionable.	
Moschus. Musk.	6 to 30 *gr.*
Ferula Assa Fœtida. G. R. Assafœtida.	10 to 40 *gr.*
Castoreum. Castor.	10 to 30 *gr.*
Oleum Succini. Oil of Amber.	10 to 30 *gtt.*
Bubon Galbanum. G. R. Gum Galbanum.	10 to 20 *gr.*

	DOSE.
Valeriana Silvestris. Wild Valerian.	30 to 60 *gr.*
β. Narcotics.	
γ. Exhilarants.	
δ. Stimulants.	
ε. Tonics.	
ζ. Cathartics.	
η. Epispastics.	

DIVISION I.

ORDER II.

Class 4th.—STIMULANTS.—Exciting strongly, and somewhat durably, the moving Fibres, particularly the Arterial, and raising the animal temperature.

Arsenici Oxidum. Oxide of Arsenic.	$\frac{1}{6}$ *gr.* ! !
Hydrargyri Oxidum Mite. Mild Oxide of Mercury.	1 to 3 *gr.*
——— Murias Mitis. Mild Muriate of Mercury.	1 to 4 *gr.*
——— Murias Corrosivus. Corrosive Muriate of Mercury.	$\frac{1}{8}$ to $\frac{1}{3}$ *gr.*
Arnica Montana. Flowers of Leopards bane.	6 to 10 *gr.* !
Meloe Vesicatorius. Spanish Fly.	$\frac{1}{2}$ to 1 *gr.* !
Hyperoxymurias Potassæ. Hyperoxymuriate of Potash	5 to 10 *gr.*
Acidum Nitricum dilutum. Dilute Nitric Acid.	30 to 60 *gtt.*
Scilla Maritima. R. Dried Squill Root.	1 to 3 *gr.*
Daphne Mezereum. Mezereon Bark.	2 to 8 *gr.*
Capsicum Annuum. Cayenne Pepper.	4 to 12 *gr.*
Piper Nigrum. Black Pepper.	10 to 25 *gr.*

	DOSE.
Piper Longum. Long Pepper.	10 to 25 *gr.*
Myrtus Pimenta. Jamaica Pepper.	10 to 25 *gr.*
Amomum Zingiber. Ginger Root.	10 to 25 *gr.*
Amomum Repens. Lesser Cardamom.	10 to 20 *gr.*
Myristica Moschata. Nutmeg.	5 to 20 *gr.*
Guiaci { Resina. Guiac Resin.	10 to 20 *gr.*
Guiaci { Ligni Dec. Decoction of Guiac.	4 to 6 *oz.*
Juniperus Sabina. Savine Leaves.	10 to 30 *gr.*
——— ———. O. V. Oil of Savine.	2 to 4 *gtt.*
Canella Alba. Canella Bark.	10 to 30 *gr.*
Wintera Aromatica. C. Winter's Bark.	10 to 30 *gr.*
Croton Eleutheria. C. Cascarilla Bark.	10 to 40 *gr.*
Aristolochia Serpentaria. R. Virginian Snake-root.	10 to 40 *gr.*
Polygala Senega. R. Rattlesnake Root.	20 to 60 *gr.*
Dorstenia Contrayerva. R. Contrayerva Root.	20 to 60 *gr.*
Inula Hellenium. R. Elecampane.	20 to 60 *gr.*
Cochlearia Armoracia. R. Horse-radish.	30 to 100 *gr.*
Sinapis. S. White Mustard Seed.	$\frac{1}{8}$ to $\frac{1}{2}$ *oz.*
Myroxylon Peruiferum. B. Balsam of Peru.	5 to 20 *gr.*
Toluifera Balsamum. B. Balsam of Tolu.	5 to 40 *gr.*
Copaifera Officinalis. Res. Liquida. Balsam of Copaiva.	10 to 30 *gr.*
Pinus Balsamea. Res. Liquida. Canada Balsam.	20 to 60 *gr.*
Allium Sativum. R. Garlic Root.	$\frac{1}{8}$ to $\frac{1}{4}$ *oz.*
Allium Cepa. R. Onions.	$\frac{1}{2}$ to 2 *oz.*

β. *Narcotics* in divided doses.

γ. *Exhilarants.*

δ. { Hot Water and Vapour Baths.
Friction with Hair Brush, &c.
Exercise in the open air.

	DOSE.
Class 5th.—Tonics.—Slowly increasing the strength of the System.	
1st, *Vegetable Tonics.*	
Cinchona Officinalis. C. Peruvian Bark.	10 to 80 *gr.*
Angustura. C. Angustura Bark.	10 to 30 *gr.*
Swietenia Febrifuga. C. Febrifuge Swietenia.	20 to 60 *gr.*
Swietenia Mahagoni. C. Mahogany Bark.	20 to 60 *gr.*
Gentiana Lutea. R. Gentian Root.	30 to 60 *gr.*
Gentianæ Inf. Comp. Compound Infusion of Gent.	2 *oz.*
Colomba. R. Colombo Root.	30 to 60 *gr.*
Anthemis Nobilis. Fl. Chamomile Flowers.	60 *gr.*
Quassia Simaruba. C. Simaruba Bark.	60 *gr.*
Quassia Excelsa. L. Quassia Wood.	60 *gr.*
Citrus Aurantium. C. Dried Orange peel.	20 to 60 *gr.*
—— Medica. C. Dried Lemon peel.	20 to 60 *gr.*
Tanacetum Vulgare. F. Tansy Leaves.	60 *gr.*
Menyanthes Trifoliata. F. Marsh Trefoil.	30 to 60 *gr.*
Artemisia Absynthium. F. Common Wormwood.	30 to 60 *gr.*
Acorus Calamus. R. Sweet Flag.	30 to 60 *gr.*
Chironia Centaurium. Sum. Fl. Smaller Centaury.	30 to 60 *gr.*
Salvia Officinalis. F. Sage.	30 to 60 *gr.*
Lichen Islandicus. Iceland Moss.	30 to 60 *gr.*
Of the Bitter Plants, the preferable form of administration is Infusion.	
Citrus Medica. S. Lemon Juice.	1 to 2 *oz.*
Fructus Acidi. Sour Fruits.	2 to 4 *oz.*
2d. *Mineral Tonics.*	
Argenti Nitras. Nitrate of Silver.	$\frac{1}{6}$ *gr.* !
Arsenici Oxidum. Oxide of Arsenic.	$\frac{1}{6}$ *gr.* !
Ammoniuretum Cupri. Ammoniuret of Copper.	$\frac{1}{2}$ to 1 *gr.*
Zinci Oxidum Album. White Oxide of Zinc.	5 to 10 *gr.*
Bismuthi Oxidum. Oxide of Bismuth.	5 to 20 *gr.*

	DOSE.
Barytæ Muriatis Sol. Solution of Muriate of Barytes.	5 to 20 *gtt.*
Acidum Sulphuricum Dilutum. Dilute Sulphuric Acid.	10 to 40 *gtt.*
——— Nitricum ——— Dilute Nitric Acid.	10 to 40 *gtt.*
——— Muriaticum. Muriatic Acid.	5 to 20 *gtt.*
Ferri { Limatura. Filings }	10 *gr.*
Ferri { Carbonas. Carbonate } of Iron.	10 to 40 *gr.*
Ferri { Sulphas. Sulphate }	5 to 10 *gr.*
Calcis Aqua. Lime Water.	2 to 4 *oz.*
β. *Stimulants* combined with *Astringents*.	
γ. { Mineral Waters, principally Chalybeate. Cold Bathing. Exercise. Frictions with Flesh Brush.	
Class 6th.—ASTRINGENTS.—Counteracting relaxation of the Living Fibres.	
Are to be found, principally in those Vegetables containing Tannin, as an essential ingredient.	
Mimosa Catechu. S. S. Extract of Catechu.	10 to 30 *gr.*
Kino. S. S. Kino.	10 to 30 *gr.*
Gallæ. Galls.	10 to 30 *gr.*
Quercus Robur. C. Oak Bark.	10 to 40 *gr.*
Polygonum Bistorta. R. Great Bistort Root.	10 to 40 *gr.*
Tormentilla Erecta. R. Tormentil Root.	10 to 40 *gr.*
Hæmatoxylon Campechianum. S. S. Extract of Logwood.	20 to 40 *gr.*
Salix. C. Willow Bark.	20 to 50 *gr.*
Arbutus Uva Ursi. F. Whortleberry leaves.	20 to 60 *gr.*
Rosa Gallica. Fl. Red Rose Petals.	20 to 60 *gr.*
Punica Granatum. Fl. Pomegranate Flowers.	50 *gr.*
Lythrum Salicaria. Loosestrife.	60 *gr.*
Prunus Spinosa. Fr. Sloe Juice.	¼ to ½ *oz.*

	DOSE.
3d. *Mineral Astringents.*	
Acetas Plumbi. Acetate of Lead.	1 *gr.* !
Sulphas Cupri. } Sulphate of Copper. } Weak solution ——— Zinci. } Zinc. } externally appld.	
——— Ferri. Sulphate of Iron.	5 to 10 *gr.*
——— Aluminæ et Potassæ. Alum.	10 to 20 *gr.*
Aqua Calcis. Lime Water.	2 to 4 *oz.*
Acida Mineralia. Mineral Acids.	
Cool Air and Cold Bathing.	
β. *Narcotics.*	
γ. *Tonics.*	
Class 7th.—Refrigerants.—Reducing the animal temperature. Perhaps the only certain remedy for allaying Morbid Heat is the first of the following list:	
Aquæ Frigidæ Affusio. } Sudden Affusion of Water, cold Aquæ Tepidæ Affusio. } or tepid, over surf. of the body.	
Balneum Frigidum. Cold Bath.	
Aqua Frigida. Cold Water taken into the Stomach.	a. l.
Tartras Antimonii et Potassæ. Tartar Emetic. So as to produce nausea.	½ to 1 *gr.*
Acida Vegetabilia. Vegetable Acids.	a. l.
Supertartras Potassæ. Tartar dissolved in cold Water.	a. l.
Nitras Potassæ. Nitre.	5 to 20 *gr.*
Lac Ebutyratum. Butter Milk.	a. l.
Aer Frigidus. Cool Atmosphere.	
Sanguinis Missio. Blood-letting.	
Cathartica Mitiora. Mild Laxatives.	
Class 8th.—Diluents.—Diluting the circulating mass. The only real Diluent is	
Aqua. Water. Either alone or combined with various Acidulous or Mucilaginous Matters.	

DOSE.

DIVISION II.

ORGANIC REMEDIES.

Class 9th.—DIAPHORETICS.—Increasing the Cutaneous Exhalation.

Oxidum Antimonii c. Phosphate Calcis. (vulgarly) James' Powder.	3 to 6 *gr.*
Tartras Antimonii et Potassæ. (vulgarly) Tartar Emetic.	½ to 1 *gr.*
Pulvis Opii et Ipecacuanhæ. Compound Powder of Ipecacuan.	5 to 20 *gr.*
Tinctura Opii c. Tartrate Antim. et Pot.	
Aqua Ammoniæ. Water of Ammonia.	10 to 30 *gr.*
Alcohol Ammoniatum. Ammoniated Alcohol.	10 to 30 *gr.*
Aqua Acetatis Ammoniæ. Solution of Acetate of Ammoniæ.	½ to 1 *oz.*
Balneum Calidum. Hot Bath.	
Balneum Vaporis. Vapour Bath.	
Aquæ Frigidæ { Affusio. Affusion and Potio. Draughts } of cold Water while the surface is hot and parched.	

β. Stimulants.

Diaphoretic Medicines, to produce their full effect, must be aided by what is termed the Sudorific regimen: which principally consists in swallowing, copiously, mild tepid drinks, beginning at the interval of one or two hours from taking the Medicine, the body being, at the same time, wrapped in warm blankets.

DOSE.

Class 10*th.*—EPISPASTICS.—Producing Cutaneous Vesications. Powerful Stimulants, applied for a considerable time to the surface, particularly

Emplastrum Meloes Vesicatorii. Plaster of Spanish Flies. — applied from 12 to 24 hours.
Euphorbiæ. G. R. Euphorbium.

When Stimulants, either alone or mixed with Water, Alcohol, Vinegar, or Oil, are applied for a shorter period than the above, Inflammation alone is produced, and the application is then termed a Rubefacient.

Class 11*th.*—ESCHAROTICS.—Corroding and dissolving the parts to which they are applied.

Nitras Argenti. Nitrate of Silver.
Potassa. Caustic Potash.
Arsenici Oxidum. Oxide of Arsenic.
Acidum Sulphuricum. Sulphuric Acid.
——— Nitricum. Nitric Acid.
Murias Antimonii. Muriate of Antimony.
Supersulphas Cupri. Supersulphate of Copper.
Acetas Cupri. Acetate of Copper.
Oxidum Hydrargyri rubrum. Red Oxide of Mercury.
Juniperus Sabina. Savine.

Class 12*th.*—EMOLLIENTS.—Softening indurated Tumours.

Heat, with moisture, uniformly applied.
Gentle Frictions, either alone or with Unctuous matters.

Class 13*th.*—ANTIPUSTULOUS.—Used here as a general term, for Remedies for Cutaneous Maladies.

α. Mild Diaphoretics.
β. External Applications.
Unguentum Sulphuris. Sulphur Ointment.
——— ——— Comp. Compd. Sulph. Oint.

DOSE.

Picis Unguentum. Tar Ointment.

Oxidum Arsenici. Oxide of Arsenic. Very weak solution in Water.

Murias Hydrargyri Corros. Corossive Muriate of Mercury. — 1 to 8 *gr.* dissolved in 1 *oz.* of Water.

Tar Ointment, with Potash and Sulphur in small quantities, very powerful in Itch.

Unguentum Hydrargyri. Ointment of Quicksilver.

———— Nitratis Hydr. Ointment of Nitrated Quicksilver.

———— Acidi Nitrici. Oint. of Nitric Acid.

Oleum Camphoratum. Camphorated Oil.

Class 14*th.*—ERRHINES.—Promoting the Mucous Discharge from the Nostrils.

Euphorbiæ. G. R. Euphorbium. — ½ to 1 *gr.* !

Veratrum Album. R. White Hellebore. — ½ to 2 *gr.* !

Asarum Europeum. F. Asarabacca. — 1 to 3 *gr.*

Subsulphas Hydrargyri Flavus. Yellow Subsulphate of Mercury. — 1 to 2 *gr.*

Nicotiana Tabacum. Tobacco. — 1 to 3 *gr.*

β. *The milder Stimulants.*

Class 15*th.*—SIALOGOGUES.—Promoting the Flow of Saliva.

1st. *Internal.*

Mercury in its various forms.

2. *Applied solely to the mouth by chewing.*

Anthemis Pyrethrum. R. Pellitory.

Imperatoria Ostruthium. Masterwort.

Nicotiana Tabacum. Tobacco.

β. *Stimulants.*

Dentifrices. Medicines capable of cleansing and preserving the Teeth.

Carbo Ligni recens. Charcoal newly Calcined in powder.

	DOSE.
Class 16*th*.—Demulcents.—Lubricating Passages.	
Mimosa Nilotica. G. Gum Arabic.	a. l.
Astragulus Tragacantha. G. Gum Tragacanth.	a. l.
Glycirrhiza Glabra. R. Liquorice Root.	a. l.
——————— S. S. Extract of Liquorice	a. l.
Saccharum. Sugar or Syrup.	a. l.
Linum Usitatissimum. S. Linseed. Decoction.	a. l.
Althæa Officinalis. R. Marsh Mallow.	
Cycas Circinalis. Sago.	
Malva Silvestris. Common Mallow.	
Orchis Mascula. R. Salep.	
Lichen Islandicus. Iceland Moss. Having extracted its bitter principle by previous maceration.	
Maranta Arundinacea. Arrow Root.	
Gelatina ex { Cornu Cervi. / Ichthyocolla. / Fructibus dulcibus. } { Hartshorn. / Jelly from Isinglass. / Sweet Fruits. }	
Amydali Communis Emulsio. Almond Emulsion.	
Class 17*th*.—Emetics.—Voiding the contents of the Stomach upwards.	
Tartras Antimonii et Potassæ. Tartrate of Antimony and Potash.	1 to 3 *gr.*
Cephäelis Ipecacuanha. R. Ipecacuan.	20 to 30 *gr.*
Vinum Ipecacuanhæ. Wine of Ipecacuan.	½ to 1 *oz.*
Supersulphas Cupri. Supersulphate of Copper.	1 to 8 *gr.* !
Sulphas Zinci. Sulphate of Zinc.	6 to 20 *gr.*
Subsulphas Hydr. Flavus. Subsulphate of Mercury.	2 to 6 *gr.* !
Veratrum Album. R. White Hellebore.	4 to 12 *gr.* !
Nicotiana Tabacum. F. Tobacco.	3 to 8 *gr.*
Asarum Europæum. F. Asarabacca.	20 to 40 *gr.*
Sinapis Alba. S. White Mustard Powder.	⅛ to ½ *oz.*
β. *Many nauseous bitter Infusions.*	

	DOSE.
Class 18*th*.—ANTACIDS.—Neutralizing Acidity of Stomach. Action purely Chemical.	
Potassæ Carbonas. Neutral Carbonate of Potash.	5 to 20 *gr.*
Sodæ ——— ——— ——— of Soda.	5 to 20 *gr.*
Calcis Carbonas. Prepared Chalk.	30 to 60 *gr.*
Aqua Calcis. Lime Water.	2 to 4 *oz.*
Magnesia. Calcined Magnesia.	10 to 20 *gr.*
Magnesiæ Carbonas. Carbonate of Magnesia.	20 to 30 *gr.*
Class 19*th*.—CATHARTICS.—Evacuating the Intestinal Canal.	
Momordica Elaterium. Fecula. Elaterium.	1 to 2 *gr.* !
Cucumis Colocynthis. Fr. Bitter Apple.	1 to 5 *gr.* !
Stalagmitis Cambagioides. G. R. Gamboge.	1 to 6 *gr.* !
Convolvulus Scammonia. G. R. Scammony.	3 to 10 *gr.* !
——— Jalapa. R. Jalap.	10 to 30 *gr.*
——— ——— Pulv. Comp. Compound Powder of Jalap.	30 to 60 *gr.*
Murias Hydrargyri Mitis. Mild Muriate of Mercury.	3 to 6 *gr.*
Helleborus Niger. R. Black Hellebore.	10 to 20 *gr.*
Bryonia Alba. R. White Bryony.	10 to 30 *gr.*
Gratiola Officinalis. Hedge Hyssop.	10 to 30 *gr.*
Rhamnus Catharticus. S. Buckthorn Juice.	30 to 60 *gr.*
Aloe Socoterina. G. R. } Aloes.	5 to 15 *gr.*
—— Hepatica. ——— } Aloes.	10 to 40 *gr.*
Rheum Palmatum. R. Rhubarb.	30 to 60 *gr.*
Linum Catharticum. Purging Flax.	
Iris Pseudacorus. S. Juice of the Root of Yellow Water Flag.	40 to 80 *gr.*
Cassia Senna. F. Senna Leaves.	20 to 40 *gr.*
Sambucus Niger. C. Common Elder; inner bark.	5 to 20 *gr.*
Ricini Oleum. Castor Oil.	½ to 1 *oz.*
Magnesia. ———	20 to 60 *gr.*

	DOSE.
Sulphur Sublimatum. Sulphur.	$\frac{1}{8}$ to $\frac{1}{4}$ *oz.*
Cassia Fistula. Pulpus. Cassia Pulp.	$\frac{1}{2}$ to 1 *oz.*
Supertartras Potassæ. Tartar.	$\frac{1}{4}$ to $\frac{1}{2}$ *oz.*
Tartras Potassæ. Tartrate of Potash.	$\frac{1}{2}$ to $1\frac{1}{2}$ *oz.*
Sulphas Sodæ. Sulphate of Soda.	1 to $1\frac{1}{2}$ *oz.*
——— Magnesiæ. Sulphate of Magnesia.	1 to $1\frac{1}{2}$ *oz.*
Phosphas Sodæ. Phosphate of Soda.	1 to $1\frac{1}{2}$ *oz.*
Tamarindus Indica. Tamarinds.	1 to 2 *oz:*
Aqua Marina. Sea Water.	$\frac{1}{2}$ to $1\frac{1}{2}$ *libs.*
Serum Lactis. Whey.	a. l.
Fructus Acido dulces. Acidulous ripe Fruits.	
Enemata Purgantia. Purging Clysters.	
Terebinthina Vulgaris. Common Turpentine.	$\frac{1}{4}$ to 1 *oz.*
Nicotianæ Tabaci { Fumus. Smoke / Infusum. Infusion } of Tobacco.	
Murias Sodæ. Muriate of Soda.	1 to 2 *oz.*
Sales Cathartici. Purging Salts.	1 to 2 *oz.*
Class 20th.—Anthelmintics.—Expelling Worms from the Intestines.	
Pini Oleum Volatile. Oil of Turpentine.	$\frac{1}{8}$ to 1 *oz.*
Dolichos Pruriens. Cowhage.	4 to 12 *gr.*
Geoffrea Inermis. C. Cabbage Tree Bark.	20 to 40 *gr.*
Stanni Pulvis. Powdered Tin.	$\frac{1}{8}$ to $\frac{1}{2}$ *oz.*
Ferri Limatura. Filings of Iron.	$\frac{1}{8}$ to $\frac{1}{2}$ *oz.*
Spigelia Marilandica. R. Carolina Pink.	10 to 40 *gr.*
Polypodium Filix Mas. R. Male Fern Root.	$\frac{1}{8}$ to $\frac{1}{4}$ *oz.*
Helleborus Fœtidus. Bear's Foot.	10 to 50 *gr.*
Gratiola Officinalis. Hedge Hyssop.	20 to 40 *gr.*
Olei Enemata. Oil Glysters.	
β. Stronger Cathartics, especially Mild Mur. of Mercury.	
γ. Bitter Tonics.	
Class 21st.—Diuretics.—Promoting the Urinary discharge.	

	DOSE.
Digitalis Purpurea. F. Foxglove. Infusion.	½ to 1 *oz.*
Scilla Maritima. R. Siccatus. Dried Squills.	1 to 4 *gr.*
Nicotiana Tabacum. Tobacco.	½ to 3 *gr.*
Allium et quædam alia Stimulantia. Garlic, and certain of the Stimulant class.	
Spartium Scoparium. Common Broom.	20 to 60 *gr.*
Supertartras Potassæ. Supertartrate of Potass.	⅛ to ½ *oz.*
Potassæ Carbonas. Carbonate of Potash.	10 to 30 *gr.*
Acetas Potassæ. Acetate of Potash.	10 to 40 *gr.*
Lactuca Virosa. S. S. Extract of strong-scented Lettuce.	4 to 12 *gr.*
Nitras Ammoniæ. Nitrate of Ammonia.	5 to 20 *gr.*
Acetatis Ammoniæ Aqua. Solution of Acetate of Ammonia.	¼ to ½ *oz.*
Colchicum Autumnale. R. Meadow Saffron.	½ to 3 *gr.*
Spiritus Etheris Nitrici. Spirit of Nitrous Ether.	20 to 60 *gr.*

Class 22d.—EXPECTORANTS.—Promoting the discharge of Pus or Mucus from the Lungs.

We know of no Medicine which possesses a direct Expectorant action, if we except Inhalation of Air, mixed with the Vapour of warm Water, of Vinegar, or of Ether. Substances capable of facilitating, by indirect operation, the rejection of matter from the Lungs, may be sought for in various of the above Classes, acording to the proximate cause of the disease.

α. *Stimulants.* Scilla, Allium, Polygala, Senega, Balsama.

β. *Diuretics.* Digitalis, Nicotiana, Tabacum, Scilla, Colchicum Autumnale.

γ. *Antispasmodics.* Ferula Asafœtida, Ammoniacum, Antimonii, vel Ipecacuanhæ doses parvæ.

δ. *Emetics.*

	DOSE.
Class 23d.—EMMENAGOGUES.—Promoting the Menstrual discharge.	
We are acquainted with no Medicines possessing a specific action of this kind; the effect has been expected, with greatest probability, from the different Classes of	
Cathartics.	
Tonics.	
Stimulants.	
Antispasmodics.	
Class 24th.—LITHONTRIPTICS.—Dissolving Urinary Concretions.	
Aqua Potassæ. Water of Potash.	15 to 30 *gtt.*
Carbonas Potassæ. Carbonate of Potash.	20 to 40 *gr.*
Subcarbonas Sodæ. Subcarbonate of Soda.	10 to 30 *gr.*
Magnesia. Calcined Magnesia.	10 to 20 *gr.*
Sapo. Soap.	10 to 30 *gr.*
Aqua Calcis. Lime Water.	½ to 1 *lib.*
β. *Bitter Tonics.* } Palliating Gravel pains.	
γ. *Astringents.* }	

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