

New Articles admitted in Pharmacopœia of 1851.	Articles of Pharmacopœia 1836 not admitted into Pharmaco- pœia of 1851.
Acidum Tannicum.	Asarum.
Tartaricum.	Aspidium.
Hydrochloricum.	Aurantium.
Nitricum.	
Aether sulphuricus.	
Ammoniae liquor.	
Ammoniae sesquicarbonas.	
Anethi oleum.	
Anisi oleum.	
Aqua destillata.	Aurantii flores.
Aurantii floris aqua.	Aurantii oleum.
Anthemidis oleum.	Baryta carbonas.
	Bergamii oleum.
	Bromium.
Buchu.	Diosma.
Calcii chloridum.	
Calx chlorinata.	Calcis hydras.
Carota.	Dauci fructus.
Carui oleum	
	Centaurium.
	Conii fructus.
	Contrajerva.
	Curcuma.
	Euphorbiuni.
	Ferri pereyanidum
Copaibae oleum.	
Fœniculi oleum.	
Granati radix.	
Juniperi oleum.	Lacmus.
Lavandulae oleum.	Lactucarium.
	Lauri baccae et folia.
	Malva.
	Marmor.
	Marrubium.
	Mentha Pulgium.
	Menyanthes.
Limones.	
Menthae peperitae oleum.	
Menthae viridis oleum.	
Morphiac acetas.	
Morphiae hydrochloras.	
Morrhuae oleum.	
Olivac oleum	
	Opopanax.
	Origanum.

New Articles admitted in Pharmacopœia of 1851.	Articles of Pharmacopœia 1836 not admitted into Pharmaco- pœia of 1851.
Pimentæ oleum.	
Pix Burgundica	
Plumbi acetas.	Plumbi carbonas.
Potassæ bicarbonas.	
Potassæ sulphas.	
Potassæ tartras.	
Potassæ iodidum.	
Potassii sulphuretum.	
Quinæ disulphas.	Quina.
Rosmarini oleum (Anglicum).	Rumex.
Rutæ oleum.	Ruta.
Sabinæ oleum.	Sabadilla.
	Subina.
Silex contritus.	Simaruba.
Sodæ bicarbonas.	Sodæ acetas.
Sodæ potassio-Tartras.	
Sodæ sulphas.	Spigelia Marilandica.
	Stannum.
Strychnia.	
Sulphur præcipitatum.	
Thus.	Toxicodendrum.
	Tussilago.
Veratria.	
Viola.	
Zinci Sulphas.	

In these two columns are presented respectively the articles of the *Materia Medica* received into the *Pharmacopœia* of 1851, and those which were in the *Pharmacopœia* of 1836, and are now removed from the *Materia Medica* list of the publication of 1851. It must not be imagined, nevertheless, that all the articles on the first or left hand column are newly received articles, and that they were not in use or in the *pharmacopœia* previously. In some instances they stood in the *pharmacopœia* as articles to be prepared by the chemist and apothecary. Of this examples are seen in benzoic and citric acid, hydrochloric acid, nitric acid, diluted nitric acid, diluted hydrocyanic acid, diluted phosphoric acid, and tartaric acid, for the preparation of which formulæ were given in the *Pharmacopœia* of 1836. In like manner also

were formulæ for the preparation of Aconitine, morphia, acetate, and hydrochlorate of morphia, Sulphate of quina, Strychnia, and Veratrina, all of which, except the first, are in the present edition received into the list of the *Materia Medica*, as articles which are prepared on the great scale, it is presumed, with greater facility and in a more economical manner than can be done by the chemist or apothecary.

In consequence of the circumstances now mentioned, the first column cannot be presented as exhibiting an exact list of new articles only. Properly speaking, it presents those articles which the College think ought to be in the list of the *Materia Medica*, and which are usually to be obtained from manufacturing chemists.

The articles actually new are not very numerous. The principal of them are the following.

Acidum Gallicum.

Acidum Tannicum.

Atropia.

Copaibae oleum.

Galla.

Decoctum Gallae.

Morrhuae oleum. Cod liver oil.

Panis; wheaten bread.

Silex contritus.

Thus.

Viola odorata.

Again, in this list of articles of the *Materia Medica* the reader should understand that while some articles are removed, the removal is rather a substitution of a new and more correct denomination, or the substitution of the article employed for that from which it is prepared, or the converse. Of this species of vicarious change or innovation, as it may be called, the following examples may be given.

Instead of Aloes spicata are substituted

Aloe Barbadensis.

Aloe hepatica.

Aloe Socotrina.

Sesquisulphuretum Antimonii becomes Tersulphuretum Antimonii.

For Argentum,

Argenti Nitras.

For Cinchona lancifolia,

Cinchona pallida.

Cydonia,

Cydonium.

Digitalis folia et semina.

Digitalis.

Lactucarium is discarded, while lactuca is retained.

Mentha Pulegium is expelled, while the Aqua Menthae Pulegii is retained

In the Pharmacopœia of 1836, this list was followed by a series

of short descriptions of the physical and chemical characters of the most important articles, with such information as might enable the chemist and druggist to discover impurities and detect adulterations. These notices are now appended to each of the articles among the *Materia Medica* List, which are supposed to require them; while some are introduced in their proper place in the *Formulary*. In some instances these notices are more lengthened than those in the *Formulary* of 1836, in others they are abridged; in all they seem to be improved. Such at least is the conclusion at which we arrive, after perusing almost all of them, and comparing them with those of the former edition.

On the other hand, there are various articles in more or less general use in the treatment of diseases, which are not found in the foregoing list. This is mentioned not for the sake of pronouncing any censure. It is often more judicious to diminish than to enlarge the lists of the *Materia Medica*; and it is not always an indication of advancement to introduce new agents. The fact we merely mention. The following may be mentioned as articles which are employed by different individuals or sections of practitioners, which are not in the present edition of the *London Pharmacopœia*.

Phosphate of ammonia.	In gout and rheumatism.
Sulphate of manganese,	In gout.
Collodion.	In cutaneous diseases and excoriations.
Indigo.	In epilepsy.
Gelatine.	In cutaneous diseases, &c.
Glycerine.	In cutaneous diseases.
Chromate of lead.	In cutaneous diseases.
Fusel oil.	
Valerianate of soda.	} As tonics, alteratives, and antichlorotics.
iron.	
zink.	

We come next to the *Second Part* of the *Pharmacopœia*, or the *Formulary* for the Prepared and Compounded Medicines.

1. *ACIDS*.—*Acidum aceticum*, it has been already noticed, is placed in the *Materia Medica* list, and therefore is not here. There is, however, an *Acidum aceticum dilutum*. It has been already noticed that the hydrochloric, nitric, and sulphuric acid, as well as the tartaric acid, are placed in the *Materia Medica* list. They are here in their dilute forms.

ÆTHEREA.—A formula is introduced for the preparation of chloroform. We understand no physician or surgeon prepares his own chloroform, and all is manufactured, as it is called, by the manufacturing chemist. The reason, therefore, for the introduction of this formula must be that chloroform be prepared with purity, and of uniform strength. At the same time, it may be observed, that

in the next edition this substance will, in all probability, be in the *Materia Medica* list.

ALKALINA.—The translation now mentioned has not been the fate of the formula for *Aconitine*, which was in the last Pharmacopœia. The substance is not in the *Materia Medica* list of the present edition, and the formula for its preparation has been removed. Aconitine is therefore no longer sanctioned by the college. The formulæ for the preparation of *Strychnia* and *Veratria*, which were in the last edition, have been removed on a different ground. Both these articles are placed in the *Materia Medica* list. Conversely, there is a formula for the formation of the sulphate of Atropia; seven scruples and a half, or a sufficient quantity, to be dissolved in half a fluid ounce of distilled water and two fluid drachms of dilute sulphuric acid. This preparation is believed to contain the active principle of Belladonna.

AQUAE DESTILLATÆ.—The distilled waters are the same, excepting that fennel water is removed. The plant and the oil, it will be remembered, are in the *Materia Medica* list.

CATAPLASMATA.—The charcoal poultice and the poultice of chlorinated soda, are introduced. Regarding the mustard cataplasm, or common sinapism, the boiled vinegar, or vinegar heated, is removed, while the linseed is retained. A more economical plan is to use only the mustard flour with vinegar, which makes an efficient sinapism at a rate not more expensive.

CONFECTIONES.—No material change.

DECOCTA.—Decoction of galls, decoction of pomegranate root, decoction of logwood, decoction of Pareira, decoction of taraxacum are introduced. Decoction of Malvae and decoction of *Veratrum* are expelled.

EMPLASTRA.—Plaster of cummin, plaster of iron and lead, plaster of iodide of potassium, are introduced. The plaster of iodide of potassium consists of one ounce of the salt mingled with six ounces of prepared frankincense (*thus*) six drachms of water, and two fluid drachms of olive oil, previously melted.

ENEMATA.—The enema of assafœtida introduced.

EXTRACTA.—On these preparations we have only to say that all of them are bad as preparations to be preserved for any length of time. They become mouldy, and often undergo decomposition. One of the best is the extract of *Nux vomica*, which is made by macerating in spirit for seven days, and after expression and straining, subjecting the matter to a second maceration in spirit for three days. This preparation often keeps well, and contains the virtues, if virtues they can be called, of the *Nux Vomica*. This extract is newly introduced; and it cannot be denied that it is an effective addition to the *Materia Medica*. Whether it is to be a serviceable one or not, must depend very much upon

the hands into which a preparation so energetic may fall. It is, however, greatly preferable to strychnia, as it is more manageable, and much less likely to do mischief in the hands of reckless and careless practitioners.

It is an instance of the unsettled and fluctuating state of medical opinion on *Materia Medica* and *Therapeutics*, that while the Extract of *Nux Vomica* is discarded from the last edition of the Dublin Pharmacopœia, in which it long had held a place, it is received into the present work of the London College.

Extract of *digitalis* is discarded.

INFUSA.—The infusion of *diosma* appears under the more familiar name of infusion of buchu.

An inspissated infusion of yellow bark (*infusum cinchonæ spissatum*), and a similar infusion of pale bark (*infusum cinchonæ pallidæ spissatum*), are introduced.

The infusion of broom, *infusum Scopariæ*, and the infusion of *Simaruba*, are discarded.

LINIMENTA.—The *Linimentum camphoræ compositum* is directed to be made with oil of lavender, dissolved in rectified spirit, instead of spirit of lavender. This can scarcely be called a change. But this and similar preparations appear to have rendered necessary the introduction of the oil of lavender into the *Materia Medica* list.

MELLITA.—No change.

METALLICA.—It is not our intention to enter into the chemical merits of this extensive and important department. That would require a professed chemist in his laboratory with all his apparatus. Nor is it requisite. The most important, if not the whole of these articles are prepared on a scale more or less extensive by the manufacturing chemist; and from him they are procured by apothecaries, trading chemists, and druggists. No apothecary or druggist, we believe, manufactures his own tartrate of antimony, calomel, corrosive sublimate, or lunar caustic. It is unnecessary, therefore, to inquire minutely into the merits of the directions given by the College for the preparation of this order of articles.

ARGENTUM; SILVER.—All the preparations of silver are rejected from the formulary, we suppose, for the reasons now assigned. One only is given in an appendix, where it is recommended to be kept in readiness as a test; recently prepared solution of nitrate of silver. We cannot refrain from thinking, nevertheless, that the oxyde of silver, which has been found a useful preparation, and which has received a place in the Dublin Pharmacopœia, might have been admitted also into the London Formulary.

ARSENIC.—Of this metal the formula for a new preparation is given; the *Liquor Arsenici Chloridi*. This is prepared by dissolving

half a drachm of arsenious acid with one fluid drachm and a half of hydrochloric acid in one ounce of distilled water, boiling and straining; and then adding water to make the whole to one pint. There is no table of proportions in given quantities in the work. But Dr Birkbeck Nevins comes to aid the prescriber, and informs him, that each fluid ounce contains one grain and a half of arsenious acid ($\frac{3}{8}\text{gr} = 1\frac{1}{2}$), and that the dose is from twenty to thirty minims.

It is proper to mention that, under the head of the subsequent preparation, the reader will find in the work of Dr Nevins an elaborate and correct account of the best modes of ascertaining the presence of this poison in mixed fluids, of the fallacies to which the tests are liable, of the methods of obviating them, and of the cautions which require to be employed in administering arsenical preparations for the cure of disease.

The preparations from chloride of barium and its solution are discarded.

Of the preparations of calcium one only is left, namely, lime water. Chloride of calcium and *Calx chlorinata* are placed with lime in the *Materia Medica* list. For *Creta præparata* of the former Formulary, there is no place.

COPPER.—Sulphate of copper is directed to be prepared in the Formulary. The object is evidently to ensure purity.

IRON.—The iodide of iron, which stood in the Formulary of 1836, is removed; and in its place is substituted the syrup of iodide of iron.

The *Ferri carbonas cum saccharo*, or saccharine carbonate of iron, is introduced. This preparation, our readers are aware, has been long in the *Edinburgh Pharmacopœia*. The directions given in the London formula, Dr Birkbeck Nevins thinks to be less eligible than those recommended by the *Edinburgh* and *Dublin* ones. The water should be expressed from the mass as rapidly as possible.

This preparation is now much used as a chalybeate; and it is one of the most serviceable and most durable forms of iron medicine. The dose, nevertheless, should be smaller than that usually specified, if it be intended that the medicine shall be easily taken and continued any length of time.

The *Ferri ammonio-citras* is also newly introduced. It may be proper to remind our readers that, several years ago, great attempts were made by some of our Irish friends, to introduce into practice the citrate of iron in solution, as a pleasant form for administering the mineral. The medicine was put up in bottles under the name of *Aqua chalybeata*, so strongly charged with carbonic acid gas, that the corks required to be secured by wires, and when they were opened the liquor sparkled and effervesced like champagne. The formula for the preparation of this agreeable chalybeate

has not been made public. It is said to be at present very generally employed, and is found to be effectual as a chalybeate medicine.

Meanwhile the ammonio-citrate, though perhaps not quite so palatable, may make an approach to the Irish iron champagne.

The *Ferri sulphas* is directed to be prepared in a different manner from that which was employed in the former Pharmacopœia. Commercial sulphate of iron (four pounds) is directed, with one ounce of iron, to be dissolved in four pints of distilled water, containing one fluid ounce of sulphuric acid. Heat is applied, the mixture is moved until solution is completed. The liquor is strained while warm, and then set aside until crystals are formed. The crystals are eventually dried.

The object of this change appears to be to insure purity and freedom from other metals.

For the formation of the *Ferri potassio-tartras* a formula slightly different is given.

In the former method the sesquioxide of iron was dissolved in hydrochloric acid. To this the potash liquor was added, and the mass was then boiled with bitartrate of potash. Then sesquicarbonate of ammonia was added until the solution was no longer acid. According to the present formula sulphate of iron (four ounces), is dissolved in sulphuric acid, (half a fluid ounce), and nitric acid (one fluid ounce). This is expected to form the sesquioxide of iron, which is then to be precipitated by the addition of ammonia. The sesquioxide is to be washed and set aside for twenty-four hours. Then the bitartrate of potash is to be heated to the degree of 140° in half a pint of distilled water; and to it in this state the mixt sesquioxide is to be added gradually.

MERCURY.—The oxyde and bromide of 1836 are discarded. The bicianide and biniodide of mercury are also removed. Other articles are the same.

LEAD.—The formula for acetate of lead in the former edition is removed; and this metallic salt, which is always manufactured by the manufacturing chemist, is placed in the *Materia Medica* list.

The formula for preparing the *Plumbi Chloridum*, and that for the *Plumbi oxydum hydratum*, are both removed. In short, under the head of lead are only three formulæ; that for the solution of diacetate of lead, dilute solution of acetate of lead, and iodide of lead.

POTASSIUM.—The bicarbonate of potash, the effervescing liquor of potash, the sulphate, bisulphate, and tartrate of potash, are all removed from the formulary; the first and third being now placed among the articles of the *Materia Medica*. The bromide of potassium is entirely removed, having no place in the work. The iodide of potassium and the sulphuret of potash are placed in the

Materia Medica catalogue. The formula for compound solution of iodide of potassium remains as before.

SODIUM.—*Liquor sodæ*, a formula for the preparation of strong or caustic solution of soda, analogous to that of potash, directs thirty-one ounces of the carbonate of soda to be mixed with nine ounces of quick lime, and a gallon of boiling distilled water to be added. The rest of the process is the same as that for preparing *liquor potassæ*. The density of this solution should be 1·061. In one hundred grains of the liquor are contained four grains of soda.

The medical uses and applications of this preparation are altogether similar to those of *liquor potassæ* and the bicarbonate of soda. It is much more powerful as an antacid than the latter, and consequently a smaller amount of it will effect the object of saturating acidity, wherever that object is kept in view. Conversely, the pure alkalis are less easily borne either by the stomach or by the system at large, than the carbonates; and therefore their use cannot be continued so long. In giving this preparation for any length of time, the observations of Dr Prout on the use of soda should not be forgotten; and it will do neither practitioner nor patient any harm to be aware, that it is possible, by means of the pure alkalis, to do injury in certain diseases, either by saturating and neutralizing normal acids, or by impairing certain of the living processes. At the same time, if all that is said of the sanative and therapeutic properties of the Vichy waters be well-founded, here is an agent which, in small compass, ought to accomplish the same purposes.

The formulæ for the preparation of the sesquicarbonate of soda, the sulphate of soda, (Glauber's salts), the potassio-tartrate of soda (Rochelle salts), and soda water, are removed, all of these articles except the last being placed in the *Materia Medica catalogue*. The last is prepared and sold everywhere.

ZINC.—A formula is given for the preparation of the chloride, which has been now long in use as an escharotic, and of which the consumption must be considerable in preparing Sir William Burnett's disinfecting liquor.

Calamine and the sulphate of zinc are both in the *Materia Medica* list, and therefore withdrawn from the Formulary.

TIN.—This metal no longer holds its place either as an article in the *Materia Medica* of the College or in the Formulary. The protochloride alone is admitted in the appendix, not as a medicine, but for its application as a chemical test.

This important division of the chemical medicines of the Pharmacopœia is on the whole as complete and as correct as can reasonably be expected in the present state of practical medicine and the present condition of the chemical arts. We see no gold, or any of its highly praised salts, as in the foreign pharmacopœias.

But the metals and metallic salts, which retain their position, are those which experience has shown to possess in good hands valuable properties. Neither in the present state of the chemical arts, when so many articles are prepared with economy and of great purity by manufacturing chemists, would it be reasonable to object, that so many articles are placed in the *Materia Medica* list, and that for so few are formulæ given. We believe that the time is approaching when these formulæ may be removed from the *Pharmacopœia*, and retain their place only in the chemist's Manual, which probably is their proper position. The physician and apothecary may understand the mode of preparing these articles and the principles of their preparation. But as the physician never has prepared them, as even the trading chemist and druggist do not prepare them, and as the apothecary regards himself now as a medical practitioner, and never enters the laboratory, regulates the temperature of the furnace or sand bath, or performs an elutriation, it is at most a work of supererogation for Colleges to issue directions which are not certain to be followed, and which are certain to be disregarded, if the operators see it to be their interest to do so. The revolution here predicted is fast approaching, and, though only in progress, will no doubt advance to completion.

MISTURÆ.—Of twelve formulæ, three are discarded; the *Mistura assafetidæ*, *M. Cascarillæ composita*, and the *M. Moschi*. The last must at all times have been in this country one the purity of which it was difficult to ensure. Supposing it were pure, what, it may be asked, are its uses and advantages?

With great deference to the Fellows of the College, we submit whether it is necessary or prudent to have such a formula as that for the *Mistura Spiritus Vini Gallici*, a species of that agreeable but dangerous compound called brandy egg-flip. If such a mixture be required for the stomachs, as it is supposed, of old and habitual wine and spirit-drinkers, can it not be easily prepared extemporaneously by any one. To compound such a mixture an apothecary is not requisite.

OLEA STILLATITIA.—For these distilled oils there is no place, all of them having been transferred with the *oleum terebinthinæ* to the *Materia Medica* Catalogue. The *oleum succini*, oil of amber, is entirely removed.

PILULÆ; PILLS.—A formula for the *pilulæ aloes cum sapone* and one for the compound colocynth pill is introduced. The latter, however, it must be allowed, is not so much an introduction as a substitution under another name. These pills have stood from the most remote times in all *Pharmacopœias*, sometimes under one denomination, sometimes under another. In almost all the other *Pharmacopœias* both of the Continent and this country they stood under the name of *pilulæ Coccinæ*, a term the original source

of which has preplexed etymological inquirers. In the Pharmacopœia for 1746, the formula was rectified, the name was discarded, and the pills were denominated *pilulæ ex colocynthide cum aloë*. In that for 1787 the formula for the pills was removed; but the compound was retained among the extracts, under the well-known name of *Extractum Colocynthis compositum*. This was continued in the formularies of 1809, 1815, 1824, and 1836. In the Pharmacopœia of 1851, the compound extract of colocynth is removed from the extracts; but the preparation appears among the pills as the compound colocynth pill. In this circumstance the London College have seen reason to approach to the Edinburgh and Dublin Colleges. The only difference between the preparation of 1836 and that of 1851 is that the latter is made with soft soap, to preserve, we understand, the pills in the necessary consistence.

The pills of iodide of mercury and the compound pills of Sagapenum of 1836 are discarded.

PULVERES;—POWDERS.—No change.

SPIRITUS.—SPIRITS AND SPIRITUOUS SOLUTIONS OF ESSENTIAL AND AROMATIC OILS. Alcohol is removed to the *Materia Medica* list under the name of *spiritus rectificatus*. *Spiritus ammoniæ* is discarded, or supposed to be sufficiently represented by the aromatic form of this spirit, which is retained. Spirit of lavender is also removed; it is represented in the *Materia Medica* list by *lavendulæ oleum*. In the others no change is made.

SULPHUREUM.—Under this is given a formula for the formation of the iodide of sulphur. One ounce of sulphur is directed to be placed in a glass vessel; and upon this are placed four ounces of iodine. The glass vessel is to be kept immersed in boiling water until the two substances are incorporated. When the whole has cooled, the vessel is to be broken, the mass is to be broken in pieces, and preserved in a vessel well secured.

SYRUP;—SYRUPS.—Two new formulæ are introduced; one for *symplicis cocci*, syrup of cochineal; the other for *symplicis violæ*, syrup of violets. The syrup of cochineal, it may be observed, is of no use except as a colouring agent.

Apparently the College have seen the propriety of preparing this class of articles with the addition of rectified spirits; for in all of the formulæ of the present Pharmacopœia, directions are given to employ a small quantity of this agent. No spirit was employed in preparing syrups, according to the last Pharmacopœia.

TINCTURÆ;—TINCTURES.—Several new tinctures are introduced. The tincture of camphor and the tincture of cardamom are both discarded; these articles being sufficiently represented, it is supposed, by the *tinctura camphoræ composita*, and the *tinctura cardamomi composita*. At the same time it is to be observed that the compound tincture of camphor, English pægoric,

is almost exclusively for internal use as an agreeable sedative and anodyne for coughs; while tincture of camphor has been chiefly employed externally. We believe it is possible either to do without it, or have it dissolved when required by the usual means.

The formulæ introduced are the following.

Tinctura aconiti.	Tincture of monkshood.
Tincturæ cinchonæ pallidæ.	Tincture of pale bark.
Tinctura belladonnæ.	Tincture of deadly nightshade.
Tinctura ergotæ.	Æthereal tincture of spurred rye.
Tinctura limonum.	Tincture of lemon pill.
Tinctura lobeliæ.	Tincture of Indian tobacco.
Tinctura lobeliæ æthereæ.	Æthereal tincture of Indian tobacco.
Tinctura quinae composita.	Compound tincture of quinine.

A change is made in the formula for *tinctura ammoniæ composita*. In the old formula this tincture contained oil of amber four minims, in somewhat more than one pint of solvent. These four minims of oil of amber are discarded. They could have been of little use either for good or evil, except to homœopathic practitioners.

As vehicles for substances which operate in small doses, as aconite, foxglove, conium, meadow-saffron, opium, spirits are perhaps a convenient agent. But it appears difficult to understand, what advantage or benefit can accrue from giving such medicines as bark, gentian, rhubarb, and senna in the form of tincture, when it is well known that about one or two ounces of the tincture must be taken at each time, in order to take a suitable quantity of the medicine. One ounce of such tincture is a medicated dram, and two ounces make a glass of spirits; and when such quantities of spirit are taken, whether it is likely that they can cure any disease is very doubtful, while it is certain that they can induce, and do induce, not a few serious and incurable maladies. How long will it be before physicians and Colleges will have the courage to speak the truth?

On the Wines and the Ointments we have nothing to say.

We have thus examined in such a manner, and at such length as the limits of these pages and the nature of this Journal will admit, the New Pharmacopœia for 1851 by the London College. We feel that a work coming from such a body is one neither for praise nor censure. Whoever offers commendation should consider well what his praise is worth, and to whom he offers it. It may be that the favour is conferred upon the individual offering, not upon the body receiving. This is a position in which no prudent person willingly places himself. Whoever censures should consider not only what he is censuring, but whether he or any other person could have done the same duty so well. The

points blamed may involve mere differences of opinion, and for these no one ought to pronounce a strong judgment.

A reason not less conclusive against any decided opinion is the fact, that the merits and demerits of such a work cannot be ascertained except after lengthened trial. Two or three years must elapse before the inconveniences, if such exist, can be discovered. Our duty is finished when we have shown wherein the Pharmacopœia is calculated to facilitate the business of preparing and dispensing medicines.

In the Appendix is given a list of articles which are to be employed as tests in ascertaining the purity of various substances and compounds given in the *Materia Medica* list and the Formulary. These are the following: •

Hydro-sulphuric acid, *recently prepared*.

Oxalate of ammonia *in crystals*.

Nitrate of silver *in crystals*.

Silver.

Gold.

Chloride of Barium *in crystals*.

Copper.

Turmeric.

Isinglass,

Lacmus tinctorius.

Solution of nitrate of silver, *recently prepared*, consisting of one drachm of the crystalline nitrate in one fluid ounce of distilled water.

Solution of Chloride of Barium, consisting of one drachm of chloride in one fluid ounce of distilled water.

Chlorine liquor, *recently prepared*, consisting of

One fluid ounce of hydrochloric acid, two drachms of binocide of manganese in powder, half a gallon of distilled water.

The acid and binocide to be mixed in a retort. The chlorine to be then conveyed into water in the usual manner.

Solution of sulphate of indigo.

Bichloride of platinum.

Iodo-cyanide of potassium and mercury.

Protochloride of tin.

It has been already stated that there are used in practice with various persons certain articles and preparations which are not contained in the Pharmacopœia. These are not numerous. Some which are not in the London Pharmacopœia are in the Dublin or Edinburgh work; and some are in neither. Those which are in either of the two formularies now mentioned are introduced both in the work of Dr Birkbeck Nevins and in that of Mr Squire,

whose appendix contains the account of several articles not previously mentioned. Those which are in neither editions are given in two appendices to the useful volume of Dr Hunter Lane.

Of some of these articles, as the valerianates, a slight notice was taken in our seventy-fifth volume, when speaking of the Dublin Pharmacopœia.

Before quitting this subject we think it requisite to observe, that experience has satisfied us, that it would be expedient and a great convenience, to insert in the *Materia Medica Catalogue* all articles newly introduced, whether as articles under this head or as standing only in the *Formulary*. We are aware that this is contrary to the practice of the College, who have hitherto admitted into the *Materia Medica Catalogue* only those articles which are called simples, or which are understood to be procured by the apothecary and druggist from the wholesale dealer and the manufacturing chemist. On the other hand, were all articles admitted into the *Materia Medica Catalogue*, it would show the reader at once the extent of that list, and would communicate to him a clear and distinct idea of the implements and agents with which he was to work. Thus chloroform would find a place in this list as well as in the *formulary*; and by the same means it would be learned that chloride of zinc and its solution were now recognized as articles in the *Materia Medica*.

On the other works we have little to add to what has been already said. The treatise of Dr Birkbeck Nevins is the most ample, the most complete, and we should think, upon the whole, the most serviceable. It is the book for the table of the consulting room, the surgery, and laboratory; and shops cannot do without it.

It is just also to Dr Nevins to say that, in estimating the therapeutic efficacy of various new remedies, he has endeavoured to avoid excessive credulousness in the statements of professed advocates of remedies, and that degree of distrust which sometimes proceeds to scepticism. This work is in this respect a good example of sober and temperate judgment.

The work of Mr Squire is very excellent, and contains many things desirable to be known. With the work of Dr Nevins it will probably divide the possession of the table of the surgery and laboratory.

The other two works are suited for different purposes. They are portable, and are evidently intended to be carried about either in the pocket or in the carriage. The work of Dr Hunter Lane is the most complete, and is unquestionably entitled to the preference between the two. This book indeed presents many advantages to recommend it well to the practitioner. It is small and portable. Its arrangement is alphabetical, and therefore it is convenient for immediate reference; as the whole book is an

index, the preliminary labour of consulting the index is obviated. The information is given in a very condensed shape, yet it is in general sufficient for the guidance of the consultant. Further, in two appendices are given short notices of all the medicines which, though not admitted into the English Formularies, are more or less generally employed in France, the United States, and the East Indies; and last comes a short but useful view of Toxicology. Creditable to the diligence of the author, it will be serviceable to the student.

ART. II.—*Corpulence; or Excess of Fat in the Human Body: its relations to Chemistry and Physiology, its bearings on other Diseases, and the Value of Human Life, and its Indications of Treatment. With an Appendix on Emaciation.* By THOMAS KING CHAMBERS, D.M., Fellow of the Royal College of Physicians, and Gulstonian Lecturer for 1850. London, 1850. 12mo, pp. 166.

Dr Chambers entertains the opinion that most persons attach to the circumstance of considerable or extreme corpulence and obesity the idea of something ludicrous; and that in consequence of this association the subject has either been treated with positive levity, or without that degree of gravity and seriousness which it truly deserves. This charge he brings not only against Mr William Wadd, the author of one of the best productions on the subject in the English language, but also against most or all of those persons who have described cases in the Philosophical Transactions, and who in so doing, have recorded such facts as the breaking of horses' backs, the breaking down of walls to allow the exodus of their corpses, and the great number of bearers who were employed to convey these large persons to their final resting places.

It would be difficult to deny, that excessive obesity has been the subject of not a few jests, some good and some indifferent enough. The fat knight, Sir John Falstaff, unquestionably afforded subject for not a few coarse jests to the true Prince and his companions, as well as to the knight himself. It is also true that the fat knight was, as he remarks himself, not only witty but the cause of wit in other men. But it requires little penetration to discover that this was in no way connected with his corpulence. Then the Spectator's Club, to whom no one was admitted who was capable of passing through the common sized folding doors, must also be allowed to be a piece of humour intelligible enough. But beyond these we cannot say, that we can at present call to

remembrance any instances in which to the observant mind anything remarkably cheerful or laughable is suggested. Of Vitellius we know only that he was a fat, sensual, overgrown, swinish glutton, whose end was sufficiently mournful. Charles the Gross, we know only by that soubriquet; and his life suggests nothing very amusing. Henry Tudor, who rejoices in the name of Eighth, was a cruel, capricious, and sanguinary tyrant, selfish, like all sensualists, to an excessive degree, the slave of the most degrading appetites and passions; and though Hume has tried to make us laugh at some of his absurdities, well may we say, Heaven defend us from such laughter. Even the anecdotes related in the Philosophical Transactions, we have always regarded rather as proofs adduced by the authors to illustrate as forcibly as they could, the great bulk and weight attained by these corpulent persons, than as tending to excite a single laughable or merry conceit. It is very true that in these accounts now referred to, we desiderate that full information upon the habits of the individuals and the causes of their death which would have been desirable. But in almost all these instances the weight of the individuals is stated; and that certainly is one means of forming an idea of the degree in which they had exceeded the average amount of corpulence. Dr Chambers informs us that, as he sees no reason for making such an infirmity or its concomitants a subject of levity, and cannot understand how that which shortens the duration of life can be considered of trifling importance, he is, without being deterred by these circumstances, to make Corpulence or Obesity a matter of serious attention.

CORPULENCE, under the name *Polysarcia* and *Polysarcia adiposa*, was defined in 1763 by Sauvages as "that disease which deforms the shape of the person, and impairs the agility of the movements by an excessive mass of fat;" and by his placing it under the Tenth Class, or that of Cachectic Diseases,* it is manifest that he considered it as an infirmity, in which the fluids and the solids are more or less in a morbid condition. In his general remarks on this class he maintains that Digestion and Assimilation are disordered, and that hence the *Crisis* or constitution of the blood is depraved.

At a period considerably posterior, namely in 1821, corpulence is by Joseph Frank defined under the name of *Polypionia* as "an abnormal collection of fat, principally in the cellular texture of the skin and the interstices of the subjacent muscles, impeding the motion and other functions of the body."†

* *Nosologia Methodica*, Tomus Secundus, Classis x. 5 Tome 8vo. Amstel-dami; 1763, and 4to, 1768.

† *Præceps Medicinæ Universæ Præcepta*. Auctore Josepho Frank. Partis Primæ Volumen Tertium Editio Secunda. Taurini, 1821. Caput xl., p. 288. 8vo.

Dr Chambers thinks that obesity must be viewed as a true hypertrophy of the adipose tissue, or increased growth without change in chemical or anatomical characters. This condition he thinks necessary to distinguish the disorder from those conditions of certain organs, as the muscles, the liver, the kidneys, which are known as fatty degenerations. The two conditions, he argues, are opposite, and may be contrasted with each other. In the fatty degenerations, so entirely different is the change, that the substance of some necessary part of the body is removed, and in its place is substituted a material quite foreign. But in Obesity the tissues of all the members remain intact, possess all the parts requisite to execute their offices, and are only impeded in the performance of them, when the additional superimposed matter alters the shape so far as to offer a mechanical obstacle to free action.

Instances of excessive accumulation of fat have always attracted more or less attention, and isolated cases are recorded by many authors. A certain amount of corpulence above the average is indeed very common among the well-fed, the indolent, and those who have little to occupy either mind or body. It is when it becomes considerable, confines the respiration, and renders the individual both unwieldy and inactive, that it attracts the attention of the physician. Gregory Horstius, Peter Forestus, Hieronymo Mercurialis and Peter Borelli, all mention instances in which their advice was requested, in order to diminish excessive corpulence, or to abate its inconveniences and evils. Smetius and Tulpus record examples in which the weight of the person was very much increased by this abnormal accumulation. The case of the former occurred in a lady of rank who weighed 427 pounds, or twenty-six stones and eleven pounds. That of Tulpus took place in a boy of fifteen, who at that age weighed two hundred and fifty pounds, or nearly sixteen stones;—a great weight for a young person of that early age, being about from four to five stones more than the weight of an adult man. Haller fixes the average weight of the human male at one hundred and sixty pounds or eleven stones six pounds; and though many persons are above this amount, they rarely exceed it without becoming unwieldy and inactive, a burden to themselves, and with more or fewer of their functions disordered and impeded.

An instance of corpulence, not void of interest, and certainly conveying some instruction, is that which took place in the person of George Cheyne, a physician who flourished at Bath during the first thirty years of the eighteenth century, and of which he has given a sketch in a sort of autobiography of himself in his work entitled *The English Malady*. This gentleman, who was originally of a large size, according to his own account, began life, at least his professional life, by eating and drinking as

much as possible, being constantly in society, either at taverns or in the houses of friends, with the view, he candidly enough allows, of getting into business. After this had been continued for some time, he became very fat, he does not at first specify to what amount, very unwieldy, short-breathed, lethargic, and listless. He then became acutely ill in various modes, and was accordingly treated for his complaints actively enough. At this time he appears to have been in London. After he got a little better, and became both a sort of saint and a philosopher, he went by the advice of friends to Bath as a patient. Then, after a long course of sinning and reforming, between eating little and eating much by fits, and all sorts of inquiries and trials as to the use of vegetable diet, at least in part, for he seems never to have entirely relinquished animal food, and always drank not above a quart or at most three pints of wine daily, after ten or twelve years, he says, he exceeded in weight thirty-two stones,—that is, 512 pounds, or as Haller, who allows fourteen pounds to the stone, states, 448 pounds. This was about the year 1722.

This excessive enlargement was not only in itself a disease, but it induced, or was the means of inducing, others sufficiently serious. Constant dyspnoea, with convulsive fits of asthma, scrofulous ulcers of the legs, and eventually lethargic drowsiness after dinner were the earliest symptoms; then an attack of fever; then attacks of what he called erysipelas; and at length gout and rheumatic gout, were all successively complaints which this corpulent gentleman suffered. It is needless to pursue the long detail of all his symptoms, which is quite similar to that of all persons who eat and drink incessantly, and take little or no exercise.*

No general view of Obesity as a Disease and inconvenience was taken previously to the year one thousand seven hundred and thirty-four, when Augustus Frederick Walther, Professor of Anatomy at Leipzig, published his Dissertation *de Obesitate et Voracitate Eorumque vitæ incommodis ac Morbis*. This writer considers the effects of corpulence upon the organs of voice and respiration, upon the movement of the heart, upon the alimentary canal, and the pelvic organs; and upon the sanguiferous system in general, and the movement of the blood. Walther has some speculations upon the great pressure which the fat exercises on the blood-vessels, and on what he denominates *sanguinis spissius oleum*, which may be the *liquor sanguinis* of modern physiologists, and the balsam of the blood, to which he ascribes the property of keeping the oil fluid; and he insinuates, if he does not distinctly say, that in very corpulent persons, the balsam is no longer in suffi-

* The English Malady; or, A Treatise on Nervous Diseases, in Three Parts. With the Author's own Case at large. By George Cheyne, M.D., Fellow of the College of Physicians at Edinburgh, and F.R.S. London, 1733. 8vo, pp. 342, 343.

cient quantity, or possesses sufficient solvent power to maintain the oleaginous part in a liquid condition. Though he allows, in considering the etiology, that in certain persons and families there is a tendency to the formation and deposition of fat, he nevertheless ascribes the growth, in the majority of instances, to excess in eating and drinking, associated with indolence.*

Haller, first in 1756, directed attention to the isolated cases of excessive corpulence recorded up to that time; and made upon the cases such general observations as the scanty and not very accurate records permitted. He notices the insensibility of the skin, or rather the subcutaneous cellular tissue. Obesity, he observes, suffocates not only birds but men; of whom he adds many examples were then known. Above all, the weight which these persons have to carry is so disproportionate to their muscular powers, that they are sometimes wholly unable to move.† He infers that in the very corpulent the blood is diminished in quantity, the vessels are contracted, and yet the blood flows slowly and imperfectly.

Sauvages repeated the observations of Haller, attaching himself, however, more decidedly to its pathologica relations, and the means of curing the condition and alleviating and obviating its effects.‡

In the year 1753, Dr Thomas Shortt published an Essay on the Causes, Effects, and Prevention of Corpulence as a disease requiring medical treatment; and in the year 1760, Malcolm Flemyng sent forth his Discourse on the Nature, Causes, and Cure of Corpulency in a tract of some interest. Between this time and the close of the eighteenth century only two dissertations of any moment appeared; one by Riemer at Halle in 1778;§ and one on the sound and morbid conditions of the Adipose Tissue by Reussing at Jena, in 1791.|| In 1811, Anege Maccary published at Paris his treatise upon *Polysarcia*,¶ containing some new facts and several instructive observations.

The merits of all these dissertations may be said to have been eclipsed by an anonymous essay entitled *Cursory Remarks on Corpulence*, which appeared about the same time at London, and which in no long time went to a second impression. In 1816, the *Cursory Remarks* in the third edition appeared under the

* Augusti Frederici Walther, Prof. Lipsiensis, *Dissertatio de Obesit et Voracibus eorumque Vitæ Incommodis ac Morbis*. Lipsiæ, 1734. Extat apud Halleri *Dissertationes*, Tom. iii. p. 97. Item apud *Delectus Opusculorum Medicorum Antehac in Germaniæ Diversis Academiis Editorum*. Quae Collegit J. P. Frank, M.D. Vol. iv. Ticini, 1787. *Dissert.* v., p. 252.

† *Elementa Physiologiae*, Tomus i., liber i., pp. 49, 50. Lausannæ, 1757. 4to.

‡ *Nosologia Methodica*, Tom. ii.

§ Riemer *Dissertatio de Obesitatis Causis Præcipuis*. Halæ, 1778.

|| Reussing *Dissertatio de Pinguedine sana et Morbosa*. Jenæ, 1791.

¶ Anege Maccary *Traité sur la Polysarcie*. Paris, 1811. 8vo.

name of the author, Mr William Wadd, enlarged and rendered more complete as a medical treatise. Mr Wadd communicated all that was then known upon the subject; and, as his essay was on the whole both the most ample and the most instructive, it became a sort of authority on the physiology and pathology of corpulence. It was republished in 1829, and still maintained its position. It is a useful and instructive book; and though it has fallen under the criticism of the present author, yet it is perused with both interest and advantage. Mr Wadd impressed particularly in the treatment the propriety of observing very moderate diet; and though he allows the value of a vegetable regimen, yet he expresses the opinion that no just preference can be given to the efficacy of either animal or vegetable food in the reduction of corpulency, and that quantity in the amount of food is more to be attended to than quality.*

The materials of the present volume were delivered in the form of the Gulstonian Lectures by Dr Thomas King Chambers in the spring of 1850 before the College of Physicians; and in the form of lectures they have been already before the public in the pages of the *Lancet*. This circumstance renders it less necessary for us to enter at large into the contents of the volume. But as the author has again examined the whole performance as first written, and has introduced such modifications and corrections as deliberate consideration suggested, and has further relinquished the lecture form, it is perhaps right that we advert to some of the principal and most instructive points in his treatise. It will be seen that Dr Chambers has brought to the investigation of the subject of Corpulence a large amount of correct chemical and physiological knowledge, that he has examined the questions as to the causes of the condition with great care, and with the aid of accurate statistical facts, and that he has endeavoured to give the whole inquiry a character of precision and practical utility.

Dr Chambers shows from various facts, that, though various articles of food employed by man and animals do contain fat or oil ready prepared as it were, yet that animals form fat from various substances which do not contain that principle. He further thinks it probable, that evidence does not distinctly show that animals find a source of adipose matter in their own bodies; yet that in unhealthy states of the system the increase of fat may coincide in point of time with the decrease of the healthy tissues.

Weight, Dr Chambers regards as one of the best modes of ascertaining the amount of fat, whether normal or in great excess. But it is requisite to determine what may be called the normal weight

* *Cursory Remarks on Corpulence; or Obesity considered as a Disease: With a Critical Examination of Ancient and Modern Opinions relative to the Causes and Cure.* Third Edition. By William Wadd, Surgeon. London, 1816. 8vo, pp. 129.

of the human body; and this again has a relation to stature. The following table, compiled by Dr Hutchinson, from taking the heights between five and six feet, with the weights, among 2650 men of average health, is believed to present a correct view of the relation between height and weight.

Height.				Weight.	
Feet.	Inches.			Stones.	Pounds.
5	1	...	...	8	8
5	2	...	...	9	0
5	3	...	..	9	7
5	4	...	..	9	13
5	5	...	...	10	2
5	6	...	...	10	5
5	7	...	...	10	8
5	8	...	...	11	1
5	9	...	...	11	8
5	10	...	...	12	1
5	11	...	...	12	6
6	0	...	...	12	10

The individuals upon whom these observations were made, were persons in the prime and vigour of life; capable of, and accustomed to make, great muscular exertions; for instance, sailors, firemen, policemen, grenadier guards, watermen, cricket-players, gentlemen, Oxford and Cambridge rowers and the like. A certain number of paupers and artisans may be placed against an equivalent number of draymen, wrestlers, and pugilists who are not inserted.

When weight depends on solid muscle and bone it does not bear so great a disproportion to stature as when it depends on fat; that is, if a person of a given stature exceeds the average in the preceding table by one or two stones, then it may be inferred that the excess indicates that the individual has so much more than the normal amount of fat. The mean height of thirty-six obese persons, whose cases are afterwards referred to, is five feet six inches, while their mean weight is eighteen stones one pound. As this is more than double the weight of the Bronze Tumbler (a statue), if made of flesh and blood, and exceeds the weight of the statue Theseus by one-half, it shows that these persons must owe great part of their weight to the presence of fat.

Some facts show that the weight of the human body is diminished, within the limits of health, during summer and increased during the winter months.

In persons prone to corpulence it is usually observed that the bony frame-work of the body is less massive than in the spare. Their hands and feet are smaller, compared with the size of the figure, than might be expected.

The volume of air which these persons are capable of containing within, or respiring from their chest, is considerably less than the average quantity of those of the same height. The lungs, instead of holding more air, because the body is larger, appear in these cases to be less capacious. Thus the pulmonary capacity of case 35 in the table, a man of enormous muscular strength, and in his youth remarkable for his power of wind, out to have been at least 250 cubic inches; it was only 205. No. 9, a female, held only 120 cubic inches of air, whereas she ought to have held 206, according to the table of averages published by Dr Hutchinson. No. 18, when in perfect health, five years ago, held 255 cubic inches, instead of 270 cubic inches. At present he holds much less, probably from congestion of the pulmonary tissue and increased corpulence.

From various experiments made to ascertain the cause of this disproportion, with the aid of Dr Sibson, Dr Chambers is disposed, to think that the motion of the diaphragm in forced breathing is equal to, if not greater, in these persons, than in others; but that the upper ribs in ordinary and also in forced breathing, move somewhat less than usual, but not to the extent indicated by the external surface.

In entering upon the consideration of the anatomical characters of Obesity, Dr Chambers states as established two points regarding the vascular system, the one, the presence of a large quantity of useless blood in the capillaries in general, but especially in those of the adipose tissue, and the other that the microscopical vessels are in their aggregate amount vastly increased.

These circumstances, he argues, receive further illustration from considering the causes of death in corpulent persons.

"With this intention," says Dr Chambers, "I have put together 69, of which the *post-mortem* records are thoroughly to be trusted, 67 having been examined at St George's Hospital,* and two by Dr Shearman of Rotherham, a gentleman of well-known accuracy and research.

"CAUSES OF DEATH IN SIXTY-NINE CORPULENT PERSONS.

Medical cases.

Dropsy...	...	...	...	...	...	...	...	...	...	...	...	13
Apoplectic coma	...	...	...	...	...	...	...	...	...	...	...	11
Pneumonia	...	...	...	...	...	...	...	...	...	...	...	5
Pleurisy (acute 2) (chronic 1)	...	...	...	...	...	...	...	...	...	...	...	3
Fainting (fatty atrophy of heart)	...	...	...	...	...	...	...	...	...	...	...	1
Aneurism, 1; malignant disease, 1; fever, 1; rupture of stomach, 1; polypus uteri, 1	...	...	...	...	...	...	...	...	...	...	...	5
Erysipelas of face	..	...	...	..	...	...	...	...	...	...	...	1

39

* See the *Post-mortem* Books from January 1841 to January 1850.

	Brought over,	39
<i>Surgical cases.</i>		
Peritonitis after hernia	8	
Erysipelas after ulcers and slight wounds... ..	3	
Gangrena senilis	2	
Diffuse cellular inflammation	2	
Secondary abscess	3	
Nephritis after lithotripsy	1	
Diseased prostate	1	
Accidents	10	
		69

"The heart was examined in fifty-seven of these patients. In seven it was found healthy—viz., in four who died from accidents, in one case of rupture of the stomach, one of hernia, and one of nephritis. In the latter case, the principal local collection of fat was about the kidneys, where the amount usually found was greatly augmented.

"In fifty of the fifty-seven cases where the heart was examined, it was found diseased.

"Of the fifty diseased hearts,

5 were hypertrophied and not dilated ;

8 hypertrophied and dilated ;

26 dilated only ;

11 atrophied.

In sixteen of these there was an increased amount of vesicular fat about the heart—viz.,

In 13 of those which were dilated ;

In 2 of those which were atrophied ;

In 1 of those hypertrophied and dilated.

"In fourteen instances, the kidneys were also affected with chronic degeneration, which in all those, where an opportunity occurred of forming an opinion, seemed to be consecutive on the cardiac disease.

"A cursory glance over the facts recorded in these lists will be sufficient to show what a great influence over life the disorders of the circulating system have had. In the medical cases, the two classes which make up the bulk of the whole may be referred entirely to this source ; and in the surgical cases, nearly all are of a nature to be much aggravated by an ill-balanced distribution of blood.

"The fourteen cases of degenerated kidneys may also without force be referred to a chronic congested state of vessels, than which nothing, in my opinion, is more frequently the cause of that disorganization, which leads to hardening, deposit of oily globules, destruction of the urinary tubules, albuminous urine urea, in the blood and dropsy.

"The change which most commonly affects the heart is dilatation, probably dependent on the greatly increased quantity of capillaries distributed throughout the body, and the consequent increase in the

amount and pressure of the circulating fluid upon the central organ. The hypertrophy which sometimes ensues is not unlikely to be an effort of nature to supply force in proportion to the increased demand.

"In eleven cases out of the forty-nine, atrophy of the heart was observed, that is, diminution in thickness of the walls without any external augmentation of size; and in such of these cases as were submitted to the test of microscopic examination, a deposition of *molecular fat*, destruction of the nuclei, and other evidences of degenerated muscle, were found.

"We must be careful to distinguish this fatty atrophy or degeneration from deposition of *vesicular fat*; the first arises from deficient nutrition, the second is due to excess. One is a retrogression from a more highly endowed tissue to one less distinguished by its importance and offices; the other is an increased growth. It is true, they may be coincident, as in the instances before us of atrophied hearts in obese people; yea, they may exist together in the same organ, as in two of these cases, where there was much fat at the base of the great vessels and degenerated muscle at the same time. But still they are contrasted conditions, hypertrophy and atrophy of different tissues.

"It still remains to be explained why these two opposite states are so often associated together; why degenerated muscle is more common in fat than in thin people, as would appear to be the case from a paper presented by Dr Quain a short time back to the Medico-Chirurgical Society. It does not arise from the pressure upon the muscle caused by the altered shape and size of the heart; for it is equally apt to occur in cases of obesity where there is only the ordinary amount of fat at the base of the organ, as where the adipose tissue there is augmented. It more probably depends on some change in the condition of the circulating fluid associated with obesity, which renders the formation of fibrin more difficult, and allows the muscular fibre to undergo an interstitial decomposition into an oily matter.

"The anomalous state of the circulation in corpulent persons, caused by the quantity of capillaries, either with or without the cardiac disease consequent thereon, is, I think, sufficient to explain all the complaints to which they are subject. The sluggishness of their blood's movement accounts for their proneness to cachectic boils, to diffuse cellular inflammation, to congestions of the lungs, liver, and brain, and explains why the use of the lancet is so hazardous in such patients."—Pp. 687–688.

The question of the antecedents and causes of corpulence, whether predisponent or exciting, appears to be not difficult. Excess in eating and drinking, the use, especially of considerable quantities of animal food, indolence and inactivity, are the main circumstances, under which this condition almost invariably takes place. It has very often been said that England is the country

in which instances of excessive corpulence are most numerous and most frequently occur; and when the usual mode of living among those whose means permit, is considered, it is not extraordinary that such should be the case. Continental physicians also ascribe much influence to the large and frequent potations of strong beer; and Joseph Frank has specified porter as the liquor most likely to produce a great deal of this. Of the general correctness of this inference, scarcely any one who has observed distillery fed cattle can entertain any reasonable doubt. These animals, which are fed upon the grains and refuse malt after the low wine has been extracted from them, appear to be always either eating or in a stupid doze.

It is, however, in the general habits of the easy classes that may be found the tendency to adipescence. Large dinners, with the copious use of animal matters, cannot fail to induce an unusual degree of corpulence, when the practice has been long continued. With many also the business of eating is the great occupation of the day. To demonstrate the importance of the duty of dining in the estimation of this class of persons, the following statement may be sufficient.

"Walking with a friend," says Dr Charles Griffiths, "some years ago into a room at a tavern (in London), which was prepared for a public dinner, we discovered a very fat person sitting on a bench with his waistcoat unbuttoned, who, on the appearance of a servant (with a plate of what was mistaken for radishes) threw off his wig, and leaning backwards against the table, he opened his mouth, whilst the servant dropped into it one by one, some of these things, which on our nearer approach I found I had mistaken; my friend too recognizing the fat man, addressed him with concern, 'hoping nothing was the matter.' 'Oh, nothing at all,' he replied, 'only we have a dinner here' to-day, and I have undertaken to cater, so I have been taking a few of these 'here plugs, which the doctor says is only a little Castile soap, to help digestion.'

"What the composition of the *plugs* might really have been, I cannot pretend to say, but they certainly looked very like the soap he mentioned; here is an act (and my veracity stands pledged for its reality) that I think may challenge not only India, but the whole world to produce a parallel.

"One of our public singers here, whose vocal exertions are hardly attainable, unless the prospect of a great dinner is added to his hire, adopts a more summary mode of gratifying his palate; this beast having devoured enough to gorge a brace of pointers, quits the room, puts his fingers in his throat, and returns to consume as much more."*

Let the following instance from the same author be taken as an example of English habits abroad.

* An Essay on the Common Cause and Prevention of Hepatitis or Disorder of the Liver; and of Bilious Complaints in General, as well in India as in Europe, &c. By Charles Griffiths, M.D., &c. London, 1816. 8vo, p. 76.

"During my stay in Bengal a remarkable, but there very common, occurrence took place. I was in the habit of visiting daily the sick of an Indiaman, which had lost one of her medical officers by death, whilst the other, was absent; and going on board generally about the same hour was invariably invited by the second officer, who had charge of the ship, to sit down with him and partake of what he called his *Lunch*, consisting of beef steak, or cold beef, the former killed the preceding day. This I always declined; and when I last saw this young man, who was one of the most healthy and athletic men of my acquaintance, took some pains to convince him of the danger attaching to his diet, observing to him as I went over the ship's side, that he would, notwithstanding his great strength, 'get a knock-down blow from which he would not readily recover.' He replied, laughing, 'that his maxim was to live while he could;' but, dying in two hours after that day's *Lunch*, our parting became impressed on my memory; and more particularly on being informed by the gentleman left in the command, that he died of 'the cramp in his stomach;' in other words, he died (or I mistake much) of an injury sustained by the stomach in its attempt to exonerate itself of a large indigestible foreign substance on which its diminished contractile power could make no impression; and I am much inclined to the opinion that what is called cramp in India, very commonly is derived from some such violence done to this very susceptible and important part of our fabric, which in point of consequence in our construction yields not the brain, or the heart itself, although being endued with peculiar resources adapted to our imprudencies, the stomach is enabled to struggle with great and repeated aggressions."

It is impossible to doubt that Dr Griffiths is quite right in the observations he makes on such habits and practices. Their bad effects do not always appear at once; and therefore those who practise them proceed a long time in these courses. But the time comes at last when all these outrages to the assimilating powers of the stomach and the disposing capacity of the vascular system are peremptorily resisted; and the sufferer, who generally is little burdened either with observation or reflection, wonders how that which has been done so often and so long, should now prove so hurtful. He forgets the long career of unrestrained excess in which he has indulged.

On the subject of treatment, it must be a matter of interest to hear what Dr Chambers recommends.

"That form of the disease which commences at birth, and goes on increasing during infancy and childhood, is, I believe, so invariably fatal before the age of puberty, that I do not think we have reason for hoping that it is in any way amenable to medicine. At all events, I have not been able to discover any one whose experi-

ence has led them to pronounce it curable. It is a form of monstrosity, and as the subjects of it commonly display some other bodily malformation, and a deficiency of intellect, their death is a relief from a miserable prospect.

"When it begins in childhood, or about the time of puberty, we must not be deterred, by the circumstance of its being hereditary, from attempting to remedy the inconvenience arising from it. We cannot truly reduce our patients entirely to the average size and weight, but we may enable them to pass life in comfort and usefulness.

"The later the disease commences, the more controllable it is by management, until the middle period of life is passed, and then old age impedes in some degree the benefit which we may confer, not by rendering our measures inert, but by preventing our employing them quite so actively as we should have done earlier.

"The first thing indicated in all cases, is to cut off, as far as possible, the supply of material. Fat, oil, butter, should be rigorously interdicted in the diet table. But all eatables contain some portion of oleaginous matter, and especially those most convenient to advise the use of for a lengthened period. And, as we observe at the former part of our review of the light which chemistry has thrown on the subject, almost all are capable of a transformation into fat, when a small quantity of this substance is previously present. It is desirable, therefore, that the mass of food should lie in stomach as short a time as possible, in order that at least a fatty fermentation may not be set up in it. Very light meals should be taken at times most favourable to rapid digestion, and should consist of substances easy of solution and assimilation. To this end the time of the meals should be fixed for an early hour in the day, before exertion has rendered the powers of the entrails languid and weak. Breakfast should consist of dry toast, or, what is still better, sea-biscuit, and if much active exercise is intended, a small piece of lean meat. Dinner at one on meat with the fat cut off, stale bread or biscuit, and some plain boiled macaroni,* or biscuit pudding, by way of second course.

"Liquids should be taken not at the meal but half an hour after, so as not to impede the action of the gastric juice upon the mass. Here should end the solid feeding for the day; no second dinner or supper should follow, nor indeed any more meals be taken sitting down. A piece of biscuit and a glass of water can be taken standing up if faintness is experienced; a cup of gruel or roast apple before going to bed.

"This is not a scale of diet by any means unattainable. A butcher

* "I cannot help pausing an instant to speak of the absurdity of our usual way of dressing macaroni. After being boiled and made palatable, it is sprinkled with cheese and placed before the fire, so as to form a tough, rancid, empyreumatic crust, nauseous and indigestible in the extreme. Boiled till soft, and eaten with French mustard or jam, it makes a soluble and wholesome dish, pleasing to the palate and the reason."

and retired pugilist, whose case I have tabulated (No. 35), has adopted it for some years with the greatest comfort to himself. He is able upon it to work in a most violent manner in a small garden which he cultivates for himself in the suburba. He has reduced himself from 20 to 17 stone; whereas his brother, who has not the same strength of mind, has increased to 23 stones in weight. Persons of more refined education ought, and often do, practise the same self-imposed restraint more easily. J. R. (No. 7), has reduced himself from 22 to 18 stones, and sometimes brings himself down to 17, but finds that he derives no particular advantage from being of the lower weight.

"The smallest amount of nutriment consistent with the health of the individual can be found by experiment only; but we need not fear that ten ounces of solid food a day is too little; for the last-mentioned gentleman confined himself for a long period to that quantity, and found his mental and bodily powers always equal to the strain which the pursuit of a laborious profession in London demands. It may be remarked by the way that it is often advisable to add a small allowance of malt liquor at dinner, as otherwise the craving of the appetite is less easily appeased. The beers to be avoided are of course the thick, sweet kinds; but that which is thoroughly fermented at a low temperature, in the Bavarian way, seems to contain very little injurious matter.

"I do not know that any advice concerning sleep is peculiarly applicable to obese persons beyond what we should recommend to all classes of men. A draught of morning dew, "*nocturni roris auram ante solis ortum bibendam*," which Aurelian* prescribes for the corpulent, is equally beneficial to every one. They are usually uneasy sleepers, and, though lethargic, by no means averse to early rising.

"In cases where the fat is largely accumulated in the omentum, it is very convenient for the patient to wear a band round the abdomen, which may be tightened gradually. The support thus given to the abdominal muscles relieves the dragging sensation in the loins, which many persons, whose viscera are heavy in proportion to their strength, experience. It enables exercise to be taken with more facility, and appears also by pressure to afford some assistance to the absorption of fat.

"The above remarks will apply equally to all forms of obesity; the abstinence recommended can be borne even by the aged, and only comfort be experienced.

"As respects exercise, however, a distinction requires to be made. The young and vigorous, whose obesity does not prevent the use of their legs, cannot employ them more usefully than in walking as long as they are able. The greater number of hours per diem that can be devoted to this exercise the quicker will be the diminution of bulk. But as riding, by the gentle shaking of the abdomen, excites the secretions of the digestive organs more, it should, where

* *Morb. Chron.* l. v. cap. 4.

practicable, be employed in addition. Where freedom of motion has once been gained, rowing, shooting, any or all of the forms of British gymnastics should be adopted as regular habits.

"But in the asthenic form of the disease, especially in elderly people, this is scarce practicable. The defect in muscular power prevents the use of the limbs in walking for a time long enough to be advantageous. But where riding can be managed, it should on no account be omitted, and the suspensory belt before-mentioned is often a valuable auxiliary to the employment of this exercise.

"The ancients were much more in the habit than we are of using various forms of friction to the skin in treating chronic complaints; and we find in Aurelian a recommendation to the corpulent to employ dry rubbing, either with cloths alone, or with the addition of various powders. Modern habits of cleanliness supersede in some degree these remedies. But the skin is not unfrequently greasy from a thick sebaceous secretion, and the circulation through it languid in asthenic obesity, and, in these cases, horse-hair gloves may be used with great advantage. Dr Flemyng strongly advises friction to be employed to the trunk of the body as promoting absorption and invigorating the surface.* The Greek additions of cold-bathing or sponging, especially with sea-water, the vapour or hot-air bath followed by rubbing with salt or with sand, and many other modifications of the same principle enumerated by Aurelian, will naturally suggest themselves to every intelligent patient.† The same author very sensibly advises these remedial measures to be employed fasting, and no food to be taken for some time afterwards, and modern habits render before breakfast a convenient time. To these rules of management, medicines, strictly so called, must be viewed as secondary and auxiliary. Unless these laws are obeyed, pharmacopœias are useless.

"Purgatives I have generally found not needed in the plethoric form; the bowels usually act once or twice in the day. But in the asthenic obesity of old people, where the abdominal walls are weakened by long pressure of an unnatural weight, it is necessary to employ them.

"But there is one class of medicines so universally applicable to all cases of obesity, that I think a trial of them should never be omitted. The chemical affinity of alkalies for fat, point them out as appropriate alteratives in this complaint, and experience proves that they are suitable to the state of the digestive organs. The most eligible one is liquor potassæ, and it may be administered in much larger quantities than any other. If given in milk-and-water, we may safely commence with half a drachm, and raise the dose to a drachm and a drachm and a half three times a day. The milk covers the

* Discourse on Corpulency, p. 15.

† "After this lecture, a gentleman present came up and told me that he had found in his own case of moderate obesity singular benefit from this measure. He had used the compendious hot-air bath heated by a lamp, and could compare the quantity of sebaceous secretion elicited only to the *vernix caseosa* of a new-born infant."

taste of the potash better than any other vehicle. It has truly the disadvantage of saponifying a portion of the remedy, but there is no evidence to prove that its efficacy is thereby endangered; indeed, soap itself has been strongly recommended. A physician, whose case is recorded by Dr Flemyng, (*op. supra cit.*,) reduced himself, by alicant soap alone, two stones in weight.

"I have often given the above-mentioned doses of liquor potassæ (even to children in cases of scrofula and consumption) without any harm arising from its use, when taken, as desired, in milk. The fear of alkaline medicines has probably arisen from the injury observed by Huxham,* to follow the use of Mrs Stephen's saponaceous mixture, at one time so popular, and therefore often misapplied. The injury appears to have originated from their being employed in improper cases, such as debilitated gouty subjects, chronic stone in the bladder, and the like, to which of course much harm would be done.

"In the case of Mrs S., (No. 6 of the list), very striking benefit followed rapidly the use of this remedy. She was, as may be seen by her weight, (28 stone 8 pounds), a woman of extraordinary size, and was becoming, when I first saw her, almost immovable. Her appetite was small, and she drank little, so that not much was to be done in her case by reducing the diet. A very short time after commencing the use of liquor potassæ, her shortness of breath left her, she was enabled to walk about with comfort; easy sleep at night, such as she had not had for months, returned to her, and the appetite, or, rather, relish, for the small quantity of food allowed her was restored. Instead of being confined to her chair, she has voluntarily come to see me from the extreme east of London several times, and I believe is now continuing to employ the drug from which she has experienced so much relief.

"Similar benefit was derived from liquor potassæ in Mrs Q.'s case (No. 24), whose weight was twenty stone, but was somewhat reduced by the remedy, as I am informed.

"A poor woman, who sold eggs in Chelsea, was becoming quite unable to gain her livelihood by her ordinary occupation. I have not kept a note of her weight and height, and therefore she is not mentioned in the table of cases, but she was extremely obese; and the cause of a variety of symptoms she complained of seemed traceable entirely to the accumulation of fat. By taking liquor potassæ only, without change of diet, she was reduced so far as to carry on her trade with comfort.

"F. V. (No. 2) and Celia S. (No. 17) are also deriving advantage under the alkaline treatment, but, as in the first case, it was preceded by a bleeding, and, in the latter, is accompanied by a great change of diet, the separate value of the remedy is not so well tested.

"Another case was communicated to me the other day of a gentleman who weighed 19 stone 7 pounds. By regimen, exercise, and liquor potassæ, he was reduced two stone and a half in six weeks.

* Huxham on Fevers, p. 48.

“I have mentioned bleeding, and perhaps that may cause some surprise, after the observations which have been made on the state of the circulation in fat people. But where distinct signs of plethora are present—such as pain over the eye-brow, beating of the temples, restless sleep by night, lethargy by day, with full lips and an elastic skin—it is capable of being employed with safety; and where it is employed, the advantage derived at the commencement of a course of treatment is very great, for it gives all the other remedies a fair start; and by affording immediate relief to many symptoms, gives the patient a favourable opinion of the plan he has undertaken. It was of great use to F. V. & J. R., (Cases 2 & 7).

“On the other hand, it is scarcely necessary to say, that much risk attends the loss of blood; for if the heart has become atrophied and weak, it will not stand the shock. Venesection may cause either sudden death, from failure of the heart's action, or effusion of blood in the brain, from disturbance to the circulation.”

Of the use of vinegar Dr Chambers disapproves; and iodine he regards as not efficient, and sometimes dangerous.

To these observations from Dr Chambers our limits will scarcely permit us to make any addition; and it is certainly to our readers more profitable to submit the instructions which the learning and experience of Dr Chambers have enabled him to collect, than to advance any thing of our own. The subject, nevertheless, naturally suggests one or two remarks which may here be more properly introduced than elsewhere. We have already seen the lesson which the case of Dr George Cheyne teaches both as to the antecedents of corpulence, the hurtful consequences of that condition, and the treatment which ought to be pursued in order to abate the evil and mitigate its effects. No one who peruses the account given by that gentleman himself can fail to perceive, that not only was the excessive corpulence the result of a long-continued course of intemperance, but that all the complaints which it engendered were kept up much longer than they otherwise would have been, and were greatly aggravated by the patient not adopting in good season a decided course as to restrained diet and regimen, and adhering with firmness and resolution to that course. The case was in truth mistreated for years, by having recourse to medicine with little aid from diet, and by not reducing the diet sufficiently both in quality and in quantity. It is indeed somewhat odd, to hear this learned physician talk of procuring large quantities of nuts;—filberts, walnuts, chestnuts, almonds, &c., and eating them with little moderation, by way of dessert after dinner, at a time when he ought, if he wished to be well, to have eaten neither dinner nor dessert. It was not wonderful that after such indulgences he had the erysipelas in the legs, the sickness and retching at stomach with colicky pains, and restless

nights, and coughed up large quantities of gross viscid phlegm. No other result could have been expected to take place.

Consider, on the other hand, the not less instructive and greatly better managed case of Mr Thomas Wood, the Essex miller, as recorded by Sir George Baker.* While this instance shows equally well the effect of excess and intemperance in eating and drinking in inducing corpulence, and its most conspicuous inconveniences, it shows not less clearly and forcibly the decided benefit resulting from the adoption of a systematically restricted diet, and adhering to that with firmness and resolution. Mr Wood, it may be remembered, from the time at which he attained the state of manhood,—that is, we understand, the age of twenty one years,—was in the habit, for fully twenty-three years after this period, of eating voraciously three times daily, of fat meat, together with large quantities of butter and cheese. Strong beer was his common drink; and in that liquor, also, he indulged freely. The effect of all this over-feeding, with very little exercise, was, that in his fortieth year he began to grow very fat; yet finding his appetite good and his sleep undisturbed, he made no alteration in his mode of living or in the amount of his food. At length, however, the enemy who had been approaching was close at hand. The stomach, which had been so long taxed beyond its powers, refused longer to endure this hard duty. Mr Wood, in his forty-fourth year, began to suffer in the digestive organs. He suffered from constant thirst; he had attacks of heartburn; frequent sickness at stomach, pains in the bowels, fits of giddiness and headach; and his sleep was much disturbed. Next he had violent rheumatism, and frequent attacks of gout, with its concomitant, gravel, almost habitual. He had two epileptic fits, showing that the circulation of the brain must have been very much disordered. The symptom, however, which he considered most formidable, was a sense of suffocation, which often came on, particularly after meals. This might partly be the effect of mere plethora; but it is very likely that it was the commencement of disease of the heart. Under this complication of diseases, says Sir George Baker, every day increasing, he continued till the month of August 1764. Mr Wood was then in the forty-fifth year of his age.

It is unfortunate that this otherwise excellent record falls under the censure of Dr Chambers in this respect, that no accurate account of the bulk and weight of Mr Wood is given. He would indeed at no time allow himself to be weighed. All that is stated

* The case of Mr THOMAS WOOD, Miller of Billericay, in the County of Essex. Communicated by Sir George Baker, M.D., F.C., Physician. *Medical Transactions of College of Physicians*, Volume the Second. London, 1772. P. 259; and Volume Third, p. 309. London, 1785.

is that, when at his zenith of corpulence, he was a monster ; and when he was reduced to a moderate size, it was conjectured that he had lost ten or perhaps eleven stone weight. This is probably not far from the truth, as country clergymen, farmers, and millers, are tolerably exact judges of weight from mere inspection. If so, he must have weighed when at the largest, almost twenty-two or twenty-three stones, probably more.

It is to be observed that it occupied nineteen years of excessive feeding to produce this degree of corpulence ; and twenty-three years in order to thoroughly derange the functions of the stomach, fill to excess the whole vascular system, and derange the secretions so completely as to induce rheumatism, gout, gravel, epileptic attacks, and incipient disease of the heart.

At this time, August 1764, when Mr Wood was in his forty-fifth year, a neighbouring clergyman observing his bad state of health and extreme corpulence, recommended to him an exact regimen, and suggested the *Life of Lewis Cornaro*, as a book likely to be serviceable in instructing him as to the method of procedure. Mr Wood immediately reduced the amount of his food and drink, taking one pint of beer daily ; and began to feel more active and less oppressed. This regimen he continued for two months, and then he diminished the beer by one half, reducing also the quantity of animal food. On the 4th of January 1765, in his forty-sixth year, he ceased to take malt liquor at all, and drank only water, eating animal food of only what are esteemed the light kinds. Under this system of living most of his complaints were relieved ; but he was still tormented by rheumatism, and had occasional slight fits of gout.

On the 4th of June 1766, Mr Wood began the use of the cold bath, continuing it twice or three times every week, until the 29th of October 1767. The use of butter he had given up early in 1767 ; he avoided cheese after the 30th day of June 1767 ; and the 31st of July was the last time he took animal food. Since the last date his food consisted of pudding made by pounding and boiling coarse sea biscuit, previously mixed with two eggs. But as he found this was rather heavy, he afterwards restricted himself to the use of a pudding consisting of one pound of the flour of which the coarse sea biscuit is made, boiled with skimmed milk without any other article. One part of this Mr Wood took at four or five o'clock in the morning as breakfast, and the rest at noon as dinner, and no more food till next morning.

Under this mode of living for two years, going to bed at eight, rising between four and five in the morning, and using a good deal of exercise, Mr Wood not only reduced his size as already stated between ten and eleven stones, but got rid of all the complaints under which he had previously laboured. He got the

better, 1st, of severe dyspeptic symptoms, 2d, catarrhal attacks, 3d, rheumatism, 4th, gout, 5th, gravel, 6th, a state of the cerebral circulation, which must have terminated either in palsy or fatal apoplexy, and 7th, symptoms which betokened incipient disease of the heart.

The regimen now mentioned was steadily continued, first for two years, counting from 4th January 1765; then for three years, counting to 30th January 1770; and at the time when he was last seen by Sir George Baker, 22d August 1771, it had been continued six years, six months, and three weeks, not only with the effect of diminishing the state of corpulence without injury to health and strength, but with the result of greatly improving both. In this course Mr Wood persevered to the end of life, which was twelve years longer. He died on the 21st of May 1788, in the sixty-fourth year of his age, in consequence of inflammation of the bowels, induced, it was believed, by getting wetted while riding on horseback in the rain.

This case may be regarded as a most successful example of the effect of restrained diet and strict temperance in curing completely and safely a great degree of corpulence, and permanently curing several painful diseases which are too often totally unmanageable by means of mere medical treatment and the administration of medicines. The case shows that restricted diet, especially if consisting chiefly of the Cereal grains, is perfectly adequate, without aid from medicine, to cure both corpulence and several of its most formidable concomitants. The cure indeed appears, if the intensity of the symptoms be carefully considered, to have been greatly more effectual and permanent than any of those which are ascribed in more recent times to homœopathy, hydropathy, and the other forms of alleged new and powerful therapeutic methods.

It can scarcely be too often impressed upon those concerned, whether physicians or patients, that restrained diet, in other words, great moderation, affords a much safer method of obviating and diminishing corpulence than that by means of medicine. It may also be perceived, that the practice sanctioned by Mr Wadd of allowing animal food under such circumstances, is rather a concession to the desires and frailties of patients than a measure either proper, safe, or necessary.

In an Appendix the author makes some judicious observations on Emaciation and its pathology, and the treatment required for each form.

This small treatise, the reader will perceive, contains the fullest information hitherto given on the nature and the causes of corpulence, and the best methods of treating corpulent persons, and showing them in what manner they ought to live.

- ART. III.—1. *On Diseases of Menstruation and Ovarian Inflammation, in connection with Sterility, Pelvic Tumours and Affections of the Womb.* By EDWARD JOHN TILT, M.D., Physician to the Farringdon General Dispensary, and the Paddington Free Dispensary for the Diseases of Women and Children. London, 1850. Post 8vo, pp. 250.
2. *On the Preservation of the Health of Women at the Critical Periods of Life.* By E. J. TILT, M.D., Senior Physician to the Farringdon General Dispensary and Lying-in Charity, and to the Paddington Free Dispensary for the Diseases of Women and Children. London, 1851. 12mo, pp. 142.

THERE are in use among medical writers and physicians four or five names which are employed to designate certain morbid states either of the female organs of generation alone, or of those organs with a morbid condition of the system at large. The terms AMENORRHOEA, DYSMENORRHOEA, MENORRHAGIA, and LEUCORRHOEA, are employed to designate certain morbid conditions of the womb and its appendages; and the term HYSTERIA is employed to denote sometimes a chronic condition of the system at large, sometimes acute attacks of the nature of paroxysms or fits, with which are often associated one or more of the complaints known under the names of AMENORRHOEA, DYSMENORRHOEA, MENORRHAGIA, and LEUCORRHOEA. These different affections have, it must be observed, been too often regarded by many physicians and physician-accoucheurs as diseases; and so, accordingly, has the treatment of them been undertaken and conducted. That, nevertheless, they are not substantive and individual diseases, but merely symptoms and effects of certain diseased conditions of the womb and its appendages, we believe is an inference which has been long recognized by many observers. The state of sterility, further, upon which a number of singular fancies have at different times prevailed, which is often associated with hysteria, either in the acute or the chronic form, has been traced to various morbid conditions of the womb, the ovaries, or the Fallopian tubes.

Though these views have been familiar to good observers and reflecting practitioners for a considerable number of years, no one has so decidedly placed them before the profession, or supported them with so much evidence and so many proofs, as the present author. Dr Tilt sets out with the principle, that the words AMENORRHOEA, DYSMENORRHOEA, MENORRHAGIA, and LEUCORRHOEA, each of which really symptomatically represents a

great variety of lesions and morbid conditions of the womb, the vagina, the ovaries, and the Fallopian tubes, cannot be received by the pathological physician as things substantive, that is, as we understand, as essential and individual diseases or forms of disease, for the reason that from vague and general terms in medicine must spring vague and injudicious treatment. We believe, it must be allowed, that the treatment of these several complaints, or, to speak more accurately, the treatment of the complaints which have been the main cause and origin of these symptoms, has been too often irregular, desultory, empirical, and inefficient, chiefly because the treatment was not directed to act on the primary lesion, or, because, the remedy administered was not applied in the proper manner, and to the exact suffering tissue. Dr Tilt further proceeds throughout, upon the supposition that by looking to the primary lesion, which according to his view is very generally, if not constantly, seated in the ovaries and oviducts, that is the Fallopian tubes, the treatment may be rendered efficient, and patients may be promptly and satisfactorily delivered from their afflictions.

In the present treatise Dr Tilt does not propose to consider all the organic lesions enumerated as causes of Diseased Menstruation. He confines himself to the examination of those organic diseases only, by which he has reason to believe they are very frequently produced; namely, inflammation of the Ovaries and Oviducts. As a preliminary he directs attention to the nature and purposes of the function itself.

Menstruation, Dr Tilt defines to be a sero-sanguinolent secretion propelled by an Ovarian influence, from all or different parts of the generative intestine, and principally from the Womb. The first appearance of this secretion and its subsequent periodical recurrence exercises on the system and health of the individual an influence, which varies in different women and in different orders of women. The antecedents and concomitants of the secretion are believed by Dr Tilt to be illustrated by the following figures deduced from facts collected by M. Brierre de Boismont. With regard to the first appearance of the secretion among 645 women carefully questioned, in 375 the menstrual discharge appeared without previous symptoms, and in 228, its first appearance was preceded by pain and other symptoms of illness. Among 654 women, in whom the menstrual function was fully established, in 496 each monthly return was accompanied by symptoms; in 360 cases, the symptoms were both general and local; in 136 there were general symptoms alone. From these facts Dr Tilt infers that in only 158 females out of 654, that is about twenty-five per cent., were the menstrual periods unattended by precursory signs and concomitant painful symptoms.

The ovular hypothesis, or that which attempts to connect the

menstrual secretion with a peculiar orgasm in the ovaries, accompanied with the enlargement and discharge of an *ovulum* or ovarian vesicle, Dr Tilt regards as on the whole the most satisfactory. That it has defects he admits; but these are fewer and less serious than in any other hypothesis hitherto proposed. Carus observed *ovula* floating in the fluid of fully developed Graafian vesicles in girls of from two to four years of age; yet in them no menstrual secretion had taken place; and in the instance of a noted woman condemned to suffer capital punishment for the commission of murder, and who had begun to menstruate twelve hours before execution, "no appearance of recent rupture of a vesicle, or of the discharge of an ovum, could be found in either ovary," according to the testimony of a careful observer. These difficulties and objections Dr Tilt thinks that the defenders of the ovular hypothesis are unable to explain.

In answering the question, What are the organs of menstruation, Dr Tilt involves himself in the obscurities of transcendental anatomy, and the mysteries of final causes. The uterus, he argues, stimulates the ovaries to increased action. The uterus itself derives its stimulus from the external organs of generation; and the reasons of its existence from the ovaries. The ovaries are the essential organs of reproduction; in them originate the greater proportion of those sympathies which have been called uterine; in short, the development of the pelvis, of the uterine system, of the *mammæ*, the function of menstruation, and all the peculiarities of the human female, depend upon the ovaries. The ovaries are also the organs of menstruation, because if they do not exist, though the uterus be present, menstruation does not take place. They, in short, regulate and govern the function of menstruation, so that if the latter be disordered or impeded, these irregularities must be traced to some previous morbid condition of the ovaries.

As healthy menstruation depends on the healthy structure of the Ovaries, so diseases in menstruation depend on a morbid condition of these organs; "for the phenomena of painful menstruation," says Dr Tilt, "when carefully analysed, may be often found to embrace the symptoms of sub-acute ovarian inflammation." As, however, the uneasy and painful sensations which women feel at the approaching periods of menstruation, are supposed by most of them to be inseparable from the function, medical assistance is rarely requested, unless when these sufferings are extreme in degree and protracted in duration. In this way, Dr Tilt thinks, not a few women continue to suffer for years complaints, which finally either greatly impair their health, induce permanent sterility, or prematurely bring them to the grave, when a little well-timed and judicious medical treatment might completely re-establish health,

render them mothers, or otherwise avert those evils which so frequently embitter the lives of females.

In a discourse which follows the introduction, and to which the corresponding name of Prolegomenon is given, the author considers the mechanical means of ascertaining the presence, the nature, and the degree and extent of ovarian disease, or the different methods of ovarian exploration. These are four in number;—namely, 1st, abdominal examination; 2d, exploration *per vaginam*; 3d, exploration *per rectum*; and 4th, the double touch, or that in which exploration by the vagina and that by the rectum are conjoined; the thumb being introduced into the former cavity, while the under finger is carried into the latter.

The morbid state which the present author thinks lies at the root of all the unhealthy phenomena and symptoms above enumerated, is what he denominates SUBACUTE OVARITIS, including under this denomination not only subacute but chronic ovaritis, and several not very well defined affections, which have from different observers received different appellations. Thus the secondary pelvic inflammation of Dr Every Kennedy, the menstrual colic or abdominal pains more or less acute which appear in many females at the usual time of the menstrual illness, and the hysteralgic Dysmenorrhœa of Gendrin, are all arranged under the head of SUBACUTE OVARITIS.

The disease the author represents to consist in swelling of the ovaries, with increase of heat and pain aggravated by pressure, accompanied by intermittent or permanent pain or uneasiness in the ovarian region, radiating to the loins and the thighs, and producing, according to the constitution of the patient, an arrest of menstruation, or its profuse flow, intense local pain, or hysterical symptoms.

By sub-acute inflammation, as distinguished from acute, Dr Tilt understands not so much a difference in the intrinsic nature of the morbid phenomena, as a limitation of the inflammatory action, to certain distinct parts of the ovaries, as the ovarian follicle and portions of the ovarian tissue so small, that they give rise to little swelling and to no febrile action. This idea leads him to indicate as peculiar properties of the sexual system of females, the liability to inflammation of certain portions of the generative apparatus, in which the others may not participate,—a peculiarity to which the ovary is still more liable on account of its complex structure.

As the following passage contains statements which some may regard as contradicting each other, it must be given in the words of the author.

“Sub-acute OVARITIS, whether primarily developed as such or supervening on the acute inflammation of the ovaries, is necessarily a chronic disease, from the circumstance of the ovaries being subject

to a periodical augmentation of nervous and sanguineous excitement. Chronic OVARITIS is always sub-acute; and as sub-acute inflammation of the *ovaria* is often present without being chronic, we have thought it best to adopt the appellation common to them both, instead of that generally made use of. Sub-acute OVARITIS is by far the more common, and, therefore, we will first proceed to its investigation.

"It is evident, however, that in the determination of causes, in the symptoms, and in the treatment of these two diseases, we shall find a great similarity; we shall also find that they may pass the one into the other, the sub-acute being exasperated into the acute, while acute *ovaritis* sometimes becomes sub-acute, or chronic, as it is then generally termed.

"We admit, then, two forms of OVARITIS;—1st, the sub-acute; 2d, acute OVARITIS; and, in attempting for the ovaries what has been so felicitously done for other organs, we will endeavour to show that the groups of symptoms which have been associated under the classic names of Amenorrhœa, Dysmenorrhœa, Menorrhagia, and Hysteria, are often the mere symptoms of sub-acute OVARITIS.—P. 40-41.

This last paragraph contains the whole doctrine proposed by Dr Tilt. The mode in which this doctrine is illustrated and explained is stated in the following terms.

"We admit that menstruation does not consist in the mere periodical discharge which may or may not accompany it, and that the maturing and periodical elimination of ovules is the primary fact of menstruation, and that which determines all the other phenomena of that important function. Now, if we inquire into the anatomical conditions of the ovarium, we find in its extremely spongy and erectile tissue, and in the great proportional development of its vessels, predisposing causes of inflammation. If we study the ovaria during ovulation, we find that there is a sanguineous turgescence of these organs, and an appearance of blood-vessels on and in the vicinity of the vesicle, which, like a small nut, protrudes from the ovary. This is followed by a gradual thinning, and progressive absorption, and bursting of the vesicle. This congestion and effort to eliminate a foreign body, and subsequent ulceration and cicatrization, when observed elsewhere are called inflammatory; they attend the natural function of the ovaria: but we must, however, admit that this physiological excitement may easily merge into the pathological condition, called inflammation. Having premised thus far, we will now proceed to state what is the pathological condition of the ovaria when sub-acutely inflamed.

"As with any other organs bounded by a serous membrane, the ovaries and peritonæum may be separately, distinctly, or simultaneously the seats of inflammation. Nowhere are adhesions, false membranes, and other products of inflammation, so frequently found as in that portion of the peritonæum which covers the generative

organs of women. Some authors—Dugés, amongst others—have asserted that sometimes (although not exhibiting any false membranes) the peritonæal covering of the ovaries and the Fallopian tube still presents signs of inflammation, the peritonæum being thicker than usual, the subjacent cellular tissue having lost its transparency, being white, or else exhibiting spotted or striated suffusions, caused by the infiltration of a thick opaque serosity, of a white, pink, or yellow colour, or else distended with a gelatinous substance. Chronic peritonitis has been found more frequent in girls than boys, and mostly in those who had already begun to interrogate the secret sources of pleasure which lie hidden within them.

“The ovary itself is slightly increased in size, or double its usual dimensions, resisting and elastic; on pressure, it yields a sensation of fluctuation; its surface is smooth, polished, and glistening; its tissue more red than natural, though less resisting; congested with blood, as described by Negrier, or moist with a sero-viscous fluid, called spermatic by Bonnet, Lieutaud, and others, in consonance with what was then the name of the ovaria, *testes muliebrum*, and in harmony with the then current opinions of the day. It is traversed by a number of smaller vessels, especially in the neighbourhood of the cells, which, placed at the surface of the organ, contain ovules, and may be healthy or diseased.

“The vesicles have been found presenting *individually* evident signs of all the different stages of inflammation, although surrounded by a perfectly healthy stroma; the parietes of the vesicles have been found highly vascularised, so as to look like red currants, friable, lined with false membranes, or full of well-formed pus—minute but unerring testimonials of previous inflammation. The proof of their chronic inflammation has still more frequently been observed. They may be hypertrophied, of the size of a pea, or larger, round, or falciform, with an extremely dense white internal membrane, having a polished surface of the thickness of parchment. They may be also found pellucid, having interposed within them and the parenchyma of the gland one or two other distinct membranous layers, with or without intermediate granular matter. They may contain either a green, yellow, or fatty liquid, or a pulpy substance, like the interior of an encephaloid cyst, or even solid saline concretions, as observed by Morgagni. The vesicles are sometimes found, on the contrary, atrophied and blighted; their liquid contents being partly absorbed, the follicles are no longer fully distended, but look like wrinkled sacs, of a white or greyish colour; and here we may observe, that, however difficult it may be to understand, inflammation is known to cause sometimes hypertrophy of the ovaria, while at other times, under the same mysterious influence, the ovaries of young women have been found as hardened and collapsed as those of women who have outlived the period of active ovarian life. These white bodies and cysts are never observed before menstruation; but they may be met with in every other stage of life, in virgins as well as in prostitutes. From the nature of these lesions, which are evi-

dently inflammatory, we are able to infer the relative frequency of various stages of inflammation in one or more of the ovarian follicles.

"Heretofore, the minute lesions of these organs have been neglected, because they did not embody an idea, or uphold any particular point of doctrine. As the physiology of the ovaria scarcely dates from later than yesterday, we need not be surprised at finding their pathology in an embryonic state. These lesions have been cursorily noticed by embryologists or physiologists, studying the ovaries from their own peculiar points of view; and, when the numerous ovarian lesions are studied with the microscope, and other resources now called to the aid of the anatomist, and the facts elicited are put together by means of a constructive idea, it will then be no longer difficult to present a richer display of anatomical facts than the meagre elements of information we now possess.

"When sub-acute ovaritis occurs in the puerperal state, the ovaries are found greatly increased in size, their tissue becomes more friable, and infiltrated with yellowish or violet-coloured serum, sometimes resembling that of the spleen, but at other times it is more infiltrated with serum, slightly tinged with blood. In recording these lesions, and ascribing to them their due value, we must not, however, forget that the ovaries may be partially, and even seriously inflamed, without the power to perform their proper functions being permanently compromised. Do we not see the substance of the lung recover from the solid state, and again become permeable to air when the patient is cured of acute pneumonia?

"The liability of the Fallopian tubes to inflammation is proved by their often presenting undoubted traces of its having existed. This is not only the result of our own experience, but it is confirmed by the testimony of those who, like Dr Ashwell, Dr R. Lee, and Professor Cruveilhier, have alluded to lesions of the ovaries, and of their ducts; and Dr Hooper, in the few pages prefacing his admirable delineations of uterine and ovarian disease, does not hesitate to say, that 'the Fallopian tubes are frequently found to have suffered from inflammation.' Their inflammation is almost always a consequence of ovaritis or metritis, and is confounded with these diseases, exactly in the same way as Fallopian cysts are confounded with ovarian—a confusion of diseases which, as the same treatment is required in both cases, is indeed of but little consequence. As regards the morbid conditions which have been noticed, the fimbriæ may be found preternaturally florid, highly vascular, filled with blood, attached by recent false membranes to the ovaries or adjacent organs, or bound down to the same by firm, thick bands of long standing. The fimbriæ of both Fallopian tubes may be found destroyed, but in general those only of one or the other are seen to be totally so.

"This is a lesion of very frequent occurrence (Dr Hooper), and with it generally coincides the obliteration of that extremity of the tube by which it communicates with the peritoneal cavity. The oviducts then terminate in a cul-de-sac, they are also increased in size,

and are mostly tortuous or of a pyriform shape, and their sides are thicker than usual, and fluctuating when pressed. On being opened, they are found to contain a serous, albuminous, puriform, or bloody fluid, and their internal surface is covered with tenacious or flocculent albuminous substance, the removal of which exposes tissues which are inflamed and softened. We may here observe, that however frequently obliterations of the Fallopian tubes may have been found, their imperforation, whether congenital or accidental, has been very seldom met with. A web of false membranes has been often discovered lining the interior of the oviducts of prostitutes, and of those women who have recovered from puerperal metropéritonitis; whereas the same tubes are often found full of mucus, or even pus, in those who have died in the acute stage of the disease. Whether or not this condition furnishes any direct therapeutical indication, we will leave for future consideration.

"In some cases, the oviducts may be perfectly healthy, and still unable to perform their allotted task, owing to the existence of false membranes, by which they may be glued to the neighbouring viscera, so as to preclude the possibility of their precise adaptation to the ovaries. Varying in density, from that of the finest diaphanous film to that of strong ligamentous bands, these false membranes are of very frequent occurrence; and, in prostitutes, the ovaries and Fallopian tubes are seldom found without some one or other of the lesions already described, if we may rely on the testimony of Walker, Renaudin, and Dr Oldham."—Pp. 41-48.

It is difficult, in treating of such a subject, to separate the occurrence of the alleged morbid process from the consideration of its antecedents, or the causes which are most like to induce it. The principal predisposing cause of both forms of disease, subacute and acute OVARITIS,—for what induces the one may induce the other,—Dr Tilt places in the nature and function of the genital organs; and in so doing he recalls and impresses the anatomico-physiological fact, that the Fallopian tubes must be regarded as the ducts or conveying channels of the ovaries, and that, consequently, the ovaries, Fallopian tubes, and interior of the womb, are to be viewed as all forming one simple continuous intestine, as it were. The periodical congestion of the ovaries during the approach of the menstrual orgasm, and the analogous congestion which is known to take place during sexual intercourse, the author views as the main predisposing causes of this form of ovaritis. In other words, the frequent vascular excitement to which these organs are liable by virtue of their functions, renders them liable to vascular irritation, which may and often does proceed to inflammation. "We may therefore admit," he says, "that if by any cause this congestion were carried to a greater degree than ordinary, or protracted beyond the usual time, general inflammation might attack the organ itself, having its source in the local

irritation of which the ovaries are the seat, at each menstrual period; we find accordingly that, in many of the published cases of *ovaritis*, the disease comes on at the time, and instead of, the menstrual discharge."

He further allows that constitutional peculiarities may act as predisponent causes; and that in young females of particular temperament, not only menstruation, but marriage and its consequences, and mental emotions may all tend to induce this subacute form of inflammation. The phenomena of the lives of public females and others of dissolute habits, as well as the appearances well known to be presented by the ovaries of such persons after death, show clearly enough, the influence of sexual intercourse under certain circumstances, in giving rise to local and partial *foci* of inflammation in these organs. The surfaces of the ovaries are always hard, rough, and irregular, covered with thick cartilaginous and pearly-like patches, which must have been the remains of inflammatory exudation. Cicatrices or scratch-like scars also are observed on their surface. In their interior are often seen vesicles much larger than the healthy Graafian vesicles, containing yellowish or reddish semifluid matter like jelly. In other instances, hard specks and tubercles are observed. All these appearances are most probably to be regarded as effects of the vascular orgasm and excitement, to which these organs in such persons are habitually subjected.

On other causes, such as those arising in a highly civilized community, where the appearance at least of immorality must be more or less sedulously avoided; or the circumstances of young widows, and those of females whom Dr Tilt designates as involuntary virgins,—a class of persons who, he maintains, are very numerous, and daily increasing in numbers,—we must refer the reader to the work itself. Some doubts, perhaps, may be entertained of the correctness of the inferences, more especially those which imply the predominant and tyrannical influence of those mental emotions connected with the organs of generation, and to which influence, and the struggle between this and the moral part of the constitution, Dr Tilt ascribes many of these attacks. We are unwilling to express any decided opinion, further than that we think reason and modesty are, in the majority of cases, sufficient to counteract those feelings, when they are proceeding to an injurious extreme. Whether they are adequate to prevent the struggle to which Dr Tilt refers, and its effects, it is not easy to say; and we are perfectly willing to give the author the benefit of the doubt. If it be the fact, that reason and modesty, aided by religious principles, are inadequate, then more care than ever ought to be taken in the education of young females, especially in the better ranks, where circumstances unequivocally enough show that all cannot enter into the matrimonial state.

Of exciting causes, the following are enumerated:—1. Mecha-

nical causes; as falls on the feet or the knees, or the sacrum; riding immediately after menstruation; and the necessity for employing instruments. 2. Pathological conditions of the neighbouring parts; the retention or suppression of the catamenia; the transmission of inflammation from the uterus to the ovary by the Fallopian tubes; as in instances of ulceration of *cervix uteri*; and even catarrhal inflammation of the uterine part of the vagina; in malpositions of the womb. 3. Specific causes; as the puerperal state; the rheumatic diathesis; and blenorragic infection.

The description of the symptoms is carefully given; but for its details our readers will consult the work. The author never loses sight of his position that Dysmenorrhoea, as described by authors, is in many cases sub-acute *Ovaritis*. The disease assumes four types; the Amenorrhoeal, the Dysmenorrhoeal, the Menorrhagic, and the Hysterical; and he illustrates the leading characters of each by the detail of six cases.

Then follow, in Chapter Fourth, some judicious observations on Sterility, which are also illustrated by the particulars of five cases. It speaks favourably for the candour of the author, that in the last of these cases, he allows that he had at first taken an erroneous view of its nature, and it was only after he had rectified this view, and changed the treatment in accordance with the change in opinion, that the symptoms were relieved, and the patient finally recovered.

One of the best proofs of the correctness of theoretical principles is within certain limits, the degree of success which attends the treatment founded on these principles.

The treatment inculcated by Dr Tilt has for its object principally the subduing of inflammatory action. This he attempts by a modification of the antiphlogistic treatment. General blood-letting he eschews as rarely necessary, indeed never, if we understand aright; but local blood-letting by means of the application of leeches, he frequently prescribes; then revulsion or counter-irritation, as it is commonly called, by the use of blisters, with the sorbefacient influence of mercury, and the administration of laxative medicine, constitute the principal remedial agents. Enemata, either simply emollient and soothing, or anodyne, and sometimes of cold water, as sedatives, he employs as adjuncts to the use of leeches and vesication; and vaginal injections he also regards as serviceable auxiliaries.

Medicated inunctions, consisting of mercurial ointment with camphor, extract of belladonna, hyoscyamus, or opium, and occasionally iodine ointment, are mentioned as useful adjuncts.

In the sixth chapter, Dr Tilt treats of ACUTE OVARITIS. This is a disease with which the profession are most familiar, in connection with that complex and formidable disease, Puerperal Fever. No doubt can be entertained, nevertheless, that

that the disease does take place independently and without any connection with puerperal fever.

The lesions which take place in the ovary when acutely inflamed, "are in themselves more apparent and similar to those produced by inflammation in other organs. If the inflammatory process has been sufficiently intense, or has not been actively treated, the ovaria in the course of a few days swell to a considerable bulk; and if by chance an opportunity is afforded of examining them, they are found to contain pus, either infiltrated in the tissue of the organ, or disseminated in its various parts. These purulent deposits scattered through the ovaries have been described by Negrier, and considered as inflamed Graafian cells, filled with pus of their own secreting."

"These collections of pus, if not artificially opened, have a tendency to empty themselves into the neighbouring organs, when they will be found to communicate, by fistulous passages, with various parts of the intestinal canal, with the bladder, or with the vagina, or to open into the peritonæal cavity. T. Bonet, Shenckius, Merat, and Dr Seymour have related cases wherein the ovaries were found to be in a state of gangrene. We must remark that, in these acute cases of inflammation, the adjacent cellular tissue is also inflamed, and that this adds considerably to the size of the tumour, and to the extent of its suppuration—indeed, some authors think that pelvic tumours originate principally in the pelvic cellular tissue. The ovarian peritonæum is also implicated in the general inflammation. It is covered with false membranes, causing it to adhere to the neighbouring organs, and these adhesions (if the patient survive) are transformed into those solid bands which interfere with the play of the pelvic viscera, and frequently cause abortion.

"The coincidence of abscesses in the ovary and the corresponding oviduct were noticed by Morgagni, and afterwards by Andral, Dalmas, and Haase. In a post-mortem examination, Cruveilhier found both the ovary and the corresponding Fallopian tube distended with pus, the tube being adherent, and the ovary so softened in the vicinity of the adhesion, that it would soon have allowed its contents to pass through the tube to the uterus.

"The pathological lesions of puerperal ovaritis are sometimes seen to differ from those just described. Pus may be found in the ovarian veins, though not so frequently as in the uterine. Cruveilhier considers the lymphatics to be more commonly distended with the pus they have absorbed; and in several of the plates of his *Pathological Anatomy*, he has shown the deep and superficial lymphatics of the ovaries and broad ligaments replete with purulent fluid. These vessels have been sometimes mistaken for veins; but when the pus is removed from the lymphatics, those structures appear perfectly healthy; whereas, when veins are inflamed, their tissues are thickened, have become more fragile, and are lined with false membranes. The size of the tumour is often more considerable and the stroma loses all traces of organization, being more or less

changed into a milky sero-purulent magma, or into a greyish sanious matter, or a vascular pulp, which is almost diffuent, and approaches very nearly to the condition of gangrenous decomposition, since it indicates the total disorganization of the ovarian tissue. In some cases of puerperal metro-peritonitis, Cruveilhier, Boivin, Dugès, Seymour, and Dr R. Lee, have found on post-mortem examination the diffuent ovaries ruptured, without it being possible to ascribe the rupture to any violent traction; and the shreds of the organ being mingled with pus and peritonæal effusion, have, no doubt, been described as the result of gangrene by the older authors. In these cases, was not the ovarian rupture the cause of the fatal peritonitis?—Another important pathological distinction between puerperal and idiopathic ovaritis is, that in the latter the adjacent peritonæum is frequently not inflamed, and for years form an efficacious boundary to ovarian disorders; but in the puerperal variety, as might have been pre-supposed, the ovarian peritonæum soon participates in, and often even originates, the disease—a disease which is the natural sequence of the high susceptibility to morbid action brought on by parturition, and of the increased flow to the pelvic organs of blood containing a greater proportion of fibrine than usual.”—Pp. 149-152

In the eighth chapter, on Terminations of Acute OVARITIS, Dr Tilt examines with care the various modes in which this disease is liable to terminate; and illustrates these modes of termination by the details of twelve instructive instances of the disease.

In the ninth and concluding chapter the author explains at length the treatment which it is requisite to pursue, in order to obtain a favourable termination of the disease.

In the foregoing account, it has been our desire to communicate a correct abstract of the hypothetical principles impressed by Dr Tilt, and the practical applications thence deduced. On the merits of these doctrines, and on the question to what extent they are well founded, we have refrained from giving any opinion, as it appears more important that they should be made known, than that their correctness should at present be strictly scrutinized. It would be difficult to deny, that these doctrines contain a certain amount of verisimilitude, and it may be granted, of truth. It is probable that, in a certain proportion of instances of Amenorrhœa, Dysmenorrhœa, Menorrhagia, and Hysteria, the circulation of the ovaries may be in some degree deranged. But whether this derangement in circulation, in all cases, amounts to inflammation, and whether such inflammation be really the cause of the other disorders, appears not yet to be perfectly established. To consider inflammation of the ovaries, even sub-acute, as the author denominates it, as the invariable and constant cause of all the disorders in menstruation, will probably be regarded by many as

a generalization too violent and too exclusive to be readily admitted. Pain cannot in all instances, it is well known, be regarded as denoting the presence of inflammation; and when the various and often opposite means, under which the symptoms of very painful menstruation disappear and subside, are considered, it will scarcely be conceded, that in all these cases positive inflammation existed. One class of cases derive benefit from the judicious and persevering use of the warm bath; another are alleviated under the use of gentle laxative medicines, either alone or alternated with opiates; in another class, benefit results from carefully regulated diet and exercise, with suitable clothing; and in other instances, amendment takes place with little or no aid from medical treatment at all. It must further be allowed, that the local bleeding recommended by Dr Tilt can in few cases do harm; and though it did good, the result would scarcely be sufficient to prove, that inflammation had existed.

It may, in short, be maintained, and we have no doubt will be maintained, that in a large proportion of instances of painful and otherwise disordered menstruation, the pain and painful sensations which are felt, denote the presence, not of inflammation, but of irritation, and something neuralgic. This is not the place to enter into the distinctions, whether well founded or not, between these two processes, or to consider the evidence upon which the distinction between them rests. It is sufficient to observe, that they have been recognized by most sensible practitioners.

In many instances, accordingly, the phenomena which Dr Tilt describes as indicating inflammation of the ovaries, will be regarded by others as denoting vascular irritation of those bodies—a state which, probably only in extreme cases, advances to inflammation. It is well known that the phenomena of painful menstruation take place mostly in nervous, irritable females, and that these phenomena are often most speedily and effectually alleviated by the remedies which abate and remove this irritability. They indeed belong to that class of persons whom the late Dr Parry of Bath, a great advocate for the predominance of inflammation in many diseased conditions, would have designated as presenting marks of irregular determination of blood.

It is, nevertheless, an advantage of the hypothesis of Dr Tilt, that the view of it now submitted, militates not against the method of treatment which he has inculcated. That treatment is, in many respects, the exact method which the most successful practitioners employ in order to remove diseases of irritation.

Though the hypothesis proposed by Dr Tilt will probably be opposed by not a few on the grounds now mentioned, it is just to that gentleman to say, that he shows much knowledge and ingenuity in explaining and defending his views; and whatever may be the ultimate fate of the hypothesis itself, it is impossible to deny

that he is entitled to a fair hearing, and that his book must be serviceable to the practitioner, both for the information which it conveys, and for the ideas which it cannot fail to suggest.

The second treatise in our list by Dr Tilt is on a subject intimately connected with that of the first. While the first is a treatise etiological, pathological, and therapeutic, the second is to be viewed as a Hygienic or Prophylactic Discourse. Impressed with the supposed prevalence and misunderstood character of disorders of the menstrual function, and believing that many of these disorders originate in neglect, and ignorance of the proper management of young females, the author undertakes to give instructions, by attending to which, he is persuaded, many of the evils consequent on disordered menstruation may be prevented in their origin, and all may be obviated, and in different degrees alleviated.

It is impossible to doubt, that by thus beginning at what may be termed the origin and root of the matter, great evils may be avoided and prevented. The undertaking is one requiring both knowledge and a considerable amount of judgment. It embraces two divisions, moral management, and physical training, in obedience to physiological principles. As Dr Tilt is convinced, in the first place, from the evidence of multiplied facts, that in the moral and physical management of young females much evil prevails and several errors are committed, and as he ascribes these errors to the ignorance of mothers, and thinks that this can be counteracted only by medical influence, he undertakes to enlighten this important section of the community, by showing them the nature of the duties which they have to perform, in superintending the corporeal health and mental constitution of young and growing females. With this object in view, Dr Tilt published, in the Provincial Medical and Surgical Journal, a series of papers on the Right Management of Women, before, during, and after the Cessation of Menstruation; and the notice which he informs us these papers received, became to him an inducement for re-considering the subject, and, as we understand, publishing his matured views in the present form. The circumstance now mentioned renders it unnecessary for us to enter into a detailed examination of the present work; and we must be satisfied with merely mentioning, in general terms, the purposes of the author, and the subject and object of the book itself.

It is right, nevertheless, to say, that we are not entirely unvisited by an idea, that the author may have in some degree exaggerated the evils referred to, as well as the causes from which he thinks these evils proceed. Most mothers know from personal experience what are the changes which take place in the system of the female at and about the approach of puberty; and females

in general are not deficient in the importance which they attach to the due, regular, and safe establishment of the secretion, which marks the approach of that period. Treatises also more or less elaborate have been written on different departments of the subject, either for the information of medical practitioners or the instruction of parents ; so that, if the evils exist to the extent estimated, remedial measures are not altogether unprovided.

In 1835, M. Bureau Rioffrey published, on the Physical Education of Young Girls or the Hygienics of Women before Marriage, a treatise which contains much information and not a few serviceable suggestions* on the mode in which young females ought to be educated, both physically and morally. In 1842, Mr Edwin Lee published an English translation of the third edition of the French work of M. Aimé-Martin on the Education of Mothers of Families.† The original of this work had been honoured with the prize of the French academy, and therefore may be supposed to contain the best information which could be obtained at that time. The work is much more comprehensive than that by M. Bureau-Rioffrey, as the author enters more into the philosophy and literature of the subject, and bestows great attention upon the subject of literary and moral education. It is an objection, nevertheless, to this otherwise useful work, that the author is not only discursive, but has probably attempted to take too wide a range ; and the result is, that the work is less practical than it would have been, had it been confined within narrower limits. We fear also that the style of the work is not exactly suited to the taste of English readers.

If a work be really required, on the other hand, to instruct mothers, and persons likely to be consulted by them, on the nature of these duties, and the mode in which they ought to watch over the health, moral and corporeal, of the young persons committed to their care, the present treatise by Dr Tilt may be recommended, as well calculated for the purpose. It is short and condensed ; does not dwell too much or too long on any of the collateral subjects ; and the information which it convey comes at once to the direct object. The author also shows that he is deeply impressed with the importance of the duty which he undertakes ; and he shows both sincerity and judgment in the manner in which he gives his advice.

* *Education Physique des Jeunes Filles, ou Hygiene de la Femme Avant Le Mariage.* Par A. M. Bureau Rioffrey. D.M. &c. Paris, 1835. 8vo. pp. 332.

† *The Education of Mothers of Families ; or the Civilization of the Human Race by Women.* By M. Aimé-Martin. Being the work to which the Prize of the French Academy was awarded. Translated from the Third Paris Edition, with Remarks on the prevailing methods of Education, and their Influence upon Health and Happiness. By Edwin Lee, Esq., &c. London 1842, post 8vo, pp. 384.

His practical directions are summed up in the following twelve aphoristical paragraphs.

- " 1. To keep a girl in the nursery as long as possible.
- " 2. Not to let her be taken unawares.
- " 3. Never to seek to determine first menstruation by forcing medicines.
- " 4. Never to give or take forcing medicines to promote the re-appearance or the increase of the menstrual flow.
- " 5. Never to give or take purgatives during the week before and after menstruation, unless by medical advice.
- " 6. Never to allow a daughter's constitution to be undermined by profuse or very painful menstruation, or by permitting it to return at shorter periods than once a month.
- " 7. Never to be so reckless of her own, or her daughter's, health, or so unjust to her medical adviser, as to let him prescribe in ignorance of her state.
- " 8. A respect for whatever may have received life.
- " 9. A knowledge of the possibility of menstruation continuing during pregnancy, and of the danger of confounding this with other sanguineous uterine discharges.
- " 10. A knowledge of the possibility of menstruation continuing during lactation without in any way forbidding it.
- " 11. A knowledge of the reality of the dangers by which the change of life is attended.
- " 12. A conviction that these dangers can for the most part be avoided by a judicious line of conduct."—Pp. 141–142.

ART. IV.—*Of the Causes, Nature, and Treatment of Palsy and Apoplexy; of the Forms, Seats, Complications, and Morbid Relations of Paralytic and Apoplectic Diseases.* By JAMES COPLAND, M.D., F.R.S., Fellow of the Royal College of Physicians, &c. &c. London, 1850. Post 8vo. Pp. 414.

OF the present treatise a considerable portion was published many years ago in the first and third volumes of the author's Dictionary of Practical Medicine; and several of the chapters on the connection of paralytic and apoplectic seizures, with other disorders, formed the Croonian Lectures for the years 1846 and 1847, at the College of Physicians, London. Dr Copland has now published the whole in a connected form, in the belief that palsy and apoplexy should be studied in intimate connection not only with each other, but also with other diseases, of which they are often the consequences and terminations, and with other affections which are frequently associated or complicated with them.

In publishing the treatise in the present form, it is right to

mention, that Dr Copland has introduced, from various respectable sources, several useful additions and important pieces of information.

The treatise in its present state may be justly recommended as an excellent monograph, pathological and therapeutic, on the subject.

ART. V.—*The Anatomist's Vade Mecum. A System of Human Anatomy.* By ERASMUS WILSON, F. R. S. Fifth Edition. London, 1851. 12mo. Pp. 656.

IN the Sixty-Seventh volume of this Journal, p. 298, we took occasion to direct the attention of our readers to the third edition of this work as it appeared in 1845. Since that period nearly six years have elapsed, the work has gone through a fourth edition, and the fifth is that which is now before the profession.

It gives us sincere pleasure to observe that the work is one of great merit, and very ably sustains the character which we gave in 1845. Mr Wilson has taken great pains to introduce all the valuable information which has since that time been communicated on various points, especially of minute structural anatomy. Thus he gives a short sketch of the observations of Mr Rainey on the minute structure of the lungs as ascertained by the microscope, and an abstract of the observations of Mr Bowman and Mr Toynebee on that of the kidney.

The utility of this treatise is greatly enhanced by numerous well-executed illustrative figures. In all respects it forms a most serviceable guide to the student of anatomy.

ART. VI.—1. *On Poisons in relation to Medical Jurisprudence and Medicine.* By ALFRED TAYLOR, F.R.S., Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital. London, 1848. Post 8vo. Pp. 855.

2. *Medical Jurisprudence.* By ALFRED TAYLOR, F.R.S., Licentiate of the Royal College of Physicians, Member of the Royal College of Surgeons, and Professor of Medical Jurisprudence and Chemistry in Guy's Hospital. Third Edition. London, 1849. Post 8vo. Pp. 849.

THE subject of Toxicology, or that branch of medical jurisprudence which treats of poisons and their effects, is so extensive that it is difficult to treat of it properly within the limits assigned to the ordinary systems of Medical Jurisprudence. Poisons are also

so numerous, and the effects to which they give rise so closely resemble several diseases, that to consider them properly in all their relations becomes a most complicated and arduous undertaking. Although, therefore, the wishes of the student often are, that the whole subject be comprised within one volume of moderate size, yet the experience of the most practised teachers and writers has been favourable to the allotment of separate treatises to the subject.

This example Mr Taylor has found it requisite, upon the present occasion, to follow. When he published his work on Medical Jurisprudence in 1844, he included in it a division on Toxicology. It must have been manifest to those acquainted with the subject that this could not be continued, if justice was to be done to the subjects of Medical Jurisprudence and Toxicology. Although, therefore, Mr Taylor has, we presume for the sake of students, retained the division upon poisons in his work on Medical Jurisprudence, it is manifest that the present separate treatise is the one which he regards as the most ample and satisfactory on the subject.

The work is indeed in all respects well entitled to the attention of the profession. It contains ample and correct information on the poisons of the different orders, gives full accounts of their chemical history, and physiological and pathological effects, and provides the reader with all that accurate and minute information which may qualify him to give an opinion as a medical witness in the case of medico-legal investigations.

The work is divided into eight parts.

The first is on the important and delicate subject of medical evidence in cases of poisoning, to the consideration of which Mr Taylor has devoted fourteen chapters, or nearly one-fourth of the entire volume.

The Second Division of his treatise, Mr Taylor commences by the examination of the Non-Metallic Irritant Poisons, including the Mineral Acids, (chapters 15, 16, 17, and 18); the Vegetable Acids, Oxalic, Tartaric, Citric, Acetic, and Formic, (chapter 19); the Alkalis, Potash, Soda, and Ammonia, (chapter 20); and the Alkaline Salts, (chapter 21.)

Next comes, as Division Third, in chapter twenty-second, the history of the Metalloidal Irritant Poisons, including under this name, Phosphorus, Chlorine, Bromine, Iodine, and Sulphur.

The extensive and complicated subject of the Metallic Irritant Poisons is treated in the following eight chapters, from the beginning of the twenty-third to the end of the thirtieth, inclusive. This forms Division Fourth.

The history of the Vegetable Irritant Poisons is explained in the thirty-first and thirty-second chapters. This is Division Fifth.

In the thirty-third and thirty-fourth chapters the Animal Irritant

tant Poisons are examined at length. This constitutes Division Sixth.

The important subject of Narcotic and Stupefying Poisons is delivered with much knowledge in the six chapters, from the beginning of the thirty-fifth to the end of the fortieth chapter; and that of the Narcotic Irritant Poisons, which is treated in the Forty-first and Forty-second Chapters, may be regarded as concluding the subject. This may constitute Division Seventh.

The subject of Poisonous Gases is examined in the forty-third and last chapter with that attention which its importance at present demands, considering the eagerness with which the questions of drainage and interment within large and populous cities have been for several years agitated. This is Division Eighth.

The work is closed with an appendix, in which are considered several points which could not conveniently, or at the proper place, be introduced into the body of the treatise; for instance, questions relating to Liquid Mercury, Arsenical Poisoning, and Prussic Acid.

The student and practitioner will find in this work a most excellent and well selected body of information on poisons in connection with Legal Medicine.

The Treatise on Medical Jurisprudence is the third edition of the same work, which we had occasion to notice in favourable terms in the sixty-second volume of this Journal in 1844, when it first appeared; and afterwards in the sixty-seventh volume, when it was republished, in the end of the year 1846.*

Mr Taylor has been at very great pains in the present edition of his work, by introducing all the new information from every available source, to maintain its character as an instructive didactic treatise; and it may be justly said to be the most complete treatise on medical jurisprudence in the English language. To the student as well as the practitioner it cannot fail to be a most serviceable guide. No one liable to be engaged in medico-legal inquiries,—and in this position every medical practitioner is liable to be placed,—should be without this volume.

VII.—*A Catalogue of Medical and Scientific Works.* SAMUEL HIGHLEY and SON. London, 1851. 8vo. Pp. 83.

To the respectable firm by whom this catalogue has been published, it is only an act of justice to say, that it is a publication

* Edinburgh Medical and Surgical Journal, volume sixty-second, p. 245; and volume sixty-seventh, p. 306. January 1847.

most useful, and one which deserves the thanks of the reading members of the profession.

The catalogue consists of two parts, one a general list, the other a classified list. In the first part are arranged an alphabetical order under the heads of the names of the authors, all the medical and the principal scientific works that have issued from the press in England during the last twenty years at least. In the second part are given arranged, under the heads of their respective subjects, yet adhering to the alphabetical order, the *Essays*, *Treatises*, and *Books* of different kinds which have been respectively published on each department and on each division and sub-division. This second part bears the marks of having been compiled with great care and much knowledge of medical literature, and the collateral and subordinate sciences. Both parts cannot fail to be of great service to readers. For whatever department any one is pursuing, he may here find in a short time references to books and publications which may render him useful assistance in his researches.

It must not be forgotten that the Catalogue contains a list of all the periodical publications arranged according to the periods at which they appear.

NOTICE OF THE LATE HENRY MARSHALL, M.D.

CIRCUMSTANCES prevented us from doing more in last Number than announcing the death of the late Dr Henry Marshall. But we are unwilling that one whose contributions to this Journal have been so numerous and important should pass away from us without making an attempt, however imperfect, to record the leading features of his character.

HENRY MARSHALL was born at Kilsyth in the year 1775. The Rev. Robert Rennie, who had been minister of the parish of Kilsyth from the 3d of September 1789, and who wrote the old Statistical Account of the Parish in 1796, was the maternal uncle of Mr Marshall,—a clergyman highly esteemed by the parishioners. This gentleman, who was also born in the parish, states that above five hundred persons residing in the parish at that time were his blood-relations. In the year 1762, John Marshall, who possessed the farm of Town-Head, and Henry Marshall of Ruckhill, are signatures to a testimonial or certificate regarding the merits of a particular mode of cultivating potatoes.

Henry Marshall received his professional education at the University of Glasgow, where he had formed, with the late Dr James Jeffray, Professor of Anatomy, a friendship which was continued to the close of the life of that excellent person. In 1803, Mr Marshall entered the naval service as surgeon's mate; but this he soon relinquished, and, in 1805, he was appointed assistant-surgeon to the Forfarshire regiment of Militia.

In the year 1806, Mr Marshall became assistant-surgeon to the 89th Regiment; and with it he served first at the Cape of Good Hope, and afterwards at Buenos Ayres, where General Whitelocke was in command. In the year 1808 he went with the 89th Regiment to Ceylon, an event which early placed him in positions of responsibility. The 89th Regiment was ordered to return to the continent of India, and Mr Marshall was appointed assistant-surgeon to the second Ceylon regiment; but at the same time he did duty as colonial surgeon of a pioneer corps, and occasionally as acting surgeon in charge of the 4th Ceylon regiment.

On the 15th of April 1813, Mr Marshall was appointed Regimental Surgeon to the First Ceylon or Malay Regiment, and, on the 21st December 1813, he was appointed Staff-surgeon, attached, however, still for at least twelve months to the First Ceylon Regiment.

In December 1814, when the preparations for invading Kandy and the interior of Ceylon were actively proceeding, Mr Marshall was attached to the first division of the army destined for that expedition, and, in January 1815, accompanied the forces into the interior. It is well known that this expedition terminated in the deposition of the King of Kandy in February 1815, and the gradual though partial subjugation of the interior to the British government.

After this period Mr Marshall performed duty as Staff-Surgeon in Colombo and Trincomalee till the month of September 1817, when the occurrence of the insurrection and rebellion at Kandy in October of that year rendered necessary very active proceedings on the part of the English authorities; and the duties of Mr Marshall, who was in 1816 Senior Medical Officer, were at the same time proportionally increased in amount and arduousness. Mr Marshall, still in the office of Staff-surgeon and as Senior Medical Officer, continued in Kandy till the month of March 1821, when he embarked for England.

Soon after his arrival in this country, he was appointed staff-surgeon for Edinburgh, where he continued for some time. Subsequently he served at Chatham, and for a longer period at Dublin, from which he was removed for employment on special duties at the War Office. The services which Mr Marshall in this position rendered, led to his promotion to the rank of Deputy Inspector-General of Hospitals in the year 1830, with half pay of the rank. Since that period Mr Marshall resided almost constantly in Edinburgh. He received the honorary title of Doctor in Medicine in the year 1847, from the university of New York; the first instance in which the honour was conferred.

The writings of Dr Marshall are numerous, considering the labour which they required, and the laborious duties in which he was engaged for nearly twenty-eight years of the best period of his life.

The earliest production which he placed before the world was a Memoir on the Cinnamon Tree, which he transmitted from Ceylon to England in 1817 to the Royal Society, to whom it was communicated in March of that year by the President, Sir Joseph Banks.

This memoir, in which Dr Marshall treats of the natural history and the commercial importance of the cinnamon tree and its products, is a work showing great learning and knowledge of the subject, much originality, and immense industry in the collection of accurate facts. A number of errors were prevalent respecting the exact tree or trees from which true cinnamon is procured. Some of these had been fostered by Burman and Linnæus, as well as by more recent observers. These mistakes Dr Marshall corrected so completely, that his descriptions have been followed by botanists in general. He showed that the *Laurus Cassia* did not furnish the cassia of commerce.*

One botanist, indeed, was at once obliged to admit the accuracy of Dr Marshall, but in such a manner that seemed to depreciate the value of his description, by saying that Dr Marshall did not aspire to the character of a professed botanist. Dr Marshall might not be a technical botanist, in the sense attached to that term by some persons, but he showed that he was a most correct observer; and if he was not a botanist, his Memoir was only a proof that his merit in writing such a paper was infinitely greater.

The circumstance now mentioned, conjoined with the fact that the original impression contained some typographical errors, led Dr Marshall, in 1839, to publish in the Edinburgh Philosophical Journal an abstract of his paper, with several new facts subsequently obtained.

The only other work of Dr Marshall, which it is requisite to notice in this place is his *Description and Conquest of the Island of Ceylon*, which was published at London in 1846. This, like all the productions of Dr Marshall, is distinguished for its extreme accuracy. It was criticised, not in a very becoming manner, in a weekly Journal, which, though often containing just remarks on books, probably attempts more than is compatible with its judgments being in all instances well founded. In the instance referred to, the only conclusion that can be drawn is, that the book had either not been read or had been read carelessly. The work of Dr Marshall gives not only a most accurate view of the early history of that island, but a most just and correct account of the circumstances under which it was conquered by British arms. It is also written in an excellent spirit, with much good feeling and benevolence towards the natives. Indeed we know few books more interesting.

The mind of Henry Marshall was distinguished by great love of accuracy and precision, with much originality. No statements of facts would he take for granted, especially where they were likely to be obscured or warped either by their own complexity or by the carelessness of previous observers. On the other hand, with his love of originality his ascertaining new relations of facts and results previously unknown, he had an extreme dislike to all exaggeration. His reverence for facts, especially in those dependent on number, amounted to a species of idolatry. Where a question required to be determined by this sort of evidence, Dr Marshall formed no opinion, but made his judgment in all instances in obedience to the results obtained. In ordinary matters of business, nevertheless, no man could show a greater union of patience in investigating and promptitude in deciding. For soundness of judgment upon all professional matters he was remarkable; while in difficult circumstances

* A Description of the *Laurus Cinnamomum*. By Henry Marshall, Esq., Staff-Surgeon to the Forces in Ceylon. Communicated by Sir Joseph Banks, Baronet, G.C.B., F.R.S. *Annals of Philosophy*, Volume Tenth. October 1817, p. 241; and November, p. 346.

† Observations on Cinnamon. By Henry Marshall, F.R.S.E., &c. *Edinburgh Philosophical Journal*, Volume xxviii., October 1839, p. 27.

his knowledge of the world enabled him invariably to give correct opinions.

Of his moral qualities, integrity and sincerity, kindness and benevolence were the leading features. Scarcely have we known a person of greater or more active benevolence. This it was which led him to devote almost a life-long labour to the reform of abuses in the management of soldiers, to the abolition of the system of force, coercion, and punishment, and the substitution of a rational and mild method of treatment. For Dr Marshall it was a happy circumstance that he lived to witness a complete revolution effected in the course of forty years in the treatment of common soldiers, and that of this revolution his own exertions and writings were the main causes. The good which in this manner his exertions have effected it is now not easy to estimate. But if the soldier of 1806 be compared with the soldier of 1851, some idea may be formed of the effect of the labours of a medical officer, who, to infinite kindness and humanity, united the fortitude and perseverance necessary to realize results. In describing the qualities of the useful regimental surgeon, Henry Marshall delineated by reflection his own character.

We feel the difficulty of doing adequate justice to the merits of this excellent and unassuming man. But it must not be forgotten that no one ever came into contact with Henry Marshall without feeling that he was improved by his conversation and sentiments; and all his friends, we know, feel, that, though dead, he yet speaketh.

The Works not communicated in Volume sixty-seventh are the following.

A Description of the *Laurus Cinnamomum*. By Henry Marshall, Esq., Staff Surgeon to the Forces in Ceylon. (Communicated by the Right Hon. Sir Joseph Banks, Baronet, G.C.B., P.R.S). Read at the Royal Society in March, 1817. *Annals of Philosophy*. Volume Tenth. July to December 1817. P. 241 and p. 346.

Historical Sketch of Military Punishment in as far as regards Non-Commissioned Officers and Soldiers. (Sixteen papers published in the *United Service Journal* between 1838 and 1845).

Historical Detail, relative to the Military Force of Great Britain, from the earliest periods to the present time. By Henry Marshall, Esq. 8vo. pp. 113. (Nine papers from *United Service Journal*).

These two performances were afterwards embodied in the *Miscellany*, &c.

Military Miscellany; comprehending a History of the Recruiting of the Army, Military Punishments, &c., &c. By Henry Marshall, F.R.S.E., Deputy-Inspector of Army Hospitals, &c.

Ceylon: a General Description of the Island and its Inhabitants; with an Historical Sketch of the Conquest of the Colony by the British. By Henry Marshall, F.R.S.E., Inspector General of Army Hospitals, c. London, 1846. 12mo, pp. 287.

PART III.

MEDICAL INTELLIGENCE.

I. PHYSIOLOGY.

Influence of Physical Agents on the development of the Tadpole of the Triton and the Frog. By JOHN HIGGINBOTTOM, Hon. Fellow of the Royal College of Surgeons of England. Communicated by THOMAS BELL, Esq., Sec. R. S. (Received April 6. Read May 16, 1850).

An opinion has been generally entertained by physiologists that the tadpole of the frog, when deprived of the influence of light, cannot arrive at its full development, or assume the form of the perfect frog.

Mr Higginbottom made a series of experiments in March and the following summer months of 1848, in different positions and degrees of temperature, but particularly in a rock-cellar thirty feet deep, where no solar light ever entered; this situation was also favourable in point of temperature, being

48° Fahr. from March 11th to May 15th.

50° to 54° Fahr. from May 15th to July 6th, and

55° Fahr. from July 6th to October 31st.

The first experiments were performed on the tadpole of the triton.

Exp. 1.—He found the tadpole of the *triton punctatus* more tenacious of life than that of the *triton cristatus*. He placed a number of the ova, enveloped in blades of grass in the manner usual with this animal, in three open shallow vessels containing water. One vessel was placed in a room where the mean temperature was 60° Fahr., another in the open air at a mean temperature of 50°, and the remaining one in a deep rock-cellar at 48°.

In the temperature of 60° Fahr. some of the tadpoles escaped from the ova in fourteen days, those at 50° in twenty-one days, and those at 48° in the rock-cellar in twenty-one days.

Although the tadpoles in the cellar at 48° escaped as early as those out of doors, they did not afterwards increase in growth, whilst those in the room at 60°, and in the open air at 50°, became more developed, the former of these having the anterior extremities in thirty-nine days, the latter in forty-nine days, whilst those in the cellar had no appearance of an extremity at the end of sixty-two days.

Exp. 2.—On the 4th of July a number of the ova of the triton were placed in the rock cellar at its maximum temperature of 55° Fahr. The tadpoles escaped in due time, but, as in the former experiment, they did not proceed in their development, having no appearance of anterior extremities in 105 days, when they died for want of proper food.

Exp. 3.—On the 11th of August he placed twenty-four tadpoles of the triton in water, in an earthen vessel enveloped in four or five folds of black calico, so as to exclude the light, the mean temperature of the

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room being 65° Fahr. The same number were placed under a shed where the mean temperature of the atmosphere was 60°, and a similar number in the deep dark rock-cellar then at a constant temperature of 55°.

In six days several of the tadpoles in the vessel in the room at 65° and in the open air at 60° were dead, and on examination it was found that their branchiæ were absorbed, and their opercula nearly closed. They had died of asphyxia. They then placed a stone in the centre of each vessel, so as to allow the tritons to leave the water as they lost their branchiæ. Two days afterwards the top of the stones had a number of tritons upon them in the vessels in the room and in the open air.

All those placed in the rock-cellar retained their branchiæ, not one having left the water, although stones were placed for that purpose. No more tritons died after the stones had been placed in the vessels, as they afforded them the opportunity of leaving the water when the branchiæ were absorbed.

In about twenty-one days afterwards, during the month of September, two or three had left the water and were on the stones placed in the vessel in the cellar, fully proving that the animal came to its full development in the absence of light, though this development was retarded by the low temperature of 55°.

Exp. 4.—On the 25th of August three tritons, previously deprived one of an anterior, another of a posterior extremity, and the third of the tail, were put into a vessel, enveloped in five or six folds of black-glazed calico so as to exclude the light, and placed it in a dark part of a room where the maximum temperature was 70° Fahr. As it was then the time of the year when the full-grown tritons leave the water, a quantity of clay and flat stones were put in the vessel with a little water at the lowest part, in order to allow them to remain in the water or out of it.

In a month the amputated limbs had undergone the reproductive process; in one a miniature posterior extremity furnished with toes had been formed, in another the tail, and in fourteen days later the anterior extremity and the toes of the third were reproduced.

On the Influence of the Atmospheric Air.

There are three modes of respiration in the tadpole of the frog:—1st, the branchial; 2d, the pulmonary; 3d, the cutaneous.

In the branchial state the body of the tadpole is very small, and at this period they flock to the sides of the vessel in which they are contained close to the edge of the water, nearly exposing the branchiæ to the atmospheric air, the lungs being as yet unemployed.

About a fortnight before the metamorphosis of the tadpole into the frog, its body is very large, and the cutaneous surface for respiration, including the tail, is very considerable; but when the development takes place, the body of the frog is again small, and there is not a sufficient surface for respiration, so that if the animal continues in the water, it becomes asphyxiated. Life then depends more on the pulmonary than the cutaneous respiration.

Mr H. found that the tadpole of the frog soon dies in either aerated or boiled water if excluded from atmospheric air; those in aerated water live the longest; some of them he found at the top of the water, and on examination the lungs were observed to be inflated, whilst those tadpoles in the boiled water sank to the bottom of the vessel. Tadpoles put into boiled water exposed to the atmospheric air live as in aerated water.

2. On the Influence of Food.

The food of the tadpole is derived from two sources. The first is the

gelatine of the ova, the second the plants growing in the water in which they are deposited.

On the 11th of March 1848, Mr H. put some spawn of the frog, newly deposited, into eight shallow earthenware vessels containing water; in four of them he added grass and duck weed to serve as food for the future tadpoles, in the other four he put none. Mr. H. observed in all the vessels that the tadpoles, after escaping from the ova, had about an equal growth as long as any of the jelly-like substances of the ova remained; but after that was consumed, the tadpoles in the vessels where there was no grass were promptly retarded in their growth.

April 17th.—To prove whether the jelly of the ova was food for the young tadpoles, he separated a number from the jelly, putting the tadpoles in one vessel with water, and the jelly in another.

In thirteen days the tadpoles had not increased in size, and some of them were very weak and nearly inanimate. On this day he placed them all with the jelly. In seven days the jelly was consumed, and some of the tadpoles had much increased in size, others of them had died from having been so long and at so early a period deprived of their first food.

After the tadpole has finished feeding on the jelly, nothing more is required for food than grass and duck-weed, the grass serving for food, the duckweed both for food and as a shelter, and also probably yielding its influence as a living vegetable in the water. The grass is sufficient as food to produce the full development of the tadpole, which feeds upon the chlorophyle which adheres to the cells of the plant, when the plant is in a state of decomposition, leaving the fibrous part. They generally feed on the under part of the plant with the abdomen upwards, owing to the position of the mouth.

The tadpoles were supplied with fresh water every third day, and with grass as often as necessary. In those vessels which were placed in the dark it was necessary to add grass more frequently, on account of the loss of the green colour it sustained in that situation.

They did not feel so well at a low temperature. The life of the tadpole cannot be preserved very long with fresh water and air alone without proper food. A number of tadpoles were placed in eight vessels, of which four were excluded from the light, and four exposed to the light in different degrees of temperature; no food was put in any of the vessels after they had consumed the jelly. On the 11th of May, eight weeks and four days after the deposition of the spawn, the tadpoles remained very small, and the last of them died on that day.

The jelly appears to be quite essential as nutriment to sustain the early life of the tadpole. Had they been deprived of it, they would have died at a much earlier period, as proved by my former experiment.*

3. *On the Influence of Temperature.*

On the 11th of March 1848, in each of four round open earthenware vessels, each containing about three pints of water, and about three parts full was put a small quantity of the spawn of the frog just deposited. The vessels were then placed in four different degrees of temperature.

The first was placed near the ceiling in a shaded part of a room, where the mean temperature was 60° Fahr., six or eight folds of black-glazed calico being tied over it so as to exclude all light.

On the 20th of March the tadpoles left the ova; on the 23d the branchiæ were fully formed; on the 22d of May the first was fully developed at a much earlier period than others placed in a lower part of

* According to Mr Brande (*Philosophical Transactions for 1810*), the jelly appears to be an intermediate substance between albumen and gelatine.

the same room, exposed to the light at the mean temperature of 58° Fahr., and also earlier than in the pools.

The second was placed at the same time in a situation where the mean temperature was 56°. On the 20th of March, nine days after the deposition of the ova, the embryos were lengthened, indicating the head, body, and caudal extremity, and lay in a curved position within the ova. On the 25th some escaped from the ova. On the 28th the branchiæ were fully formed, and on the 6th of April they were absorbed. On the 22d of May the tadpoles had increased in size. On the 18th of August the first was fully developed.

The third vessel was put within a larger one and placed in the open air, on a shaded side of a house, and entirely covered with wood, so as to exclude all light, the mean temperature being 53° Fahr.

March 20th.—In nine days after the deposition of the ova, the embryos retained their globular form, but considerably increased in size.

On the 25th they had the elongated form within the ova; on the 31st they escaped. On the 4th of April the branchiæ were fully formed, and on the 11th they were absorbed. May 22d, the tadpoles were increased in size. On the 29th of August the first was fully developed.

The fourth vessel was placed in the rock-cellar. The temperature was uniformly 48° Fahr. from the 11th of March to the 15th of May, 50° to 54° Fahr. from May 15th to July 6th, and 55° Fahr. uniformly from July to October 31st.

March 31st.—The tadpoles escaped from their ova on the same day as in that in the open air, the temperature being in the cellar uniformly 48° Fahr., in the open air 53° mean temperature.

On the 6th of April the branchiæ were formed, and on the 18th they were absorbed. On the 22d of May the tadpoles were very small, but from that period to the 5th of September they grew much more rapidly. On the 31st of October the first was fully developed.

It may be observed that when the tadpole in the room was fully developed at the mean temperature of 60° Fahr., those in the open air were small at the mean temperature of 53°, but those in the cellar were smaller still, having been influenced by the low temperature of 48°; from March 11th to May 6th, when the temperature became constantly 55°, they advanced more rapidly in size until their full development.

Soon after November 17th the temperature in the rock-cellar was from 50° to 54° Fahr. for a month, and during that time there were no more tadpoles fully developed. One of them had three legs only; for upwards of three weeks the fourth leg could be seen distinctly under the skin when the animal moved, but it did not protrude.

4. *On the Influence of Light.*

With regard to the question of full development of the tadpole of the frog in the absence of light, Mr Higginbottom states, that it advances in growth equally well in the dark and in the light, and that absence of light has therefore no influence in retarding its development.

Of six vessels with tadpoles, three were exposed to the light in different degrees of temperature, and from three the light was excluded.

At the first he was led to think the absence of light was even favourable to development, but he afterwards found that the difference depended on a slight increase of temperature owing to the vessel being covered. This fact is rendered obvious by the plate, in which the temperature and absence of light are fully illustrated.

These experiments were repeated in the year 1849 with similar results.

NOTTINGHAM, February 5, 1850.

II. CHEMICAL PATHOLOGY.

On Urine usually called Chylous. By HENRY BENCE JONES, M. D., &c. (Philosophical Transactions for 1850. Read 14th March 1850.)

Urine white from the suspension of a quantity of fatty matter in it has been called chylous urine, and the albumen and fibrin which escape from the blood with the fat have been considered to belong to the chyle and not to the blood.

An opportunity of observing a case of this disease having occurred to Dr Jones, he was led to make the following experiments. The conclusions thence deduced are,—

1st. That the fat on which the white colour of the urine depends does indeed appear in the urine after the chyle is absorbed, but the albumen, fibrin, blood-globules, and alkaline salts, may be found in the urine previous to any food being taken, and these substances can be made to appear in, or disappear from, the urine, according as the circulation is hurried by motion or quieted by rest.

2d. That the disease consists in some slight alteration in the structure of the kidney, by which, when the circulation is most active, one or more of the constituents of the blood passing through the filter escape from the vessels into the urine.

The supposition that the disease consists in an accumulation of fat in the blood which is thrown out by the kidneys carrying with it albumen, fibrin, blood-globules, and salts, is altogether disproved, both by actual analysis of the blood itself, and by the frequent occurrence of a large jelly-like coagulum in the urine, when no white fatty matter can be seen to be present.

For an account of the patient, and for the treatment and its ultimate effect in stopping the escape of the white water which he had passed more or less frequently for nine months previous to his being seen by Dr Jones, refer to the *Medico-Chirurgical Transactions* for 1850.

On the 19th of October, the patient came to Dr Jones, having taken food last at 11 A. M. The water passed at 2 P. M., solidified like *blanc mange* in ten minutes. It contained, when passed from the bladder, some clots ready-formed. It was very feebly acid to test-paper. Thrown on a filter, a very small quantity of reddish streaked fibrin remained on it. The filtered fluid, at 60° Fahr., had a specific gravity = 1015. It coagulated by heat and acid. In appearance it was quite milky, but became clear when agitated with a considerable excess of ether. Some perfectly healthy blood-globules were seen with the microscope, and the granules of fat were so small as scarcely to be resolvable by a high power.

Dr Jones performed a series of careful and elaborate experiments extending over eleven days, during which the patient was in bed and out of it; took food of various kinds, but chiefly a regulated diet; lost blood, and was otherwise under treatment for his symptoms and sufferings.

The general conclusions from these experiments are the following.

1st. That so-called chylous urine may contain fat, albumen, fibrin, and healthy blood-globules.

2dly. That although the fat passes off in the urine after food is taken, yet the albumen, and fibrin, and blood-globules are thrown out before any food has been taken. During perfect rest, the albumen ceases to be excreted, and it does not appear in quantity in the urine even after food is taken, provided there is perfect rest. A short time after rising early, the urine may coagulate spontaneously, although no fat is present in perceptible quantity, and this may happen previous to any food.

3dly. Though the urine made just before and a short time after bleeding was as milky as it usually was at that period of the day, yet the

serum of the blood was not milky. It did not contain a larger quantity of fat than healthy blood does. In other respects, except in the diminution of the solids in the serum, the analysis of the blood corresponds with that of a case of cerebral congestion given by Andral.

Cerebral Congestion.		So-called Chylous Urine.
Fibrin, ...	2·7	2·63
Globules, ...	152·3	159·3
Solids of serum, 105·0		78·1
Water, ...	740·0	759·97

The general results are—

1st. That the most important changes in the urine take place independently of the influence of digestion.

2dly. That the urine in one respect only resembles chyle, and that it is in containing, after digestion, a large quantity of fat in a very fine state of division; but the excess of fat in the urine is not caused by any excess of fat in the blood, for no excess of fat was found there.

3dly. It appears that some change is produced in the kidney, by which fibrin, albumen, globules, and salts, are allowed to pass out whenever the circulation through the kidney is increased; if at the same time fat is present in the blood, it escapes also into the urine.

That this change of structure is not visible to the naked eye on *post mortem* examination of the kidneys, Dr Prout long since demonstrated; and in a case of this disease, which was in St George's Hospital, and was examined at Plymouth, no disease of the kidney was observed. From the total absence of fibrinous casts of the tubes from this urine, it is not improbable that by the microscope a difference may be detected in the structure of the mammary processes rather than in that of the cortical part of the kidney.

On the Variations of the Sulphates and Phosphates in the Urine during Disease. By HENRY BENICE JONES, M.D. M.A. Cantab., F.R.S. Physician to St George's Hospital. (Philosophical Transactions, 1850. June 13th.)

In two papers in the Philosophical Transactions for 1845 and 1849, Dr Bence Jones showed that in the healthy state on full diet the total amount of sulphates and phosphates in the urine varies.

As regards the total results—

	Spec. grav.
After food from 11·85 grs. of sulphate of baryta per 1000 grs. of urine	1033·9
Before food to 7·93 grs. of sulphate of baryta per 1000 grs. of urine	1026·5
As regards the total phosphates—	
After food from 7·22 grs. of phosphate of lime per 1000 grs. of urine	1030·0
Before food to 7·96 grs. of phosphate of lime per 1000 grs. of urine	1027·9

In the above mentioned paper, Dr Jones gives the amount of the sulphates and the total amount of the phosphates in the urine:—

1. In acute and chronic diseases in which the muscular structures are chiefly affected.

2. In some functional diseases of the brain, as *delirium tremens* and some other forms of delirium.

3. In acute inflammatory disease of the nervous structures.

4. In chronic diseases of the nervous structures.

5. In *acute* diseases in which neither the nervous nor the muscular structures are chiefly affected.

6. In *chronic* diseases in which neither the muscular nor nervous structures are chiefly affected.

In three cases of acute chorea the most remarkable increase was observed in the amount of sulphates in the urine. That this did not arise from the small quantity of urine passed is evident from the small amount of the total phosphates in the urine. Moreover the actual quantity passed, when it could be determined by measure, was found occasionally to be above thirty ounces in twenty-four hours. It is worthy of notice that the amount of urea was also very greatly increased in these cases; so much so, that on the addition of nitric acid to the urine without any evaporation, nitrate of urea immediately crystallized out.

A very small quantity of food was taken by these patients, whilst the muscular action was most severe; and the contrast between the amount of sulphates when they were recovering and taking full diet, and the amount when they took little food, but were in a state of violent muscular action, is very remarkable.

The general conclusion is, that in acute chorea the amount of sulphates in the urine is increased, whilst the phosphates are in some cases as remarkably diminished.

In five cases of *delirium tremens* the sulphates were found to be above the average. In the 6th case the sulphates are in the greatest quantity ever observed in health or disease. Sulphate of magnesia had also been taken by this patient, so that the amount of sulphates is partly owing to the medicine; but that this is not the sole or chief cause of the increase is proved by the fact that many of the patients with other diseases took the same quantity of sulphate of magnesia, but the sulphates in the urine were never increased to the same amount.

The phosphates, in seven out of the nine cases of *delirium tremens*, were below the average. The same fact was stated in Dr Jones's previous paper, but from the diminution of the phosphates in acute chorea, it becomes doubtful how far this result is owing to the action of alcohol in the system.

Further experiments are required; meanwhile excessive abstinence from food must be admitted as a cause of the diminution of the phosphates in the urine, provided there is no inflammatory action of the nervous structures.

In a case of restless excitement leading to self-destruction, the sulphates in the urine were found to be increased, and the same thing was also observed with a diminution of the phosphates in a case of delirium and phthisis.

In acute inflammatory diseases of the nervous structures, during the most febrile symptoms, an increase was observed in the amount of sulphates in the urine, and the total amount of earthy and alkaline phosphates in these diseases appeared to be increased in the same proportion as the sulphates were increased.

In some slight and chronic diseases of the nervous structures, no increase in the amount of sulphates in the urine was observed, excepting when sulphate of magnesia had been taken as a medicine.

In acute diseases, in which neither the nervous nor the muscular structures were chiefly affected, no increase in the sulphates or phosphates was observed, except after sulphate of magnesia.

In chronic diseases, in which neither the nervous nor the muscular structures were chiefly affected, no decided increase in the sulphates or phosphates in the urine was observed, except after sulphate of magnesia. One case of exostosis may be regarded as a doubtful exception to this statement.

The general conclusions are—

1. That in acute chorea, in which the muscles are in excessive action, the sulphates and urea in the urine are greatly increased.

2. That in *delirium tremens* the same state of urine is frequently met with; that in these diseases the phosphates are not at all increased.

3. That in acute inflammation of the nervous structures, sulphates and phosphates are both increased in the urine.

4. That in chronic diseases of the brain, and that in other acute inflammations and diseases, and in other chronic diseases, no increase in the total amount of sulphates is observed, excepting when sulphate of magnesia is taken as a medicine.

The result of this investigation is that—

Muscular action increases the sulphates in the urine without increasing the phosphates; whilst

Inflammation of the brain increases both the sulphates and phosphates in the urine.

On the Influence of Tartrate of Ammonia and of Carbonate of Ammonia on the Acidity of the Urine. By HENRY BENICE JONES, M. D., M. A., Cantab., &c. (Philosophical Transactions, 21st June 1850.)

In a previous paper and appendix on acidity of the urine, published in the Philosophical Transactions for 1849, Dr Jones showed the effect of different diets, of sulphuric acid, of tartaric acid, of caustic potash, and of tartrate of potash, on the acidity of the urine. In the above paper, Dr Jones traces the effect of tartrate of ammonia and of carbonate of ammonia.

III. (e.) The effect of tartrate of potash having been so remarkable it was thought that by observing the effect of tartrate of ammonia, some conclusion might most rapidly and decidedly be obtained as to the comparative effect of fixed and volatile alkalies on the acidity of the urine.

From a series of fifteen experiments performed during a space extending over many days, the following conclusions are deduced.

First, that there is a very great difference between the effects of volatile and fixed alkalies on the acidity of the urine; *secondly*, that carbonate of ammonia, in large doses, does not diminish the acidity of the urine; *thirdly*, that carbonate of ammonia, in large doses, actually increases the acidity of the urine; and this was evident, not only in the acidity not falling so low as it did after food when no carbonate of ammonia was taken, but in an actual rise before food to a higher degree than was reached when no carbonate of ammonia was administered.

The conclusions from these experiments with tartrate and carbonate of ammonia may be shortly stated thus—

(e.) That tartrate of ammonia in large doses produces no effect on the alkalescence of the urine. It differs entirely in this respect from tartrate of potash.

(f.) That carbonate of ammonia in large doses increases the acidity of the urine.

III. SURGERY.

1. *Case of Popliteal Aneurism treated by Compression.* By O'BRYEN BELLINGHAM, M. D., &c., Surgeon to St Vincent's Hospital, Dublin. Communicated to the Medico-Chir. Society on Tuesday, 10th June 1851.

A labourer, aged forty-two, was admitted into St Vincent's Hospital under Dr Bellingham's care in November 1850. The aneurism, which was of large size, was seated in the right popliteal space, had a strong heaving impulse, and a short harsh murmur was heard on auscultation. The treatment was commenced by placing the patient upon a very restricted diet, particularly as regards fluids (six ounces only being allowed in the day, with eight ounces of solid food), confining him strictly to the horizontal posture, with a dose of purgative medicine each

night. Under this treatment, continued for some days, the pulse, from being hard and incompressible, became soft, small, and slow.

Compression was commenced December 4th, at eleven A. M., by means of two instruments, one upon the artery where it crosses the ramus of the *os pubis*, the other at the lower third of the thigh. At half-past eight P. M., the outlines of the aneurismal sac were more distinct; the patient's skin was cool, and he did not complain of pain. He remained awake during the night, and kept up the compression himself; the points upon which the pad of the instrument should rest having been marked with ink. Next morning, between nine and ten, on unscrewing the instrument, the pulsation of the aneurism was found to have ceased; the tumour was hard, solid, and circumscribed, and an enlarged collateral vessel was felt over the centre of the popliteal region. Moderate pressure was continued for some days; the patient was kept in bed, and the diet was gradually improved. The tumour diminished in size and became harder; and when the patient returned home, the limb was as strong as the other, and his general health perfectly good.

The author contrasted the results of compression and the ligature, and pointed to the advantages likely to ensue from combining constitutional with local treatment.

In a table appended to the paper, the author has given a list of all the cases of external aneurism treated by compression in Dublin during the last seven years, in which the seat of the disease is mentioned, the hospital or other locality where the treatment was conducted, the surgeon's name who had the management of the case, and the results were stated.

2. Dissection of a case in which two Popliteal Aneurisms had been treated by Compression of the Femoral Arteries. By P. HEWITT, Esq.

A man, aged thirty-eight, was admitted into St George's Hospital, in the middle of 1848, under Mr Cutler, with an aneurismal tumour in each popliteal space. That on the right side, completely filling this region, was compressible, but could not be emptied; that on the left, not larger than a small egg, was hard, and to a great degree apparently solid, and with much less pulsation. The tumour on the right side had only existed three months, and nothing had been done for it. From the account of the patient, it appeared that the disease on the left side, which had begun about eighteen months back, had been treated by compression of the femoral artery, at the Wexford Infirmary, where the pressure had been kept up, more or less, for seventeen weeks. During this time the limb had regained its natural size, and the tumour was reduced to its present state, from which it had never since varied, and had caused him but little inconvenience. His general health, which had begun to give way about two years and a half back, had prevented him from following his business of musical instrument maker. When admitted into the hospital, he was pale, and apparently suffering from great debility.

At a consultation of the surgeons, it was determined, under existing circumstances, that compression should first be applied to the right femoral artery; and the instrument, a ring tourniquet, was so adapted as only to lessen the circulation of the limb, and to be worn for a few hours daily. In some little time the limb was reduced in size, and the tumour became smaller and firmer; but pulsation still remained. Some six weeks after his admission, and whilst he was under surgical treatment, cough and expectoration, with difficulty of breathing, made their appearance. Auscultation detected nothing abnormal about the heart, but the lungs were found to be engorged at the back part. The chest symptoms went on increasing in severity; and the patient one day suddenly brought up a large quantity of arterial blood, and died shortly after-

wards. The tumour in the right ham had gone on decreasing in size, and had become firmer and more solid; but some pulsation was still felt. No change had occurred in the left ham.

At the examination of the body, which took place thirty-one hours after death, the left aneurismal tumour, deeply imbedded in the popliteal space, was found lying between the joint and the artery, of the size of an egg; it was pyriform in shape, and apparently quite solid; but on cutting into it, the lower half only was filled with long-standing coagula; the upper part, still presenting a cavity lined throughout by a perfectly smooth membrane continuous with the coat of the artery, merely contained some small recent clots. Of the two openings into the sac, the upper one was large, and nearly of the size of the artery; the lower one, on the contrary, was much contracted, and scarcely admitted a common-sized probe. The portion of the artery lying upon the sac was also very much contracted, but its coats were healthy, as well as those of the posterior and anterior tibial vessels, which were of their normal size. In the upper part of the popliteal, and in several parts of the femoral, there were large patches of atheroma, with three distinct aneurismal dilations, one in the former vessel and two of the latter. The femoral artery and vein were pervious in their whole length, and the surrounding cellular tissue was not thickened. The vein and the nerve in the popliteal space were firmly adherent to the sac, with a few of the fibres of the gastrocnemius muscle.

The aneurism on the right side, larger than a cricket-ball, was also lying between the artery and the knee, to which it was firmly adherent. It was filled with laminated coagula, except at the back part, where there was still a small channel leading from the upper into the lower part of the vessel; this channel was rough throughout, and covered with recent fibrine. The upper opening of this channel was free and smooth; the lower one was small, and below it the artery was reduced to the size of the posterior tibial. Above the aneurism, the coats of the artery were much thickened by atheroma; and here too, about an inch and a-half above the tumour, was another small aneurismal dilatation. The femoral artery presented several patches of atheroma; but it was otherwise healthy, and, as the vein, pervious throughout its whole course: the surrounding cellular tissue was not thickened. With regard to the popliteal vein and nerve, the appearances were the same as those observed on the left side.

The thoracic aorta was extensively affected with atheroma throughout a great part of its course, and it was somewhat dilated. In its arch, it presented three distinct aneurisms, one of which, the largest, was lying between the large vessels and the windpipe, into which it had burst by a small ulcerated opening about an inch above the bronchi: the cavity of this sac was partly lined with long-standing coagula. The bronchi were filled with blood, in addition to which the lungs themselves presented several large patches of pulmonary apoplexy, and were extensively affected with emphysema.

All the abdominal organs were healthy, excepting the kidneys, which were somewhat smaller than natural, rough on their surface, and with several small cysts in their structure.

In the discussion which followed various members delivered their opinions.

Mr PARTRIDGE was inclined to think that the London surgeons were open to the remark of Dr Bellingham, of having neglected the plan under consideration. In King's College Hospital, pressure had been but little employed, and the result was by no means encouraging. This was partly attributable to the imperfect instrument employed, and partly to the circumstance of the patients being entrusted a good deal with the

treatment themselves. Thus a stout healthy-looking man was admitted into the hospital with a popliteal aneurism, and the management of the instrument was mainly left to himself. He screwed up the instrument so tightly that it eventually broke, but not until a large slough formed on each side of the aneurism, which remained in the same state. A ligature was afterwards applied; the man lost his toes by gangrene, but the aneurism was cured. If he (Mr Partridge) had such an instrument as that exhibited on the table, he should use it, as it was a great improvement on the one usually employed in London. He inquired the experience of surgeons on the state of the artery after compression had been employed unsuccessfully; it having been urged by some that the artery, after the failure of compression, was not in so favourable a condition for the application of a ligature as before.

Mr QUAIN had observed good results from compression in a few cases of popliteal aneurism, and he was favourably disposed to that treatment. He feared that a portion of the remarks in the paper first read were not calculated to conciliate support to the practice it advocated; he alluded to the remarks made in connexion with the statement that surgeons out of Dublin "decry" compression as a mode of treating aneurism. This statement, too, he believed to be erroneous; at least he had not heard anything that would bear it out. But the question really was not, what is thought in Dublin, or in Edinburgh, or in London, but what was the fact as to the utility of compression in the management of the disease? While he listened to the paper, he was struck by the circumstance that no mention was made of the treatment in question being resorted to in aneurisms, other than the popliteal and femoral. He (Mr Quain) had seen the late Mr Liston use compression of the brachial artery in a case of aneurism of the hand from injury. Though the compression was made under favourable circumstances (for it was well applied, and the patient gave every aid to the surgeon), still it entirely failed. The disease in this instance was cured by ligature of the brachial artery. In the operation, this artery was by no means so easily secured as it usually is, owing to the thickening of the cellular substance and fascia by the compression; but there was no such difficulty in the case as would justify, in his opinion, any opposition to the use of compression upon that ground. He thought, at the time, that the want of success in this instance might perhaps have been attributable to the large nerve which courses over the brachial artery. The femoral artery, it would be remembered, has no nerve in of magnitude in company with it.

Mr PARTRIDGE said that the statistics should state whether the patients were cured or not, and how long they remained well. Dr Bellingham was right in saying that in London we did not habitually employ pressure, and that there must be some reason for it.

Mr QUAIN had seen compression employed successfully in cases of femoral and popliteal aneurism, but at the moment he did not recollect the number of cases.

Mr PRESCOTT HEWITT differed from Mr Partridge respecting the employment of compression by London surgeons; at all events, he could speak for St George's. During the last three or four years, there had been five cases of aneurism in the hospital, including the one detailed in the paper before the Society. Two of these were cases of popliteal aneurism, one of which was of very large size. In both cases, compression was applied to the femoral artery, but owing to some peculiarity in the patient, compression was discontinued, and the artery was ligatured, and both did well. The instruments employed were not so clumsy as had been represented: in both cases, compression was kept up by two tourniquets in two parts of the artery. The patients were under the care respectively of Mr Cæsar Hawkins and Mr H. C. John-

son. In neither of the cases did the effects of compression render the application of the ligature more difficult. The third case was one of diffuse aneurism of the ulnar artery, consequent upon a wound; in this case the tourniquet was applied over the brachial. He did not think that the failure in Mr Liston's case of aneurism in the hand was attributable to the contiguity of the nerve to the brachial artery; for, in the case in St George's, the pressure was applied over the brachial, and the patient was cured in a fortnight. In the fourth case, compression was tried, and acted apparently with good effect; but in two or three months the pulsation was again detected; the patient was unwilling to submit again to pressure; the artery was consequently ligatured, and a cure effected. The fifth case was the one related in the paper before the Society. In answer to Mr Partridge respecting the influence of compression on the after operation of ligature, he might say, in the case operated on, there was no thickening of the sheath surrounding the vessels.

Mr CURLING would have no disinclination to try compression when a suitable case presented itself. It was a valuable plan of treatment; and the Society was indebted to Dr Bellingham for bringing it forward. The instrument on the table was not sufficiently known in London. He thought that in cases of compression on the femoral artery, obliteration of the vein, as in the case mentioned by Mr Quain, might be avoided by having the pressure applied either just above or below Poupart's ligament. The instrument required management. Where did Dr Bellingham apply pressure on the femoral artery? He thought Mr Quain's observations respecting the brachial artery would be borne out by other cases. The pain would be very severe from pressure upon the nerve.

Mr COCK said that his experience of pressure was limited to two cases of popliteal aneurism. In these cases, the only reason he believed the plan did not succeed was, that the patients did not persevere in the employment of the means—one discontinuing it in four, the other in six days. There was no reason to doubt that if the patients had gone on they would have got well. The instruments employed in Guy's Hospital were by no means so perfect as the one on the table, and were more irksome. In each of the cases to which he had referred, the femoral artery was tied at the urgent request of the patient. Both patients got well; but in one case the operation was rendered somewhat more difficult from some thickening and inflammation of the sheath of the vessels. Beyond this, the pressure had not interfered with the application of the ligature. He (Mr Cock) had no doubt that the failure of the pressure in these cases, and the inability of the patients to bear it for any length of time, had arisen from the clumsy character of the instruments, and the bad manner in which they had been applied. The patients in these cases had not been sufficiently watched, and were seen only daily or every second day. Much more watching and care was required in the proper management of these cases than were usually bestowed on hospital patients, and to a neglect of these the failure in the cases he had related might fairly be attributed, as well also to the neglect of instructing the patient carefully in the mode of applying the pressure. He thought, however, that pressure in the treatment of aneurism would soon be much more extensively employed in London than it had been.

Mr HOBGSON hoped that if Dr Bellingham were in the room, he would give some further particulars of his mode of treatment. He thought the profession in England were very much indebted to their Dublin brethren for the great attention they had bestowed on the treatment of aneurism by compression, and to the improved method they had carried out. They had rendered compression much less irksome by the form of apparatus which they employed, and their substitution of an elastic

material, like India rubber, for an inelastic one. Another point alluded to was the application of pressure at two distinct points, so that pain and weariness might be prevented by changing the place of pressure.

Dr BELLINGHAM referred to some casts on the table of a limb taken before and after pressure had been applied to it to cure aneurism. In one case, a popliteal aneurism was cured in twenty-four hours; but an aneurism of the opposite side presented itself, and took a much longer time to cure. The patient eventually died from aneurism of the descending aorta. The artery over which the pressure had been applied was found quite normal; the aneurism was obliterated; the vein was normal. In another case, in which pressure had been applied to the femoral artery for popliteal aneurism, galvanic punctures having been also employed, the patient had died at the end of ten days from erysipelas. The aneurism was found nearly filled by layers of fibrine; the artery under the seat of pressure was healthy. He had dissected a patient who had suffered from aneurism in both popliteal arteries. One of these was treated by compression, the other by ligature. The latter returned at the end of three or four years; not so the former. The vein and artery were found healthy. It was difficult to apply pressure to the femoral artery without involving the vein in the compression. In almost every case which he had treated by compression, the pressure had been made at two or more points. He begged to say that his observations referred to the Edinburgh surgeons; not to those of London, on whom he had no cause to reflect. In the list of cases which had been alluded to in the reading of the paper (but had not been read), instances were recorded in which the radial artery was the seat of aneurism, and which had been cured by pressure made on the brachial artery.

Dr BELLINGHAM sat down amid much applause.

Case of Femoral Aneurism in the Female treated by Compression. By WILLIAM HARGRAVE, M. B., Professor of Surgery to the Royal College of Surgeons, Surgeon to the City of Dublin Hospital.

THE rarity of external aneurism in the female, particularly in the femoral and popliteal arteries, is most remarkable. In fifteen cases of these two aneurisms recorded by Hodson, fourteen were in the male, and only one in the female; during forty years' practice, but eight cases of popliteal aneurism were seen in the female by Sir A. Cooper, but three by Guthrie; and my colleague in the College of Surgeons, Dr Porter, who has had much experience in this disease, never saw it but in this instance.

From every examination, this case presented the characters of diffused false aneurism, the result of direct injury. This form is considered more difficult of treatment, either by pressure or by the ligature; in it there is always less tendency for the blood to coagulate than in the false circumscribed variety.

Some difficulties were encountered in the treatment; the pressure could not be applied on any part of the thigh, owing to its being full, soft, and flabby, offering no support or counter-resistance to the instrument, unless it was carried to its *maximum* to arrest the pulsation in the tumour, and which could not be endured, when tried, but for a very short period: it also caused the aneurism to be more distended, and the limb to be considerably congested. I was then compelled to select the inguinal region, which was not a very favourable site for compression, as there was not only a small enlarged lymphatic gland close to the artery, but also the remains of a cicatrix occupying nearly the entire length of the groin, which rendered the patient very sensitive to pressure, so that it could not be borne continuously for any length of time. In the commencement of the treatment she was rather refractory, being

under the impression that her disease was of but little consequence ; but when informed of its true character, for the cure of which, if this mild treatment failed, she must submit to a severe operation to save her limb, if not her life, she then endeavoured to second our efforts. Still the pressure was by no means so effectively continued as could be wished.

She was under treatment for twenty days, that is, from the first application of the compression until all pulsation had ceased in the tumour, during which period the absolute pressure did not amount altogether to more than 134 hours, or five days and a half.

The only suggestion I can make in the use of the instrument now rendered so complete by Dr Carte, both as to its perfect adjustment and gradation of pressure, is to change the pad when it becomes roughened by use ; for when it acts so as to fret the skin, it is productive of more irritation and annoyance to the patient than the actual pressure itself ; or, in other words, that the pad should always preserve a *perfectly smooth surface*.

During the treatment of the case, it cannot be too strongly impressed upon the attention of the surgeon, to avoid much handling of the tumour and of the limb ; in fact, to eschew meddlesome interference, which will invariably delay and derange the sanitary processes going forward in the aneurism.

I have condensed the case as much as possible from the full and accurate notes of it taken by Mr M. O'Connor, the house-surgeon, who zealously devoted himself to carry out all my wishes with untiring attention.

I may also observe that Sir B. Brodie, in his late visit to this city, had the opportunity of satisfying himself of the efficacy of this treatment, by examining this patient when in hospital.

Harriet L., dress-maker, aged twenty-three, unmarried, of full habit, admitted into the City of Dublin Hospital, June 22, 1850 ; she says that her general health previously was good. On examination, a large pulsating tumour was observed to occupy the lower part of her thigh, for six inches above the patella, and extending spirally backwards and downwards as far as the head of the tibia ; the exact shape of the tumour could not be ascertained, but it appeared to be irregularly quadrilateral, longer in the vertical than in the horizontal direction ; the upper part best defined and most prominent. There was no discoloration of the integuments over it ; temperature natural ; leg flexed at an obtuse angle on the thigh ; outline of the patella lost, and natural shape of the joint destroyed. Three inches above the patella, the circumference of the limb was $17\frac{1}{2}$ inches, and round the patella $16\frac{1}{2}$ inches ; the corresponding parts on the opposite limb measured respectively $16\frac{1}{2}$ and $14\frac{1}{2}$ inches. A distinct bruit, best marked in the upper part, was audible all over the tumour synchronous with the systole of the heart.

She first observed the tumour about four months before admission ; since then it had been constantly increasing in size. The only cause she could assign for it was a hurt she received from a door ; she was in the act of running out of a room, when some person, in play, forcibly shut the door, and caught her thigh between it and the frame. About a week subsequently to this, she perceived a small tumour, of the size of a marble, in the place where the sharp edge of the door had struck her ; this part she now points out as the upper and most prominent portion of the tumour. It gradually and steadily increased ; she describes it as having pulsed from the beginning, and compares the pulsation to the ticking of a watch ; it was this that first directed her attention to it. When it became as large as a walnut, the pulsations were so strong as to lift the thigh and leg off when placed across the opposite one ; as the swelling increased the leg became benumbed, and, before admission,

it was often blue and cold, and slightly oedematous. The whole limb was affected with painful twitchings, which generally occurred during sleep, and lasted for an hour each time. On admission, the tumour could be diminished by making firm pressure on it, at the same time compressing the femoral artery, *but this diminution was very slight*. The pulsations were synchronous with those of the heart; indistinct fluctuation could be perceived.

June 27th.—Compression was commenced at 5 o'clock in the evening, with Dr Carte's circular compressor, in the inferior part of Scarpa's triangle, and, although causing intense pain, borne for forty minutes, when it was relaxed; it was re-applied at a quarter before 10, and continued until 11 o'clock, and borne without much inconvenience. The pressure was then relaxed for a few minutes, and from twenty minutes after 11 until within five minutes of 12 o'clock, pressure was again used; again from half-past 12 to 1 o'clock, A. M., "when she complained of sickness in the stomach, and trembled violently: the instrument was then removed from the limb." She was ordered twelve drops of *acetum opii* and fifteen drops of compound spirit of ammonia in cinnamon-water, to be taken immediately.

June 28th.—Tumour evidently more solid, the sub-fluctuating fell less perceptible; ice was directed to be applied over it. The circular compressor was now laid aside, and the pelvic compressor, as invented by Dr Carte, was substituted for it, and made to act on the groin. During this day pressure was made at various periods, and a very trifling amount was sufficient to arrest completely the pulsation in the aneurism.

June 29th.—This morning the circumference of the thigh over the tumour was $17\frac{1}{4}$ inches; during the evening of this day it is noted, when the pressure was removed from the artery, she instantly complained of intense pain shooting along the leg. On renewing the pressure the pain was relieved, and replaced by a burning sensation, around the knee-joint, which ceased in about two minutes. She suffered from sickness of stomach, and vomited frequently. Ordered an effervescing draught, with two minims of hydrocyanic acid.

July 1st.—Tumour seems firmer to day; still no very decided change. Two instruments were applied this day; she complained of the one next the tumour very much; it did not control the pulsation, and it was then finally discontinued, and pressure on the pubis alone confided in, which was used at intervals.

July 2d.—During the evening, after irregular trials of pressure, when removed from her bed to have it made, it is noted that she experienced an excruciating attack of pain, which she referred to the internal and external sides of the knee, and which was in a short time relieved by pressure on the femoral artery, and the application of cold to the thigh.

July 3d.—The compressor was used but at intervals, and she slept soundly for about four hours; towards night she again complained of extreme pain around the knee-joint, extending down to the toes; she had an opiate of twenty minims of *acetum opii*.

July 4th, 5th, 6th.—Nothing worthy of note during these days, except the return of the nocturnal pains about the knee, thence extending along the anterior part of the leg, but of shorter duration than on the previous days.

July 7th.—The impulse and bruit in the aneurism are much less than on yesterday; she is more tolerant on pressure. It was observed that the pulsations of the abdominal aorta are remarkably strong, particularly in the umbilical region; there is no hypertrophy of the heart, nor any evidence of disease in it or the aorta. During this day the instrument was applied continuously for at least four hours.

July 8th.—This morning the tumour appears smaller, the pulsation less distinct, and an indistinct murmur is heard in addition to the bruit before described, which shortly after became inaudible.

July 9th.—Fulness in the ham increased; she suffered much pain in and around the knee last night; pressure irregularly effected this day.

July 10th.—Compression borne for seven hours.

July 11th.—No change; the instrument used for eight hours.

July 12th.—No compression during the past night, as she had several rigors, with sickness of stomach, but no vomiting. Ordered effervescing draughts with hydrocyanic acid. Noted, "that she slept well all the day, and is sufficiently well to bear pressure, which was applied for about one hour during the evening. Slight ecchymosis observed on the surface of the tumour, and the superficial veins are seen ramifying over it. Circumference of the thigh over the aneurism $17\frac{1}{2}$ inches."

July 13th, 14th.—Pressure was made for three hours on the latter day, but imperfectly. Ordered a draught of rhubarb and sulphate of potash, which acted once on the bowels.

July 15th.—Pulsations much weaker; the circumference of the thigh $17\frac{1}{2}$ inches; the instrument applied for four hours and a-half.

July 16th.—The ecchymosis is better marked and more diffused; pressure for five hours.

July 17th.—Last night, about ten o'clock, she was attacked with a most violent pain which lasted for nearly an hour; her screams could be heard outside the hospital; she referred the pain chiefly to the anterior part of the leg, extending on both sides of the tibia to the ankle; a belladonna plaster along the site and course of the pain gave her relief; the instrument has not been applied; the tumour has increased since yesterday, the circle being 18 inches in circumference. Last night, after the pain had ceased, the slightest pulsation could not be perceived in the aneurism, either with the hand or ear; it, however, returned in a quarter of an hour; pain quite gone to-day.

July 18th.—Pressure was applied for six hours during the day; at 8 o'clock P. M., the pulsation completely ceased; pressure was continued during the night. When examined in the morning, no pulsation could be detected in the aneurism, the whole tumour presenting a remarkable solidity.

July 20th, 22d, 23d.—No pulsation; the discoloration fast fading away, and the limb becoming smaller; pressure still kept up at intervals. On the sixteenth day, after the pulsation had stopped, she was permitted to sit up, and in two days after to leave her bed and walk about the ward. A progressive diminution has taken place in the bulk of the aneurism, so that on the twentieth day, after all pulsation had ceased, the limb is nearly as well-shaped and symmetrical as the other. She continued daily to improve from this time, the limb becoming stronger and its temperature increasing, and the tumour diminishing and presenting more solidity.

Sep. 6th.—She was discharged from the hospital, the limb natural in size and temperature, a part of the tumour remaining unabsorbed.

She was brought into the hospital the night following, in a state of great excitement from intoxication and pain; the limb was greatly swollen from above the knee down to the ankles, and very hot; she screamed violently, and she felt as if her leg had burst, referring to the calf of the leg as giving most pain. It appears from her account, that she had been in the Park all the day (Saturday), that she had walked a considerable distance, and jumped across a stream; that she went to the theatre in the evening, and, returning from thence, drank six glasses of brandy; she remembers nothing further.

For four or five days subsequently to her re admission into the hos-

pital, she suffered much from pain in the calf of the leg, the temperature of which was considerably lower than that of the other leg. The application of a flannel roller from the toes to the middle of the thigh was all the treatment that appeared necessary; she gradually got well, and was finally discharged from the hospital on September 24th, at her own request; the limb being in function and appearance as perfect as the other.

IV. MISCELLANEOUS.

In the foreign papers the death of Lorenz Oken, Professor of Natural History in the University of Zurich, is announced to have taken place in that city on 28th August 1851.

Lorenz Oken died at the age of seventy-three, having been born in 1778.

Oken was originally intended, it is said, for the profession of medicine; that is, he studied in a desultory manner, as was then the custom, anatomy, physiology, chemistry, and some natural history, at Jena, during the latter years of the eighteenth century. At this time the peculiar opinions and doctrines which distinguished the philosophy of Schelling were fashionable, and attracted much attention among those who endeavoured to apply to the physical and physiological sciences principles of philosophy. Among those who adopted and endeavoured to explain and illustrate the doctrines of Schelling, Lorenz Oken was eminently conspicuous. In 1802 he published a short tract, entitled *Outlines of Natural Philosophy*, in which he proposed a new Classification of the Animal Kingdom, resting principally on the idea, that each class is the representative of a particular organ of sensation. It was impossible that so violent an assumption could be generally adopted; and though various facts seem to favour the idea that one sense is more strongly developed and more predominant in its operations than others, yet the system so proposed never made a general or strong impression upon naturalists and zoologists.

In 1805, Oken published a work on *Generation*, in which, amidst many fancies and hypothetical notions, he announced the idea that all the parts and tissues of animals and plants are originally cells or vesicles; the idea that has derived so much weight from the subsequent confirmation by Robert Brown in this country as to plants, and by Schleiden as to plants, and Schwann as to the animal tissues in Germany. It is not easy to say, whether this was merely a happy guess, or a notion elaborated by observation and reflection. The notion has been in different forms, and at different periods of science was more or less distinctly brought forward by different authors; Malpighi, Grew, Haller, Buffon, Bordeu, Treviranus; but it was never established as a fact on stated grounds till the paper of Schleiden appeared in Muller's *Archives*.

It is well known that the work which has been allowed to show most decidedly the genius of Oken is his *Essay*, published at Bamberg in 1807, on the Signification and Nature of the Bones of the Skull, in which he undertook to prove that each separate cranial bone is, or represents a vertebra. This notion, which unites the advantage of being at once striking, and subsequently plausible, was adopted more or less strongly by many speculators in transcendental anatomy; first among the Germans, and subsequently by some of the French anatomists. It was supported by Geoffroy St Hilaire; but it never received from Cuvier that degree of countenance which is requisite to show its verisimilitude. It has subsequently been more fully and accurately explained and applied by Mr Owen, with those conditions and limitations which

are probably requisite to its safe application, It remains, nevertheless, yet to be seen whether the idea promulgated by Oken is one of those which are entitled to be ranked among the general principles of the science of animal organization.

In the course of the same year, namely, 1807, he published at Bamberg, in association with D. G. Kieser, *Contributions to Comparative Zoology, Anatomy, and Physiology*,—a work of which we believe only two numbers appeared.

In 1810, Oken published his *Physico-Philosophy*, a great work, with not a few blemishes and defects. Like all his writings it bears the marks of genius, and shows the effects of fanciful and excessive generalization. Of this work an English translation was published in 1840 by the Ray Society.

Many separate papers and memoirs on Geology, Zoology, Botany, and Physic in general, has Oken written. He was editor of the *Isis*, a very excellent philosophical and scientific journal, published for a long time at Jena, where he was at an early period Professor of Natural Philosophy. Subsequently he became professor of the same science at Munich.

During the political dissensions that arose in various German States in 1842-43, Oken took part with the discontented side; and having expressed himself as to the points in dispute with a degree of freedom which was offensive to the Bavarian government, he found it expedient to resign his office. He was subsequently appointed to a similar situation in the University of Zurich.

To Oken is generally ascribed the idea of assembling the scientific persons of Germany in annual general meetings; an example which has in this country given rise to the British Association, and which has been so successfully imitated in the annual meetings of that body.

The character of Oken presents an example not very inaccurate of the usual type of German intellect. That he was possessed of genius with several of its highest qualities, it is impossible to deny. But the genius was mixed and depreciated by not a few of the usual defects of the German mind. Fancy and imagination, wild and little restrained by judgment, the talent of seeing in a few facts innumerable applications sometimes just and practicable, more frequently quite hypothetical, if not chimerical, striking and original ideas, which may or may not be true, but which are almost in no case capable of demonstration; such nearly seem to be the leading characteristics of the intellect of this eminent philosopher. His genius was his own; its aberrations were the effect of the system of education in German universities, and the peculiar circumstances in which scientific men in Germany are placed. Had Oken received his education in an English or Scottish university, he might not have written works containing notions so original. But his doctrines would have been more carefully considered; they would have been brought forward with the necessary limitations and conditions; and they would have been more closely adapted to nature, and more serviceable to society.

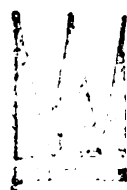
Died on Wednesday, 17th September 1851, at his residence, St Giles's Street, Oxford, after a few hours illness, John Kidd, M.D., of Christ Church, Regius Professor of Medicine, Tomlin's Prælector of Anatomy, Aldrichian Professor of Anatomy, and Radcliffe's Librarian.

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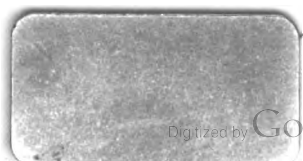
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