

viscera proper or of tissues and organs; and local defects of development and function. He then goes on to develop his nosologies of pyretic and constitutional diseases, of diseases of the skin and of the nervous system, and of mental diseases; and here we must say he has carried minuteness of classification to the extreme of elaboration. Has he not also pushed it beyond the limit of practical utility? Let us take as an example the way in which he has handled certain "specific or zymotic fevers."

"REMITTENT FEVERS—Malarious Fever, complicated with visceral inflammations:—

I. *Cerebro-spinal* Remittents—Endemic Meningitis.

II. *Pulmonary* Remittents—Pleurisy, Pneumonia.

III. *Biliary and Gastric* Remittents:—

Endemic Gastric Fevers (Gastritis, with hepatic and splenic congestion:—(a) Of Temperate Regions—Biliary Remittents; (b) Of Tropical Regions—Endemic Yellow Fever.

IV. *Pernicious* Remittents—Endemic Pernicious Fevers or Malarious Fevers, complicated with septic or miasmatic poisons:—

(a) Complicated with Fæcal Miasmata (sewer and dunghill emanations); Choleraic Remittents; Dysenteric Remittents; Malarious Continued Fevers, with abdominal symptoms.

(b) Complicated with Sepsis; Petechial and Scorbutic Remittents; Endemic Pernicious Fevers, with hæmorrhages, black vomit, etc." (P. 263.)

Now all this careful definition and classification is very interesting; but there is with it a danger lest the student, for whose perusal Dr. Laycock has written his work, should magnify all the phases of a disease here mentioned into so many distinct diseases, thereby further overwhelming and confusing his already overburdened mind. Again, can any one tell us whether at any time, and to what extent if any, medicine in its true sense—the science of healing—has been advanced one step by the elaborate systems of classification which nosologists have devised, and in the details of which no two of them thoroughly agree?

Dr. Laycock is rather fond of introducing, perhaps not new names, but names which are now scarcely ever heard of in medicine—such as Trophesiæ, Æsthesiæ, Kinesiæ, Hyperkinesiæ, Parakinesiæ, Akinesiæ, Oresies, etc. All these may be very expressive; but we fear that the same fate awaits them as has befallen several of the terms which Dr. Mason Good and Piorry have used; namely, that they will be more valued as curiosities in medical nomenclature than for their practical use. When a new or apparently new thing comes under our notice, we must make or find a name for it, which shall be as correct and expressive as possible; but few medical men, we take it, will go out of their way to learn new names for things of which they have already some idea, and a way of naming them. Who, for instance, is likely to substitute the term "encephalic hyperkinesiæ" for "general convulsive diseases"?

Dr. Laycock is unquestionably a most zealous teacher, and endeavours most conscientiously to do the duty which has been entrusted to him, of training the medical pupils of the Edinburgh University in the observation of disease. We have said, and repeat it, that there is much valuable and really instructive matter in his book; but in some points his teaching is, in our opinion, calculated to perplex the student rather than to aid him.

DR. GARROD'S LECTURES

ON THE

BRITISH PHARMACOPEIA,

Delivered at the Royal College of Physicians.

THE third lecture was delivered on Wednesday, February 3rd.

Salts of Silver. The only novelties in regard to these compounds in the new Pharmacopœia consist in the introduction of the *oxide of silver*, and the insertion in the body of the work of the process for making the nitrate.

Oxide of Silver consists of one equivalent of silver and one of oxygen (Ag O). The union between the two elements is not strong; the silver is, therefore, reduced to the metallic state by exposure to a red heat. The oxide is insoluble in water, but soluble in weak acids; and, in the stomach, is converted into chloride. The oxide of silver is less caustic than the nitrate. Internally, it acts as a sedative in some irritative states of the mucous membranes. Dr. Garrod had found it useful in gastric disturbance, and generally in cases where the absorption of silver is desired—as in passive hæmorrhages, and in various nervous affections, such as those for which nitrate of silver is commonly given. It is said not to cause darkening of the skin; but it must be remembered, that this phenomenon occurs only when the nitrate has been taken for a considerable time, and it is difficult to imagine that the coloration will not be produced by oxide of silver also, if administered for a sufficiently long period. The dose of oxide of silver ranges from a quarter of a grain to a grain; it is best given in a simple form—*e. g.*, with crumb of bread. It becomes decomposed by certain organic substances; especially creasote, which deoxidises it.

Bael (Bela). This is the dried half-ripe fruit of the *Ægle Marmelos*, a plant of the natural order *Aurantiacææ*. The fruit is described as being "roundish, about the size of a large orange, with a hard woody rind; usually imported in dried slices, or in fragments consisting of portions of the rind and adherent dried pulp and seeds. Rind about a line and a half thick, covered with a smooth pale-brown or greyish epidermis, and internally, as well as the dried pulp, brownish-orange, or cherry-red. The moistened pulp is mucilaginous." The only official preparation is the *Liquid Extract (Extractum Belæ Liquidum)*, a fluid-ounce of which is equal to an ounce of the dried fruit. Bael is much used in India; and, Dr. Garrod believed, was principally introduced into this country by practitioners who had employed it abroad. Its chemical composition has not been accurately ascertained; it probably contains some astringent principle. In India, it has a high repute as a remedy in chronic diarrhoea and dysentery. Dr. Garrod had, however, known it to fail in cases where gallic acid and opium afterwards proved successful.

Belladonna. In addition to the leaves and branches, the root of belladonna finds a place in the British

Pharmacopœia; and *atropia* and a *liniment* are prepared from it.

The action of belladonna and its alkaloid is local; this is demonstrated by its effect in dilating the pupil of one eye when applied to it, and also by the fact that, while one-thirtieth of a grain of *atropia* is required to be taken internally to produce this result, the local application of so small a quantity as one-millionth of a grain is sufficient. As a topical application, belladonna is used to relieve pain. For this purpose, the tincture of the London Pharmacopœia has little or no effect; the extract is, at best, a dirty preparation; and *atropia* itself is very expensive. Hence a *Liniment of Belladonna* has been introduced, of which each fluid part contains the properties of a corresponding weight of the root. Belladonna liniment has the colour of sherry wine. Dr. Garrod believed it to be a very efficacious local application. It requires to be diluted with two thousand parts of water before it loses its property of dilating the pupil; while the tincture of the London Pharmacopœia requires only two hundred parts to reduce it to the same want of strength. Hence the liniment appears to have ten times the strength of the tincture.

Sulphate of Atropia has been omitted; because it is not required, and is moreover an unsatisfactory preparation. The alkaloid *Atropia* is introduced; and a solution is directed to be made from it, of which each ounce contains four grains. Various dilutions, it may be used in ophthalmic surgery.

Chiretta (Chirata). This remedy is now introduced for the first time, although it has been for some time used in medicine. The entire plant is directed to be used; and formulæ are given for preparing an infusion and a tincture. It belongs to the natural order *Gentianaceæ*, and has some resemblance in its properties to gentian. It contains a bitter principle, but very little volatile oil; hence it is a more simply intense bitter than gentian. In India, it takes the place of the last named medicine; and is an useful tonic in cases of atonic dyspepsia. The dose of the tincture is from half a drachm to a drachm; of the infusion, from half an ounce to an ounce or an ounce and a half.

Cocculus Indicus. The dried fruit of the *Anamirta Cocculus*, a plant of the natural order *Menispermaceæ*, is introduced. The seed contains a peculiar non-nitrogenous body—picrotoxine; and the shell an alkaloid—menispermine. The only preparation directed to be made from the cocculus is an *Ointment*.

Cocculus evidently exerts its action on some part of the nervous system; animals poisoned by it lose the control over their movements. Its effects on men have been but little studied; although it is very probable that in many instances it is taken unconsciously. When introduced into malt liquors, it appears to produce an unwillingness to move. It has probably never been used in medicine otherwise than externally, in some skin-diseases or for the removal of pediculi. Care must be taken never to apply it to an abraded surface. Considering the penalties to which brewers are liable for using and druggists for selling it, Dr. Garrod thought it a matter of regret that it has

found a place in the Pharmacopœia, and thereby obtained a certain amount of legal sanction for its sale. The action of picrotoxine, however, should be investigated, as it may be found to have properties which may render it useful in practice.

Indian Hemp. Although many years in use as a medicine, *Cannabis Indica* is now for the first time made officinal in England. The part directed to be used is "the flowering tops of the female plant from which the resin has not been removed." Indian hemp owes its power to the resinous exudation. Regarding the composition of the resin, nothing definite is known. Two preparations are ordered; an alcoholic *Extract*, and a *Tincture*, made by dissolving an ounce of the extract in a pint of rectified spirit. Although Indian hemp has been several years used in medicine, a thorough investigation of its physiological action is still required. In large doses it causes delirium; in smaller, it exalts the mental faculties, and for this purpose is used in Eastern countries in the form of *haschisch*. Hence it somewhat resembles, in its properties, certain solanaceous plants, as belladonna; but it does not produce dilatation of the pupil. Its action as an anodyne is well established; in rather large doses, it gives rise to a sense of numbness. It is also useful as an antispasmodic. Dr. Garrod has never found any soporific action to be directly produced by it; when sleep has followed its use, this has probably been attributable to the relief of pain. It differs from opium in several respects; especially in not producing the constipation, loss of appetite, etc., which attend the use of that medicine.

The dose of the extract of Indian hemp is from a quarter of a grain to a grain or more; that of the tincture from five to twenty minims or upwards. The resin is apt to be precipitated when mixed with water; but is held in solution by the addition of an alkali.

Digitalin (Digitalinum). This is a greyish-white powder, having the appearance of small scales. It is soluble in acids, but does not neutralise them; it appears to have one hundred times the strength of the leaf of digitalis. Dr. Garrod had had no experience in its use; but from its want of power of crystallisation, the consequent readiness with which it can be adulterated, and the difficulty with which adulterations of it can be detected, and from its great power, he thought it might have been dispensed with. The dose, for its safe administration, is from one-fiftieth of a grain upwards; but, for the reasons already assigned, its strength is likely to be uncertain.

Digitalis, though a potent remedy, may be given in much larger doses than is generally supposed. Dr. Garrod said that he remembered that, when he commenced the study of medicine, it used to be given by some in considerable doses; and in recent years this practice has been revived, and digitalis has been given in large quantities in delirium tremens, especially by the late Mr. Jones of Jersey. Dr. Garrod had tried it in a few cases of this disease; and had found it a very powerful and useful remedy when the malady is uncomplicated. He had also suggested to Dr. Lockhart Robertson its employment in acute

mania; and Dr. Robertson had accordingly used it, apparently with satisfactory results.

Preparations of Iron. In the London Pharmacopœia, iron in the metallic form had no place as a remedial agent. Now, however, it is introduced as a medicine, in the form of *Reduced Iron (Ferrum Redactum)*—the *fer réduit* of the French. It consists of iron reduced to the metallic state from the oxide, by means of hydrogen gas. When properly prepared, it has a somewhat steel-grey colour; is attracted by the magnet; scintillates when thrown into the flame of a candle; and is soluble in very weak acid solutions. It always contains a variable quantity of magnetic oxide of iron. It is liable to become oxidised by exposure to the air. Dr. Garrod had had considerable experience in the use of this remedy. It is very easily dissolved in the stomach, and absorbed; and produces little or no local influence, especially when taken with food. From many observations, and comparison of its effects with those of the other preparations of iron, he had come to the conclusion that it is a most potent remedy, and comparatively most useful in all purely anæmic states. He would, however, prefer some of the other preparations where astringents are required; as in passive hæmorrhages, and in relaxed conditions of the system. One grain is equal to five grains of the citrate of quinine and iron; so that a dose of from one grain taken twice or thrice daily should produce an effect on the blood. He always gives it with meals; it is then scarcely detected by the patient. The reduced metallic form of iron is most desirable when the long continued use of this metal is indicated.

Two new oxides of iron have been introduced; the *Magnetic Oxide (Ferri Oxidum Magneticum)*, and the *Hydrated Peroxide (Ferri Peroxidum Hydratum)*.

The *Magnetic Oxide* does not consist of the scales commonly known by that name, but is a precipitated oxide. It is in a favourable state for solution and absorption. In some respects it resembles the reduced iron; but does not scintillate in flame, and is somewhat less soluble in weak acid solutions. Dr. Garrod could not speak of its efficacy so confidently as of the reduced iron; and as far as his observations had extended, the result was rather in favour of the latter medicine. It has the name of oxide; but there are good reasons for believing it to be a salt, composed of iron in two different states of oxidation, one being basic to the other—a ferrate of iron.

Hydrated Oxide of Iron has been recommended as an antidote in poisoning by arsenic.

Iodide of Iron. A *Pill* and a *Syrup* of this are directed to be made. This salt is liable to become oxidised; and it may be questioned whether its formation into pills protects it from this.

Phosphate of Iron has long been in use as a medicine, but of late has been somewhat neglected. It has a blue colour, from partial oxidation. A *Syrup* of this is ordered to be made, one fluid-drachm of which contains a grain of phosphate of iron. Dr. Garrod knew no clinical facts showing the superiority of this salt of iron; but it has been thought to be possibly useful, as it is probable that some of the iron of the

blood exists in the form of phosphate. Some years ago, Dr. Garrod used to give with good effect, in anæmic cases, a compound iron mixture (Griffith's mixture) in which phosphate of iron was substituted for the sulphate.

Three *Persalts of Iron* are found in the British Pharmacopœia.

Of the *Persulphate of Iron*, a solution is placed in the Appendix; it is used in making several of the preparations of the metal.

Perchloride of Iron is ordered in the form of solution (*Liquor Ferri Perchloridi*), of which each ounce contains nearly 125 grains of the salt, so that it differs little in strength from the tincture of sesquichloride of iron of the London Pharmacopœia. It has the advantage, however, of being uniform in strength and free from acidity.

Pernitrate of Iron is also ordered in the form of solution (*Liquor Ferri Pernitris*), a clear reddish-brown liquid. It has been used as a powerful astringent.

The British Pharmacopœia is rich in salts of iron. The *Ammonio-chloride* of the London Pharmacopœia, and its tincture, have been omitted. In addition to the ordinary *Sulphate*, a dried form (*Ferri Sulphas Essiccata*) has been introduced, four grains and a half of which are equal to seven grains of the crystallised salt. The Pharmacopœia also contains a *Granulated Sulphate (Ferri Sulphas Granulata)*. This is less easily oxidised than the ordinary sulphate; but has no special superiority as a remedy.

Dr. Garrod here took the opportunity of remarking, that it might be asked why *Manganese* has not been introduced into the Pharmacopœia. A few years ago, the sulphate, in doses varying from one to two drachms, was proposed as a purgative and cholagogue; but its efficacy in this respect is doubtful. Some of the salts of manganese have also been used in France and in this country as tonics in anæmia, it being supposed that this metal forms a constituent part of the blood, and that certain cases of anæmia are dependent on a deficiency of it. About five years ago, Dr. Garrod tried manganese in several well marked cases of anæmia and amenorrhœa. The patients were first kept in hospital for a sufficient time to observe the influence of improved diet; then, if no marked improvement took place, sulphate of manganese was given in five-grain doses, or was substituted for sulphate of iron in Griffith's mixture; in some cases, carbonate of manganese was given. In no instance was any effect produced by the manganese; while, on its discontinuance, speedy restoration to health took place under the use of iron. It is worthy of note that, in France, manganese was at first given alone; but afterwards double salts of this metal and iron were used.

Glycerine is made officinal in the British Pharmacopœia. After describing its characters and properties, Dr. Garrod observed that it has been proposed as a substitute for cod-liver oil in phthisical cases. As long ago as 1848, he gave it in this disease; it certainly allayed irritation and cough; but could not be regarded as a substitute for the oil. More lately, he

had made more careful observations. A patient, for instance, was selected in whom the tubercular disease was in course of arrest. Cod-liver oil was given, with the effect of increasing the weight; on the discontinuance of the oil, the weight remained stationary. Glycerine produced no increase; but the re-administration of cod-liver oil was again attended by the same effect on the patient's weight. Hence Dr. Garrod considered that glycerine does not arrest the waste of tissue. Glycerine may be sometimes used for the purpose of sweetening in cases where the use of sugar is objectionable.

Purified Ox-Bile (Fel Bovinum Purificatum) is made official. It consists of ox-bile prepared so as to remove the albuminous and mucous substances. Ox-bile is supposed to be of value in cases where bile is deficient, and to aid intestinal digestion. It is sometimes prepared so as to be given in capsules. As yet, Dr. Garrod is not a convert to the use of the digestive products of animals in the treatment of disease in the human subject.

Pepsine has not found a place in the new Pharmacopœia.

British Medical Journal.

SATURDAY, FEBRUARY 13TH, 1864.

GRATUITOUS MEDICAL SERVICES.

WE have more than once made the remark, that what we especially desire touching the subject of gratuitous medical services is free discussion. We ask in this matter for nothing so much as the public production of the statements put forward by the admirers of the system. Nothing we can say against it would, we are satisfied, so fully prove to the minds of unprejudiced persons, its absurdity and unreasonableness as the statements produced in favour of it.

It is a curious, and perhaps a significant fact, that so few defenders of the system are to be found; we mean of the kind who will come publicly forward and defend it in public. There are plenty of people who are strongly in favour of it; but then they do not pretend to give the reasons of their belief. They believe because they believe, and have never taken the trouble to inquire into the nature of their belief. It is, therefore, a pleasure to us to find anything like an opponent who has the courage to defend the thing *coram publico*; because we then know that he is, for certain, through the weakness of his defence, propagating a belief in the wrongness of the system which he would support. The necessary feebleness of his arguments in favour of gratuitous medical services will naturally convert any reasonable reader, and not improbably even himself, to a belief in the very opposite of the views which he is supporting.

We have no doubt that an article on this subject

which some time since appeared in the *Medical Critic* has had an effect of this kind, for the reason suggested. We call, however, attention to the article; because, being a solemn and serious essay, we may fairly consider that it contains all that can be suggested, in the way of argument, in favour of the gratuitous system; and it is well that the profession should see what a serious writer can say in praise of it, when he applies himself solemnly to the business.

He says that there is no analogy between the giving by a medical man of his services, and the giving of bread by a baker. A medical man's skill is "a gift of God; but a baker has no gift in any like sense." "There is a difference between skill and merchandise." It is remarkable, that this curious reasoner, holding such views, did not inquire how it is that the skilled architect does not build the hospital gratis; that the clergyman with his spiritual gifts does not dispense them gratis; why, in a word, the doctor alone of all skilled professions is to be mulcted for the benefit of the poor, or rather of the rich—it being really the pockets of the rich which he saves by giving his gratuitous services.

We are next told, that it may be true the General Practitioners are robbed of their legitimate earnings by this system; but let them reconcile this to their mind, says the *Medical Critic*, in thinking of the much superior skill and knowledge of the hospital doctors over themselves, and, therefore, of the greater advantages thence accruing to the patient. But we would ask in reply, supposing (which we do not admit) that the knowledge of hospital doctors, at this day, is so very superfine in comparison with that of other medical men, why are sick men in the lower ranks of society entitled to the benefits of such an A 1 kind of knowledge, any more than they are entitled to the benefits of turtle-soup, champagne, and the other luxuries which are purchased by the wealthy sick? If there be any reality in the argument, why are not the medical wards of workhouses supplied with the superior skilled article as well as hospitals? The injustice and inapplicability of the idea is shown again by the fact, that the hard-working clergymen, lawyers, and men of the middle class, who cannot afford to pay the fees of hospital doctors, are invariably (perforce) attended to by that very class of practitioners which the writer considers inferior, and not good enough for the chimney-sweep and tailor. The parish cobbler, indeed, in this way, can obtain gratuitously the advice of the great surgeon Sir David Slashaway; whilst the parish clergyman is forced to be contented with the services of the humble Mr. Scalpel.

The next argument (if so it may be called) is a curious one enough, and, we think our readers will admit, both far-fetched and not very easily digested, nor flattering to the profession at large.