REVIEWS OF
BRITISH AND FOREIGN LITERATURE.

Immunity in Infective Diseases. By Élie Metchnikoff. Translated by Francis G. Binnie. Cambridge University Press.

Amongst the numerous writings on the subject of immunity in recent times, those which have most influenced opinion and have contributed most to real advance are undoubtedly Ehrlich’s and Metchnikoff’s. The former has sought for an explanation of immunity in the bio-chemistry of the nutritional processes of the cell; the latter studies it in the light of the comparative physiology of defensive activities, which in their turn have in great part nutrition as their basis. Both workers have dealt with the same great problems from different points of view, and their general conclusions are more in harmony than is generally supposed. It is one of the great merits of Metchnikoff’s work that it has been the means of giving to pathology a much wider outlook than it had before, and a vastly enhanced interest; it has broken down the barriers between pathology and other biological sciences, just as at present a similar process is going on in its relations to physico-chemistry. The distinctions drawn by pathologists between the various reactive processes are more or less arbitrary; they are all to be considered as parts of the means of defence of animal organisms against inimical surroundings. And the keynote of Metchnikoff’s theory is that the vital activities directed towards defence under abnormal conditions have their basis in, and are evolved from, functions concerned with the maintenance of the normal life of the organism.

Many English readers are already familiar with Metchnikoff’s work on phagocytosis as expounded in his “Comparative Pathology of Inflammation”; in the present translation of his “L’Immunité dans les Maladies Infectieuses” are presented an extension of his investigations along similar lines, and an application of his results to the explanation of the facts established regarding the changes in the blood serum as a result of immunisation. A study of the unicellular animal organisms, with which the book opens, shows that the flagellata and the ciliated infusorians are subject to invasion by some of the lower fungi, and that the destruction of the latter takes place by a process of digestion, indicated often by a slightly acid reaction in the digestive vacuoles. Intracellular digestion is here the chief feature, although in certain instances a digestive ferment can be separated. Mouton, for example, obtained from amebœ a substance with weak proteolytic action. It is shown that amongst those lowly animal organisms certain important other properties are found, e.g., the power of moving from the hostile parasite, the power of fixing, and in some cases of transforming, toxic substances, and the faculty of becoming acclimatised to poisonous bodies and unsuitable surroundings, etc.—all being factors of great importance in relation to general pathology. It is now generally recognised that the question of the means of the destruction of bacteria is but part of the general subject of the absorption of formed elements, e.g., red
corpuscles and other cells. This absorptive process thus demands special attention. If red corpuscles be introduced into the digestive tract of actinia or of planarian worms, it is seen that their destruction and absorption take place by means of intracellular digestion, and an analogous process is seen when they are injected into the body tissues of most invertebrates. On ascending the animal scale, we find that digestion becomes more and more an extracellular process, and ultimately almost exclusively so; that is, it takes place by means of secretions. In connection with this subject much importance is duly accorded to the work of Pawlow and his pupils, who have shown that the intestinal secretion contains a substance enterokynase, which greatly aids the subsequent action of trypsin; that is, the two ferments act in association. According to Delezenne, the source of enterokynase is not the epithelium but the lymphoid tissue of the alimentary tract. These facts form, according to Metchnikoff, the physiological counterpart to what is seen in the action of haemolytic and bacteriolytic serums. If the blood corpuscles of the guinea-pig, for example, be injected into the tissues of the goldfish, their destruction is at first intracellular, but after two or three injections the lymph acquires haemolytic properties; that is, the digestion is now in part extracellular. This subject of course involves a consideration of the properties of haemolytic serums as revealed by the researches of Bordet and of Ehrlich and his co-workers. In the action of such serum, as is now well recognised, there are two substances concerned, the normally present alexin, cytase, or complement, and the specially developed immune-body, fixative, or substance sensibilisatrice. Both substances Metchnikoff regards as allied to ferments, and he holds that there is one important difference between them in addition to that stated, namely, that the fixative becomes set free in the plasma, whilst the cytase is contained within the leucocytes under normal conditions. This latter view is combatted by Ehrlich and others. Just as red corpuscles are chiefly destroyed by the macrophages and bacteria by the microphages, so there are two chief cytases, macrocytase and microcytase, which are derived from the corresponding cells; the origin of the fixatives is also to be ascribed to the same two classes of cells. The essential feature in the development of haemolytic or bacteriolytic properties is that digestion at first intracellular becomes extracellular, and the digestive substances are derived from the cells in which the intracellular process can be seen. The fixatives or immune-bodies formed in large amount and set free during the process of immunisation are ferments adjuvants, analogous in their mode of action to enterokynase.

Such in outline is the leading idea as regards the destruction of bacteria and other cells; we have specially referred to this as it represents the modification and extension of the theory of phagocytosis in accordance with the facts more recently established. But it is scarcely necessary to add that all departments of the subject of immunity are fully discussed, and, we may add, with a lucidity and a wealth of interesting illustration rarely equalled. Natural and acquired immunity against micro-organisms, and the mechanism of such immunity, natural and acquired immunity against toxins, immunity of the skin and mucous membranes, immunity acquired by natural means, vaccination, and a
historical survey of our knowledge of immunity, constitute the subject-matter of the chief chapters. The book is of the first rank as a scientific work, and is of the highest value alike to the pathologist, the physician, and the biologist; and it would be difficult to imagine a clearer or more interesting exposition of a subject which admittedly in parts is beset with difficulty. The translation has been admirably executed by Mr. Binnie, and the system of putting the number of the page in the original at the margin of the page in the translation, so that the original can readily be referred to, will be found to be a very convenient one.

The Sanitary Laws of Scotland and Principles of Public Health. By W. J. Brock, D.Sc. (Public Health), M.B., C.M., etc. Edinburgh: Oliver & Boyd.

The task of the reviewer in this case is not easy. A compilation of Acts and Forms which have been taken from existing publications or instructions from the Local Government Boards of England and Scotland, do not afford pabulum for a reviewer. One cannot therefore be hypercritical. Dr. Brock's book is obviously designed to be a vade mecum. It is issued in convenient size, and has been well printed and bound. Perhaps the most useful portion is that for which Mr. J. A. Louttit Laing, M.A., LL.B., is responsible. This deals succinctly with the governing decisions which have been given from time to time in the Law Courts. Doubtless the book before us will prove useful to some, but it is not sufficiently complete to be absolutely reliable. For instance, on looking at the index we failed to find any reference to the Sanitary Accommodation Order, the putting into operation of which is one of the difficult problems connected with the Factory and Workshops Act. The Order has been left out, yet to know its terms is a necessity. The space devoted to the aforementioned Act, and the Housing of the Working Classes Act, is so small that one must refer to the full text of the Acts to be certain of one's ground. Under the Dairies, Cowsheds, and Milkshops Orders, it would have been well had a model set of regulations been inserted. To know that a local authority has power to make regulations is one thing, but the responsible official, the clerk for instance, would have been pleased to have had a guide a set of model regulations.

Towards the end of the volume two sections on "Food" and "Vital Statistics" have been given. The former is very incomplete, and the latter inordinately long. Perhaps at a future date these faults may be remedied. It may appear strong criticism to make, but we hardly think the present volume fills the place intended for it by the author.

The Royal Medical and Chirurgical Society of London. Centenary 1805–1905. The Aberdeen University Press Limited.

This book has been written, at the request of the President and Council, by Dr. Norman Moore, honorary librarian, and Mr. Stephen Paget, honorary secretary, for the Centenary Festival of the Royal Medical and Chirurgical Society. Its primary object is to give, in outline, a history of the Society, and to commemorate in the Festival its founders and
benefactors. Such a book, say the editors in their preface, should be welcome to the present Fellows of the Society.

The interest of the volume is, however, so great that it will be welcomed by all members of the medical profession who are privileged to read it. The work of compiling the book from the Transactions and Minutes of the Society must perforce have been great, but so ably have the editors performed their task, that they give us in some three hundred pages what is practically a history of medical and surgical progress during the last hundred years. No part of the book is redundant, and yet the authors do not sacrifice style to space, but have produced a volume of which, while every page is of interest, the whole may be read both with pleasure and with profit.

The book is divided into two parts, of which the first contains chronicles of the Society, compiled by Mr. Paget from the Minute-Books, Proceedings, and Transactions of the Society, while the second contains a short account of its presidents, of whom seven were happily able to aid in person the celebration of the centenary of the Society.

In Part I. we are able to trace the marvellous progress of the Society from the tenancy of two small rooms in Verulam Buildings at the rent of 95 guineas per annum, with a press-bedstead stuck in a corner of one of the rooms, and the clerk and his wife lodged in a gloomy little basement, to the purchase in 1889 of 20 Hanover Square, where, in 1896 the premises alone, without their contents, were valued at £51,150.

Of particular interest at the present time, when the union of the various medical societies is in the air, is the earlier proposals of union with other societies made to or by the Royal Medical and Chirurgical Society in 1808, 1850, 1860, and 1868. In 1808 union would have occurred between the Medical Society and the Medical and Chirurgical Society as it was then (the Royal Charter was granted in 1834), but the latter Society refused any concession of name which might lead to an inference that it had been absorbed by the former and older Society. The Medical Society, on the other hand, considered that any change of name would endanger the security of its property. Thus it would seem that the Medical Society of a hundred years ago showed more knowledge of the laws of property than certain churches of the present day. In 1868 a serious attempt was made to amalgamate the various societies into “The Royal Society of Medicine,” but after two years of discussion the scheme fell to the ground.

Of the many papers, now of classic importance, read before the Society, space does not permit us to make mention. The profession has the editors to thank for rescuing other papers of importance, which had fallen into undeserved oblivion.

Part II. consists mainly of short biographical notices of all the presidents of the Society who are dead, with quotations from their writings, putting before us some characteristic of each president, or of the knowledge prevalent in his day. “It has been composed with the intention of the sage of old, ‘Let us now praise famous men, and our fathers that begat us,’” a quotation in this case peculiarly applicable.

In this short review enough has, we hope, been said to indicate how much the Fellows of the Royal Medical and Chirurgical Society, and
the medical profession as a whole, are indebted to the editors for this fascinating volume.

**Nodal Fever.** By Alfred Austin Lendon, M.D. London. With four Coloured Plates and five Charts. London: Baillière, Tindall, & Cox.

Under the above title, Dr. Lendon describes the disease usually known as erythema nodosum. It is his object to show, first, that it is an acute specific infectious fever, and, secondly, that it is the same condition as erythema multiforme. His monograph is based on the careful study of sixty-three cases, and well repays perusal, even if it is not always easy to agree with the author's opinions. At present there are two views on the causation of this interesting condition. Some physicians, and notably Dr. Stephen Mackenzie, hold that it is a manifestation of acute rheumatism. Others of us regard it as being probably due to some form of auto-intoxication. Dr. Lendon's cases certainly do not bear out the rheumatic theory. In a very small percentage of them was there any history of previous rheumatism, or even of a rheumatic family history. It has long been recognised that a prodromal stage with considerable fever exists, and it is on the occurrence of this stage and of the stages of eruption and of convalescence (often prolonged) afterwards that Dr. Lendon bases his theory that we are in reality dealing with an acute eruptive fever. As regards its infectious qualities, he is able to instance several interesting facts which have come under his notice. The occurrence of two cases in the same family may, he admits, be merely due to some peculiar predisposition, but he claims that he has seen cases of hospital infection. Moreover, in one case the infected person developed a circinate erythema, the infecting case being one of erythema nodosum. This, in his view, points to the identity of the various forms of erythema multiforme, as does the fact that in most papular erythemas there is a suggestion of nodes in some part of the body. Altogether, Dr. Lendon has produced a most interesting little book, and there is something to be said in favour of his idea that at least the time has now come for erythema nodosum to be taken out of the dermatological section of textbooks of medicine.

**Dietetics for Nurses.** By Julius Friedenwald, M.D., and John Ruhrah, M.D. Philadelphia and London: W. B. Saunders & Company.

This admirable and concise work on dietetics is designed especially for nurses and laymen. However, it is in our opinion somewhat too elaborate for such a purpose. We question very much if anything is to be gained by that very superior person the trained nurse being able to point out to the family doctor that the diet he has ordered is deficient in protein, or does not contain the requisite number of calories. On the other hand, we readily admit that the book is very simply and clearly written, and puts a difficult subject in a very readable form. The chapters on infant feeding are particularly good, and will be found of use not only by the nurse but by the doctor also. Very good also is the chapter on rectal feeding, which contains many useful recipes for
nutrient enemata. The appropriate diet for every form of disease is
given in detail, and the whole book is full of valuable suggestions of a
practical nature. British readers will gather many new ideas from the
long list of recipes at the end of the book. Variety of food is of such
value in the treatment of the sick, that the preparations there mentioned
will be welcomed by all nurses. In our opinion the book, so far from
being only useful to nurses and laymen, will be of much assistance both
to the medical student and to the busy practitioner. It appears to us to
contain all the practical side of dietetics, and being of a handy size and
absolutely devoid of any "padding," it will commend itself to those who
have neither the time nor the inclination to grope their way through
more pretentious and more bulky works on the same subject.

Nouveau Traité de Médecine et Thérapeutique. Sous la directions de
MM. P. Bouardel et Gilbert. II. "Fièvres Éruptives." Paris:
Librairie, J. B. Baillière et Fils.

This new edition of a well-known system of medicine is issued in
separate parts of a handy size, and contrasts favourably with the heavy
volumes of the original edition. The fasciculus under notice, that on the
eruptive fevers, contains articles on smallpox, chickenpox, scarlatina,
measles, rubeola, and miliary fever (suette miliaire). All the mono-
graphs are good, and have that lucidity and charm which are so
characteristic of French medical works. The article on smallpox, by
Auche, has been brought thoroughly up to date, and mentions all
the most recent bacteriological and other researches. We notice that
Auche does not support the view of aerial convection of smallpox,
believing that a few dozen yards is the utmost that the infection can be
carried by air. Wurtz, in a very good paper on scarlatina, does not
commit himself as to the etiological agent, and we gather that he is by
no means satisfied that it is a streptococcus. He advises the cold bath
in cases in which the temperature has reached 104° F., a procedure
which may have its advantages if the rash is well developed, but
which in our opinion might well be dispensed with. It is curious to
find in Grancher's excellent article on measles that no mention is made
of Koplik's spots, especially as in other respects this section seems well
up to date. Those of us who, while finding the spots useful aids to
diagnosis, think their value has been much exaggerated, would have been
glad to have had a pronouncement on the subject from a physician of
such experience. Grancher is convinced of the infectivity of broncho-
pneumonia complicating measles, and there is certainly much to be said
for this contention. Netters' contribution on rubeola is somewhat scanty,
and in mentioning fourth disease he seems to have the impression that
its existence is accepted by most British medical men, which is hardly
correct. In conclusion, we may say that the whole volume is an im-
provement on the first edition, and if there was only an index, the
absence of which seems to be the rule in French books, it would leave
nothing to be desired.
In these two bulky volumes the author sets out a new pathological theory to which he applies the term "hyperpyraemia," meaning thereby a condition in which there is present an excess of carbonaceous material in the blood. He believes that this morbid condition of the blood is responsible for the production of the paroxysmal neuroses, migraine, asthma, angina pectoris, and epilepsy, as well as such diverse diseases as gout, glycosuria, acute mania, bilious attacks, catarrhal affections, and circulatory, renal, and other degenerations. The opening chapters contain a good summary of our present knowledge of nitrogenous and carbonaceous metabolism, and the laws which govern these are well contrasted. In succeeding chapters the author considers the methods by which the carbonaceous contents of the blood are regulated. He disputes the current and, as he terms it, optimistic assumption, that any excess of carbonaceous material in the blood is normally and easily stored up as fat; indeed, he regards the disproof of this assumption as one of the chief objects of his book. In attempting, however, to show that carbonaceous material can accumulate in the blood—which is the basis on which his whole theory rests—he proceeds by his own admission on purely deductive reasoning; he confesses—and this is the weak point of the whole position—that he can give no chemical proof of it. To anyone who inquires as to the form in which the excess of "carbonaceous" material accumulates he has no reply to give. The author, however, is not daunted by this lack of chemical support. Having convinced himself that such accumulation can take place, he proceeds to apply his theory to the explanation of all the diseases already enumerated, as well as some others, regarding them all as different ways in which a pathological "decarbonisation" of the blood is brought about. Into the details of this explanation, which make up the chief bulk of the book, it would be idle to attempt to follow him. Anyone who is prepared to swallow the initial assumption upon which the theory rests will have no difficulty in approving the author's exposition of the "meaning, mechanism, and rational treatment" of the paroxysmal neuroses and other diseases to which the theory is applied.

Serious criticism of such a book is almost impossible, for if the author is prepared to dispense with any chemical support, what more is there to be said? We will confess, however, that we have read it with interest as an example of a modern attempt to re-establish a humoral pathology, and with amusement, as an ingenious turning of the tables on the supporters of the uric acid theory of the same class of diseases. The author out-Haig's Haig with a vengeance; and in these days, when serious physiologists, such as Chittenden, are preaching that the proteid standard in diet is too high, it is refreshing to come across a free-lance who boldly proclaims (vol. ii. p. 377) that it is inadequate. It is only fair to add that the book is well written, and that the style is clear and well knit, though the thought may be obscure and the logic loose. We cannot help thinking, however, that the author would have done himself more justice and secured for his theory a more patient hearing if he had presented it in a more compact form.
Transactions of the American Pediatric Society. Volume xvi.

The pages of the Transactions of the American Pediatric Society may always be relied upon to furnish interesting papers and to provide profitable reading. The sixteenth volume forms no exception to this rule, and contains many contributions of more than average merit. Several papers were read before the Society on the subject of "Pyloric Stenosis in Infancy," from the perusal of which one arrives at the conclusion that there is still a considerable difference of opinion as to the frequency of the occurrence of this condition, as to the reliance to be placed on the individual symptoms in forming a diagnosis, and as to the period at which surgical interference should be entertained.

Rotch contributes a paper on "Considerations regarding Substitute Feeding," in which he once more reiterates his often-expressed opinions concerning the value of percentage modification of milk, and depreciates the feeding of infants by rule of thumb.

Rachford has an interesting paper on "Gastro-intestinal Toxemia," in which he calls attention to the excess of indican and of the atheral sulphates in the urine in such cases.

One of the most valuable papers in the volume is by Churchill on "Acute Leukæmia in Early Life." He considers that the condition is more common than is generally supposed, that all cases are of myelogenous origin, that the course in children differs from the adult type in minor details only, and that the disease is always fatal. Many other papers might be quoted, but enough has been said to show that the American Pediatric Society has many able and earnest workers in its ranks.

NOTES ON BOOKS.

Wellcome's Photographic Exposure Record and Diary.—It is not easy in a short notice to set forth all the excellences of this small book. Many must know it, and to those who do not, we can conscientiously recommend acquaintance. It contains amongst other valuable information for the photographer, a list of English, Continental, and American plates and films, monthly light tables, exposure calculator and a great deal more, all comprised in a small compact pocket-book.

Wellcome's Medical Diary and Visiting List.—This excellent pocket-book is typical of all Burroughs, Wellcome, & Co.'s productions. It is well got up, handy, and in addition to the diary and visiting list, contains a mass of most useful information. It forms a veritable vade mecum for the general practitioner, and it will be found to be not only accurate itself, but also to induce accuracy and method in those who use it.

The "Arboreta" Medical Case-Book (John Walker & Co. Ltd. London).—This is a loose leaf medical case-book, that is to say, by an ingenious arrangement leaves can be added or taken out for preservation. The contents can be made up according to individual desire: thus they may be partly case charts, diary leaves or note, and cash ruled leaves, so that the practitioner can have a pocket-book, diary, and case-book in one.