REVIEWS.

A Manual of Public Health. By A. WYNTER BLYTH, M.R.C.S., Medical Officer of Health and Public Analyst for St. Marylebone. Imp. 8vo., pp. 653. (Macmillan and Co., 1890.)—The issue of this work at the present time, when the legal qualification of medical officers of health for the larger districts has become compulsory, is opportune. If, before beginning the book, the reader is inclined to question the advisability of attempting to deal in a handbook with so extensive a subject, and one consisting of so many parts, each of which is of sufficient importance to deserve a volume to itself, this idea is likely to be dispelled on perusal of this ably and carefully prepared manual. The work is divided into twelve sections, each on a different subject, treated in a manner adapted to meet the requirements of the student and practitioner in hygiene. The arrangement of these parts is fairly good, but not free from fault. Why, for example, is the section on zymotic (microparasitic) diseases interposed between those on disinfection and isolation hospitals? or that on the duties of sanitary officers, between those on food and inspection of food? Again, in the sub-section on the first of these parts one fails to see a sufficient reason for separating enteric fever from other fevers, by a number of diseases commonly relegated to a different class. It is impossible in the short space available to do more than notice certain points of this work.

Section I. (Statistics) is essentially practical and useful. The proportional distribution of deaths, as recommended, is perhaps an over-refinement. The chapter on Life Tables, etc, is a concise *resumé* of the principal points. That on aids to calculation (mechanical apparatus) is good, but omits allusion to the large slide rule of Professor Everatt, of Belfast, which is both simple, accurate, easily worked, and inexpensive.

Section II. (Air Ventilation, and Warming). It might be thought difficult to tell us anything new on these subjects. On glancing over the table of contents, it appears that the nine chapters of this section almost of necessity include somewhat that has been said before. But the matter is stated with a bearing so directly sanitary, and is illustrated with examples so fresh and so well chosen as to invest the theme with an air almost of novelty. The remarks on the sanitation of the air show the advantage of the M.O.H. understanding chemistry. They are written in a spirit of true philosophic reverence for the wonderful hygienic operations of nature. A good table exemplifies the effects of cleanliness on the air of dwellings. The mechanical appliances used in ventilating are well classified, but some of the apparatus might have been more fully described. Nothing is said about the much required ventilation of ships. The methods given for the practical examination of air, include the author's own. The table of cubic spaces allowed by law, or by local regulation, is instructive. It is perhaps hardly worth while to follow the example of the author in his use of "nonsense words," to fix in his mind the relation of the diameter of a circle to its circumference in taking the cube of a pillar! The elaborate directions for calculating by trigonometry the cubical capacity of pillars, bow-windows, and domes, will seldom be needed by the M.O.H. The author gives an excellent example of a report on ventilation of soldiers' quarters, by the late Professor de Chaumont.

The Section (III.) on Meteorology is scanty, and contains a few errors of omission and otherwise. Thus, the principle of the barometer is incompletely enunciated, and the syphon form of the instrument is not fully described, *i.e.*, it is not stated that the long limb of the syphon is closed, an important omission. In describing the errors of the cistern barometer, the only reference to that of capillarity relates to its correction. The air of the aneroid barometer is not entirely removed from the box, as stated. Under hygrometers, no mention is made of Daniel's.

Section IV. (Water Supply). The remarks on sources, quantity per head, general principles of a town water supply, and constant and intermittent supplies—might well have been extended considerably. As one of the dangers to be apprehended under the latter head, the writer names cistern-pollution, but does not show how this arises. The statement that a vacuum is necessarily left in the branch pipes on turning off the water at the main, is news! May not the pollutions of water with coal-gas ascribed to this cause have occurred as the result of currents induced by the water whilst in flow through defective pipes, which as may be proved experimentally, instead of letting the water out, will often draw air inward in large amounts?

In regard to the scientific examination of water, as the author observes, although the M.O.H. should, if required, be able to determine the main constituents, he need not be a professed analyst. Properly enough, therefore, the reader, instead of being taken over the minutiæ of chemical analysis, is referred by the author to his other works, for details as to processes, not however without the incidental mention of a few of those polysyllabic and perplexing names so dear to the chemical soul.

The author's tube for collecting and examining water sediments is calculated to be of use to every water-microscopist.

The sub-section on purification and softening of water should either have been extended or supplemented by reference to authorities describing those processes.

Section V. (Drains, Sewers, and Sewage Disposal). This well-written section consists of five chapters, the first of which treats lucidly of private drains from a legal, and also from a practical, point of view. No mention is made of the disconnecting chamber, or of the virtues or faults (as the case may be) of several of the more common forms of drain-trap. The sub-section on Special Drain Tests is excellent as far as it goes, but not sufficiently developed. The term "drain-sewer," quoted from Prof. Corfield, is objectionable, from its incompatibility with the provisions of the Public Health Act, 1875, where the terms "drain" and "sewer," and the responsibility of private owners and the sanitary authority with respect to the one or the other, are clearly defined. The author strongly, and rightly, condemns ordinary "dead-ends" in sewers, and with propriety recommends flush-tanks at the upper extremities. It is to be regretted that he does not give us the benefit of his views on the deodorization and prevention of decomposition of sewage whilst in the sewers. On this matter, which has not yet received the attention its importance demands, the author's opinion would be valuable. The present system of ventilating sewers at street-level, so as to greet the passers by with volumes of disgusting and highly dangerous gases, though generally and loudly complained of, continues in force, probably because the chemical treatment of sewage so as to prevent the formation and evolution of noxious emanations has not been sufficiently insisted on by chemists. It is to be hoped that in the next edition Dr. Blyth will deal fully with the question.

Chapter XIX., on Disposal of Sewage, is in reality principally a concise summary of the methods of treatment of sewage by chemical processes after it has left the sewers, and its removal by various systems. Is the author correct in classing Edinburgh and Birmingham among the cities on the "pail system" of excrement disposal? Are they not "water-closet towns"?

Section VI. (Nuisances). The reason for dividing this section into two parts—one on "Ordinary nuisances dealt with by sanitary authorities," and the other on "Effluvium nuisances connected with trade" as carried out—is not obvious. With this exception, the section is a plain and admirable exposition of the subject of which it treats, and gives a great deal of valuable information as to the causes of, and remedies for, nuisances. In speaking of effluvium nuisances, the author acknowledges his indebtedness to the classic report of Dr. Ballard.

Section VII. (Disinfection and Disinfectants). Introducing this subject with a short account of the methods of testing the value of a disinfectant, the author proceeds to describe the experiments of Drs. Parsons and Klein on the disinfecting power of heat, its penetration into, and injurious effects

on, fabrics, and the different forms of apparatus for disinfection by heat. Then follows an interesting chapter on practical chemical disinfectants, containing an account of the experiments of Klein, Lingard, Rendel, Fischer and Roskauer, the author himself, Koch, Schill and Fischer, and Wolthugel. The practical disinfection of a sick-room by chlorine gas is explained in detail.

Section VIII. This important section, to which it is impossible to do justice here, is devoted to a full account of all the recognised micro-parasitic diseases, their history, prevalence, symptoms, relative mortality, etiology, bacteriology, and prevention, together with a *resumé* of the duties of the sanitary authority and its officers with regard to them. The aerial dissemination of small-pox to a great distance is accepted as proved on the authority of Dr. Barry's careful report on the outbreak of the disease at Sheffield, and its spread round the hospital of that town. Seeing the immense host of negatives the establishment of which is involved in such a proof, and the outcome of similar investigations in the metropolis which ended in the *reductio* that a hospital became a special mischief to the population of a wide circle round it when it contained as few as nine small-pox patients at one time and five at another, unless the result be to show either (1) the fact that certain institutions have been guilty of gross neglect of precaution, or (2) that every house or building containing a few cases of small-pox is a danger to all within a half-mile radius—then the practical utility of such inquiries is not apparent, and the acceptance of the evidence they contain as proof against the propriety of isolation of those affected with small-pox in a hospital is not justifiable.

Section IX. treats of the principles of construction and equipment of isolation hospitals, taking the well-known exhaustive report of Dr. Thorne Thorne as a basis. The recommendation as to horsehair mattresses (at least if meant to apply to enteric fever), and that as to the laundry forming an annex to the administrative block are scarcely to be followed implicitly.

Section X. on Diet and Dietaries.

Section XI. on the Duties of Sanitary Officers, as laid down by law and dictated by the author's personal experience. The practical experience embodied in the pages on this subject will be welcomed by commencing and intending medical officers of health, and instructive to others. Surely, however, it does not come within the department of the M.O.H. to publish statistical weekly returns of such details as number of tons of house refuse removed, or square yards of surface cleansed, etc. (!) Neither is it advisable to attempt to work with a Nuisance Department and a Health Department under separate heads, as indicated in the example held up for imitation.

Under the sub-section relating to the report of a port M.O.H., the tables of clause 4 (general sanitary work), owing to typographical errors, are rather misleading. The first of these is merely a list of structural defects, the second a statement of action taken to remedy them and to abate nuisances generally.

Section XII. (the Inspection of Food). This consists of five chapters, treating respectively on—

The inspection and seizure of unwholesome food (legal).
Poisonous food (manufactured).
Vegetable foods unfit for consumption.
The inspection of fish and meat (practical).
The diseases of animals affecting their flesh as food.

Seeing the paucity of special works on food from the medical officer of health's point of view—those of Baillet and Walley being all that come to mind at the moment—it is a pity more has not been made of this section—*e.g.*, with regard to the wiles of the unscrupulous butcher, the normal and abnormal appearances of the dressed carcass, viscera, etc. The money penalty under the Public Health Act, 1875, for breach of the sections respecting unsound meat, etc., is higher than stated, viz., up to £20 for *each piece*. In the description of measles in the pig, to speak of the parasite as "the bladder-worm" is misleading.

One cannot but notice, in such a comprehensive treatise, the want of a section on sanitary law, especially as the author is himself a barrister.

The foregoing critique touches more on the few defects than on the many excellences of Dr. Blyth's book, which is full of interesting matter, gives ample evidence of research, and is written in his usual clear and lucid style. The judicious use made of the valuable information stored up in the reports of the medical officers of the Local Government Board and other official documents, together with the embodiment of the author's own wide and varied knowledge, as shown on every page, combine to render the "Manual of Public Health" in every respect worthy of its theme. Such a work is calculated to promote the advancement of sanitary science, and will form a useful text-book for candidates for degrees in hygiene.

The illustrations are numerous and well chosen. The plates, by Mrs. Blyth, are drawn and coloured with a fidelity and an artistic delicacy which add greatly to the attractiveness and general value of the volume.—HENRY E. ARMSTRONG.

Chemical Arithmetic: A Collection of Tables—Mathematical, Chemical, and Physical. By W. DITTMAR, LL.D., F.R.S.S., London and Edinburgh. (Hodge and Co., Glasgow.)—Professor Dittmar has published the first part of his tables. A careful, exact, and laborious undertaking, one also marked by considerable originality of conception, in this vastly differing from the numerous works, bearing a somewhat similar title, which are but little more than compilations. The volume commences with a series of logarithmic tables. Here we find three-place, four-place and five-place logarithms. The five-place table is continued up to the *numerus* 14,999, thus doing away with interpolations in connection with *numeri* between 10,000 and 15,000; but the greatest novelty consists in the arrangement of the marginal tables of proportional parts, a method fully explained in the preface, the advantage of which consists in this, that all interpolations can be done at sight. There are also graphic representations of logarithmic intervals, a four-place table of reciprocals, and a table of values for the "Probability Integral." No small portion of the book is devoted to factors for the purpose of facilitating the calculation of the professed chemist; but there are, besides, numerical relations and facts of wide applicability, such, for example, as those in the section treating of the "Metric and British System of Units." The tables may be recommended to all those who have to work out statistics or scientific calculations, and as such the volume will prove of great utility to the health officer.

THE MEDICAL OFFICER OF HEALTH FOR THE COUNTY OF STAFFORD.—Dr. Reid, who was provisionally appointed some eighteen months ago medical officer of health to the Staffordshire County Council, at a salary of £100 a year, with special fees for visits in the country, was, on November 7th, permanently appointed, at a salary of £800 a year, with £200 for expenses, his whole time to be devoted to the duties of the office.

ADMISSION OF WOMEN TO THE EXAMINATION OF THE SANITARY INSTITUTE.—A lady having applied to be admitted to the examination of the Sanitary Institute, the Council have resolved to admit women to be examined. The progress of modern thought is entirely against disqualification by reason of sex. It is indeed the writer's opinion that the office of inspector of nuisances might in some places be undertaken by women; be this as it may, as the certificate of the Institute simply states that the holder has sufficient knowledge of sanitary science to take such an office, there is certainly no reasonable objection to the admission of women.