

the manufacturing process appears to present little difficulty. Their mode of action is identical with, but even more striking than treatment with whole liver, because it is possible to give the specific factor contained in 1000 g. of liver in one dose.

#### Conclusion.

One of us has had a long experience of pernicious anæmia and of the remissions that can be produced by all the methods of treatment formerly in use. The impression formed of treatment by liver and liver extract is that its effects are more promptly, rapidly, and regularly produced than by any former method, although occasionally treatment by arsenic or sometimes no treatment at all may be followed by remissions as rapid in their commencement. The period of recovery is certainly shortened. The recovery is more continuous. The production of a colour-index below unity, which under previous methods of treatment has been found to occur in cases which are going to do well, regularly develops under liver therapy. The most important point, however, is that recovery is more complete. Formerly one had too often to be content with a count of about 3,500,000 R.B.C.'s; now an extra million or more may be confidently expected; the whole blood picture returns to the normal with much greater frequency and certainty, and apparently remains so indefinitely, so long as treatment is persevered with. Two cases have been seen whose treatment was begun in America; they are not included in the foregoing lists. The first had begun liver treatment in 1925 and continued it steadily. The blood was examined twice at an interval of about a year and was practically normal on both occasions. The second was seen once 18 months after treatment was begun and the blood was normal. Both were in vigorous health. This return to vigorous health is certainly more frequent and complete—and, let us hope, permanent—than has ever been experienced as a result of previous methods.

It is important to notice that liver treatment is effectual at any age, and still more that it acts just as well in chronic cases as in acute ones. Some patients had had arsenic *ad nauseam* in various forms, had ceased to respond to it, and could no longer tolerate it, but they answered just as promptly to liver as if they had been fresh cases. It appears to be immaterial to the success of the treatment whether the patient is in his first attack or has suffered several relapses. It seems to be a matter of indifference whether the patient is treated with liver or with the liver extracts which we have tested. All the latter seem to be efficacious, and it will be a matter of personal liking and convenience whether liver or the extract is chosen for treatment.

Is the treatment free from risk? In the great majority of cases it certainly is. Nothing more serious than an occasional temporary diarrhoea is likely to occur, and this can be dealt with by stopping fruit and vegetables for a few days. But it is to be noted that renal complications may arise, though their connection with liver treatment is not definitely proved. One of our hospital cases had an acute nephritis and one died of uræmic vomiting and convulsions. One of us long ago pointed out that the only condition which will cause a persistent leucocytosis in pernicious anæmia is kidney mischief. In that case the leucocytosis should have been a warning, but the patient was in such magnificent health until the final collapse that the warning was disregarded. No pernicious anæmia comes to the post-mortem table with normal kidneys, but this is hardly ever evidenced by albuminuria. In cases with a persistent leucocytosis, it would probably be wiser to trust to liver extract alone, which contains no protein, and not give the large quantities of red meat advocated in Minot's original diet.

In the first few private cases one was inclined to give arsenic as well as liver, on the principle that it is unwise to throw away a crutch too soon, but that was soon found to be unnecessary. Hydrochloric acid

is of value in improving appetite and hence may be used in combination with liver therapy. It is certainly not responsible for the remarkable improvement following the exhibition of liver, as equally good results are obtained in cases which have never received any acid.

Minot has formed the opinion that the nervous symptoms are not benefited by liver treatment, except in so far that as the muscles become stronger the patient can walk better. We are inclined to differentiate a little more. It seems to us that in cases in which the symptoms are of the tabetic type very marked improvement may occur, but in cases of the spastic type we have, so far, either seen no improvement or, as in a case in the private series, a distinct increase of spasticity may supervene, possibly because the muscular tone is increased.

## Reviews.

**MEDICAL ANNUAL, 1928.**—Bristol: John, Wright & Sons, Ltd. Pp. 630, with 130 illustrations. Price, 20s. net.

To the general practitioner in this country the *Medical Annual* is a godsend. It enables him by the expenditure of a comparatively small sum to keep up to date in all branches of his profession. To the specialist also it is an extremely valuable publication.

The *Medical Annual* for 1928 has fully maintained the reputation of this publication; there are no material differences between it and its immediate predecessors, but the yearly improvement has been maintained. The book has now reached its limit in size and if next year the publishers contemplate increasing the thickness of the book they will have to consider seriously the question of dividing it into two volumes.

It is impossible to discuss the individual contributions; the contributors are in each instance experts on the subject with which they deal. Most of the tropical diseases have been reviewed by Sir Leonard Rogers and the recent advances described clearly and concisely. The most striking recent advance in the treatment of non-tropical diseases is the liver treatment of pernicious anæmia. The results which are claimed from this treatment are most remarkable, more especially in view of the fact that it is a disease the aetiology of which is not very clear. A number of pages are devoted to this subject. Recipes for making raw liver less noxious and cooked liver appetizing are given; this is a practical point of great value as practitioners have often found that patients would prefer to die than to eat raw liver in the condition in which it has sometimes been presented to them.

There are numerous most excellent plates—the ones that particularly appeal to the reviewer are those showing the skin reactions in the Schick test and the Dick test, respectively—and some most interesting skiagrams.

L. E. N.

**PUBLIC HEALTH LABORATORY PRACTICE.**—By Lieut.-Col. A. D. Stewart, I.M.S., Professor of Hygiene, Calcutta School of Tropical Medicine, and Lieut.-Col. T. C. Boyd, I.M.S., Chemical Examiner to the Government of Bengal. Calcutta: Oxford University Press, 1928. Pp. 306, with 3 figures. Price, Rs. 9.

THIS book has been written by two senior members of the Indian Medical Service who have long been connected with laboratory work on foods, drugs, and water in their official capacities, and as such they have acquired very considerable experience. The book is therefore an embodiment of knowledge, long experience, and skill.

A valuable feature of the book is its special application to Indian conditions. There are several books written on the subject in general, but none of them deals with analysis of Indian foods and Indian water supplies. Hence the book is assured of a very warm reception at the hands of public health laboratory workers in India, especially of the students who are preparing themselves for the examination for the Diploma in Public Health of Indian universities. The book is the more welcome, because it contains completely up-to-date information on the subject; for instance the chapter on "hydrogen-ion concentration" which subject has been completely omitted in such a standard textbook as "Kenwood" is here fully described, and ten pages devoted to it.

The arrangement of the chapters dealing with the different subjects is here logical and methodical, and helpful from the student's point of view. This is often not the case with textbooks dealing with the subject. Generally it is very difficult for the medical student to follow the natural sequence in organic and inorganic chemistry in relation to public health, as he is very likely to have forgotten his elementary chemistry by the time he passes his final M.B. examination. So when he comes to read chemistry for his D.P.H. examination, he is quite at sea, when asked to commence straightaway with water and food analysis. The standard books on the subject for his instruction rarely give the student the necessary preliminary ideas on methods of general analysis, acidimetry and alkalimetry, thiosulphate titration, etc. This being the case, the student experiences difficulty when he is suddenly called upon to carry out food and water analysis. The book under review removes this difficulty by devoting one full chapter to this general analysis at the very beginning, and this will be most helpful to students.

In the fitness of things, analysis of alum, lime, and bleaching powder should be included in the chapter on water and sewage analysis, but this is, curiously enough, not to be found in any other textbook. The authors have not omitted to describe these analyses. The chapter on "aims, objects, and interpretations of the sanitary chemical analysis of drinking water" is very well written, and most instructive. Indigenous Indian samples have been well chosen here, a fact which will be much appreciated by all workers in India interested in the subject of water analysis. Some of the explanations are quite original, e.g., the free ammonia content in such a surface water as that of the river Hughli remaining low in spite of considerable pollution, owing to the heat of the tropical sun acting deleteriously on the "nitrifying organisms."

The subject of milk has been very comprehensively dealt with. It is pleasing to find here analyses of such indigenous articles as *chunna*, with suggestions for the standards to be fixed. These suggestions should prove useful guides to local authorities, if they choose to include such foodstuffs in future amendments of the Food Adulteration Act.

In the chapter on "oils and fats" their general chemistry and classification have been fully dealt with, and this section will be very useful to students in trying to grasp the principles underlying their analysis. The physics of the butyro-refractometer are fully explained with the aid of diagrams. Modern milling processes for preparing flour are well described—another matter which is not dealt with in other textbooks on the subject. D.P.H. students will much appreciate the schedules given of the latest regulations on preservatives in food. A good description is also given of the kata-thermometer. In brief, within the narrow compass of 306 pages the authors have included all possible information on the more important matters dealt with in public health chemistry.

Unfortunately, the table of atomic weights has been included in the section dealing with rag floc; this is clearly a printer's error. With the exception of a few minor printer's errors, however, which we hope, will be corrected in a second edition, the manner in which the book has been printed and got up leaves nothing to be desired.

This book can be heartily recommended to all public health workers in India, and, above all, to all students preparing for a Diploma in Public Health.

R. B. K.

**THE USE OF SYMPTOMS IN THE DIAGNOSIS OF DISEASE.**—By H. A. Hare, B.Sc., M.D., LL.D. Ninth Edition. London: Henry Kimpton, 1928. Pp. 528, with 124 illustrations and 4 plates. Price, 30s. net.

WE have just received a copy of the 9th edition of this excellent book. The author has realised that at present the purely clinical side of medicine is being under-valued, and that more importance is being attached to laboratory examinations and laboratory methods. A well trained physician should carefully note the clinical signs and symptoms first and the laboratory investigation should be called in as a further aid when necessary. This book has been written to bring home to the physician the importance of physical signs and symptoms.

The plan of the book is very simple and effective. Different parts of the body are taken up one by one and are carefully studied with regard to any deviation from the normal, beginning from their general and superficial aspects and working down to deeper structures. Special chapters are devoted to important symptoms such as headache, vertigo, coma, convulsions, hiccough, vomiting, cough, and different kinds of pain, etc. The new edition will be welcomed by medical students and practitioners alike.

R. N. C.

**THE SIMPLE GOITRES.**—By Robert McCarrison, C.I.E., M.D., D.Sc., LL.D., F.R.C.P. London: Baillière, Tindall and Cox, 1928. Pp. x plus 106, with 43 figures. Price, 10s. 6d. net.

COLONEL McCARRISON is a well known authority on goitres, and his experimental work on this subject has been appreciated by the whole medical world. This volume was the outcome of a "Report to the International Conference on Goitres" held under the auspices of the Swiss Goitre Commission at Berne last year. The book is divided into two parts:—

Part I deals with the aetiology and epidemiology of simple goitre. Three main types are described. The factors concerned in their production include food deficiencies, food excesses, polluted water supplies, gastro-intestinal infections, and insanitary conditions of life. A large number of them can be prevented by attention to the fundamental principles of nutrition and personal and social hygiene. Various types of these goitres may prevail in the same locality, some being capable of amelioration by the prophylactic use of iodine while others are not and some may even be harmed by it. The author warns against the indiscriminate use of iodine as a preventive of goitre.

Part II is composed of illustrations, and contains many curves, reproductions of pictures of human cases and of animals in which goitre was experimentally produced, and numerous microphotographs of sections of the gland.

The book is very well got up and will be of great interest to the profession.

R. N. C.

**COMMERCIAL DRUGS OF INDIA.**—By L. R. Dutt, M.R.A.S. (Lond.). Calcutta: Thacker, Spink and Co., 1928. Pp. 256. Price, Rs. 5.

THE writer in his introduction says that this book is not intended so much for medical practitioners as for business men. Its object is to place before the drug grower, collector or dealer, as briefly and lucidly as possible, all the available information regarding the sources, method of collection and cultivation and marketing of drugs. Most of the common drugs found on the market are mentioned, but such drugs as *Ephedra vulgaris* which have lately assumed considerable importance from the commercial point of view and which grow in India abundantly have not been included.