

pitfalls of identification are shown as in the risk of confusion in dark-ground preparations of protoplasmic threads for leptospire; also, most sensitive methods are described like the use of careful centrifugation of the plasma from oxalated blood to concentrate leptospire for microscopical examination. In serology the author uses living cultures for the observation of agglutination and lysis by active serum, but he states that the end-point of agglutination of killed leptospire (which is the method usually adopted in Great Britain) is practically as high as the end-point of lysis of living organisms. In this country the formalin used to kill leptospire is made less harmful to the antigen by adding pyridin to it (Burke, V. (1933), *Amer. J. Path.*, 9, 915).

Dr. Wolff indicates the proper method of examination for the different stages of a leptospiral infection and gives a synopsis and table of the very valuable work on serological differentiation of 36 types of leptospire by himself and Dr. J. C. Broom which was published recently. There are also brief accounts of the epidemiology of the infections caused by 24 types. There is a good index. This is a clearly written, authoritative, practical handbook on a group of infections of man and animals about which knowledge is rapidly expanding throughout the world.

J. M. ALSTON.

Biochemical Investigations in Diagnosis and Treatment.

By John D. N. Nabarro. (Pp. x+299; illustrated. 25s.) London: H. K. Lewis.

The rapid development of chemical pathology in recent years has opened up a very wide field in which both physicians and clinical pathologists need guidance if full advantage is to be taken of recent discoveries in diagnosis and treatment of disease. Dr. Nabarro's book sets out to clarify these developments from the point of view of the young physician.

The many subjects covered comprise water and electrolyte metabolism, calcium and phosphorus metabolism, protein and nitrogen, carbohydrate and fat metabolism, diseases of the gastro-intestinal tract and of the liver, investigation of renal function, the cerebrospinal fluid, the endocrine glands, vitamins and poisons, with an extensive series of tables of normal values of blood, urinary and faecal constituents.

The matter comprised in the book is well up to date, but treatment of different subjects is uneven: for instance, the chapters on electrolyte metabolism and on the endocrine glands contain much information which does not occur in the older books, and should be very helpful both to the physician and the general pathologist.

On the other hand, much of the chapter on carbohydrate metabolism is old "textbook stuff" which is familiar ground to the majority of readers: the two rare conditions, Von Gierke's disease and galactosaemia, mentioned in this chapter should receive fuller treatment if the article is to be of assistance to the clinical patholo-

gist, and it would be helpful if selected references could be given to important work on such conditions: as it is, all four references at the end of the carbohydrate chapter refer to general textbooks or monographs on diabetes.

The arrangement of the book where the first seven chapters deal with the metabolism of different groups of substances and the remainder of the book largely with the biochemical changes met with in diseases of various organs, necessarily leads to a good deal of duplication. The Fanconi syndrome, for instance, is referred to in six different places, yet it is difficult anywhere to get a comprehensive idea of what is meant by the Fanconi syndrome. The index is also twofold, dealing with, first, an index of investigations, and, secondly, an index of conditions: one complete index would probably be more convenient.

Details of laboratory tests are not given, except in cases where it is necessary for the physician to collect suitable specimens, where instructions as to collection are given. However, in some cases the instructions are insufficiently precise: for example, in the pyruvate tolerance test (p. 242) it is mentioned that blood should be transferred to ice-cold trichloro-acetic acid as quickly as possible—but how much blood and how much acid are not specified: either instructions as to blood taking should be omitted entirely or should be complete.

The series of tables of normal values divided into those "usually undertaken in hospital laboratories" and those "not usually undertaken" should be very useful for reference.

The main criticism is that this book falls between the two stools of the new and the old: a decision has to be made whether this is to be a general elementary textbook, in which elementary discussions of all types of biochemical investigation are included, or an introduction to recent advances in chemical pathology, in which case much of the elementary matter already covered in other books could be omitted and greater attention given to more recent work. In this latter case, more references might well be included.

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At the meeting of the Joint Committee of the Association of Clinical Pathologists and Association of Clinical Biochemists, it was reported that vials of freeze-dried serum suitable for biochemical investigation will be ready for distribution some time in April. This material has been prepared by Messrs. Glaxo, and an analysis has been carried out by members of the Joint Committee. A mean of the analyses will be included with each sample on a separate piece of paper. It will be distributed by Messrs. David Keeler, Ltd., of 39, Wigmore Street, London, W.1, price 4s. 6d. per vial, postage extra. This is the actual cost price of the material.