and finds there is no added tendency to abortion—indeed, the drug may prevent it.

The mechanism of transmission is still not clear. Wickramasuriya was struck by the fact that the placenta of some of his maternal cases and this led him to investigate the possibility of transplacental fetal infection. He found that parasites become aggregated in the placenta, and it is possible in some cases to find positive placental smear where a blood examination has been repeatedly negative. It is usually assumed that an intact and physiologically healthy placenta will not permit the passage of pathogenic protozoa. The mechanical barrier is therefore usually postulated. Lopatin suggests that the child may be infected at parturition during detachment of the placenta, when maternal and fetal blood may mingle. This would not account, however, for cases of intrauterine infection; and it may be supposed that the pathological changes induced in the placenta by malaria are sufficient to make it permeable by the parasites. This seems to be borne out by Wickramasuriya's finding that transplacental infection is most commonly by the malignant tertian parasite—the most destructive of the plasmodia.

Reviews

KNOWLES'S INTRODUCTION TO MEDICAL PROTOZOOLOGY. Second Edition. Revised and abridged by B. M. Das Gupta. 1944. U. N. Dhir and Sons, Limited, Calcutta. Pp. xviii plus 328, with 104 illustrations and 10 coloured plates. Price, Rs. 20

This work is a greatly abridged edition of Knowles's Introduction to Medical Protozoology, and is primarily intended for the use of students at the Calcutta School of Tropical Medicine. Such abridgments of textbooks are notoriously difficult of achievement, for only the useful is to be retained and all the redundant omitted, and if the resultant offspring of the parent book is to remain a well-balanced and symmetrical work.

It may be said at once, that with only one reservation mentioned below, the present editor has succeeded admirably in this task, and that the new matter which he has incorporated has been skilfully introduced without interfering with the general balance of the original work. The main arrangement of the original book has been adhered to, so far as the abridgment allows, and this is excellent.

Before making the few comments which space allows on the treatment of the different groups of protozoa, the reviewer wonders why, in omitting the redundant matter, the editor has retained the section on spirochaetes in an abridged textbook on medical protozoology when he himself remarks in chapter 1 that 'they are certainly not protozoa!'

Considering the fact that they are, at best, 'gate crawlers' in a textbook on protozoology surely 28 pages is too generous an allowance when not more than 43 are accorded to the Plasmodia, animal as well as human. It is a pity that the first genus of parasitic ameboz dealt with should be miss-spelt as 'Endanbana' on p. 15 as the heavy type brings the mistake into prominence. The account of the parasitic amoeba is clear and concise, and the table of differential characters appended will be welcomed by the student.

In the chapter on Mastigophora there is an omission in the section on the genus Bodo. While the reference to Powell and Kohyar (1919) of a bodiid-like organism in the urine is mentioned, the earlier record by Sinton (1912), and even earlier records, is omitted.

Another defect in the alignment of letters occurs in the spelling of the parasitic amoebae, and these errors in bold type are especially regrettable as the fault does not lie with the editor. The description of the various genera and species is adequate, and there is, again, a useful table of differential characters.

In chapter IV an excellent account of the genus Leishmania is given, although there are certain omissions. Thus, in the section on the pathology of kala-azar, mention of the faces as one of the avenues of escape of the parasites of the host is omitted. Again, in the section on susceptibility of animals to inoculation, while some of the animals so susceptible are mentioned, no indication is given of the method of inoculation nor of the form of the parasites to be inoculated. It is important enough to note that both the flagellate and Leishman-Donovan body forms of the parasite are infective by inoculation into the tissues, and that both forms as well as flagellates in the actual sandflies can also infect when given orally, while the Leishman-Donovan bodies may even infect if placed on the uninjured conjunctiva.

In the records of the localities where natural infection with Leishmania tropica has been found, a record from the Punjab by Sinton (1938) of infection in a dog has been omitted, although, being an Indian record, it is of interest to Indian students.

In the section on Leishmania in animals, mention is made of Leptomonas forms obtained in culures from the blood of the Indian gecko H. gleadowi. This reference would have been completed by mention of the record by Shortt and Swaminath (1928) of the finding of typical Leishman-Donovan body forms, presumably of this parasite, in the peripheral blood of Indian geckos in Assam.

In the description of the development of trypanosomes in Glossina, no mention has been made of the relationship of the developing trypanosomes with the peritrophic membrane, and of the method of their entry into and exit from the space between this membrane and the gut wall proper. This omission leaves the account somewhat incomplete.

The description of the Hennosporidididae is naturally devoted chiefly to the genus Plasmodium, and the description of the human species is very informative and complete considering the condensation which the limits of space imposed on the editor. This is a wholly admirable chapter, every page of which the student should study carefully. Nothing more need be said.

The undue prominence given to spirochaetes in a textbook of protozoology has already been commented upon. Chapters XIV to XIX on laboratory technique are a very useful part of the book, and a good selection of methods has been made. If the student uses these only, he will be well served. Two points may, however, be remarked on. In the section on examination of stools for intestinal protozoa, no mention is made of the very useful method in which a watery solution of mucus is used to assist in the method of their entry. This method not only assists in picking out cysts of ameboz, but also differentiates dead from living cysts.

The other point for mention is the old, oft repeated, story here italicized which is used now as a method of staining the fresh smear. It has been shown that this is by no means necessary, but the 'thirty year' period required to remove a mistake from the textbooks, as mentioned in the preface to the first edition, has not yet expired!

To sum up on this new edition; the reviewer has registered a very pleasing impression of the work as a whole. The format, is, in particular, good; there are comparatively few printing errors; the type is most pleasing; the illustrations are excellent and well-chosen, and the whole book is a distinct credit both to the editor and to the publishers, as a war-time production.

H. E. S.

[Note.—Protozoologists, like the objects of their study, are often invasive, and tend to annex territory which is really outside their province; the standard textbooks usually contain chapters on the spirochaetes and the rickettsiae.

In including such chapters, the present book is following established precedent; nevertheless it is right that the sins of the protozoologists should be pointed out.—J. M. G.]