

## BOOK REVIEW

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MANUAL OF TROPICAL MEDICINE. By Aldo Castellani, C.M.G., M.D., M.R.C.P. and Albert J. Chalmers, M.D., F.R.C.S., D.P.H. Third Edition, New York, 1920, William Wood and Company. 2436 pages, 909 text figures and 16 colored plates.

The appearance of this magnificent volume was so closely coincident with the news of the sudden and unfortunate death of the junior author that the work stands in a very real sense as a monument to his ability and industry, in every way worthy of a career which, though brief, was one of marked achievement.

While the second edition of this manual has been out of print for some years, there has been a natural delay in the preparation of the new edition due to the war and its consequent difficulties in many directions. Despite these, the authors have succeeded in producing a work that is in every way worthy of high praise. So far as mere size goes, the new material introduced has expanded the volume fully one half and the illustrations by an equal amount. Nor has this been all, since the use of smaller type for historical and subsidiary items has allowed the introduction of still more new matter. The work is not only admirably comprehensive without being diffuse but the index, which covers 152 pages, and is in every way well constructed, makes the book useful for rapid reference as few of its size really are.

Much new matter has been added to chapters on plague, fevers, influenza, cat bite fevers, typhus, etc., and the additions incorporate in large part the most recent studies on the relations of animals to these diseases. Entirely new chapters on war zone fevers, diagnosis of tropical fevers, tropical poisonings, myiases and allied conditions, among others, give evidence of the careful efforts exerted to bring the work fully up to date and to enhance its practical value for the worker in the tropics. The rather scanty treatment of tsutsugamushi disease, so important in Japan, is no doubt due to the inaccessibility of the literature, some of the most significant of which is also of very recent date.

Part I of this work is introductory and contains chapters on the history of tropical medicine, tropical races, climatology, foods, diseases, fitness for tropical life. Part II, the classification of diseases in the tropics, has separate sections covering physical causes, chemical causes and parasites, both animal and vegetable. Part III, the diseases of the tropics, has sections on fevers, general diseases, and systemic diseases. Each of these sections is sub-divided on the basis of causation. It is interesting to note that under the fevers thirteen chapters are devoted to those probably of protozoal origin and carried by animals, three chapters to those of bacterial origin, of which two are related to animal carriers, and only four chapters to other types of fevers. In the section on general diseases, animal causation is held responsible for two-thirds of the diseases listed. No better evidence could be given of the tremendous rôle played by animal parasites in tropical diseases. And no one can examine a work like this without being profoundly convinced of the importance of thorough study of animal life for the worker in tropical medicine.

Attention may properly be confined here to those details that fall within the scope of parasitology, although other parts of the book are not only of great interest to workers in medical zoology but are full of valuable material bearing directly upon their subject.

The changes in section C, Parasites, which embraces 740 pages, are so great that one may properly regard this part as a new monograph on the topic. Especially worthy of note is the introduction of a new chapter entitled



The Animal Carriers of Disease, which discusses in thoro fashion the problems connected with animal carriers, relation of hosts, the question of disease reservoirs, contrasts between different types of insect borne diseases, complex life histories of worm parasites and the contrasting relations of bacterial diseases to animal carriers.

Under Animal Parasites the forms are classified in accordance with the zoological system. This has been carefully applied by an author who is not only well acquainted with the animals, but is familiar with the necessary restrictions that have grown up in the subject and that must apply to those who, tho not zoologists, find it necessary to utilize technical material in the field. It would be a piece of good fortune for zoological research and for the proper treatment of parasitic diseases if every worker in this field were compelled to study carefully the material presented in this section of the volume. The authors have made a good move towards the substitution of uniformity for the chaos that exists in medical literature by following, for the names of parasites, as in previous editions, the rules of the International Zoological Congress. It would be hard to find a clearer and more convincing statement of the case concerning nomenclature of parasites than that given in a half page in the preliminary paragraphs under the division on animal parasites.

Undoubtedly the most difficult phase of this topic is that which treats of protozoal parasites. The organisms are so minute, the differences so difficult to determine, and many types are to the untrained observer so thoroly identical, that even in more technical publications there is great confusion with reference to the number of forms that may rightly be distinguished as independent types of organisms. It is a little unfortunate that the author could not have had for consideration the recent comprehensive study of the *Amoeba Living in Man* by Dobell, reviewed in a recent number of this JOURNAL. The differences between the two accounts are sufficient to be the source of serious confusion to those who have not made an intensive study of the field. Specialists recognize, however, that such differences are inevitable in early work on any topic, and it is not too much to say that we have only just begun to get a grasp on these forms.

There is no synopsis of the protozoa parasite in man in which the topic is presented so completely and at the same time so concisely as in the volume under revision. Its fairness in presenting various aspects of disputed questions and its completeness make the record invaluable for those who are trying to work on these little-known organisms. Chalmers includes the *Spirochaetes* along side of the *Trypanosomes* under the *Binucleata* and thus conforms to the opinion of most zoologists, altho he departs from the views of many pathologists and especially of the bacteriologists who would include them with the bacteria. While it is undoubtedly too early to reach a final conclusion on so complex and obscure a question, yet for the purposes of this volume and of work in tropical medicine the setting given these forms is abundantly justified.

It is indeed in the group of flagellates that the greatest confusion obtains at the present moment. Not only do these forms lack in recognizable morphological characteristics but they are so minute and include so many types that are merely developmental stages that even the trained observer is inclined at times to abandon the attempt to interpret forms he finds. In this field Chalmers has himself worked so long and successfully that the scientific world is fortunate in having him to guide its progress thru the intricate mazes of the problem. And many new genera make their appearance for the first time in these pages in proper systematic relations.

Much new material has been included in the section on the Sporozoa and the work gives the best available survey of this which is another little known field. The treatment of parasitic worms may also be commended for its com-



pleteness and for the judgment exercised in introducing new material. One finds little to criticize; perhaps the accounts of the life history of *Ascaris* and of *Schistosomes* are the most imperfect.

The short chapter on the leeches is rather unsatisfactory and the single figure given is really little more than a joke, but this group is no doubt of all the least significant for the worker on tropical diseases. The Arthropod chapter is well handled, if one excuse the omission on grounds difficult to suggest in view of the completeness of the work otherwise, of the splendid work done by Howard and his colleagues on mosquitoes.

Some minor points deserve passing criticism; the authors use, for instance, in a synopsis the names *Platyhelminthia* and *Nemathelminthia* which appear in other places as *Platyhelminthes* and *Nemathelminthes*. Such variant forms, easily recognized by the specialist, are apt to be serious stumbling blocks for those not trained in zoological lines. Tho some of the misprints of the earlier edition have been corrected, others still remain not merely in the names of well-known scientific workers and journals, but in a few scientific names where it might be difficult to recognize in *Collyrichum* and *Hocyalomma* the correct forms *Collyriclum* and *Hyalomma*. It is unfortunate to find such terms as *Rattenkönig cercariae*, which is not even a correct citation of the German term and is readily translatable by the equivalent *Gorgonocephaloid*.

On the whole the figures are admirable and abundant. The colored plates are very well done and the photographs of eggs by Bell are both new and thoroly desirable, altho some of them have come out in the printing rather indistinctly and the value of the representations (p. 626) of such as are of doubtful identification is seriously reduced in that no indication is given of the magnification or actual size. The literature lists have unfortunately not been revised and stand almost everywhere exactly as in the earlier edition, altho much new and very important material has been added to the text. This throws a heavy burden upon the student who wishes to refer to the recent contributions in order to follow up more fully an individual problem. Typographical errors seem to be more frequent in authors' names and in the designation of periodicals than elsewhere, altho it must be confessed that the percentage of such errors is fortunately small.

It would be hard to record the excellencies of the work with the same fulness with which the minor errors have just been reviewed. From cover to cover the volume shows adequate knowledge and control of the field. Its conciseness and clearness of presentation cannot be too highly commended. The fulness with which it includes most recent work, and the freedom from bias in dealing with moot questions and unsolved problems are admirable features that must be emphasized in closing this review. The work is a storehouse of splendidly arranged material, and as such is indispensable to every worker interested in any phase of medical zoology.





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