he was dealing. "I don't believe you will have any trouble in finding use for a little more. Here is a trifle for you to apply, on just one condition. Put it in your pocket and expend it as you choose. Make no note of it in your accounting." He left, with a rough yellow envelope sealed in my hands. This contained seven bills of $100 each. The total contributions raised outside of this did not amount to $200, as I recall.

And the school grew. The work of Brooks was prophetic of his future career. Collections and excursions and dissections were made possible. Dr. John S. Newberry gave us two lectures on geology which were beyond and above any I ever heard for concise completeness. If from this poor little effort there came forth no other good than the launching of Brooks upon his most worthy career, it is honor indeed to have shared in the cost thereof.

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SCIENTIFIC BOOKS

Histologisches Practicum der Tiere. By Dr. Karl Camillo Schneider, A. O. Professor in the University of Vienna. With 434 text-figures. Jena, Gustav Fischer. 1908.

In view of the excellence of the first edition of K. C. Schneider's histology, which appeared about six years ago, students of the subject will welcome this new edition recently published by Fischer in Jena. The wide circulation of the first edition, together with the importance attached to it by all scientists, will enable the writer to more easily review the last edition by some slight reference to the first.

In general, it may be said that the author has endeavored, by shortening his "Lehrbuch der vergleichenden Histologie," and by slightly rearranging it, to make it more practical and to adapt it to the use of university students taking a "course" in the subject. While doing this, some of the subject-matter has been rewritten to accord with the results of recent research, and some entirely new work has been added.

The first or general part of the work opens, after the preface, with an introduction, in which the subject is defined and the view-point and method of treatment outlined. This discussion is concluded (p. 5) with two ideas which give the author's conception of histology and, of necessity, fix the form of arrangement of the whole book. The first idea is that histology should concern itself only with structure or form and should be studied and treated without regard to function. Secondly, that being a fundamental morphological study, it underlies any natural scheme of classification. The reviewer presumes that by "natural classification" is meant the classification founded upon blood relationship through evolution.

The reviewer does not wish to criticize this conception as the guiding principle in a histological course, being fully impressed with its educational value in a book so well executed as that under review. He does, however, wish to call attention to another view, held by some workers including himself, which looks upon histological structure as the important machinery through which the varied functions of organisms are performed and life is maintained. Such a view, which lays special stress on the cytological and chemical side of histology without making it altogether a study of physiology, has prompted the writing of such text-books as Prenant's "Traite D'Histologie" and Martin Heidenhain's "Plasma und Zelle." The introduction concludes with a discussion of some of the principal features of animal morphology or "Architektonik," followed by a systematic arrangement of the animal kingdom on this basis.

The remainder of the "general part" is taken up with an account of the structure of the cell, of cell division, and of the working substances of the cell; also a special account of the various groups of cells (under eleven types) and a very short account of some general principles of tissue and organ building, this latter being the last of the "general part" of the work which occupies 75 pages out of the entire 518 in the volume. When we notice that this "general part" occupied 240 pages in the former edition instead of 75, it can be seen how greatly this portion of the present edition has been reduced. This reduction has

been effected, chiefly, by cutting out about 30 pages on special organology, and 60 pages on "Architektonik" or morphology; also by omitting many figures and parts of the descriptive matter, as well as changing other parts. Some new paragraphs, mostly of a historical nature, have been inserted.

The second part of the book or "special part" deals with the descriptive histology of some 40 animal types taken in almost systematic order. The entire histology of each form is seldom discussed, but only such portions as are characteristic, or as fill out gaps in the rather rough and incomplete system of tissue classification, are described in the author's thorough and scholarly way. The whole part is divided, very arbitrarily, into 50 lessons as a convenience to teaching.

This special part is, of course, the largest and most substantial part of the book. To estimate very crudely the amount by which it has been reduced from the corresponding part in the old edition, it may be said that in the latter it occupied 685 pages, while in the new form it is contained in 445 pages. This reduction has been secured by taking out descriptions of a few entire forms and of certain of the tissues of other forms. Care has been shown in doing this, as a rule, to remove those parts which in any sense duplicated or paralleled other parts.

Comparatively little has been added to this part of the book, although it has been carefully worked over and much changed in many details. One improvement consists of the addition in several places of appropriate details of histogenesis. The omission of any allusion to the comparatively rare but important tissues that produce light and electricity is a disappointment to the reviewer; the more so that other rare tissues of possibly less fundamental importance have been left in, as a quite extensive account of the structure and development of the nettle cells of *Physophora*. All reference to gas secretion has been omitted, although it was treated of in the first edition and is a matter of scientific importance.

The index is short, too short even when one considers that the method of arrangement and table of contents both supply much that is omitted in its numbers. As an instance, a student or research man would have to search through nine pages of text to find the concise but valuable account of muscle structure in *Peripatus* (pp. 131–132), there being no indication of this item in index or table of contents. Were he to start on a comparative study of muscle he would have to search carefully in other places as well. This also holds true for other tissues.

Personally the writer would have preferred to see an enlarged edition of the former "Lehrbuch," strengthened by certain additions and revisions. One can not help feeling that the new edition is, in part, a sacrifice of scientific ideals to practical or even commercial demands. An advanced student should really have the old edition as well as the new, even if he should not prefer the first edition outright. It is to be hoped that the author will, in the near future, give to advanced students of scientific histology a third and fuller edition.

The printing, figures and general make-up are all that can be desired, and the very few errors of typography and lettering are a negligible quantity; the bibliography is full and complete. The book should be in the hands of every advanced student of histology as well as of other zoological subjects.

ULRIC DAHLGREN

Probleme der Protistenkunde. I. Die Trypanosomen ihre Bedeutung für Zoologie, Medizin und Kolonialwirtschaft. Von F. DOFLEIN, Ao. Professor der Zoologie an der Universität München. Jena, Gustav Fischer. 1909. Pp. 1–57.

Under the above title there has appeared an excellent article on the present knowledge concerning trypanosomes.

The trypanosomes are small one-celled animals bearing a flagellum on one end and an undulating membrane on the side of the body. They are classed under the protozoan group Flagellata. They are parasitic in the blood of vertebrates and cause in mammals serious diseases, such as "nagana," "surra," "dourine" in horses and "sleeping sickness" in man. The pathogenic forms are distributed