

serve to give an introduction to the special features of the physiology of the various organ systems of fishes, and in some cases, but not all, will provide a critical discussion of the current problems.

The monograph by Drs. Pickford and Atz on the pituitary of fishes goes much deeper. Every aspect of the subject is treated in the greatest detail, and the result would be fascinating were it not for the severe difficulty of reading imposed by the hideous type, with lines much too long and unaligned. The effect of this extensive review is to emphasize that a very large body of detailed fact is available and yet is little used by biologists. Co-ordination of ideas only becomes possible when a full and scholarly treatment such as the present one becomes available.

An interesting feature is the discussion of the use of injection of pituitary extracts in pisciculture in Brazil and the U.S.S.R. The authors have gone to great trouble to obtain translations from the original papers published in those countries. They are able to present a full survey of the techniques, and the results claimed for them. It is especially interesting to have an account of the sequence of enthusiasm for the method by the schools of Skadovskii and Gerbils'kii and the criticisms by Derzhavin. The work has involved very thorough study of the breeding habits of the various races of sturgeon and other fishes and comparison of the results of natural and artificial spawning methods. That the former should be the more efficient is not surprising, but the latter is becoming increasingly necessary as the sturgeons are cut off from their up-stream spawning grounds by dams.

The book is dedicated to Prof. Petrunkevitch on his eightieth birthday, and he has himself performed much of the translation from the Russian.

These two works together emphasize that comparative physiology is growing up into an extensive discipline contributing greatly both to theoretical and practical biology.

J. Z. YOUNG

HISTOLOGY

A Student's Histology

By H. S. D. Garven. Pp. xii+650. (Edinburgh and London: E. and S. Livingstone, Ltd., 1957.) 55s. net.

OF the various text-books of histology of the traditional type, designed to meet the needs of the medical student, this is one of the best I have seen. It is an excellent work which despite minor blemishes deserves great praise. Dr. Garven has succeeded admirably in steering a course between what he terms "the Scylla of elaborate detail . . . and the Charybdis of over-simplification". The essential facts are presented clearly and concisely yet the student is always encouraged to keep an open mind and be prepared, when necessary, to consider more than one point of view. The diagrams are in general simple but effective, clearly emphasizing the points to which attention is being directed—for example, the scheme of the splenic circulation on p. 251, or the figure of the renal corpuscle on p. 438. The only doubts which assail one in reviewing such a book concern the extent to which the teaching of histology should incorporate some of the revolutionary changes which are now taking place.

It was in 1850 that Kölliker produced one of the earliest classical texts in histology, and it is interesting

to note that this pioneer in his subject, who was professor of anatomy and physiology at Würzburg, gave his book the title of "Mikroskopische Anatomie". The great anatomist Jacob Henle had already, in 1841, extended the scope of anatomy from macroscopic down to molecular detail. In the introduction to a shorter "Handbuch der Gewebelehre", published in 1852, Kölliker wrote: "If it be possible that the molecules which constitute cell-membranes, muscular fibrils, axile fibres of nerves, and so forth, should be discovered, and the laws of their apposition, and of the alterations which they undergo in the course of the origin, the growth, and the activity of the present so-called elementary parts, should be made out, then a new era will commence for histology. . . ."

In the light of the vast body of new facts which in our own day are so rapidly accumulating through the use of the electron microscope and other agencies, Kölliker's prophecy of 105 years ago is well on the way to fulfilment. The new era in histology which he foretold has indeed commenced. From now on text-books of histology must incorporate to an increasing extent the newer concepts, which will bring histology ever closer to the molecular level, and demonstrate with yet greater precision the integration of structure and function, as the newly explored territory of the cell is mapped out afresh.

J. M. YOFFEY

NORTH AND CENTRAL EUROPEAN FLORA

Flora von Nord- und Mitteleuropa

Von Friedrich Hermann. Pp. xii+1154. (Stuttgart: Gustav Fischer Verlag, 1956.) 98 D.M.

THIS is a remarkable book. It is the work of an amateur botanist living in a small town about 85 miles south-west of Berlin and therefore without ready access to the vast amount of literature concerning European plants which has accumulated during the past two centuries. Nevertheless, it contains a great deal of information, both descriptive and distributional, in a single volume of convenient size but unreasonable price. The brief preface gives all too little information about the area covered, the sources used (there is no bibliography), and the general plan and purpose of the book. One is left longing to know more, particularly of the author's obviously extensive journeys and of his views on species and subspecies.

So far as can be discovered from the preface and from the species included in and excluded from the body of the work, the area covered may be outlined roughly as follows: Iceland, Spitsbergen, Fennoscandia, Poland, Carpathians, Bulgaria, Alps (south to the Alpes Maritimes), the line of the Rhône and Seine and the British Isles. The author has, he says, no personal knowledge of the western Alps, the British Isles, Iceland and Spitsbergen, but appears otherwise to have sampled the area with such thoroughness that he claims to have seen the majority of the species growing wild and to have cultivated many of them in his garden.

The descriptive part of the flora occupies rather more than 1,000 pages and deals with approximately 4,500 species, which is a little more than a quarter of the estimated total number of species in Europe. The exclusion of the Iberian peninsula, most of the Balkan peninsula, a considerable part of east Europe and of