

as though the finite were necessary to preserve infinity from nothingness; and it is all in keeping that in this retrospect occasional trivialities appear, and that in places the straining for impressiveness is too evident. But such foibles are part and parcel of a man the profession holds in honour and friends

hold in esteem and affection. Englishmen, too, will be proud of this stalwart countryman of theirs. Accordingly, this lively and most interesting story of the critic in action and of the man in intimacy makes a wide and in formative human appeal.

S. J. TRUSCOTT.

Elementary Work in Zoology

Laboratory Studies in Comparative Anatomy
By Dr. W. C. Senning. (McGraw-Hill Publications in the Zoological Sciences.) Pp. ix+188. (New York and London: McGraw-Hill Book Co., Inc., 1937.) 10s. 6d.

HERE is the method of conducting the first-year course in comparative anatomy at Cornell. The student is to provide himself with a text-book, drawing materials and specified dissecting instruments. Then he is to have a set of outline plates, some filled in for use with this manual—and he is told precisely how to fill up the outlines. These are to present to the student “readily available, summarised information”. Three animals, namely, the shark, a newt (*Necturus*) and the cat, are chosen to supply a “structural framework” for “subsequently acquired knowledge”, the student by his careful studies to absorb “as much information as can be grasped”. The student is also indulged in “oral discussions by the laboratory instructor” and “oral and written quizzes and dissection checks”. Let us say at once that the author has carried out his ideas admirably, and the student is to draw figures of what he has learnt from his dissections on fifty-four plates. He will be an encyclopædia of facts about his three animals and presumably he will have learnt a little dissection and some elements of drawing; his chief asset will be that he has learnt to observe and record topography with accuracy; his memory is improved and he has acquired much information.

But we deduce from the preface that the author aims to prepare his students “to do independent work”. The reviewer has prepared or edited more than a dozen such laboratory manuals, for laboratory notebooks are the same thing, spaced to leave sheets for drawings. He had produced some with as detailed instructions as here—and he found them very useful for instructing large classes, especially useful for students who happened to be supplied with indifferent demonstrators; such produced the note-books in an almost verbally perfect manner for examiners,

who wanted facts alone. Many of his most elementary students were ‘medicals’ and they, desirous of putting behind them a disagreeable first M.B., were happy. Their joyous life continued, for they kept the same compartment of mind for anatomy and only had to develop a second chamber for physiology, the two not provided with communicating doors until much later, when the students learnt that their business was with a living animal.

To the real student of science such ‘manuals’ were fatal, and from the commencement the reviewer began to whittle them down. To be of any subsequent use or to employ his knowledge for his own pleasure, a student must acquire independence and be allowed considerable latitude in choice of interests and methods. The anatomy of this manual is not science—this remark applies also to most text-books—and indeed is boring to the young. The latter centres his interest on the living animal, how it lives, moves and reproduces; in other words, is adapted to its place in the world. He then demands how the functions consequent on this life are performed and what sort of organs produce them. The interest of comparative anatomy is not closed, but the approach is from the living to the dead, for the latter can only be understood in the life of the former.

The ‘laboratory instructor’ has not the function of driving facts into dull minds, but to encourage his pupils to inquire for themselves and to help them to do so. Zoology will be killed by the use of such methods as suggested in this manual, methods in vogue when the idea of evolution was very young, but completely past to-day. Huxley was a great teacher of comparative anatomy, but his most used book was his “Comparative Physiology”, which can profitably be read as an introduction to anatomy even to-day.

Are the methods of this manual those which are commonly adopted in American universities? If so, the reviewer understands why he has repeatedly had to place trained American students in his most elementary classes.

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