

are the final comments on possible post-war frontiers. But the reader who has had the opportunity of studying the Germano-Polish question is left at the end with a feeling of disquiet. He has the impression that factual information has been chosen to make yet another theory on the vexed problem of Central Europe, but that even an outline tale has not been told in proportion. Any account of the Germano-Polish settlement areas, for example, should contain much more emphatic comment upon the loess strip between the Hercynian Highlands and the glacial plain than is present in Lieutenant-Colonel Gayre's study. Moreover, the story of Teuton-Slav relations is incomplete from the point of view of the anthropologist without some treatment of the migrations of the Dark Ages. It is misleading to take it up at the stage when the peoples of Central and Western Europe were beginning to achieve some geographical fixity, especially when early history is made the foundation of political opinion on current events. Finally, although one may agree with the author that too great an importance was attached to linguistic divisions in the re-drawing of frontiers after the War of 1914-18, it is difficult to believe that physical anthropology is going to prove a safe guide to demarcation after the present one.

Lieutenant-Colonel Gayre makes a point at the end of his study which is worth close attention. Before the first World War the disparity between the German and Polish birth-rates was noticeable, and the greater increase of the Slavs has continued between the two Wars. The Germans may have needed *Lebensraum* in the sense of greater economic opportunity, but they wanted living space in the literal sense much less urgently than the Poles. The eager concentration of the Germans on penetration into Eastern Europe came rather from demographic unease, an instinctive dread of the multiplying Slavs, than from territorial need. The immense loss of German man-power in the present War suggests that pressure on living space in Germany will be still less, once the actual devastation of war is repaired. It remains to be seen whether the terrible destruction of life and material well-being in Poland will affect the demography of that country only temporarily or permanently.

It is scarcely the fault of the author if the development of the 'art' of war in the fifth year of this struggle makes arguments on frontier demarcation from the strategic point of view seem a little irrelevant.

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## ELEMENTARY ZOOLOGY

### Animal Biology

By Dr. A. J. Grove and Dr. G. E. Newell. Second edition. Pp. viii+678. (London: University Tutorial Press, Ltd., 1944.) 16s.

**T**HIS book is already well known, and young people coming to the study of zoology for the first time will find in this second edition an account of animal structure which is welded with the elementary facts about the animal's physiology and relation to the environment. The whole fascinating story is told in words which create enthusiasm and stimulate further study and reflection. Older readers who were students when morphology was the main pre-occupation of zoology will appreciate this book no less. It is easy to neglect or even to deprecate the

beauty and significance of animal architecture, but this book avoids this error and also the older one of emphasizing it too much. By it the beginner will be prepared for the wider conceptions of modern biology.

The changes in this new edition are mainly amplifications of certain sections and additions wherever these are necessary to bring the book up to date. An outstanding feature of the book is its excellent diagrams, which are much better than those usually found in books of this kind. Some of these diagrams have been re-drawn; others are new. Eight new photographic illustrations of the earthworm and crayfish have been added; but some readers will wish that the space occupied by these had been given to really good and characteristic photographs or drawings of the animals dealt with in the chapter on the animal's background or to a better illustration than the one of the rabbit on p. 234. These would have helped other illustrations to remind the student that a diagram is only an interpretation of living structure and not a representation of it. Captious critics may detect one grammatical error, evidently missed in the proofs, namely, "The life-histories" . . . of nematodes . . . "is frequently complicated" on p. 628. Nematoda are classified as a phylum and not as a class of the Nematelminthes. Although their uniformity of structure in spite of their success in a wide variety of habitats is noted, their great influence on the health of man and on his food supplies entitles them, some consider, to a more adequate treatment, even in a book for the beginner, than they receive here. Nor are the paragraphs on the pathology and control of the flatworm parasites adequate.

But these are, perhaps, minor criticisms. The beginner will not go far wrong if he selects this book, especially if he adds to it, for the sake of its philosophical and physiological outlook and the illustrations designed to resemble what is actually seen under the microscope, Woodger's "Elementary Morphology and Physiology for Medical Students". But, whatever books he uses, the student should never forget the advice given in the preface to the first edition of this book, namely, that the study of the animal is the essential thing, that a living animal is better than a dead one and that a dead animal is better than no animal at all. If this book is intelligently used, the student will not come excitedly to his teacher, as he has been known to come, with the information: "There's something wrong with my rabbit; it isn't like the book" G. LAPAGE.

## ORGANIC CHEMISTRY

### Principles of Organic Chemistry

By Sylvanus J. Smith. Pp. viii+570. (London: Macmillan and Co., Ltd., 1944.) 15s.

**T**HE author states in the preface that the object of this book is to provide a course in organic chemistry which a student may be expected to cover in about three years from starting the subject, and hence, quite rightly, the book does not follow rigidly the syllabus of any particular examining board.

The first two chapters give a brief survey of the determination of formulæ and physical properties, together with a discussion of isomerism and the electronic theory of valency. In view of the scope of the book it is a pity that no mention is made at this stage of the phenomenon of resonance; and it is unfortunate that a misleading structural formula has