

every way. The arrangement of nearly all the figures on a series of plates at the end of the volume does not make for ease of reference, especially as many of them are exceedingly intricate; to follow the text in one place, the figure in another and find the meaning of an abbreviation on the plate (there are more than nine pages of these abbreviations) is no light task.

Again, the taxonomic and zoogeographical chapters are disappointing, for nothing is said of the numerous described subspecies of the salamander and only three 'varieties' are recognised. What the author's concept of a 'variety' may be is not explained, but as the '*var. molleri*' is said to occur all over the Iberian Peninsula side by side with the '*Forma typica*' it is presumably not the same

as a subspecies. No explanation of the use of the name *molleri* (the date of which is wrongly given as 1896 instead of 1889) in preference to the older *galliaca* is offered, and the map showing the species as occurring in the Balearic Islands, Sicily, Crete and Cyprus is very misleading. But, since these chapters are merely incidental to the main theme, and are, moreover, merely repetitions of mistakes by other workers, they do not seriously detract from the value of the book for its primary purpose. There are also some slips (such, for example, as in references 779-781, where the author's name should read "Werner" instead of "Weliky"), which will prove troublesome to the student, and though trivial in themselves are blemishes on an otherwise admirable piece of work.

Modern Views on Magnetism

Magnetism and Matter

By Dr. Edmund C. Stoner. Pp. xv+575. (London: Methuen and Co., Ltd., 1934.) 21s. net.

DR. STONER and all physicists interested in magnetism are to be congratulated on the appearance of this admirable monograph. In 1926, the author published a book on the same subject, "Magnetism and Atomic Structure". The present treatise, far from being merely a revised edition of its predecessor, is practically an entirely new work, in which full justice is done to the considerable progress resulting from experimental and theoretical research in the course of the last ten years (electronic spin, quantum mechanics, etc.).

After a historical introduction, which makes delightful reading, short accounts are given of the necessary theoretical tools of classical and quantum physics in Chapters ii and v respectively, Chapter iii giving a lucid exposition of experimental methods and Chapter iv describing earlier results and theories (Ewing, Curie, Langevin, Weiss). After three chapters on the Zeeman effect (in atomic spectral lines only), magnetic deviation of atomic rays and gyromagnetic effect, an extensive review is given of diamagnetism (Chapter ix, pp. 251-279), paramagnetism (Chapter x, pp. 280-349) and ferromagnetism (Chapter xi, pp. 350-437), the author's interest being everywhere harmoniously divided between the exposition of facts and of their theoretical interpretation. Then follows an account of Kapitza's measurements in very strong fields (Chapter xii), of molecular magnetism (Chapter xiii) and of the magnetic properties of metals and alloys (Chapter xiv). The work ends

with useful appendixes and an extensive author- and subject-index.

With a vast subject such as magnetism, it is often a very difficult question to what extent experiments and theories claim a general scientific interest. The author's choice in this respect is very much to be admired indeed; his own important contributions to the theory, for example, have been presented in the same objective manner as those of others, and he has shown a very wise self-restraint in practically leaving out such subjects as magneto-optics and magneto-electricity. At the same time, the reader gets a vivid impression that magnetism is a very living branch of physics nowadays; many of the theories recorded still bear a strongly speculative character, but the way in which it is done adds highly to the charm of the book. Consequently objections which here and there can be raised may easily be due to personal taste.

The classical discussion of the energy of a magnetised body in Chapter ii is, in the reviewer's opinion, scarcely a satisfactory basis for the general laws which are derived from it. More attention might perhaps have been directed to the calculations of Penney and Schlapp, which give an important contribution towards the understanding of the wide applicability of Weiss's law in paramagnetics. As regards anisotropy of ferromagnetic single crystals, it is questionable if the current atomistic explanation of this phenomenon can withstand the touch of criticism. Remarks like these, however, if valid at all, do not affect the intrinsic merits of Dr. Stoner's excellent book.

H. A. K.