

of practical experience of his subjects. He opens by discussing many points of interest in the life of the red grouse and other game birds. Faced with such questions as "Do grouse drink?" Mr. Chapman does not need to weigh the pros and cons or to meet opposing arguments: he simply knows, and has known from boyhood, that grouse do drink, and he can tell us how, and when, and where, with a wealth of circumstantial detail. Not least interesting are the chapters on what Mr. Chapman calls the "globe spanners," those species of waders, particularly, which breed only on the Arctic tundras but migrate so far as South Africa, Patagonia, Tasmania, and New Zealand. He knows some of them in their northern homes and on their migrations in Spain and in Africa, but especially he knows them on passage on the Northumbrian coast. Various aspects of wild-fowling are also dealt with, and it is only a wild-fowler who readily becomes familiar with such birds as the Brent Goose. Further chapters are devoted to "salmonology," and finally the author sums up his far from complimentary views about modern zoology and bird protection laws respectively.

Mr. Chapman has the defects of his qualities. He is too much out of sympathy with those who follow different lines of study, and he often fails to recognise the limitations of his own method. Thus, he seems to claim questions of evolutionary relationships for the peculiar province of the field observer, attaching more importance to the evidence of habits than to the less plastic features of fundamental structure. Again, it is untrue that the curlew is described by British ornithologists simply as a resident species (although, as the author gracefully puts it, "the precise verbiage may vary"); and the text-books may be pardoned for not following the author's example in dogmatically defining the winter-range of British native birds. The experiment with bats which the author ascribes to Thomson was merely quoted by him.

The numerous illustrations are just what one would wish for in such a work, namely, field sketches from the author's own pencil: these are reinforced by some excellent coloured plates by Mr. W. H. Riddell.

*Tabellen zur Röntgenspektralanalyse.* Von Paul Günther. Pp. iv+61. (Berlin: Julius Springer, 1924.) 4.80 gold marks.

X-RAY spectroscopy has already invaded the domain of chemical analysis and is no doubt destined to play an ever-increasing part in this field. It is to meet such a situation that Dr. Günther has compiled this handy volume of tables. He has departed from the conventional method of classifying the lines under elements and has tabulated them in order of increasing wave-length. Such an arrangement, while suited for the special purpose for which the tables are intended, may not be very popular among physicists, who will probably prefer the more usual method; their needs have, however, already been catered for in various publications. In addition to the wave-lengths and their identification, this table gives, for the more important lines, the reflecting angles for the crystals commonly used with the spectrometer. The actual values given are largely based on the measurements of Siegbahn and his school, but in the *K* series of the elements of higher atomic weight it is surprising to find that the wave-lengths given are not those of the latest and most

accurate determinations, and differ in some cases considerably from those given by Siegbahn and de Broglie. This divergence appears to be confined to this set of lines. With this exception, the table has been very carefully constructed and is very complete. In addition, Dr. Günther gives in the introduction a brief description of the characteristics of X-ray spectra, and concludes with a series of tables on absorption coefficients, critical exciting voltages, and the like. In following the example of Siegbahn and including these tables, the author has materially increased the value of the book. The printing and general arrangement are excellent, and the volume should prove a useful reference book to all engaged in X-ray spectroscopy.

*Biologie der Tiere Deutschlands.* Herausgegeben von Prof. Dr. Paul Schulze. Lieferung 6, Teil 4: *Turbellaria*; von Erich Reisinger. Pp. 4. 64. 1s. 3d. Lieferung 7, Teil 42: *Hymenoptera I.*; von H. Bischoff. Teil 49: *Amphibia*; von A. Remane. Pp. 42.64+49.34. 1s. 10d. Lieferung 8, Teil 42: *Hymenoptera II.*; von H. Bischoff. Pp. 42. 65-156. 1s. 10d. Lieferung 9, Teil 34: *Ephemeroptera*; von Georg Ulmer. Teil 50: *Reptilia*; von A. Remane. Pp. 34. 40+50. 29. 1s. 8d. Lieferung 10, Teil 32: *Plecoptera*; von Ed. Schoenemund. Teil 40: *Coleoptera I.*; von H. v. Lengerken. Pp. 32. 34+40. 36. 1s. 10d. (Berlin: Gebrüder Borntraeger, 1923-1924.)

WE welcome a further instalment of the parts of this extremely useful work on the natural history of the animals comprising the fauna of Germany. About one-third of the whole has now been issued, and as publication is apparently being pushed forward rapidly, the completion of the work may be looked for at a not too distant date. The parts under notice follow closely the lines laid down by previous parts, and the high level of excellence of the earlier series is well maintained. It is perhaps invidious to select any part for special mention, but the section dealing with the Hymenoptera seems to us to be a remarkably concise account of the biology of this large and varied group of insects. A work on similar lines dealing with the British fauna is urgently needed.

*Handbuch der Balneologie, medizinischen Klimatologie und Balneographie.* Herausgegeben im Auftrage der Zentralstelle für Balneologie von Prof. Dr. Dietrich und Prof. Dr. Kaminer. Band 4. Pp. xii+379. (Leipzig: Georg Thieme, 1924.) 3.80 dollars.

THIS treatise on balneology, etc., to be completed in five volumes, deals with the subject very completely. The volume under review includes the technique of hydrotherapy, sea-water baths, radio-active waters and hydro-electro-therapy, sunlight therapy and diets, and the therapeutic action of climate—low and high altitudes, desert air, and ocean travel.

The section on sunlight therapy, by Dr. Bernhard of St. Moritz, is of considerable interest, and the illustrations showing the condition before and after treatment of patients suffering from tuberculous sinuses, wounds, and the like are a striking testimony to the value of this form of treatment.

The various sections, which are all written by specialists, give the latest available information on the subjects with which they deal.