

succeeding subsection deals with the stereoisomeric carbon-nitrogen compounds, such as the oximes, and is followed by a subsection on the substances that owe their stereoisomerism to the configuration of nitrogen atoms. The first part closes with an account of the optically active sulphur, selenium, and tin compounds, and of the geometric isomerism exhibited by the cobalt and platinum compounds with ammonia and the organic bases.

The second part of the work is concerned with stereochemistry unaccompanied by stereoisomerism, under which head are treated such matters as the stability of carbocyclic and heterocyclic chains, the stereochemical formulæ of benzene, and the influence of space-arrangement on the speed or possibility of chemical reactions, *e.g.* esterification, formation of amides from esters, formation of triphenylmethane dyes, reduction of nitro-groups. Perhaps this part of the book will be found as useful as any, for it marshals under one point of view a great array of facts otherwise scattered and difficult of access.

Prof. Werner's book should be in the possession of every organic chemist.

The Fauna of British India, including Ceylon and Burma. Published under the authority of the Secretary of State for India in Council. Edited by W. T. Blanford. Rhynchota, vol. ii., part ii. Heteroptera. By W. L. Distant. Pp. i-iv, xi-xvii, 343-503; figs. 168-319. (London: Taylor and Francis, 1904.) Price 10s.

THE first part of vol. ii. of this work was published in December, 1903, and was noticed in NATURE for February 25, 1904, and we have not had long to wait for the second part, completing the volume, the preface of which bears date April, 1904. The total number of species described in the second part is 511, bringing up the total number of species described in the first two volumes of the work to 1471. The second part of vol. ii. completes the great family Reduviidæ (subfamilies Acanthaspidinæ to Nabidinæ), which is fam. 12 of Mr. Distant's arrangement. The volume also includes the families Saldidæ, Ceratocombidæ, Cimicidæ, and Capsidæ. This completes the land bugs, with the exception of the Anthocoridae. These, with the two last families of the Gymnocerata (Hebridæ and Hydrometridæ), which are aquatic or subaquatic, are left over to be included with the Cryptocerata, all of which are aquatic, in the third volume, which will complete the work so far as the Heteroptera are concerned. The Homoptera will also be commenced in vol. iii.

Other volumes of this series in preparation are to include certain families of Coleoptera (especially those of economic importance), the butterflies, and the land mollusca.

Analytical Chemistry. Vol. ii., *Quantitative Analysis.* By F. P. Treadwell, Ph.D. Translated from the second German edition by William T. Hall, S.B. (New York: Wiley and Sons; London: Chapman and Hall, Ltd., 1904.) Price 17s. net.

It is a little curious that this volume, which appeared in German in 1901, should have reached a second edition before finding an American translator, as one might suppose that its many excellences would have hastened the fate which has overtaken a number of less valuable German treatises.

The author states in the preface that the majority of the methods which he describes have been submitted to careful examination in his own laboratory, a fact clearly evident from the minutiae which are introduced at every step. This is precisely what gives a work on analytical chemistry a real value. There

is an introductory chapter on general manipulation, details, and apparatus, including the use of the Gooch crucible, that ingenious and time-saving combination of filter and crucible which is much too little known and used.

The subsequent chapters deal with gravimetric and volumetric estimations of inorganic materials, including such methods as are specially applicable to certain minerals, ores, and metals, and there is a final chapter on gas analysis.

It should be added that the book is one for reference and is not a graduated course of instruction for students. It is, in fact, an abbreviated Fresenius without the undesirable quality of superficial comprehensiveness which characterises that exasperating classic.

J. B. C.

Arnold's Home and Abroad Readers. Book i. Glimpses of the Homeland. Pp. 135. Book ii. Glimpses of the Globe. Pp. 152. Book iii. England and Wales. Pp. 200. Book iv. The British Dominions. Pp. 232. Book v. The World's Great Powers—Present and Past. Pp. 228. Book vi. The World's Trade and Traders. Pp. 228. (London: Edward Arnold, n.d.) Prices from 10d. to 1s. 6d.

THE aim of the anonymous author of these volumes appears to have been first of all to secure the interested attention of his young readers, and then incidentally to teach them a great deal about the physical features of the countries of the world and of the manners and customs of the peoples of the globe. The readers are skilfully graded, well illustrated with maps and pictures, and excellently printed. The books are likely to be popular in elementary schools.

LETTERS TO THE EDITOR.

The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.

Chemical Action Produced by Radium.

VARIOUS chemical investigations relating to the chemical action of radium bromide have been in progress in this laboratory during the past session, an account of which will shortly be published.

But one of these investigations has yielded results so extraordinary that we think it well to direct attention to the results. On the Rutherford-Soddy hypothesis of the disintegration of the radium atom, an enormous amount of energy is evolved, and at least one simpler product is formed, namely, helium, which is slowly produced during the disintegration of the emanation, which Mr. Soddy and one of the authors have shown to be a gas, following Boyle's law; and with Dr. Collie the spectrum has been investigated.

It has, of course, often suggested itself that such a change should be reversible; that is, that by imparting a sufficient charge of energy to any atom, it should be transformed into different matter, probably by the building up of a more complex structure. Now the only known source of energy in such a concentrated form is that which is given off by radium and its products during their disintegration. The facts which we have to chronicle appear to point towards such a synthesis.

During experiments on the emanation, about 105 milligrams of radium bromide, dissolved in water, were kept in small glass bulbs, connected to a pump. To protect the bulbs against accident, each was surrounded with a small beaker, one of potash-glass and two of soda-glass. The former was coloured brown in the course of some six months, the latter violet. On altering the apparatus these beakers were discarded.

They were all found to be radio-active on both surfaces,