

involved has lagged behind the technical side of the subject, investigations during the last few years have afforded considerable insight into the various causes and stages of resinification; these are well set out in the volume under notice. The synthetic resins, other than those obtained by treatment of the natural varieties (*e.g.* by esterification of colophony and copal) which are also dealt with in this section, fall broadly into two classes, the condensation resins and the polymerisation resins. These are considered under their respective headings; other products, such as the treated phenol-formaldehyde resins and those from urea and thiourea, are considered separately. The section concludes with a brief chapter on the methods of testing synthetic resins.

The book covers a very large field, and certainly presents in modest bulk a useful summary of our present knowledge of the products discussed. The index is adequate, although one or two omissions have been noted. Unfortunately there is an unduly large proportion of misprints, mainly in the first section; names mis-spelled in the text persist in the index, whilst some references are incorrect.

B. A. E.

*Spectroscopy.* By Prof. E. C. C. Baly. (Text-books of Physical Chemistry.) Third edition. In 4 volumes. Vol. 2. Pp. viii + 398 + 3 plates. (London: Longmans, Green and Co., Ltd., 1927.) 18s. net.

PROF. BALY'S well-known work on "Spectroscopy," which formed a single volume in the first edition of 1905, as well as in the second edition of 1912 and 1918, has now begun to grow so rapidly that the third edition is to appear in four volumes instead of the two volumes that were originally contemplated. This expansion is an almost inevitable sequel to the amazing growth of the subject since Bohr first introduced the quantum theory into spectroscopy in 1913; and no one will grudge the author more space in which to expound the wider knowledge that has been gained during the subsequent years. These topics, however, are not included in the present volume, which contains only one indexed reference to Bohr, and none to the quantum theory.

The subjects dealt with are: (i) interference methods, (ii) methods of illumination, (iii) the nature of spectra, (iv) fluorescence and phosphorescence, (v) the photography of the spectrum. Thus a detailed account is given of the use of an interferometer in the study of double stars, with diagrams of the apparatus used at Mount Wilson, which look rather like a 'Meccano' model, until it is seen that the beams are made from 10-inch and 12-inch steel channel. The methods of illumination range from flame spectra to the 'explosion' of wires by means of a condenser discharge. The chapter on the nature of spectra deals mainly with the structure, width, and sharpness of the lines, *e.g.* the resolution of the green mercury line into a dozen components and the classification of these components into three triplets and three remaining unrelated lines. The chapter on fluorescence and

phosphorescence covers a wide field, including Wood's work on resonance spectra and on fluorescence, the work of the two Becquerels and of Nichols and Howe on the fluorescence of uranyl salts, Stewart's experiments on Tesla luminescence spectra, and a large amount of work on phosphorescence and luminescence of various types. The final chapter on photography includes a considerable amount of information supplied by Dr. Kenneth Mees, and also a section on sensitisation written by him.

The author is to be congratulated on completing his second volume, and preparing the way for the description in Vol. 3 of those modern developments which have given to spectroscopy a predominant position in atomic physics, comparable to that which it held when Bunsen first applied the spectroscope to the study of the chemical elements.

*Über die Natur und Bildungsweise der marinen Eisensilikate, insbesondere der chamositischen Substanzen: ein Beitrag zur chemischen und mechanischen Sedimentation.* Von Dr. Karl C. Berz. (Fortschritte der Geologie und Paläontologie, Heft 11.) Pp. viii + 365-522 + 6 Tafeln. (Berlin: Gebrüder Borntraeger, 1926.) 12 gold marks.

DURING recent years considerable progress has been made in the description of ferriferous sediments. Works by Hayes on the Wabana iron ore (1915), by Cayeux on the French secondary ores (1922), and by Slavik on the Czechoslovakian deposits have contributed substantially to the elucidation of the chamosite-bearing rocks, while corresponding researches have been carried out on the English iron ores by the Geological Survey of Great Britain since 1920 (see "Summary of Progress for 1922" (1923), and Special Reports, vol. 29 (1925)). The present work contains a review of this question on similar lines to the above, dealing in some detail with the German deposits. The author limits himself to the discussion of existing literature on the subject, with a few additional descriptions, and provides a useful account of many rather inaccessible papers on local ores. In dealing with general literature the author has evidently been somewhat at a disadvantage, for of the works above mentioned not one appears in the bibliography, though there is passing reference in the text to the report by Hayes.

The views advanced are substantially in agreement with those generally current, the ores being regarded as primary sediments. Interesting sketches are given of the tubular organisms sometimes found in the oolites; the author does not regard them as having played an essential part in the formation of the oolith, but rather as parasitic growths accidentally preserved in the inorganic structure. Chamosite is described in detail from the mineralogical viewpoint, but the corresponding account of glauconite is scarcely adequate, and more space might perhaps have been given to the discussion of the glauconitic sediments. As is perhaps inevitable in a work of compilation, the tone of the discussion appears somewhat speculative,