

of Mr. H. V. Nanjundayya. The writer of this notice was in close touch with Mr. Nanjundayya during the early days of the work in Mysore. It is to be regretted that this learned worker has not survived to witness the publication in final form of his very valuable contribution to the study of Indian ethnography.

R. E. E.

Infra-Red Spectra.

Infra-Red Analysis of Molecular Structure. By F. I. G. Rawlins and A. M. Taylor. (The Cambridge Series of Physical Chemistry.) Pp. xv + 176. (Cambridge: At the University Press, 1929.) 10s. 6d. net.

IN view of the numerous and important researches which have been carried out in the infra-red region of the spectrum, it might appear surprising that until now there should have been no book in English dealing exclusively with this branch of spectroscopy. The methods employed have been most ingenious and diverse, and the results will assuredly contribute as much to the solution of molecular problems as photographic spectroscopy has contributed to those of atomic structure. Yet the experimental difficulties have so greatly restricted work in this field that there has been little demand for a book of this kind. Now that the significance of such researches is being realised, whilst at the same time standard methods have been to some extent developed, it is most desirable that the knowledge which has been acquired with so much labour and difficulty should be made more easily accessible to the student and prospective worker in this field.

The four chapters of the work which is at present under notice deal successively with the infra-red spectra of gases, liquids, and solids, and with experimental methods. A really comprehensive or detailed treatment is naturally out of the question in a book of this size, but the authors have succeeded in compressing a quite remarkable amount of information into the limited space available. The mathematical appendix, in which, *inter alia*, a brief but unusually clear account is given of the application of wave mechanics to molecular vibration and rotation, is particularly to be commended. The list of references at the end of each chapter appears to have been compiled with discrimination, and is an extremely valuable feature.

The book is by no means a mere compilation. The authors themselves have worked extensively in these regions, and are therefore in a position to contribute useful criticisms and suggestions. They

suggest, for example, the desirability of substituting direct readings of prism orientation for the drum and lever arrangement in common use. In several places they emphasise, and very rightly, the necessity of measurements of intensity of absorption as well as of spectral position. In very few cases indeed have workers derived coefficients of absorption from their observations, being mostly content to plot galvanometer deflections against wave-length, and for no single substance, so far as we are aware, is the absorption coefficient known over any considerable spectral range.

There are a few slips which should be rectified in future editions. In two cases (pp. 131, 144) the credit due to the actual research worker is attributed to the author of a book in which his results are quoted. On p. 138 it is implied that the diffraction breadth of a spectral line is determined by the width of the entrance slit of the spectrometer, and one's suspicions of the unorthodox nature of the authors' views on resolving power are strengthened by the statement (p. 115) that it is, "as usual, proportional to the numerical aperture of the mirror". The account of photographic methods in the infra-red is distinctly inadequate, having regard to the important developments of the last few years.

Finally, a protest may be lodged against the ugly and unnecessary term "many-lines" spectrum of hydrogen. It is, of course, a literal translation from the German, but the already established term "secondary spectrum" is much to be preferred. In view of recent progress, it would seem still better to refer to it as "the band spectrum of hydrogen", or simply as "the H₂ spectrum". The book is well indexed and reasonable in price, and should find favour with chemists and physicists alike.

Our Bookshelf.

An Etymological Dictionary of Chemistry and Mineralogy. By Dr. Dorothy Bailey and Dr. Kenneth C. Bailey. Pp. viii + 308. (London: Edward Arnold and Co., 1929.) 25s. net.

THE aim of this dictionary is primarily *etymological*, and no attempt at exhaustive definitions has been made. Apart from its literary interest, however, its utility is, as the authors suggest, definitely enhanced by the inclusion of references. These, in many cases original, indicate where more complete definitions and descriptions of many uncommon minerals and chemical compounds may be found. Approximately 11,000 words are listed in the dictionary. These include many scientific terms, in addition to substances, though the work