

branches, although at the same time it is well to connect and coordinate the groups as far as possible, just as examples in inorganic chemistry can often be made use of to elucidate certain facts in organic chemistry and *vice versa*.

Chapter ii., upon isomerism and stereoisomerism, is written in a very interesting manner, and the subject can be made anything but interesting. The diagrams are good, and the explanations clear and not too overloaded with details. This chapter deals with isomerism of the lactic acids, van 't Hoff's and Le Bel's theories, mutarotation, &c., and the different action of dissolved substances, depending upon whether they are electrolytes or non-electrolytes. Certain of the sections, indeed, were it not for the full references, might be considered rather short. The next chapter treats of the stereochemistry of unsaturated and cyclic compounds (geometrical isomerism), and chapter iv. with the stereochemistry of nitrogen. The work of Pope and collaborators upon the optical activity of sulphur, selenium, and tin compounds is also included in this chapter, and also that of Kipping upon silicon compounds. It would certainly have been advantageous if this part of the section had been a little more fully gone into.

One of the best chapters in the book is that upon condensation. Here the various methods employed for condensations are elaborated and brought together in a manner which will be found extremely useful to students of chemistry and even to those who may consider themselves beyond the student stage. Not only are the methods themselves given, but the subject is also treated theoretically, as, for example, in the acetoacetic ester condensation and in Perkin's reaction. Another chapter is devoted to fermentation and enzyme action, which includes, beside an historical introduction, references to hydrolysis, oxidases, reductases, and the mechanism of enzyme action. The alkaloids, terpenes, camphors, proteins, and carbohydrates are dealt with in detail, but not colouring matters, either natural or artificial. Of course, the author does not pretend to cover all the branches of chemistry, and presumably his reason for omitting the colouring matters is that there is a special chair of chemistry dealing with this subject at the University of Leeds, and there are also other books on this theme.

As we have already stated, the book supplies a want, and we have pleasure in recommending it to all advanced students of chemistry; certainly all chemical libraries will require it.

F. M. P.

#### OUR BOOK SHELF.

*The Geology of the Leicestershire and South Derbyshire Coalfield.* By C. Fox-Strangways. Pp. vi+373. (London: His Majesty's Stationery Office, 1907.) Price 6s.

THIS latest memoir contains a description of the joint coalfields of Leicestershire and South Derbyshire, commonly known as the Leicestershire coalfield. It is one of the smallest coalfields of the Midland counties, and is cut off from the Warwickshire and Derbyshire coalfields by an uplift of older strata. It includes an area of about sixty square miles in Leicester-

shire, and about sixteen square miles in South Derbyshire. Its exact limit has, however, not yet been proved. A large portion of the area is covered by Triassic rocks, so that the Coal-measures only come to the surface over twenty-four square miles. Although one of the smallest coalfields, it is one of the most ancient, having been worked to some extent from time immemorial. The earliest mention of coals being worked in the district is in the reign of King John in 1204.

The author describes the Coal-measures and the surrounding strata as far as it is possible from the evidence afforded up to the present time. He gives full particulars with regard to the productive measures, remarks on their probable extent beyond present workings, and a general account of the physical history and structure of the area. Brief accounts are also given of the associated rocks, including those of Charnwood Forest, of the Carboniferous Limestone and shales, of the Millstone Grit, and of the Permian and Trias. A chapter is also devoted to the superficial geology. The water supply, saline springs, pottery clays, whinstone, ironstone, building stone, and lime are touched upon in a chapter on the economic geology of the area.

The final chapter on the palæontology of the coalfield has been written by Mr. A. R. Horwood, of the Leicester Museum, who has made a special study of the subject.

There are three appendices—(1) a glossary of technical or local mining terms, (2) a bibliography extending from Camden's "Britannia" of 1607 down to publications in 1907, and (3) details of all the borings and pit sections accessible, covering 200 pages. Many of these sections were left in manuscript by the late Rev. W. Coleman many years ago, and it is gratifying to find the records of old workings, that would probably otherwise have been lost, thus preserved. The bibliography is very valuable and complete. In the list of authors, by an oversight, the titles of Sir William Fairbairn and Sir Arthur Rücker have been omitted. Sir C. Le Neve Foster's title, omitted in the index, is given correctly in the list of authors preceding the bibliography.

The value of the report is greatly enhanced by a small coloured map of the coalfield and six large folding plates of vertical and longitudinal sections.

*Inorganic Chemistry.* By E. J. Lewis. Pp. xxv+408. (Cambridge: University Press, 1907.) Price 5s.

THIS book, primarily intended for school use, deserves the widest recommendation as a sound and interesting introduction to the subject. It consists of a series of chapters or lessons in which the systematic part of the subject is happily blended with a considerable amount of theory. The treatment is thorough and painstaking without being dry. One is a little surprised, perhaps, after reading of the intended scope and purpose of the work, at the very large number of topics introduced which by tradition have come to be regarded as part of an advanced course. Thus, in part ii. the successive topics treated theoretically are mass action, thermochemistry, basicity of acids, relative strength of acids and bases, isomorphism, osmotic pressure, ionic theory of solution, and the periodic classification. The treatment, though simple, is satisfactory.

For the small number to whom chemistry is to become a life-study, there may be two opinions as to the wisdom of this brief inclusion at an early stage of so many topics of the advanced course, since thereby the latter is apt to be robbed of some of its freshness and novelty, and to lose in consequence its stimulus for the expanding intellect. But in so far as the course of instruction is intended to apply to