and electric charge; if either of these separately is reduced, the sol alters its character but remains stable. The author is inclined to deal somewhat lightly with the anomalous viscosity of emulsoids, which have occupied both Freundlich's and Ostwald's laboratories considerably during recent years, but perhaps this is one of the simplifications made in the interests of the beginner; it is, however, certainly incorrect to say that a linear relationship between viscosity and concentration holds in agar, gum arabic, or starch sols, except at the very low concentrations and comparatively high temperatures at which the author and his students have chiefly examined them. In sols like those of india-rubber or cellulose nitrate it does not hold even at concentrations between 0.1 and 0.5 per cent. The remainder of Part 3 is devoted to protein sols, osmotic phenomena, and gels; though brief, these chapters are extremely lucid and instructive, and the reviewer has been struck particularly by the presentation and critical examination of Loeb's views. A short fourth part deals briefly with special cases of interest, such as soaps and emulsions.

The translation is idiomatic and nowhere leaves the reader in doubt about the author's meaning. The book is excellently printed and illustrated.

E. H.

Eruptive Rocks: their Genesis, Composition, Classification, and their Relation to Ore-Deposits; with a Chapter on Meteorites. By Prof. S. J. Shand. Pp. ~~xx~~ 360. (London: Thomas Murby and Co., New York: D. Van Nostrand Co., 1927.) 20s. net.

PROF. SHAND'S interesting and original book is, as he says in the preface, the outcome of three insistent wishes: first, to clean up the "jungle of rock names"; second, to make the results and conclusions of petrology intelligible to "matter-of-fact people like physicists and chemists" (we did not know before that petrologists were less matter-of-fact than physicists and chemists); and third, to "bring theory and practice together to save petrology from the reproach of being an academic study of little use in life." Prof. Shand has produced an admirably stimulating work, but we are not sure he has achieved the above aims. The classification of igneous rocks he has devised is based upon a sound plan, just as Esperanto is, but it may fail for the same reason that artificial languages fail, because it is too clean-cut and logical, and has not grown up with the science. He does not clean up the jungle of rock names; on the contrary, he adds to the undergrowth a number of new terms with the aid of the overworked prefixes and suffixes, per-, sub-, meta-, -oid, and the like.

The most successful part of the book, indeed, is not the classification, but the exposition of physico-chemical principles as applied to the crystallisation of natural magmas. This occupies the first five chapters, entitled "Eruptive or Igneous Rocks," "The Fixed Constituents of Igneous Rocks," "The Fugitive Constituents of Magmas," "The Magma and its Walls," and "The Freezing of

the Magma." Chaps. vi. to xiv. discuss classification in general, Prof. Shand's own system and nomenclature, and descriptions of igneous rocks in relation to this system. The book concludes with chapters on meteorites and eruptive ore deposits.

In describing the rocks assigned to various divisions of his classification, Prof. Shand has made a valuable survey of recent igneous petrography. The description of each main group is appropriately prefaced with a section on its geology, a feature often neglected in petrographical treatises. This book forms a very notable addition to petrological literature.

Second Experimental Report to the Atmospheric Corrosion Research Committee (British Non-Ferrous Metals Research Association): a Discussion held by the Faraday Society, 30th March 1927. By Dr. W. H. J. Vernon. Pp. ii + 113-204. (London: The Faraday Society, 1927.) 8s. 6d. net.

It is quite impossible in a short survey to give any real indication of the amount of valuable information contained in this report. Systematic investigations on the indoor atmospheric corrosion of copper, brass, aluminium, lead, and zinc are recorded, whilst in the case of copper, brass, and zinc, outdoor exposure has also been examined.

Weight increment-time curves are given, and the value of the protective coating formed in some cases is revealed. The effect of oxide films on brass upon its subsequent corrosion in a polluted atmosphere is indicated. Exposure of zinc over a period of three years shows that, in an indoor unsaturated atmosphere, a straight line relationship holds except for the first twenty-four hours.

An outstanding feature of the report is the portion giving detailed analyses of the outdoor corrosion products, the proportions of sulphate, sulphide, carbonate, and oxides being determined. The corrosion product is shown to be less easily eroded in some cases than others. The deposit on copper is the most tenacious and that on zinc the least. In the latter case some 90 per cent. of the deposit is removed by weathering during outdoor exposure.

The influence of alloying impurities in the metals is not very appreciable during indoor exposure, but in certain cases it is very pronounced during outdoor exposure; thus arsenical copper and, to a lesser extent, copper containing nickel, is more resistant to attack than H.C. copper.

Some laboratory experiments upon the atmospheric corrosion of iron are included in the report. Solid suspended impurities in the atmosphere are shown to be responsible for the corrosion of iron in an atmosphere of low relative humidity. Screening the metal by preventing the access of such solid particles inhibits the corrosion. The influence of rust upon the subsequent corrosion of iron in an unsaturated atmosphere is also demonstrated.

In conclusion; the report embodies the results of a research covering a wide range and carried out with a patience and accuracy which can only be described as classical.

W. S. PATTERSON.