

OUR BOOK SHELF.

Minerals and Metals: a Reference-book [of] Useful Data and Tables of Information. A condensed compilation from various sources by J. G. Goessel. Pp. xiii+287. (New York: John Wiley and Sons; London: Chapman and Hall, Ltd., 1906.) Price 12s. 6d. net.

THE scope of this pocket-book of reference may be best indicated by quoting from the title-page:—"Legal, customary, and scientific measurements; geological classification; rock composition; chemistry, dry and wet assay; mineralogy; metallurgy; metal founding and plating; hydraulics; water purification; mineral oils; gases; explosives; strength of materials, including woods, their properties, adaptability, and preservation; pigments, gums, and solvents for paints and varnishes; miscellaneous data and receipts." It will thus be seen that the variety of subjects treated is much more extensive than is indicated by the main title, "Minerals and Metals"; in fact, there is, in a handy form, a vast amount of information which may be of use to mining engineers and others.

Books of this kind should, of course, be free from ambiguities and errors, but in the portions which we have specially tested, namely, those dealing with minerals and precious stones, numerous errors have been detected; quite extraordinary chemical formulæ are given for even common minerals, whilst in the spelling of names there are many misprints.

The book is clearly printed, though not on thin paper, and is well bound in limp leather, with rounded corners and gilt edges.

Practical Exercises in Chemistry. By G. C. Donington, Senior Science Master in the Leeds Grammar School. Pp. x+251. (London: Macmillan and Co., Ltd., 1906.) Price 2s. 6d.

MR. DONINGTON's little book derives special interest from the fact that whilst he is a pupil, and a very grateful one, of Prof. Armstrong, he has found himself compelled by experience as a science master in a school (and one in which no specially unfavourable conditions prevail) to depart from the practice of leaving the pupils without a text-book during their practical lessons. This experience is, we believe, by no means uncommon, and it is an advantage that the "felt want" should be supplied by one who naturally strives to conserve as much as he can of the merits of the no text-book system. In this object the author has, we think, had good success, and his book is likely to take high rank among those which of late years have been written to set forth an elementary course of chemistry for those secondary schools where there is a desire to teach scientific method through the medium of this science.

Paradoxes of Nature and Science. By Dr. W. Hampson. Pp. xv+304. (London: Cassell and Co., Ltd., 1906.) Price 6s.

DR. HAMPSON proposes to explain to the uninitiated certain scientific "paradoxes." The only possible "explanation" of such paradoxes is attained by showing that the abnormal phenomena are determined by precisely the same laws as the normal phenomena; to "explain" why a balloon rises it is necessary to propound the general principles of gravitational mechanics and to show that it rises for the same reason as a stone falls. But Dr. Hampson eschews general principles. His "explanations" are appeals to prejudices as unscientific as those which gave rise to the appearance of a paradox. Even when his arguments are sound they must convey to a reader a wholly untrue idea of scientific method.

But they are not always sound. Sometimes he wanders far out of his depth, as, for instance, when he seeks to solve the old logical contradiction of Achilles and the tortoise by a reference to the atomic structure of matter. He would have done well to restrain his jeers at mathematicians until he had gained some acquaintance with the elements of their science.

Seasonal Botany, a Supplementary Text-book. By M. O'Brien Harris. Pp. 56. (London: Blackie and Son, Ltd., 1906.) Price 8d.

PROBABLY most teaching botanists looking back upon their early experiences when they first found it necessary to draft a syllabus of instruction can recall an attempt to prepare a course adapted to the round of the seasons. In the case of pure observational study such a course is profitable, but it is the general experience that a seasonal adjustment does not accord with the best morphological or physiological sequence, and this opinion is not modified by the arguments or scheme put forward in the present instance.

The seasonal syllabus given in the form of a tabulated scheme, and a number of physiological experiments on very usual lines, form the chief contents of the book.

French Readings in Science. Selections from Scientific and Technical Writers, arranged and edited for the Use of Students. By de V. Payen-Payne. Pp. vii+230. (London: Blackie and Son, Ltd., 1906.) Price 3s. 6d.

IGNORANCE of either French or German is a serious handicap to the scientific worker. University examining bodies are recognising this need, and some, such as the University of London, demand from candidates for science degrees a knowledge of these languages sufficient to enable them to translate with fair ease and accuracy. In making his selection of passages from scientific treatises, Mr. de Payen-Payne has included some extracts for their modernity, and others because of their association with great names in science. The compiler is catholic in his tastes, and his work should provide students with just the practice they require.

LETTERS TO THE EDITOR.

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Radium and Geology.

THOSE interested in this subject should refer to the paper which appears in the last issue of the *Philosophical Magazine*, by Mr. A. S. Eve, on the ionisation of the atmosphere over the ocean. Mr. Eve cites observations, and adds others of his own, showing that the ionisation over the ocean is much the same as over the land, and points out the difficulty of explaining this in view of the small content of radium in sea-water compared with that in ordinary rocks. Possessed as I am with the view that extra-terrestrial radio-active dust reaching the earth may account for much of the radium of soils, sediments, and rocks, I cannot but think that Mr. Eve's difficulty may find explanation in an extra-terrestrial source of supply.

Mr. Eve also gives some new determinations of the radium in sea-water, and arrives at results which considerably accentuate the discrepancy which I referred to