OUR BOOK SHELF.

On the Location and Examination of Magnetic Ore Deposits by Magnetometric Measurements. By Eugene Haanel. Pp. ix+132 and plates. (Ottawa, Canada: Department of the Interior, 1904.)

DR. HAANEL, Superintendent of Mines to the Canadian Government, read a paper under the above title at the annual meeting of the Canadian Mining Institute in the spring of last year, which is now published in book form by direction of the Minister of the Interior.

The work is substantially an account of the Swedish method of locating by means of specially constructed magnetometers the presence of magnetic ore deposits, and of determining their strike, direction of dip, and depth below the surface.

Von Wrede, as far back as 1843, indicated the value of the magnetometer in determining the location and extent of such deposits, but the first to turn the suggestion to practical account was Robert Thalén, who, in 1879, published his work "On the Examination of Iron Ore Deposits by Magnetic Measurements." Since that time the method has been greatly developed, and convenient field instruments—the Thalén-Tiberg magnetometer and the Thomson-Thalén magnetometer—are now placed by Swedish mechanicians at the disposal of mining experts. As yet, however, the knowledge and use of these instruments have been almost exclusively confined to Sweden, although scattered references to their employment are to be met with in English mining and scientific literature.

Rücker and Thorpe, in their great magnetic survey of the British Isles, showed the value of the magnetometer in determining the presence and the contour of underground magnetic material, and they were the first to direct the attention of English geologists to the importance of this instrument in geological inquiry.

Dr. Haanel has rendered the mining profession a great service by putting together a concise account of the Swedish method and practice. By the help of this manual a properly trained mining engineer would have comparatively little difficulty in mastering the theory of the field instruments and in acquiring familiarity with their use.

Whether, however, the greater number of English mining engineers are sufficiently well trained to follow the mathematical treatment of the theory, as set forth by Dr. Haanel, may be open to doubt.

Spokil, an International Language. By Dr. Ad. Nicolas. Pp. viii+272. (Paris: A. Maloine, 1904.)

THIS work consists of eight pages of preface, of eighteen pages of "grammar," of forty-four pages of exercises, and of 203 pages of a "Spokil"-French dictionary. The language consists of two kinds of words; those borrowed from existing languages with slight modifications and those coined on a system. The system is ingenious, but, in the opinion of the reviewer, quite unworkable. To take an instance:—To the letter "P" is attached various ideas; for example, those of motion, the foot, weight and the preposition "after." Thus we find Pimo, heavy; Pino, light; for the letter n contradicts the letter m; Peme, to lead; Pene, to come; the idea of "leading" being antithetical to that of "coming"; Pleal, wood; and Plealta, absence of wood; the idea of absence or default arising from the affix "ta"; and so on. As in Esperanto, different parts of speech are distinguished by different vowels, as, for example, Arta, dirt, or a dirty object; Arte, to dirty; Arto, dirty; and Artu, dirtily. The language is in what may be termed the agglutinative stage; for we have Apafil, derived from Ap, to lead, af, off, and il, agent; the whole word means an abductor. It may interest chemists to know that the future name of butylene is to be eul vokilo; for e stands for carbon, u for hydrogen, l is terminative; vo means four, ki eight, and lo is the termination of a noun (?). English plurals in s are borrowed; likewise our classification of genders. The definite and indefinite articles are retained in the singular and plural, the latter in the plural in the sense of "the ones"; and the French "du" and "des" also appear in both numbers.

Enough has probably been said to give an idea of the character of the grammar; in conclusion, we will show what is "to serve as a model to future speakers"; it is "Zu erve di teil da les espel zoio." We do not think that that will be the fate of this artificial language. And it may be confidently supposed that the future universal language will not be invented by a Frenchman. There have been a good many attempts; and they all tend far too much towards inflection. Probably the most perfect languages from that point of view are those of the native Australians, who possess singular, dual, trial and plural, who have inclusive "we" and "they," as well as exclusive, and who indicate in half-a-dozen ways the particular position of the object designated by the word "that." The idea of an international language is an admirable one, and it will no doubt be realised, but the end is not yet come, and it is certainly not "Spokil."

The Non-Metallic Minerals: Their Occurrence and Uses. By George P. Merrill. Pp. xi+414. (New York: John Wiley and Sons, 1904; London: Chapman and Hall, Ltd.) Price 17*s.* net.

THE author of this valuable work is head curator of geology in the United States National Museum, and in 1901 he issued a scholarly guide to the study of the collections in the section of applied geology. Upon this guide he has founded the present work in which he brings together the widely-scattered notes and references relating to the occurrence and use of minerals of value other than as ores. Much of the information he gives is quite new, particularly in regard to the occurrence of American minerals; and the value of the work is greatly enhanced by the well-selected photographs of quarries and of striking specimens. Among these the views of the big vein between the peridotite and gneiss at Corundum Hill, North Carolina; of the quarry of lithographic limestone at Solenhofen, Bavaria; of large spodumene crystals in granitic rock, Etta Mine, South Dakota; and of quarries of bituminous sandstone in California and in Indian territory, are of special interest.

The scheme of classification adopted is as follows:—(1) Elements, (2) sulphides and arsenides, (3) halides, (4) oxides, (5) carbonates, (6) silicates, (7) niobates, tantalates and tungstates, (8) phosphates and vanadates, (9) nitrates, (10) borates, (11) uranates, (12) sulphates, (13) hydrocarbon compounds, and (14) miscellaneous, including grindstones, pumice, moulding sand, road-making materials, &c. Gems, building stones and marbles are not included in the scheme. Under each species will be found an excellent bibliography, and much interesting comment and information regarding its uses. For example, we are told that at Oberstein, on the Nahe, schoolboys' marbles are made in great quantities from limestone. The stone is broken into square blocks, which are thrown into a mill consisting of a flat horizontally revolving stone with numerous concentric grooves on its surface. A block of oak, of the same diameter as the stone and resting on the cubes, is then made to revolve over them in a current of water, the cubes being thus reduced to the spherical form in about fifteen minutes.

Of lithographic stone a series of analyses are given