for the use of miners, prospectors and business men. From its preface we learn that "the work is intended merely as a book of reference to be used by the practising miner or man of business, for whom especially it is intended, as well as by the geologist, metallurgist or mineralogist in so far as it may serve their purposes. * * * The original intention of the author was to give, in as simple and concise a form as possible, a description of the nature of only the more important of those mineral substances, more frequently referred to as ores or compounds, *which possess commercial value*, indicating at the same time means by which they could be identified, and referring very briefly to some of the principal economic uses to which they are put. Upon reflection, however, it seemed advisable* *to insert also a description of a few other minerals which are very frequently met with as common veinstones or as rock constituents, although they may possess in themselves no commercial value." In short, the book is a work on determinative mineralogy in which, however, only the most important compounds are discussed. There is nothing noteworthy in the treatment of its subject-matter, unless it be the arrangement of the minerals according to their metallic constituent. Whether this manner of arrangement is as good as one based on hardness, density or some other physical property is at least doubtful. Indeed, it is probable the book throughout is too technical for miners, prospectors and business men, though it may easily be of assistance to metallurgists and geologists, more because of its convenient form than because of anything of especial value in its contents.

The first part of the volume contains a list of atomic weights, statements of the characteristics of the crystal systems, the scale of hardness and brief descriptions of the most important blow-pipe reactions and wet tests for the different chemical elements.

The second part is made up exclusively of tables. The minerals of each metal are listed alphabetically and opposite each is given its chemical composition, a statement of its general character and its occurrence, a description of its behavior toward reagents, its color, lustre, etc., and, finally, an account of its uses. In three appendices following the lists of minerals is a condensed form of Brush's classification of minerals according to lustre and fusibility, a list of simple tests for the most important chemical elements and a brief description of the simpler processes of assaying.

The book is carefully compiled and is well printed. It is accurate and therefore trustworthy. Although, as has already been stated, it contains no novel features, it will serve as a convenient companion, because of its handy size, to any one capable of using it. It is the most compact determinative mineralogy in the market.

W. S. BAYLEY.

COLBY UNIVERSITY.

SCIENTIFIC JOURNALS.

The Journal of Geology for February–March, 1898 (Vol. VI., No. 2), contains the following papers: 'Brazilian Evidences on the Genesis of the Diamond,' by Orville A. Derby. The author endeavors to draw a parallel between the geology of the South African Diamonds and of those of Brazil. Three Brazilian localities in Minas Geraes are selected, viz., San Joâo da Chapada, Grâo Mogol and Agua Suja. At the first it is uncertain whether the diamonds are derived from phyllites or from contact zones in the phyllites next intrusions of pegmatites, or from the pegmatites. In the second locality they seem to be allothigenic minerals in metamorphosed clastics. At the third place there are basic intruded rocks, more or less analogous to those at Kimberley, but it is still an open question whether the diamonds have been derived from them or from the neighboring schists. Excessive weathering and the present abandoned condition of the Brazilian mines mask the evidence. 'The Glaciation of North Central Canada,' J. P. Tyrrell. The author describes the three successive glaciers of this portion of Canada, viz: 1st, the Cordilleran, that spread from the Cordilleras eastward and then retreated; 2d, the Keewatin, that originated northwest of Hudson Bay and spread north, west, south, and to some degree east, and withdrew; 3d, the Labradorean, that began in central Labrador, spread in all directions, but especially southward, and on the northwest lapped

the Keewatin territory. The relations are illustrated by maps. 'The Use of Local Names in Geology,' C. R. Keyes. The paper is in the main a justification of the recent introduction and spread of local formational names. 'The Weathered Zone (Sangamon) between the Iowan Loess and Illinoian Till Sheet,' Frank Leverett. After an introduction describing the general relationships of the subdivisions of the glacial deposits concerned, the character, distribution and interpretation of the zone of weathered materials, called the Sangamon, are taken up. 'Studies in the Driftless Region of Wisconsin, II,' G. H. Squire. Several small areas are described in detail with sketches, and their topographical forms and superficial deposits are interpreted. 'Fucoids or Coprolites,' J. A. Udden. Fossils closely resembling the *Spirophyton*, of New York, are found in the Middle Devonian along the Mississippi River in Illinois and Iowa. Instead of fucoids, they are interpreted as coprolites from some mud-eating animals, such as sea-cucumbers. 'Zirkelite a Question of Priority,' M. E. Wadsworth. The author introduces, as in other current journals, his claims to priority in the use of the name zirkelite. Significant comments are added by one of the editors of the *Journal of Geology*. Editorials and reviews close the number.

THE March number of the *Bulletin* of the American Mathematical Society contains the following papers: 'The Relations of Analysis and Mathematical Physics,' by Professor H. Poincaré, translated by Mr. C. J. Keyser; 'The Roots of Polynomials which Satisfy Certain Linear Differential Equations of the Second Order,' by Professor Maxime Bôcher; 'Inflexional Lines, Triplets and Triangles Associated with the Plane Cubic Curve,' by Professor Henry S. White; 'On the Intersections of Plane Curves,' by Professor Charlotte Angas Scott; 'Euler's Use of i to Represent an Imaginary,' by Professor W. W. Beman; 'Note on the Roots of Bessel's Functions,' by Dr. M. B. Porter; 'Shorter Notices;' 'Notes;' and 'New Publications.'

The April *Bulletin* contains an account of the February Meeting of the Society, by the Secretary; 'The Theorems of Oscillation of Sturm and Klein (First Paper),' by Professor Maxime Bôcher; 'Some Examples of Differential Invariants,' by Mr. Charles L. Bouton; 'On an Extension of Sylow's Theorem,' by Dr. G. A. Miller; 'Note on the Tetrahedroid,' by Dr. J. I. Hutchinson; 'Note on Integrating Factors,' by Mr. Paul Saurel; 'Early History of Galois' Theory of Equations,' by Professor James Pierpont; 'Love's Theoretical Mechanics,' by Mr. W. H. Macaulay; 'Schell's Tortuous Curves,' by Professor Alexander Ziwet; 'Page's Differential Equations,' by Professor Edgar Odell Lovett; 'Shorter Notices;' 'Notes;' and 'New Publications.'

SOCIETIES AND ACADEMIES.

AMERICAN MATHEMATICAL SOCIETY.

A REGULAR meeting of the American Mathematical Society was held at Columbia University, New York City, on Saturday, April 30th. As has now become the rule, the meeting extended through a morning and an afternoon session. In the interval a pleasant opportunity is offered to those present to lunch together in the restaurant on the grounds of the University. Thirty persons were in attendance, and thirteen papers were read, both numbers much exceeding the record of the same season in previous years. At the meeting of the Council seven persons were elected to membership in the Society, and four applications for membership were received. The By-Laws of the Society were amended to provide for life membership, the dues being fixed at $50, exclusive of initiation fee.

The following is a list of the papers presented:

MORNING SESSION.

1. PROFESSOR W. F. OSGOOD: 'Example of a single-valued function with natural boundary, whose inverse is also single-valued.'

2. MR. J. K. WHITTEMORE: 'A proof of the theorem:

$$\frac{\partial^2 f(x, y)}{\partial x \partial y} = \frac{\partial^2 f(x, y)}{\partial y \partial x},$$

3. MR. H. E. HAWKES: 'The limitations of Greek arithmetic.'

4. PROFESSOR H. S. WHITE: 'The construc-