

The story since 1820 is told briefly, as that is given in detail beyond.

The main portion of the work contains chapters on cosmical, physiographical, dynamical and stratigraphical geology, petrography and paleontology, which are not mere narratives, not mere synopses of individual contributions: they are true histories; the opinions of investigators are given, their value discussed and their bearing upon the advancement of the science determined. The reader may detect here and there evidence of positive bias, or he may feel that the decision is inexact, but in every instance he must recognize the author's effort to maintain a judicial attitude—and it may be said that the effort has been so far successful as to place the work in a class by itself.

The statement has been made frequently that Germans are inclined to ignore the work of English-speaking peoples, but there is no trace of any such inclination in this work. Professor Zittel has been a faithful student of British and American contributions, and the references to such titles compare in number very favorably with those to works in German or French. This history will prove more than serviceable to the geologist who finds the daily accumulation of literature bearing upon his own immediate line of work so burdensome as to prevent him from keeping track of advance along other lines.

Mrs. Ogilvie-Gordon, the translator, has done her work well, for hardly a trace of German idioms remains. The text is enriched with brief biographical notices of deceased geologists and with thirteen portraits. The index of authors is complete and in a measure replaces the bibliography, which the British publisher felt compelled to omit. The index of subjects is less satisfactory, being much too brief.

JOHN J. STEVENSON.

SCIENTIFIC JOURNALS AND ARTICLES.

THE April number (Vol. III., No 2) of the *Transactions of the American Mathematical Society* contains the following papers: 'On the Small Divisors in the Lunar Theory,' by E. W. Brown; 'On the Holomorphisms of a

Group,' by J. W. Young; 'A Simple Non-Desarguesian Plane Geometry,' by F. R. Moulton; 'On the Real Solutions of Two Linear Homogeneous Differential Equations of the First Order,' by M. Bôcher; 'On a Recent Method for Dealing with the Intersections of Plane Curves,' by C. A. Scott; 'A Complete Set of Postulates for the Theory of Absolute Continuous Magnitude,' by E. V. Huntington; 'Complete Sets of Postulates for the Theories of Positive Integral and of Positive Rational Numbers,' by E. V. Huntington.

THE April number (Vol. VIII., No. 7) of the *Bulletin of the American Mathematical Society* contains the following articles: 'The February Meeting of the American Mathematical Society,' by E. Kasner; 'Note on the Transformation of a Group into its Canonical Form,' by S. E. Slocum; 'Some Applications of Green's Theorem in One Dimension,' by O. Dunkel; 'On the Forms of Quintic Scrolls,' by V. Snyder; 'Simplified Definition of a Group,' by E. V. Huntington; 'Note on Isotropic Congruences,' by L. P. Eisenhart; 'Kronecker's Lectures on the Theory of Numbers,' by G. A. Miller; 'Notes' and 'New Publications.'

THE *Botanical Gazette* for March contains the following: Professor Frederick C. Newcombe, of the University of Michigan, publishes the first instalment of a paper upon the 'Geotropism of Roots,' the result of a number of years of investigation. His results will be noted upon the completion of the paper. Miss Alice Eastwood, of the California Academy of Sciences, continues her descriptions of an interesting collection of plants from Nome City, Alaska, describing several new species and completing descriptions of many species already poorly known. John Gallatin Hall has published some interesting results of an embryological study of *Limnocharis emarginata*, a South American member of the Alismaceæ. Some of the interesting features are as follows: The tapetal cell of the ovule is cut off, but no division wall is formed, the cell disappearing early; the antipodal cell following the first division of the megaspore nucleus remains undivided, so that there is no antip-

odal group or lower polar nucleus; the upper polar nucleus migrates to the antipodal end of the sac and there divides, one daughter-cell remaining in that position and becoming cut off by a wall across the sac, the other moving back to the egg and eventually forming a considerable mass of endosperm; fertilization takes place very soon after pollination, material killed within eighteen hours after pollination showing the embryo in a two-celled stage; in addition to the ordinary development of a single embryo, polyembryony may occur, as in *Erythronium* and *Tulipa*, by the division of the suspensor cell to form an extensive embryogenic mass of tissue. C. L. Shear, of the Department of Agriculture, discusses generic nomenclature, bringing up the difficulties connected with determining generic names among certain fungi. He does not offer a set of rules, but reaches the conviction that the so-called 'type-method' is both desirable and practicable. He urges the importance of selecting a starting point for genera, definite provision being made for the treatment of genera having no binomial species referred to them at the time of their original description. W. W. Ashe, of Raleigh, North Carolina, describes new species of *Fraxinus*, *Tilia* and *Crataegus*; while Newton B. Pierce, of the Department of Agriculture, describes as a new species (*Alternaria citri*) the fungus disease of navel oranges that has attracted attention in California for the past eight or ten years, and which is popularly known as 'black rot of oranges.'

IN *Popular Astronomy* for April, Percival Lowell, of Boston, gives an 'Explanation of the Supposed Signals from Mars of December 7 and 8, 1900.' Many will recall that it was then reported that Mars had been signaling the earth; that lights had suddenly shone out brightly, and then vanished. The explanation is that this misrepresentation came from a telegram sent to Mr. Lowell as to a projection then observed on the surface of Mars, similar to those more often seen on the moon. From a study of the projections on Mars, the writer believes that these are due to clouds floating in the air rather than to mountains on the surface.

George C. Comstock writes of the 'Motion of Comets when far from the Sun.' He speaks of comets as they are commonly considered, as mere visitors who come from the region of the fixed stars, and after a temporary sojourn here return. An interesting popular article on the 'Zodiacal Light' is written by Arthur K. Bartlett, of Battle Creek. This light which is seen at this time in the year on any clear moonless night after sunset might be mistaken for the aurora borealis by those unacquainted with astronomy, were it not for its position and form. Its form is that of a cone or pyramid having its top rounded, and its base directed toward the sun, and with a light like that of the Milky Way. Mr. Bartlett speaks of the various theories to which this illumination has been, and is, attributed, inclining towards the one most generally accepted, though not established, viz., that of meteors combining in unknown millions, reflecting to our eyes the peculiar light in question, borrowed from the sun, around which they revolve probably as do the planets. The usual amount of space is given to current news and notes of comets, asteroids, planets and variable stars, and to various short articles.

SOCIETIES AND ACADEMIES.

NATIONAL ACADEMY OF SCIENCES.

THE annual stated session of the Academy was held in Washington, D. C., April 15 to 17, inclusive.

President Alexander Agassiz presided at the meetings, which were attended by the following members: Messrs. Abbe, Abbot, Agassiz, Allen, Becker, Billings, Boas, Boss, Brewer, Brooks, Cattell, C. F. Chandler, S. C. Chandler, Chittenden, C. B. Comstock, Crafts, Dall, Emmons, Farlow, Gilbert, Gill, Hague, Hall, G. W. Hill, Langley, Minot, S. W. Mitchell, Moore, Morley, Newcomb, Nichols, Osborn, Peirce, Penfield, Pickering, Prudden, Remsen, Richards, Sellers, E. F. Smith, Walcott, Welch, White, and Woodward.

Most of the time during the sessions was devoted to routine business, hearing reports from the officers of the Academy, chairmen of