*SCIENTIFIC JOURNALS AND ARTICLES*

THE July number (volume 11, number 3) of the *Transactions of the American Mathematical Society* contains the following papers:

Eduard Study: "Die natürlichen Gleichungen der analytischen Curven im Euklidischen Raume."

J. W. Young: "Two-dimensional chains and the associated collineations."

L. I. Neikirk: "Groups of rational transformations in a general field."

P. F. Smith: "On osculating element-bands associated with loci of surface-elements."

G. A. Bliss and Max Mason: "Fields of extremals in space."

G. A. Miller: "Groups generated by two operators $s_1$, $s_2$ satisfying the equation $s_1 s_2^2 = s_2 s_1^2$."

L. P. Eisenhart: "Congruences of the elliptic type."

THE July number (volume 16, number 10) of the *Bulletin of the American Mathematical Society* contains: "A theorem on the analytic extension of power series," by W. B. Ford; "Extensions of two theorems due to Cauchy," by G. A. Miller; "Existence theorems for certain unsymmetric kernels," by Anna J. Pell; Review of Baker's Multiply Periodic Functions, by J. I. Hutchinson; Review of Bôcher's Higher Algebra (English and German editions), by Arthur Ranum; Review of Coolidge's Non-Euclidean Geometry, by Joseph Lipke; Review of Wieleitner's Spezielle Ebene Kurven, by E. G. Bill; Shorter Notices: Borel-Stäckel's Elemente der Mathematik, Band II.: Geometrie, by C. H. Sisam; Carus's Foundations of Mathematics, by F. W. Owens; Cox's Mechanics, by W. H. Jackson; Abraham's Theorie der Elektrizitat, volume 2, Elektromagnetische Theorie der Strahlung, second edition, by E. B. Wilson; "Notes"; "New Publications"; "Nineteenth Annual List of Papers read before the Society and subsequently published"; Index of volume.

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*SPECIAL ARTICLES*

THE COMPOSITION OF SOME MINNESOTA ROCKS AND MINERALS

THE writer after spending two summers in the field for the Geological and Natural History Survey of Minnesota, has been analyzing and gathering data regarding the composition of typical materials, and some interesting variations. The detail of field observations, the petrographic descriptions and the less important types are reserved for future possible bulletins of the survey, but three lines of investigation have given results of general interest: (1) analyses of typical acid and basic igneous rocks, (2) mineral analyses, (3) tests for copper in the Keweenawan lavas.

1. Rock analyses are available from central and eastern Minnesota.[1] In the central area excellent building and monumental stone is obtained from two or three types of granite, which occur in laccoliths of considerable size, in Kewatin schists, and are probably themselves of that age. There are a few masses of gabbro, and the granites are intersected by many diabase dikes and a smaller number of quartz-diabase and quartz-porphyry dikes. In the eastern area are the basic Keweenawan lavas, continuous with the copper-bearing rocks of Michigan. Most of the lavas in Minnesota can be classed in three types of diabase, which show quite distinct field appearance and are mineralogically three points in a series, varying from a mottled rock high in augite to one with conchoidal fracture low in augite, the other constituents showing minor changes.

The attempt has been made to produce analyses of much greater completeness and somewhat greater accuracy than those heretofore available, so as to estimate the approximate composition of the fundamental magma existent in this petrographic province. Broadly considered, these two districts are the southwestern extreme of a long series of outcrops of igneous material extending northeast to Labrador and northwest to McKenzie. They are thus near the point of a great V. The Wisconsin igneous rocks may be assigned a similar position farther east. South and west, some few igneous materials outcrop on the Minnesota River, but then there is a break to the Ozark Mountains and the Black Hills. Northward the outcrops are much more abundant.

[1] Previous work is mostly referred to in the state survey reports.