

feature. Commendable also is the effort throughout to render clear the *meaning* and *limitations* of cardinal theorems. We doubt, however, whether the vexed question whether a variable may attain its limit is, in spirit, quite settled by the ingenious example given on page 20.

The Boston Colloquium consists of three sets of lectures: three by Professor White on 'Linear Systems of Curves on Algebraic Surfaces'; three by Professor Woods on 'Forms of Non-Euclidean Space'; and six by Professor E. B. Van Vleck on 'Selected Topics in the Theory of Divergent Series and Continued Fractions.' The lecturers being all of them former pupils of Professor John Monroe Van Vleck recently retired from the chair of mathematics and astronomy at Wesleyan University, where he had served for a period of fifty years, this volume of lectures is inscribed to him. Each set of the lectures affords a compendious account of the advanced thought in its field, together with indications of existing problems and of the directions that further immediate developments will probably follow. The lectures being of highly technical character and being addressed to specialists, any adequate account of them must be reserved for journals specifically devoted to mathematics.

CASSIUS J. KEYSER.

COLUMBIA UNIVERSITY.

Neudrucke von Schriften und Karten über Meteorologie und Erdmagnetismus herausgegeben von Professor Dr. G. HELLMANN. No. 15 (Schlussheft). Denkmäler Mittelalterlicher Meteorologie. Berlin, A. Asher & Co. 1904. 4to. 46 pp. introduction + 270 pp. reprints + 12 pp. addenda and errata to previous numbers.

The publication of this volume, which is the fifteenth and final one of the series, affords an opportunity to congratulate Dr. Hellmann on the completion of so admirable a bibliographical work, which offers to students the advantage of reading in their original form many epoch-making papers relating to meteorology and terrestrial magnetism. Readers of SCIENCE are familiar with the nature of these reprints from the reviews that have appeared

in Vol. I., p. 302; Vol. IX., p. 910; Vol. XIII., p. 821; and Vol. XVI., p. 352. Five of the earlier volumes demonstrated that meteorology was actively cultivated in the fourteenth, fifteenth and sixteenth centuries, but in the present issue it is seen that much earlier, and during the entire middle ages, meteorological questions were continually discussed. As illustrations there are given, in part or *in extenso*, 26 writings, dating from the seventh to the fourteenth centuries, inclusive, among them the following examples of famous authors: 'De Natura Rerum,' by Isidorus Hispalensis and Beda Venerabilis; two papers by Albertus Magnus; Roger Bacon's 'Opus Majus,' and 'De Proprietatibus Rerum,' by Bartholomæus Anglicus. Most of the treatises are taken from printed books, but a few are printed from manuscripts for the first time. Certain tracts that were written in little-known languages have been translated into German and so are made accessible to a wider circle of readers, but those in early French, Italian and Dutch appear in the original tongues. It is hardly necessary to say that the facsimile reproductions have been made with the same care that characterized Dr. Hellmann's previous reprints, for the accuracy of which the writer can vouch, having compared several with the originals in his own possession. Their value is much enhanced by the explanatory and bibliographical notes which accompany each.

One or two copies of this last volume have been placed on sale at the Blue Hill Observatory, Hyde Park, Mass., and will be sent on receipt of the publisher's price, viz., 28 Marks, or \$7. In conclusion it may be stated that at least four of the earlier volumes are already out of print and command high prices.

A. LAWRENCE ROTCH.

SCIENTIFIC JOURNALS AND ARTICLES.

THE last number of *The American Journal of Mathematics* contains the following articles:

G. W. HILL: 'Deduction of the Power Series Representing a Function from Special Values of the Latter.'

SAUL EPSTEIN AND HEMAN BURR LEONARD: 'On the Definition of Reducible Hypercomplex Number Systems.'

PETER FIELD: 'Quintic Curves for which $P=1$.'

C. L. E. MOORE: 'Classification of the Surfaces of Singularities of the Quadratic Spherical Complex.'

LEONARD EUGENE DICKSON: 'Subgroups of Order a Power of p in the General and Special m -ary Linear Homogeneous Groups in the $GF[p^n]$.'

THE introductory article in the May number of the *American Geologist* is a 'Biographical Sketch,' with portrait, of Benjamin West Frazer by Persifor Frazer. This is followed by Professor N. H. Winchell's article entitled 'Deep Wells as a Source of Water Supply for Minneapolis.' This paper, which is accompanied by several plates, is a presentation of the ever-interesting problem of the water supply of cities. Miss Owen discusses the 'Evidence on the Deposition of Loess.' R. R. Rowley contributes a paper on 'Missouri Paleontology,' which is illustrated by one plate of figures and three new species are described. The concluding article is by Professor Warren Upham on 'Fjords and Hanging Valleys.'

The *Museums Journal* of Great Britain for May notes that the principal subject for discussion at the coming meeting of the Museums' Association will be 'The Relation of Provincial Museums to National Institutions,' a topic to which American members can contribute little, as here there are no relations, save those of good feeling, each museum being independent of others. Under the head of 'A Notable Gift' is recorded the presentation to the British Museum of the reproduction of the skeleton of *Diplodocus carnegiei*, in the museum at Pittsburgh. Under 'Museum Thefts' is noticed the stealing of some Nelson relics from the Liverpool Museum, primarily due to the fact that a case was left unlocked for some months. Apparently English museums do not suffer from the petty thefts of 'relic seekers' who, in our own museums, take articles of little intrinsic but considerable scientific value, thus doing very considerable damage.

The *American Museum Journal* for April is called the *Brontosaurus* number, its principal topic being 'The Mounted Skeleton of *Brontosaurus*' recently placed on exhibition. Dr. Matthew tells how this skeleton was obtained, transported and mounted, and discusses the habits and habitat of this enormous brute as indicated by the bones. The two new bird groups, the flamingos and the bird life of the San Joaquin valley are also described and illustrated by full-page plates.

The *Popular Science Monthly* contains the following articles:

July.

PROFESSOR W. E. CASTLE: 'Recent Discoveries in Heredity and their Bearing on Animal Breeding.'

PROFESSOR J. LAWRENCE LAUGHLIN: 'Present Monetary Problems.'

H. TAYLOR EDWARDS: 'The Vegetable Fibers of the Philippine Islands.'

DR. GUSTAVE MICHAUD: 'The Climate of the Central American Plateau.'

PROFESSOR A. E. DOLBEAR: 'The Science Problems of the Twentieth Century.'

DR. HENRY RUTGERS MARSHALL: 'Human and other Forms of Consciousness.'

PROFESSOR ARTHUR A. NOYES: 'The Preparation and Properties of Colloidal Mixtures.'

August.

PROFESSOR CHARLES DILLON PERRINE: 'An Eclipse Observer's Experiences in Sumatra.'

PROFESSOR JOHN M. COULTER: 'Public Interest in Research.'

JOHN F. CARGILL: 'The Value of Old Age.'

PROFESSOR GEORGE T. LADD: 'A Suggestive Case of Nerve-anastomosis.'

PROFESSOR HUGO DE VRIES: 'A Visit to Luther Burbank.'

PRESIDENT WALTER NGON FONG: 'Some Phases of the Educational Problem in China.'

PRESIDENT KENYON L. BUTTERFIELD: 'The Social Phase of Agricultural Education.'

DR. W. H. MAXWELL: 'Education for Efficiency.' 'President Roosevelt's Address before the National Educational Association.'

SOCIETIES AND ACADEMIES.

THE OREGON STATE ACADEMY OF SCIENCES.

THE need of some general scientific organization has for a number of years been keenly felt by a number of teachers of science and