

problem is presented in a somewhat polemical reply by Buckman, entitled 'River Development' (*Geol. Mag.*, Vol. IX., 1902, pp. 366-375).

DISSECTION OF LACCOLITHS.

AN ingenious use of physiographic methods has been made by Jaggar in discussing the former size of the laccolith of which the famous butte, Mato Tepee, northwest of the Black Hills, is believed to be a remnant (The Laccoliths of the Black Hills, 21st Ann. Rep. U. S. Geol. Surv., Pt. III, pp. 163-303). Successive stages in the dissection of laccoliths are summarized about as follows: An early stage produces a dome-shaped hill with radial drainage. One radial stream gains advantage over its fellows and eats out the soft stratum beneath the central portion of the dome; the outward dipping hard beds are undermined and drainage formerly radial outward (consequent) becomes radial inward (obsequent); a former mountain becomes a quaquaversal basin inclosed by a horseshoe ridge. Recession of this ridge and continued erosion on the soft bed uncover a deeper dome of harder rock. Monoclinical shifting of the streams on the soft bed becomes easier than deep cutting into the dome, and thus an encircling (subsequent) valley is developed with a new series of radial streams (resequent) from the stripped mountain core. This alternation from mountain to basin will continue until the igneous mass is discovered; if its upper surface is strongly convex, monoclinical shifting will withdraw the encircling valley from it, leaving an igneous dome with radial ravines; if the upper surface is but slightly convex, the innermost annular streams may be superposed on the laccolith somewhat within its periphery; and still later they may be superposed on the bedded rocks beneath the laccolith. The last condition is thought to occur around Mato Tepee, whose bold column is therefore interpreted to be the remnant of a laccolithic sill about a mile and a half in diameter. W. M. DAVIS.

SCIENTIFIC NOTES AND NEWS.

DR. CHARLES S. MINOT, professor of histology and embryology in the Harvard Medical School, was given the degree of Doctor of

Science at Oxford University, on the occasion of the tercentenary of the Bodleian Library.

WE learn from the *Naturwissenschaftliche Rundschau* that, on the occasion of the jubilee of Abel at Christiania, the honorary doctorate was conferred on the following German mathematicians: Professor Georg Cantor (Halle), Professor J. W. R. Dedekind (Brunswick), Professor David Hilbert (Göttingen), Professor Felix Klein (Göttingen), Professor Leo Königsberger (Heidelberg), Professor H. A. Schwarz (Berlin), Professor Heinrich Weber (Strassburg), Professor Ludwig Blotzmann (Vienna).

AT the first autumn meeting of the American Academy of Arts and Sciences, of Boston, Professor Luigi Cremona, of Rome; Professor J. J. Thomson, of Cambridge, England; Professor Emil Behring, of Marburg, and John Morley, Esq., of London, were elected foreign honorary members; and President Hadley, of Yale University, was elected an associate fellow. President Agassiz gave an account of his observations on the coral reefs of the Maldives in the Indian Ocean, and Mr. H. H. Clayton spoke on the observed movements of the dust from the volcanic eruptions in the West Indies and their bearing on theories of atmospheric circulation.

DR. S. P. LANGLEY, secretary of the Smithsonian Institution, has returned to Washington from Europe.

MR. FREDERICK V. COVILLE, of the Department of Agriculture, has returned to Washington from a botanical expedition to the Klamath country, Oregon. It is understood that a part of his work has been ethno-botanical.

V. I. JOCHELSON, one of the explorers of the American Museum of Natural History, has arrived at Moscow on his way to New York. He has been making ethnographical studies and collections in the Amur and Yakoust territories for two years.

PROFESSOR B. E. FERNOW, professor of forestry of Cornell University, has been requested to advise the New York park commissioners as to the best policy to pursue in regard to the trees in Central Park, which are thought to be suffering from lack of sufficient earth.

MR. EDWIN C. ECKEL has resigned from the staff of the New York State Museum at Albany to accept a position under the U. S. Geological Survey at Washington.

KIUCHI MIYAKE, Ph.D. (Cornell, 1902), has recently received an appointment from the government of Formosa for two years' travel and study in Europe. Dr. Miyake is a graduate of the Doshisha College in Japan, afterwards spending four years at the Tokyo Imperial University. He entered Cornell University in September, 1899, where he spent two years in continuing his graduate work, giving especial attention to fertilization and embryology in the Phycomyces and in the Abietinæ. He sailed from New York for Bonn on October 7.

DR. MAX PROEBST has been advanced, by royal decree, from the position of director of the Royal Statistical Bureau of Bavaria to that of an independent chief directorship, and the Order of Merit has been bestowed on him in recognition of his services. Dr. Karl Trutzer now assumes the position formerly held by Dr. Proebst.

KING OSCAR, of Sweden, has bestowed the Grand Cross of St. Olaf on Capt. Otto Sverdrup, the arctic explorer, and has given him an annual allowance of \$800.

THE eightieth birthday of John Fritz, iron-master and inventor, of Bethlehem, Pa., will be celebrated by a dinner given in his honor at the Waldorf-Astoria, in the ballroom, on Friday, October 31. The dinner will also signalize the founding of the John Fritz gold medal, for achievement in the industrial sciences, the medal to be awarded annually by a committee of members of the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Institute of Mining Engineers and the American Institute of Electrical Engineers. The organizing committee having the matter in charge on behalf of these societies has already raised \$6,000, representing the contributions of some 500 members of the engineering professions in this country and in Europe. The medal has been entrusted to the American sculptor, Victor D. Brenner.

MR. JACOB RICHARDS DODGE, connected with the department of agriculture from its organization in 1862 until he retired in 1893, and known for his contributions to agriculture and statistics, died at Woburn on October 7, at the age of seventy-nine years.

THE death is announced of two well-known American physicians: Dr. John Bryne, past president of the American Gynecological Society, and Dr. Abel M. Phelps, past president of the American Orthopedic Society.

DR. JOHN HALL GLADSTONE, F.R.S., known for his researches on chemical combinations and the relations of chemical and optical science, formerly professor of chemistry at the Royal Institution, died on October 7, at the age of seventy-five years.

DR. B. J. STOKVIS, professor of pharmacology and general pathology at the University of Amsterdam, died on September 29, at the age of sixty-eight years.

DR. JEAN HABEL, of Berlin, known for his explorations in the Andes and in Canada, died on September 11.

M. VINCENT LECHE CHESNEVIEUX, the French traveler and geologist, has died at the age of eighty-six years.

THE twelfth annual meeting of the Ohio Academy of Science will be held at Columbus, November 28 and 29. Members desiring to present papers are requested to send titles and time required to the secretary on or before November 1.

AT the first meeting of the Geological Conference of Harvard University, informal reports were made by officers of the Division of Geology on their summer work. Professor Shaler spent part of the summer in Alaska, noting especially the mountain forms and fiords of our northwestern coast. Professor Davis, accompanied by two advanced students, made an excursion through southern Utah and northern Arizona, visiting the Colorado Canyon at Toroweap valley, and making special study of the Hurricane fault; he afterwards examined some of the Basin ranges and the Tertiaries at Green river. Professor Wolff completed the Franklin folio, New Jersey, for the U. S. Geological Survey, and

continued his field work on the ancient crystalline rocks of Berkshire county, Mass. Professor Smyth made a brief visit to the Lake Superior district, and then went to Colorado, where he made an extended reconnaissance of the mining camps on the Yukon and at Cape Nome. Professor Jackson and Mr. Cushman spent some time collecting fossils in the Helderbergs and Catskills of eastern New York. Professor Woodworth continued his work for the N. Y. State Geological Survey on the glacial geology of the Hudson and Champlain valleys and around the northern side of the Adirondacks. Professor Palache was engaged on office work following field studies of a year ago on the geology of Bradshaw mountains, Arizona, for the U. S. Geological Survey. Dr. Jaggar went to Martinique and St. Vincent in May on the U. S. relief ship, *Dixie*, and remained in the West Indies until the end of July. Mr. Raymer conducted a summer course for students in mining, making practical study of mines and works in and about Denver, Silverton, Telluride, Leadville and Salt Lake City. Mr. White led a party of geological and mining students through southern Colorado, visiting La Plata mountains, Animas Canyon and the San Juan district; after the party disbanded, Mr. White examined various mining and reduction plants in Colorado and Utah.

An Intercollegiate Geological Excursion, similar to the one a year ago at Westfield, Mass., in which six colleges and as many preparatory secondary schools were represented by forty-six participants, is proposed for Saturday, November 1, under the leadership of Professor B. K. Emerson, of Amherst College. The party will gather on Friday evening at the Cooley House, Springfield, Mass. On Saturday morning the 8:30 train will be taken to Holyoke, and the day will be spent on the Mount Tom trap range, returning to Holyoke in time for evening trains in all directions. The chief features to be seen are the structure of the Triassic trap sheets and sandstones; contacts of the trap with the underlying and overlying sandstones; fossil footprints in the sandstones, glacial deposits and terraces along the Connecticut river. Teach-

ers and students of geology who desire to join the excursion are requested to communicate with Professor Emerson not later than October 26.

DR. F. L. RANSOME has just completed a comprehensive report on the geology and ore deposits of the Globe copper district, Arizona, for the United States Geological Survey. The region is dissected by a remarkable network of faults, of various geologic ages, and the occurrence of the ores is related to some of the older of these fissures. The copper ores hitherto mined in the district have been oxidized and are consequently free from sulphur, but the exploitation of the deeper sulphide ores is yet in its infancy. The district has produced in the neighborhood of 120,000,000 pounds of copper. The greater part of this output has come from the Old Dominion mine, which has for years been working large bodies of oxidized ore found in limestone occurring by the side of a strong fault. During the present season Dr. Ransome is to continue the investigation of the copper deposits of Arizona by undertaking a detailed geologic study of the Bisbee district, in which is the well-known Copper Queen mine.

UNIVERSITY AND EDUCATIONAL NEWS.

THERE will be erected this year for Wesleyan University a physical laboratory, given by the alumni. It is expected that this and a new college hall will be ready for dedication in July, 1903, when the college will celebrate the tercentenary of the birth of John Wesley. It is also announced that a new astronomical observatory will be erected at a cost of \$40,000, the money having been provided by a brother of Professor J. M. Van Vleck, professor of mathematics and astronomy and vice-president of the University.

At the recent meeting of the board of trustees of Columbia University it was announced that \$7,500 had been given by citizens of New York to support the chair of social and political ethics, to which Dr. Felix Adler has been called. \$10,000 has been given anonymously for the purchase of books for the library and \$1,300 has been given by Mr. J. H. Hyde and Mr. F. R. Coudert, Jr., for two scholarships