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Geology and Palaeontology

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The following papers on American anthropology have appeared: Recent Discoveries in the American Bottom, by Mr. Henry R. Howland, Bull. Buffalo Soc. Nat. Sc., Mar. 2; The Mound-builders of Illinois, *Western Rev.*, Nov.; in the same periodical, the paper of H. A. Rush on Mound-builders in Missouri, before the American Association; Are the Indians dying out? S. N. Clarke, Bureau of Education; Col. Garrick Mallery read a paper before the Washington Philosophical Society, Dec. 8, upon the same subject; Rink's Greenland is reviewed in *Nature*, Nov. 22d; Die Indianer Canadas, *Globus*, xxxii; Aboriginal Pottery of Salt Springs, Ill., Geo. E. Sellers in *Popular Science Monthly*, Sept.; On the Antiquity of Man in America, Dr. Daniel Wilson in *Canadian Journal*, Oct.; two volumes of Maj. Powell's Contributions to American Ethnology will soon appear, Vol. II, by Gatschett, Mallery, and others, and Vol. III by Powers, Crook, Hazen, and Powell; Notes on the Zaporos, paper read before the London Anthropological Institute, Nov. 27th; Explorations of Don F. P. Moreno in Patagonia, *Geographical Magazine*, 1877, No. 8; Ueber die Eingeborenen von Chiloe, L. Martin in *Zeitschrift für Ethnologie*, 1877, H. 3; Das Land der Yukararer und dessen bewohner, H. v. Holten, same, Heft 2; Die gegenwärtige Lage der Indianer in den Vereinigten Staaten, Fred. v. Theilmann.—O. T. Mason, *Washington, D. C.*

GEOLOGY AND PALÆONTOLOGY.

A NEW MASTODON.—A new species of the *Tetralophodon* type has been recently discovered by Russell S. Hill, in the Loup Fork beds of Kansas, which is called by Prof. Cope (Palæontological Bulletin, No. 28) *T. campester*. It is allied to the *T. sivalensis* C. and F. in its dentition, and to the *T. longirostris* Kaup of Europe, in its lower jaw with prolonged symphysis. The specimen obtained has no indication of tusks in the symphysis, and the superior tusks have a broad band of enamel, which is not found in *T. longirostris* according to Vacek. *T. mirificus* Leidy, the only other American species of the group, has a short symphysis and a very different composition of the molar teeth. The *T. campester* is about the size of the African Elephant.

THE SNOUT FISHES OF THE KANSAS CHALK.—Prof. Cope recently read a paper before the meeting of the American Association for the Advancement of Science at Nashville, on the order of fishes named by him *Actinochiri* in the final report of the Hayden Survey, stating that the genus *Erisichthe* must be referred to it. Species in England had been referred by Dixon to the genus *Saurocephalus*, and Sir P. D. G. Egerton had discovered that they possessed a snout somewhat like that of the sword fish. Prof. Mudge ascertained the same fact regarding

the American species, and Prof. Cope discovered that the fin structure was that of the order above named. These fishes were, then, fully armed; first, with an acute bony rostral weapon; second, with large lancet-like teeth; and third, with acute-edged bony pectoral spines.

A NEW GENUS OF OREODONTIDÆ.—From the Upper Miocene (Pliocene) of Montana, has recently been described by Prof. Cope, a new genus of *Oreodontidæ*, which holds an interesting intermediate position. It has the full dental formula and preorbital fossa of *Oreodon*, but the premaxillary bones form a single mass, as in *Merycocherus*, and there is a large lachrymal vacuity as in *Leptauchenia*. It differs from the last genus in the absence of frontal vacuities. The molars are short-crowned, and not prismatic. It is named *Ticholeptus*, and the typical species, *T. zygomaticus*, is the size of *Oreodon major*. It has widely expanded zygomata, which have a horizontal plate-like extension at the glenoid region. The anterior face of the united premaxillaries is flat, and the nareal fissure is deep. The molar teeth are remarkable for their wing-like external ribs, which curve forwards. Length of molar series M. .097; width of premaxillary in front .032; length of cranium .225.

PALÆONTOLOGY OF GEORGIA.—Prof. Little, director of the Geological Survey of Georgia, has accumulated a valuable collection of the vertebrate fossils of that State, of cretaceous and tertiary age. Among these there have been identified the dinosaurian *Hadrosaurus tripos*, and the turtles *Taphrosphys strenuus* and *Amphimys oxysternum*, a new genus and species related to *Adocus*. Mr. Loughridge of the survey also discovered a very fine specimen of that rare Propleurid, the *Peritresius ornatus*.

SILURIAN AND CARBONIFEROUS PLANTS.—Prof. Lesquereux read before the American Philosophical Society of Philadelphia, last October, two papers, one describing a fungus (*Rhizomorpha sigillariæ*), discovered under the bark of a *Sigillaria* from the Cannelton coal of Beaver Co., Penn. The other describes four species of plants from the Lower Silurian, viz.: a *Psilophyton* and *Sphenophyllum* from the Cincinnati group of Covington, and a *Psilophyton* and an *Annularia* from the Lower Helderberg of Michigan. The first remains of land plants from the Lower Silurian were discovered by Dr. Scoville in the Cincinnati beds near Lebanon, Ohio.

A NEW ALLY OF SIVATHERIUM.—Dr. R. Lydekker of the geological survey of India, has recently discovered a new genus allied to *Sivatherium* which is of much interest. It lacks anterior horns, and has but a single base for horns on the vertex.

EXTINCT REPTILES OF INDIA.—Dr. Lydekker describes the first *Plesiosaurus* discovered in India from the Umia beds of Kach. He refers to the discovery of remains of *Megalosaurus* from the upper cretaceous of Trichinopoli, and mentions the existence of a huge dinosaurian in the Lameta rocks of Jabalpur. It is represented by a femur and caudal vertebræ, and he names it *Titanosaurus indicus*. He, however, does not define the genus to which he desires the name to apply.

PALÆONTOLOGICAL COURSE.—This course, at the Jardin des Plantes, by Prof. Albert Gaudry, includes an interesting discussion of the evidences of descent to be observed in the teeth and feet of the *Mammalia artiodactyla*. One part of it published in the Revue Scientifique is illustrated with many excellent cuts which convey important evidence to the eye. He refers to American observations in the same field, but commits a minor error in ascribing three upper incisors to the genus *Procamelus*, stating that Leidy has so determined it. The fact is that Dr. Leidy was unacquainted with the superior incisors of that genus, and that Prof. Cope first showed that it possesses but one, as in *Camelus*. Prof. Cope, however, discovered the genus *Protolabis*, which possesses the three superior incisors referred to by Prof. Gaudry.

GEOLOGY OF WISCONSIN.¹—The Geological Survey of Wisconsin first instituted by the late Dr. I. A. Lapham, has been carried on with evident vigor by Prof. T. C. Chamberlain, and his assistants, R. D. Irving and Moses Strong. While Professor Chamberlain reports on the geology of Eastern Wisconsin, Mr. Irving describes that of Central Wisconsin, and Mr. Strong discusses the geology and topography of the lead region. An appendix on microscopic lithology is contributed by Charles E. Wright. The illustrations are numerous and excellent, and the atlas of thirteen maps further enhances the value of the report. We have been especially interested in the account of the surface geology of the eastern portion of the state, particularly the description of the ancient fiords which run into Lake Michigan, and the determination of the Kettle range to be an old terminal moraine, as abundantly proved by the interesting and excellent diagram facing p. 204.

GEOGRAPHY AND TRAVELS.

GEOGRAPHICAL WORK OF HAYDEN'S SURVEY.—A photolithographic plate of the primary triangulation carried on during the summer of 1877. by Mr. A. D. Wilson, Chief Topographer, has just been published by the U. S. Geological Survey, under the charge of Dr. F. V. Hayden. The area covered by these triangles extends from Fort Steele in Wyoming territory, westward to Ogden in Utah territory, a distance of about 260 miles, and north

¹ *Geology of Wisconsin*. Survey of 1873-1877, Vol. II., accompanied by an Atlas of Maps. Madison, 1877. 8° pp. 768.