

the influence of forests on climate, and on changes of climate, to see what the greatest authority on climatology has to say on these subjects. Regarding the former, Hann says that the influence of forests upon rainfall is a slight one. Regarding the latter, while granting that Stein, Huntington and others have shown that there is a general desiccation going on in Asia, the author adds: "How far in all these accounts we have to do with a progressive desiccation, and how far with climatic oscillations, is still a question." In other words, there is as yet no sufficient evidence for believing in considerable *permanent* changes. Oscillations, yes, some of longer, others of shorter periods; but permanent progressive changes, no, not yet.

The teacher of climatology will feel safe and sure with Hann's book on his study shelf, close at hand. The man of science, in whatever field he may be working, who needs the fullest, latest, most authoritative information on climatology, will find in Hann's new volume what he seeks, and he will find it clearly set forth.

The remaining volumes, dealing with the special climates of the different parts of the world, will be published shortly.

R. DEC. WARD

Reservoirs for Irrigation, Water Power and Domestic Water Supply. By JAMES DIX SCHUYLER, M.Am.Soc.C.E., M.Inst.C.E., etc. Second edition revised and enlarged. Bound in cloth; dimensions, 6½ by 10¼ inches. Pp. 573; illustrations 381; folding plates 6. Price, \$6.00. New York, John Wiley and Sons; London, Chapman and Hall, Ltd.

The growing importance of storage reservoirs and their appurtenant structures in the development of domestic water supplies, hydraulic power plants and irrigation projects warrants the revision and enlargement of this already useful work. The scarcity of water furnished by the normal flow of streams for irrigation in the arid regions; the increasing demand for water power due to the decreasing coal supply and the increasing possibilities of electric power and the sanitary needs of the many growing towns and cities throughout the

entire country are requiring wide information on the subject of water storage and water-storage structures. This information abounds in the book under review, as may be inferred from its chapter subjects, the titles of which are as follows: Rock-fill Dams; Hydraulic-fill Dams; Masonry Dams; Earthen Dams; Steel Dams; Reinforced Concrete Dams, and Miscellaneous. In these chapters are discussed individually more than 200 important dams, of which the majority are of the masonry type. However, over a score each of rock-fill, hydraulic-fill and earthen dams and nearly a half score of steel and reinforced concrete dams are described in detail.

The style and arrangement of subject matter of the book lack uniformity and its substance is rather a collection of facts relating to dams and reservoirs than a scientific treatise thereof. The author has included but little of the principles of design and construction except as incident to description. The work is therefore better adapted to use for reference than for study. It is an excellent memory storehouse for the practising engineer. Such works, although not forming the highest type of engineering literature, are none the less essential parts thereof, and are especially valuable as sources from which to draw inferences from basic facts.

The first edition of this work found its way into the libraries of many engineers and the second edition is certain to find a still greater circulation. Sufficient new and rewritten material has been incorporated into the text to make the book essentially a new work. In addition to the new and revised subject matter the book contains 234 new cuts and photographs and 3 plates. The work will, therefore, be equally of interest to those familiar and unfamiliar with the first edition.

F. W. HANNA

U. S. RECLAMATION SERVICE

SCIENTIFIC JOURNALS AND ARTICLES

The American Naturalist for April opens with a paper on "Heredity of Hair Color in Man," by Gertrude C. and Charles C. Davenport. This article includes a number of tables showing the distribution of color in the off-

spring of parents with hair of a given color, the authors concluding that heredity in hair color is alternative, and that the known facts fit Mendel's law rather than Galton's. G. H. Parker discusses "A Mechanism for Organic Correlation," showing the influence of the secretions of various glands in bringing about marked changes in certain portions of the body—these secretions are termed "hormones," and in some instances are absolutely essential to life. Under "Recent Advances in the Study of Vascular Anatomy," John M. Coulter deals with "Vascular Anatomy and the Reproductive Structures." Raymond Pearl presents "A Note on the Degree of Accuracy of the Biometric Constants" and O. F. Cook a communication on "Pure Strains as Artifacts of Breeding."

Bird-Lore for March-April has the following articles: "Chickadee All the Year Round," by Mary C. Dickerson; "A Second Season of Bluebird Tenants," by Marian E. Hubbard; "A Special Bird Blind," by E. J. Sawyer; "Eggs of a Flicker found in a Strange Place" (on the ground), by William Brewster; "Where Does the Male Horned Lark stay at Night?" by R. W. Hagner, and the first paper on "The Migration of Vireos," by W. W. Cook. There is a striking illustration of a drumming ruffed grouse, photographed from life by C. F. Hodge.

In *The American Museum Journal* for April Charles W. Mead gives some interesting notes of the Andaman Islanders and their customs under "A Collection from the Andaman Islands." W. D. Matthew tells of "The Oldest Land Reptiles of North America" and there is a note, with an illustration of a fine "Group of Peculiar Mollusks," *Vermicularia nigricans*.

The Bulletin of the Charleston Museum for March notes "The Needs of the Museum" in the way of money for the purchase of cases and installation of specimens. The city of Charleston is doing all it possibly can and private individuals must do the rest. In the south, where so large a proportion of the population is negroes, the number of actual taxpayers is vastly less than the number of in-

habitants and this is the case in Charleston. The second part of the "Local Fauna" completes the list of birds, 216 species, observed in the vicinity of Charleston.

The Johns Hopkins University Circular for January contains the addresses given at the memorial meeting in honor of Dr. W. K. Brooks and also the charming "Biographical Sketch" by E. A. Andrews, reprinted from *SCIENCE*. It also contains the addresses commemorative of Dr. Gilman.

THE EPIDERMIS OF AN IGUANODONT DINOSAUR

WE owe to Charles H. Sternberg and his son George F. Sternberg the welcome discovery of the epidermal markings of an Upper Cretaceous Iguanodont. The discovery was made August, 1908, in the region of Converse County, Wyo., made famous by the explorations of Hatcher for remains of *Ceratopsia*. This *Triceratops* Zone, originally designated as the *Ceratops* Zone, is divided, like that of the Hell Creek Basin in Montana, into successive layers of sandstones and clays. The present specimen¹ was found near the summit of the basal sandstones, and is provisionally identified by Mr. Barnum Brown who is making a special study of these dinosaurs, as belonging to the species *Trachodon annectens* Marsh.

As found, the entire animal lay in a normal position on its back and completely encased in the impression of its epidermal covering as far back as the posterior portion of the pelvis and extremities of the hind limbs, which had been cut off and removed by erosion. The left fore limb was outstretched at right angles to the body, while the right fore limb lay stretched over the under surface of the head. The manus is completely encased in the integument, and was thus web-footed—adding another analogy to the Anatidæ. The head was sharply bent around to the right side (the left side as seen from above). The scapulæ were closely pressed to the sides and probably in normal position, as well as the

¹This unique specimen has been added to the Jesup collection of reptiles and amphibians, through the liberality of Mrs. Morris K. Jesup.