SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

FRIDAY, APRIL 12, 1901.

CONTENTS:

GEORGE M. DAWSON.

BY the death of Dr. G. M. Dawson, the Dominion of Canada loses one of her ablest and most distinguished men of science and one whose loss will be felt for many years to come. George Mercer Dawson was the eldest son of the late Sir William Dawson and was born at Pictou, Nova Scotia, on August 1, 1849. In 1855, his father, having received the appointment as Principal of McGill College, left Nova Scotia and came to live in Montreal. The wide college grounds, lying then on the outskirts of the town and backed by Mount Royal, at that time covered with its original forest growth, formed an environment full of interest and delight to the boy, whose mind turned to the study of nature from the first, a study which was made doubly fascinating in his case by his father, who was always ready to encourage him in his work, explain his difficulties and talk with him as a friend.

At the age of ten he entered the High School at Montreal, where he took a high place among the boys of his class. There were, however, at that time, near what is now the center of the city of Montreal, a number of ponds in which the boys from the High School used to go rafting at lunch hour. On one of these occasions he received a drenching and remained in his damp clothes through the afternoon; a chill was induced, which led to spinal trouble,

and by no means as probable as the author maintains. The oceans of boiling water remind one of the cataclysmal hypotheses in vogue in earlier geological speculation, and raise the question whether here also there may not be a less sensational interpretation of facts.

The lunar temperature, on the other hand, in regard to which we have some knowledge derived from quantitative measurements, is not so much as mentioned in the book.

Barnard's fifth satellite of Jupiter is given a whole page, which, while commendable as an account of recent astronomical progress, seems to show a lack of perspective, since only an equal space is devoted to the other four moons with their wonderful harmony. Moreover, in spite of the prominence given to this excessively minute body, the moon, which continues to be called by an anachronism by the Roman numeral I, is alluded to as 'the innermost.'

The 'invisible rays' of the solar spectrum are treated as if they were synonymous with the ultra-violet rays. Over a page is given to this topic, but there is no mention anywhere of the much more extensive infra-red part of the spectrum which comprises rays of greater intensity and of more importance to the earth.

The statement on page 39 that 'we find each one of the multitude of lines in the artificial iron spectrum agreeing to the last degree of precision with the corresponding line in the solar spectrum,' is not in accordance with facts. Along with many wonderful coincidences, there are some notable differences which are of very great importance as furnishing a possible key to further solar mysteries.

The description of the solar corona and of sun-spots in Chapter II. is inadequate, and something more than a bare mention of the fact that there are different classes of stellar spectra is desirable; but the list of shortcomings is not long, and the book is to be commended for its attainment of an exceptional standard of excellence.

F. W. Very.

GENERAL.

Announcement has been made by a committee of American anthropologists, of which Mr. F. W. Hodge, managing editor of the *American Anthropologist*, is secretary, of the proposed publication of a series of more than thirty folk-tales recorded and translated by the late Frank Hamilton Cushing during his long and intimate association with the Zuñi Indian tribe of New Mexico. The price of the work will be $3.50. Information and subscription blanks can be supplied by the Secretary, whose address is Washington, D. C.

The late Professor A. W. Hughes, left in an advanced state of preparation a new volume on practical anatomy. Professor Keith, of the London Hospital College, has undertaken to complete Professor Hughes's work, which will be published by Churchill.

BOOKS RECEIVED.

Experimental Psychology. E. B. Titchener. New York and London, The Macmillan Company. 1901. Volume I. Part 2. Pp. xxxiii + 456. $2.50.

Human Placentation. J. Clarence Webster. Chicago, W. T. Keen & Co. 1901. Pp. 126 and 30 plates.

Studien über die Narkose. E. Overton. Jena, Fischer. 1901. Pp. x + 195. $4.50.

Morphology of Spermatophytes. John M. Coulter and Charles J. Chamberlain. New York, D. Appleton and Company. 1901. Pp. x + 188.

Les problèmes de la vie. Ermanno Giglio-Tos. Turin, Chez l'Auteur. 1900. First Part. Pp. viii + 286. 10 fr.

Clays of New York, their Properties and Uses. Heinrich Ries. Albany, University of the State of New York. 1900. Pp. 593-944.

The Manual of Laboratory Physics. H. M. Torry, and F. H. Pitcher. New York, John Wiley and Sons. London, Chapman and Hall, 1901. Pp ix + 288.

A Select Bibliography of Chemistry. 1492–1897. Section VIII. *Academic Dissertations.* H. Carrington Bolton. Washington, D. C., Smithsonian Institution. 1901. Pp. iv + 534.

SCIENTIFIC JOURNALS AND ARTICLES.

The Journal of the Boston Society of Medical Sciences for December 18, 1900, delayed on account of the plates, has recently been issued. It forms a volume of 180 pages and 16 plates after photomicrographs, devoted to 'A Study of the Bacteriology and Pathology of Diph-

theria,' by W. T. Councilman, F. B. Mallory and R. M. Pearce. The material was derived from 220 fatal cases of diphtheria, and the various regions of the body are treated in detail. An extensive bibliography of recent literature on the subject is appended, the whole forming a most important contribution to our knowledge of diphtheria.

IN *The American Naturalist* for March, W. M. Wheeler and W. H. Long describe 'The Males of some Texan Ecitons' and incidentally tell much of the habits of these ants and of the raids made by them on other species. W. H. Dall discusses 'The Morphology of the Hinge Teeth of Bivalves,' calling attention to the work of Bernard and Steinmann and giving preference to the formula devised by the latter for indicating the arrangement of the teeth and sockets. Harris H. Wilder describes 'The Pharyngo-Œsophageal Lung of Desmognathus,' showing that this species, and inferentially other lungless salamanders, breathes mainly by means of a definitely localized portion of the anterior part of the alimentary canal. J. Arthur Harris presents some 'Notes on the Habits of *Cambarus Immunis* Hagen,' showing that this species, like others of the genus, burrows, and implying that by this means the animals are preserved through the dry months of summer. Albert M. Reese tells of the 'Artificial Incubation of Alligator Eggs' by keeping the eggs in damp *humus* in an incubator at a temperature of 37° C. 'The Colors of Northern Apetalous Flowers' are considered by John H. Lowell, giving a table showing that the great majority are white or dull-colored, and concluding that they are of primitive character and not degraded entomophilous forms. 'The Prehistoric Workshops at Mt. Kinco, Maine,' are treated by C. C. Willoughby, who states that it is evident the products were mainly intended for transportation and to be finished at a distance.

IN the *Plant World* for February William Palmer tells of 'Deforested Cuba' and the manner in which the trees have been destroyed and the soil injured by the continued burning over of the land. Pauline Kaufman describes the 'Orchids in Central Park,' E. M. Williams 'The Masked Tricholoma' and Stewart H. Burnham 'A February Outing in California,' while 'The Discovery of a Plumose Variety of the Ebony Spleenwort' is noted by Francis B. Horton. In the Supplement, 'The Families of Flowering Plants,' Charles Louis Pollard treats of various families of the order Ranales.

THE February number of the *American Geologist* contains an article by S. P. Jones on 'The Geology of the Tallulah Gorge.' The Tallulah River is a tributary of the Chattooga and finally reaches the Savannah in South Carolina. The Grand Chasm of which the paper treats is situated in the crystalline area of Georgia and surrounded by granites, gneisses and schists, supposed to be pre-Cambrian. The principal constituent of the rock is quartz, but small quantities of feldspar and mica are present. The falls are found to have been produced entirely by the river and atmospheric agencies, and it is further found that both falls and gorge are of recent age. It has been shown by certain geologists, with whom the author concurs, that this stream is an example of piracy, having been captured by the Tugaloo from the Chattahoocha river and diverted into the Savannah. In 'Paleontological Speculations,' Mr. L. P. Gratacap gives a few notions derived from an extensive study of collections among which are mentioned those of the American Museum of Natural History. These are studied for the purpose of determining the variations whose accumulated force ushers in new forms in the life series and by whose influence on the organism as a whole a kinetic impulse is established in a new direction. The deductions of Dr. Succo, Professor H. S. Williams, Professor Alpheus Hyatt and others, concerning change of environment of air, water and deep sea, are discussed. The fauna of the different ages and their philogeny, and their development through following ages, are also discussed in an interesting manner. 'The Plan of the Earth and Its Causes,' by J. W. Gregory, follows, and is an interesting discussion of the prevalent theories of the earth's formation, and its growth to its present relations of land, water and air. The discussion is to be continued. Then follows the usual 'Recent Geological Literature,' 'Cata-

logue of Geological Literature' and 'Personal and Scientific News.'

Three new ornithological journals have appeared this year. *American Ornithology*, edited by Mr. C. A. Reed, at Worcester, Mass.; *The Petrel*, edited by Mr. J. W. Martin, at Palestine, Ore., and *The Bittern*, edited by Mr. G. M. Hathorn, at Cedar Rapids, Ia. On the other hand *The Western Ornithologist* has suspended publication.

SOCIETIES AND ACADEMIES.

THE ACADEMY OF SCIENCE OF ST. LOUIS.

At the meeting of the Academy of Science of St. Louis, of March 4, 1901, the following subjects were presented:

The Corresponding Secretary read a communication from Dr. Amos Sawyer, entitled 'Ethnographic life lines left by a prehistoric race,' the paper being illustrated by sketches, fragmentary human remains and stones, etc., derived from a prehistoric grave examined some ten miles southwest of Hillsboro, Illinois, on the west side of Shoal Creek. In one instance it was stated that a grave consisting of six slabs of limestone contained six skeletons, their thighs flexed upon the abdomen, the legs upon the thighs, their arms placed by their sides, and their heads at either end of the enclosing box and facing east and west. From the limited capacity of the slab-enclosed graves, the writer inferred that the remains had been placed in them after skeletonization, as there was not sufficient room for the number of bodies found unless the muscles had been removed, and it was argued from this that the remains were those of prominent men in the nation.

The Corresponding Secretary read a further communication from Dr. Sawyer, referring to a piece of wood found at a depth of 400 feet below the surface in sinking a shaft for a coal mine. The specimen was said to have occurred in a ten-foot layer of loam filled with the débris of a forest, and the specimen submitted, like others, had been flattened by pressure.

In the discussion which followed the reading of these communications, Mr. Colton Russell said that west of St. Louis, in a number of so-called Indian graves which he had examined, the encasing with rough limestone slabs, mentioned by Dr. Sawyer, had been observed; and Dr. Trelease called attention to the fact that the specimen of wood exhibited, which did not seem to be petrified, belonged to post-glacial times and was perhaps comparable with certain pieces of wood, supposed to be cedar, but not yet carefully studied, which Mr. Hermann, the Sewer Commissioner of St. Louis, had found in company with bones of the early bison in the glacial detritus through which a storm sewer is being excavated at Tower Grove, St. Louis.

A paper by Dr. T. Kodis, 'On the action of the constant current upon animal tissue,' was read by title.

Professor F. E. Nipher stated that he wished to take this occasion to correct some misapprehensions concerning the development of photographic positives. He stated that the effect of development in the light was to make the normal exposure for positives shorter than when they are developed in the dark-room. When for a given illumination of the developing room the exposure has been properly made, the ordinary developer used for negatives may also be used for positives without any restrainer. The restrainer is only needed when the plate to be developed as a positive has been under-exposed, or the plate to be developed as a negative has been over-exposed. In both cases it is an approach to the zero condition which calls for the restrainer.

Professor Nipher stated that Mr. Cockayne, of the Heliotype Company, of Boston, had suggested to him the use of potassium ferro-cyanide in place of potassium bromide in developing positives, and he had found it to give great brilliancy to the pictures. A Cramer 'Crown' plate exposed in a printing-frame for a couple of minutes at a south window, just out of the direct rays of the sun, under a thin negative or positive, may be developed at the same place. A few drops of a ten-per-cent. solution of the ferro-cyanide may be added, and even as much as one part in twelve of developer has yielded excellent results. The bath has in some cases been wholly made up of the ferro-cyanide solution, the other chemicals being added in dry form. The action of the ferro-cyanide is quite different from that of