of Dr. John Murray, have now been published by Eyre & Spottiswoode, London. The completed work fills 50 large quarto volumes containing about 29,500 pages and illustrated by over 3,000 plates. These two concluding volumes are mainly occupied by a general summary of the scientific results of the voyage.

Dr. A. R. Forsyth, of Trinity College, has been elected to the Sadlerian Professorship of Mathematics in the University of Cambridge, succeeding the late Professor Cayley.

According to the *American Geologist*, efforts are being made looking towards a geological survey of the State of Maine.

Dr. John P. Lotsy, now Associate in Botany at Johns Hopkins University, has accepted the Directorship of the Botanical Gardens on the Island of Java.

The Lake Superior Mining Institute made an excursion on March 6th, 7th and 8th, from Duluth to the Mesabi iron range. The mines were visited and in the evenings meetings were held, at which papers were presented by Dr. L. L. Hubbard, Dr. U. S. Grant, Mr. F. W. Denton, Mr. F. F. Sharpless and Mr. E. F. Brown.

The tenth annual meeting of the American Association for the Advancement of Physical Education will be held at the Teachers' College, New York, on April 25th, 26th and 27th.

The Journal of Mental Science gives, in the last number, a retrospect of Normal Psychology, prepared by Mr. Havelock Ellis, and proposes to give regular summaries of the progress of psychology.

The Chemical Society has conferred its Faraday medal upon Lord Rayleigh in recognition of the investigation which has led to the discovery of Argon. Dumas, Canizzaro, Wurtz, Helmholtz, and Mendeléeff have been the previous recipients of the medal.

Rev. Herbert A. James, principal of Cheltenham College, has been elected head master of Rugby, succeeding the Rev. Dr. Percival.

The Woods Holl Biological Lectures for 1894, in the press of Ginn & Co., include: I. *Life from a Physical Standpoint.*—A. E. Dolbear. II. *A Dynamical Hypothesis of Inheritance.*—John A. Ryder. III. *On the Limits of Divisibility of Living Matter.*—Jacques Loeb. IV. *The Differentiation of Species on the Gálapagos Islands and the Origin of the Group.*—G. Baur. V. *Search for the Unknown Factors of Evolution.*—H. F. Osborn. VI. *The Embryological Criterion of Homology.*—E. B. Wilson. VII. *Cell-Division and Development.*—J. P. McMurrich. VIII. *The Problems, Methods and Scope of Developmental Mechanics.*—W. M. Wheeler (Roux's). IX. *The Organization of Botanical Museums for Schools, Colleges and Universities.*—J. M. Macfarlane. X. *The Centrosome.*—S. Watasé. XI. *Evolution and Epigenesis.*—C. O. Whitman. XII. *Bonnet's Theory of Evolution.*—C. O. Whitman. XIII. *Bonnet on Palingenesis and Germs.*—C. O. Whitman.

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON, MARCH 23.

Mr. Charles T. Simpson read a paper on the 'Respective Values of the Shell and Soft Parts in Naiad Classification.' Mr. Simpson deprecated the fashion of many conchologists of late in basing classification wholly on the soft parts and stated that his studies of the Naiads, or fresh water mussels, go to show that among them, at least, he has found the characters of the soft parts of the animal more variable and less reliable for the purposes of classification than those of the shell. That, while in some cases the soft parts give us the key to true affinities, in others they are worthless, and we must rely on the shell for a knowl-

edge of relationships. Numerous cases were cited showing such variation. In *Unio novi-eboraci* the branchiæ are sometimes free only a short distance on the posterior part of the abdominal sac; in other cases they are united the whole length, and the same is found to be true to a great extent in *U. multiplicatus*. In that species and some others not closely related the embryos are found in all four leaves of the branchiæ, but in all other North American forms they only occupy the outer leaves.

The statement was made that the dissection of a single animal of a widely distributed and variable species will probably not give any more knowledge of all its characters than the examination of a single shell, *Castalia*, *Castalina* and *Glabaris*, South American Naiads, may either have no siphons at all, or have them perfectly developed, and this variation occurs in the same species. The families *Unionidæ* and *Mutilidæ* were founded on the absence or presence of this character. In a new arrangement of the Naiads v. Ihering has based the family *Unionidæ* on the fact that the embryo is a *glochidium*, in which the soft parts are enclosed in a bivalve shell, and the *Mutilidæ* was established on the fact that the embryo is a *lasidium*, divided into three parts, the middle one only being protected by a single shell.

Basing a classification on these characters it will be found that *the genera of the unionidæ have invariably heterodont teeth, or vestiges of them, while in the mutilidæ the arrangement is essentially taxadont.*

It is claimed that similar circumstances of environment may produce like characters of unrelated forms; the *Mycetopus* of South America and *Solenaia* of China are burrowers, and though belonging to different families closely resemble each other in the elongated shell and greatly developed foot, and have both been placed in one genus on this account. *Anodonta angulata* burrows in rapid streams and differs greatly in appearance from *A. dejecta*, which is closely related but lives in stagnant water. The two were shown to have affinities by connecting forms.

Dr. Stiles spoke* 'On the Presence of Adult Cestodes in Hogs.' He called attention to the remarkable fact that no adult tapeworms were described as regular inhabitants of *Sus*, and discussed the cases recently mentioned by Cholochowsky in Russia and two cases which had recently been reported to him from Iowa. One of the Iowa cases was certainly a case of chance parasitism in this host, and although there are no satisfactory data upon which to base an opinion concerning the other cases, he thought helminthologists in general would not admit the forms mentioned to the lists of the parasites of hogs.

Mr. Coville laid before the society a copy of the newly published list of ferns and flowering plants of the northeastern United States, prepared by a committee of the Botanical Club, A. A. A. S., in accordance with the nomenclature rules adopted by the Club, and gave a brief history of the recent nomenclature reform in botany. He pointed out the fact that in a recent criticism of the List by Dr. B. L. Robinson, who represents those still favoring the old system, only a single specific point of vital principle in the new system was really discussed, the other items of criticism referring to details which do not involve the principles themselves. Mr. Coville pointed out that in view of the success of the new system as already tried by several of our leading botanical institutions and as tested for many years past in other branches of biological science, together with the prevailing dissatisfaction regarding the old system among working botanists, the new code gives every

*Notes on Parasites, 34; Centralbl. f. Bakt., u. Par. 1895.

promise of satisfactorily solving the nomenclature problem.

Professor Joseph F. James made some remarks on 'Daimonelix and Allied Fossil.' He gave an account of the large fossil 'cork screws' described by Professor Barbour from the Bad-Lands of northwestern Nebraska, calling attention to their peculiar features. He noted the fact that while they had heretofore been considered as unique and without resemblance to other fossils, that in reality several other similar forms had been described. One of these was figured by Heer in 1865 in 'Die Urwelt der Schweiz,' under the name of 'screw-stones,' which presents all the characters of *Daimonelix* as figured by Barbour. In 1863 Professor James Hall described *Spirophyton* and gave a restoration of *S. typum*. In a view of one of the whorls there is a great correspondence between it and a figure of the same character given by Barbour. In 1883 Professor Newberry described *Spiraxis*, also a genus of screw-like fossils which presents features similar to *Daimonelix*. Heer's fossil occurs in the Miocene of Switzerland, while *Spirophyton* and *Spiraxis* occur in the Chemung of New York and Pennsylvania. The wide distribution of the forms is interesting as showing that *Daimonelix* is not an 'accident' as hinted by some. Whether it is a plant or not must be decided in the future, although there is a strong presumption that such is the case. Frederic A. Lucas,

Secretary.

SCIENTIFIC JOURNALS.

American Chemical Journal, April.

Argon, A New Constituent of the Atmosphere: Lord Rayleigh and William Ramsay.

On the Spectra of Argon: William Crookes.

The Liquefaction and Solidification of Argon: K. Olszewski.

On the Atomic Weight of Oxygen. Synthesis of Weighed Quantities of Water from Weighed Quantities of Hydrogen and of Oxygen: Edward W. Morley.

On the Chloronitrides of Phosphorus: H. N. Stokes.

On the Saponification of the Ethers of the Sulphonic Acids by Alcohols: J. H. Kastle and Paul Murrill.

Contributions from the Chemical Laboratory of Harvard College. LXXXVI. On the Cupriammonium Double Salts: Theodore William Richards and George Oenslager.

Basswood-oil: F. G. Wiechmann.

Note.

American Journal of Science, April.

Niagara and the Great Lakes: F. B. Taylor.

Disturbances in the Direction of the Plumb-line in the Hawaiian Islands: E. D. Preston.

Glacial Lake St. Lawrence of Professor Warren Upham: R. Chalmers.

Argon, a New Constituent of the Atmosphere: Lord Rayleigh and W. Ramsay.

Velocity of Electric Waves: J. Trowbridge and W. Duane.

Epochs and Stages of the Glacial Period: W. Upham.

Structure and Appendages of Trinucleus: C. E. Beecher.

Scientific Intelligence; Chemistry and Physics; Geology and Mineralogy; Botany; Miscellaneous Scientific Intelligence; Obituary.

American Geologist, April.

The Stratigraphy of Northwestern Louisiana: T. Wayland Vaughan.

The Paleontologic Base of the Taconic or Lower Cambrian: N. H. Winchell.

The Missouri Lead and Zinc Deposits: James D. Robertson.

On the Mud and Sand Dikes of the White River Miocene: E. C. Case.

Editorial Comment; Review of recent Geological Literature; Recent Publications; Personal and Scientific News.

NEW BOOKS.

A travers le Caucase. Émile Levier. Neuchâtel, Attinger Frères. Pp. 346.