the present week is an African number. It contains a political-physical map of Africa printed in colors and numerous contributions by well-known writers, including Mr. Henry M. Stanley, Dr. Scott Keltie and others.

The May *Educational Review*, concluding the fifteenth volume, contains the following papers prepared for the Harvard Teachers' Association: The election of studies in secondary schools, five articles, as follows: 1. 'Its Effect upon the Colleges:' by Nathaniel S. Shaler. 2. 'Its Effect upon the Community:' by Samuel Thurber. 3. 'A Negative View:' by John Tetlow. 4 and 5. 'Affirmative Views:' by Charles W. Eliot and George H. Martin. 'The School Grade a Fiction:' by Wilbur S. Jackman; and 'Knowledge Through Association:' by T. L. Bolton and Ellen M. Haskell.

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON—291ST. MEETING, SATURDAY, APRIL 9.

Mr. Vernon Bailey described the manner in which beavers fell trees, saying that they did not gnaw squarely across, but made two cuts a short distance apart vertically and pried out a chip between them. The result was a V-shaped cut very similar in appearance to that made by a wood cutter.

Professor O. P. Hay made some 'Observations on the genus of Cretaceous Fishes, called by Professor Cope *Portheus*,' discussing the osteology of the genus at some length and particularly the skull, shoulder girdle and vertebral column. He said that in many respects it resembled the Tarpon of our Southern coasts, although possessing widely different teeth, and undoubtedly belonged to the Isospondyli. The conclusion was reached that Cope's *Portheus* is identical with the earlier described genus *Xiphactinas* of Leidy. (Since the paper was read the author has learned that Professor Williston has reached the same conclusion.)

Mr. W. H. Osgood gave some 'Notes on the Natural History of the Farallon Islands,' dwelling particularly on the birds and illustrating his remarks with lantern slides. Mr. William Palmer presented a paper on 'A Phase of Feather Re-pigmentation,' briefly reviewing the discussion regarding this mooted question, stating that much of the discrepancy between the statements of the advocates and opponents of the subject was probably due to the geographical conditions under which their birds had been obtained. The theory was advanced that migration arrested the moult of birds, the drain upon their strength made by protracted flight preventing the growth of the new feathers and the shedding of the old.

F. A. Lucas,
Secretary.

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

The 276th regular meeting of the Society was held on Tuesday evening, April 5, 1898. Professor Otis T. Mason read a paper on 'Egypt in America.' He called attention to the early and insidious intrusion of the Iron Age into America everywhere, through the blonde Teuton, the dark-eyed Kelt and the melanchroic Spaniards and Portuguese. This time he confined the argument to the way in which much of the primitive life of Arabia, Palestine, Egypt and Northern Africa found its way to Latin America. Dr. Brinton, he said, had just emphasized the vast importance of North Africa and the Hamite (Khamite) in early civilization. Keane also had dwelt on this same subject in his late work, and Ripley was quoted as saying, "Beyond the Pyrenees begins Africa." The first settlers of Spain were Hamites, and they formed the folk of the peninsula during Keltic and Roman occupation. Phœnicia strengthened the bond with the mother race. Carthage went to Spain to claim her own, and for seven hundred years and more (711–1492) all the Semite-Hamite elements of the Moorish occupation were added to the old. It was this that furnished the folk life that came to middle America and easily and early affiliated itself with the natives. This folk life insidiously grows over the old, genuine, aboriginal culture and attracts the eye of the traveler who may have sojourned also in North Africa, Egypt or Palestine. By the trained eye it is easily detected and eliminated. For three thousand years the Khamites accultured Spain. In the

operative classes of all Spanish and Portuguese expeditions they crowded into the western hemisphere, and that is one way in which Egypt came to America. Discussed by Professor W J McGee.

Dr. Thomas Wilson read a paper entitled 'The Mysterious Chamber and the Magic Key.'

Mr. Isaac P. Noyes read a paper on 'The Peruvian Mummy.'

J. H. MCCORMICK,
Secretary.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 483d meeting of the Society was held at the Cosmos Club at 8 p. m. on April 16th. The first paper of the evening was by Mr. C. C. Yates on 'Personal Equation in Estimating Tenths.' The author stated that attention was first called to this equation by Pierce, in the Coast Survey Report for 1854. It was defined as a persistent deviation from the law of probability applied to the distribution of purely accidental estimates.

Mr. Yates illustrated this by diagrams representing equations obtained from readings of chronometers, micrometers, thermometers, levels, etc., involving, in all, 38,499 estimated tenths.

His conclusions from the study were that:

1. The personal equation in estimating makes its appearance in every species of observations involving an estimate.

2. It is the result of a defective habit or condition of the observer.

3. It can be more or less modified when attention has been called to it, except in its elements due to fixed conditions, such as astigmatism of the eye.

The second paper was by Mr. G. W. Littlehales on 'The Progress of Trans-oceanic Navigation in the 18th and 19th Centuries.'

The address described the extent of the influence of scientific work in the material affairs of mankind by pointing out what the investigators in astronomy, meteorology, mathematics, mechanics and physics have done during the last two centuries toward the improvement of navigation and the advancement of commerce on the sea.

Perhaps the striking progress in trans-oceanic navigation which the paper portrayed may best be reflected by these two sentences taken respectively from the former and the latter part:

"Driven by the variable winds—which were the sole motor of ocean commerce and of the fleets of nations in that age—and generally without other implements for navigation than the compass, log and line, it became the first duty of every captain to keep his ship in the company of others having the same general destination and thus to regulate his speed to the progress of the dullest sailor and the most indolent master in the fleet."

"A modern steamship works against time. Her paying qualities depend upon the celerity with which she can get from port to port, and her captain—generally disregarding the wind and weather upon which all depended in the old days, but mindful of the perils of navigation—chooses that course which offers the least number of miles of travel and upon which, if practicable, he can head his ship for the port of destination as if it were in sight throughout the voyage."

The third paper was read by Mr. W. H. Dall, in the absence of the author, Mr. Signe Rink. This interesting communication was 'On the Origin of the Eskimo Name for the White Man.'

E. D. PRESTON,
Secretary.

NEW YORK ACADEMY OF SCIENCES—SECTION OF BIOLOGY.

THE annual election of sectional officers resulted in the re-election of Professor E. B. Wilson and Mr. G. N. Calkins to the offices of Chairman and Secretary respectively.

Dr. O. C. Strong reported on a new point on the Innervation of the Lateral Line Organs, and the substance of his paper was as follows:

The view as to the innervation of the organs of the lateral line system which is upheld by the most recent investigations is that these organs are exclusively innervated by certain special roots, having a common center in the medulla. Certain exceptions have been recorded, however, which apparently militate against this view. One of these exceptions is the innervation of a certain canal organ by a

branch of the glossopharyngeus and thus apparently not by a lateral line nerve proper. This anomaly has been described in certain teleosts, ganoids and elasmobranchs.

In studying serial sections through the head of a young dog-fish (*Squalus acanthias*) a condition was found which not only explained this apparent exception, but converted it into an additional support for the specific character of the lateral line nerve roots. The lateral line nerve to the trunk and the glossopharyngeus emerge from the medulla in about the same transverse plane, the former being dorsal to the latter. Close to their exit from the medulla a small intracranial bundle of fibres becomes detached from the lateral line root and fuses with the glossopharyngeus. This bundle could be still followed as a component of the latter, however, owing to the greater caliber of its fibres. When the glossopharyngeus emerges from the auditory capsule the bundle in question soon becomes detached and could be traced to a canal organ. Undoubtedly the fibres, described by Kingsbury, which the glossopharyngeus in Amia receives from the root of the lateral line nerve, would be found to have a similar destination if traced in this way—as indeed Kingsbury himself has suggested.

H. E. Crampton,
Sec. pro. tem.

THE ACADEMY OF SCIENCE OF ST. LOUIS.

At the meeting of the Academy of Science of St. Louis on April 18, 1898, eighteen persons present, Mr. Carl Kinsley read a paper on 'Series Dynamo Electric Machines.' He showed, by the results of tests of machines, that the relations between electromotive force, current and speed can be represented by a surface. This is easily done, since for widely different currents, and for both dynamos and motors, the total induced electromotive force is strictly proportional to the speed when the current is constant. He stated that Frölich's empirical equation can be used to represent large portions of this surface, as suggested by Professor F. E. Nipher.

It was stated that the way in which a series motor will operate from a series generator can be predetermined; and, for cases reported, it was shown that computed results throughout the complete range of working conditions gave an average agreement with observed results to within 0.05 per cent. The method explained in the paper enables an engineer to design such a power transmission circuit accurately from shop tests of the machinery, and to operate the series motor at constant speed under all loads.

It was shown that the resistance of the generator does not vary with the speed. This makes it possible to use a small series generator as a speed indicator and so obtain instantaneous values of engine speeds from the volt-meter or ammeter readings, if the resistance of the outside circuit is kept constant. The practicability of this methed of determining engine speeds was fully shown by the results reported in the paper.

Professor J. H. Kinealy made some informal remarks on the ventilation of schools, and by means of a number of stereopticon views showed the different methods adopted for supplying the air required to the different rooms of schoolhouses.

Four new members were elected.

William Trelease,
Recording Secretary.

NEW BOOKS.

Il Codice Atlantico. Leonardo Da Vinci. Milan, Ulrico Hoepli; New York, Gustav Stechert.

Studies of Good and Evil. Josiah Royce. New York, D. Appleton & Co. 1898. Pp. xv+384. $1.50.

Alternate Currents in Practice. Francis J. Moffett. London, Whittaker & Co.; New York, The Macmillan Company. 1898. Pp. ix + 376. $5.

Lectures on the Geometry of Position. Theodore Reyl; translated by T. F. Holgate. New York, The Macmillan Company. 1898. Part I. Pp. xix + 248. $2.25.

A Treatise on Magnetism and Electricity. Andrew Gray. London and New York, The Macmillan Co. 1898. Pp. xv + 947. $4.50.

The Development of the Child. Matthew Oppenheim. New York and London, The Macmillan Co. 1898. Pp. 296. $1.25.