'Facts and Theories of Telegony,' which gives a brief review of the subject in general and of the recent experiments by Professor Ewart in particular. Edward Thorndike in a 'Note on the Psychology of Fishes' tells of a simple experiment by which it was shown that the common Fundulus could readily learn the proper route of escape from the compartment of an aquarium in which it was confined. C. E. Mead discusses '*Collops bipunctatus* as an Enemy of the Colorado Potato Beetle,' concluding that it is an important agent in protecting the potato crop. 'The Egg-Carrying Habit of Zaitha' is described by Florence W. Slater, and Robert T. Edes treats of the 'Relation of the Chirping of the True Cricket (*Oecanthus niveus*) to Temperature,' showing that the rapidity of the chirps increases with the temperature. 'Regeneration in the *Hydromedusa, Gonionemus vertens*' is discussed in detail by T. H. Morgan, whose experiments show that, although pieces smaller than one-eighth of the medusa may make new individuals having the medusa form, the remodeling does not include the internal organs. Richard C. McGregor has an article on '*Salvinia coccinea*, an Ornithophilus Plant,' describing the manner in which pollination is effected by humming birds, and the sixth instalment of 'Synopses of North American Invertebrates,' by W. P. Hay, is devoted to the *Astacidæ*. The reviews are numerous, and under Correspondence Henry B. Ward puts in a plea for the use of Mesenchyme.

The *Journal of the Boston Society of Medical Sciences* for December has for its first article an abstract of a paper by Charles S. Minot on the 'Classification of Tissues,' which takes the ground that this should be based on embryological data. W. F. Whitney describes some 'Malformations of the Kidneys,' and Thomas Dwight some 'Remarkable Skulls.' The final article 'Experiments on *Saphrolegnia ferax*, and their Application to the Trout Hatchery,' by J. H. Cunningham, Jr., is of much interest to fish culturists.

The Osprey for December opens with some 'Notes from Northern Counties of California,' illustrated by Milton S. Ray; this is followed by a reprint of J. E. Harting's article on 'The Largest Bird that Flies,' which is the subject of some interesting editorial comment. There is a brief biographical sketch, with portrait, of the late D. W. Prentiss. The editorial columns contain a description of the recent meeting of the American Ornithologists' Union, and among the letters is the prospectus of the Third International Ornithological Congress, to be held in Paris during the coming year, and a record of the bird arrivals at Dawson.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES.
SECTION OF GEOLOGY AND MINERALOGY.

At a meeting of the section on December 18, 1899, in the absence of the Chairman, Professor J. J. Stevenson was elected temporary chairman. Twenty-six persons were present.

Professor J. F. Kemp presented a paper on 'Recent Theories Regarding the Cause of Glacial Climate.' During the subsequent discussion of this paper by Professors R. E. Dodge, D. S. Martin and others, Professor Stevenson called attention to the fact that the great excess in the area of the peat bogs on the surface of the earth, during the present period, over that of the swamps which prevailed during the Carboniferous, shows the little foundation for the hypothesis of an excess of carbon dioxide in the atmosphere during the formation of the coal. Dr. Julien also pointed out, in reference to the theory of the refrigerating influence of the absorption of carbon dioxide from the atmosphere, during the decay of rocks, that this effect may have been more than offset by the heat produced during the accompanying absorption of oxygen.

Professor Kemp then read a paper on 'Metamorphosed Dikes in the Mica Schists of Morningside Heights.' This paper was discussed by several members. Dr. Julien acknowledged the resemblance of this outcrop of black hornblende schist to a sheared dike, produced by its strong contrast in color with the enclosing light gray micaceous gneiss, and by the sharp lines of separation of the schist from the highly tilted beds on either side, as if thrust up from below. Yet this is but one of hundreds of exactly similar outcrops in New York and Westchester

Counties. All are intercalated, however, as thin beds in the Manhattan Series; in not a single case has a hornblende schist been observed to cross the other beds. If one or all of these are dikes, the lamination of the associated beds must also have been effected by a general shearing. But the series is accepted as typically metamorphic, a succession of true beds of altered sandstone (quartzitic gneiss), shales (mica schist), magnesian schists (dolomite marble), etc., into which the injection of trap dikes exclusively between the beds would be entirely improbable. These hornblende schists, moreover, on Morningside Heights, as elsewhere, thin out along the strike like the other lenticular beds, often become partially or entirely biotitic and quartzose, passing gradually into biotitic schists, biotitic and hornblende gneisses, exactly like those of acidic constitution which enclose the above supposed dike. Indeed, a basic element, rich in lime and magnesia, is distributed throughout the Manhattan Series; and was originally perhaps hornblendic throughout, or, in the absence of silica, concentrated in the numerous dolomite beds. The more purely hornblendic layers correspond in composition, as shown by the interesting analysis in the author's paper, to beds of altered marl; their density has enabled them to resist and escape, in the present surviving layers, the biotitic alteration which has affected the general series.

A paper was then presented with lantern illustrations by Mr. W. D. Matthew, 'Notes on the Geology of the Laramie Plains and Rattlesnake Mountains in Wyoming.' Professor H. F. Osborn remarked on the uncertainty of the age of the *dinosaur*-beds, whether Jurassic or Lower Cretaceous. All determinations hitherto have been made by collectors, but neglected by the paleontologists, though the section is here continuous from the Mountain Limestone of the Carboniferous up to the base of the Cretaceous. Nor has the correlation yet been made with the corresponding beds of the Wealden, Purbeck, etc., of England and the European Continent. The æolian theory of the author, however, does not appear consistent with reported observations of remains of aquatic life in these beds. The Chairman stated that no true Mountain Limestone fossils have yet been detected in the bed so called in Wyoming, nor the good evidences yet needed of Jurassic life in the *dinosaur*-beds, of other vertebrate life, lacustrine remains, etc., of that age, and for confirmation of synchronism of Jurassic life between the continents. As to the heavy oils of Wyoming, they contain but little paraffin and perhaps less than twenty per cent. of kerosene, and are likely to be worthless, except possibly hereafter for use as a coarse fuel. The paper was further discussed by Professors Dodge, D. Van Ingen and others.

ALEXIS A. JULIEN,
Secretary of Section.

THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

THE 297th regular meeting of the Society was held Tuesday evening, December 19, 1899.

Mrs. M. C. Stevenson read a paper on 'Zuni Games,' in which several ceremonial games were technically described, and the errors of other observers and writers pointed out. The author claimed that these errors were due to a superficial acquaintance, not only of the game itself, but to the lack of familiarity with the people and their language. It was necessary to live a long time with them in order to discover the true meaning of many of the details.

Dr. J. H. McCormick read a paper entitled 'The Supernatural in Primitive Concept,' in which he traced the origin and development of primitive ideas of religion and pointed out the four universal primitive doctrines of Physianthropy, Animism, Transmigration and Anthropomorphism, and the influence exercised by each upon such concepts.

Mr. George R. Stetson gave 'Some Curiosities of Philological Literature.'

Mr. Stetson examined the literature of Comparative Philology from the point of view of the student "who is disturbed if not somewhat appalled by the prevailing confusion and contradictions in the understanding and application of the technical terms used by philologers."

In behalf of the inquirer whose mental vision is obscured by the divergent concepts and theories advanced by the various professional writers in regard to the origin of speech, and the

genesis, formation, growth and classification of language, Mr. Stetson appealed to the latter to exercise greater care in announcing, and greater diligence in seeking for unanimity in their concepts.

He suggested that, in order to prevent the existing confusion among professional writers as well as among students, it was imperative that a line be drawn and a classification adopted which shall definitively separate the crude, fluctuating, undeveloped, and unrefined speech of a narrowly circumscribed region—*i. e.*, the 'dialectic stage'—from the comparatively fixed and highly developed inflected speech of an extensive area, or the 'cultivated stage.'

That patois and dialect should cease to be used as synchronal or equivalent terms, as in the history of language the former represents the destructive and the latter the constructive period.

That the use of 'dialect' as a relative term, by which the meaning of the 'dialect' and 'language' is made to depend upon the connection in which the terms are used should be abandoned, in the interest of clear thought and intelligible classification.

That writers should more particularly differentiate 'speech' from 'language,' and, in comparative philology, the study of the affinities of language, from linguistics, the study of the derivation of words.

That the classification and relations of dialect, language, patois, and jargon be more absolutely defined and rescued from their present confusion by some authoritative body.

That the aim of writers on comparative philology and experts in linguistics should be to more completely separate the conceptual and hypothetical from the practical and profitable, and thus prevent the needless waste of thought and effort.

"That more is to be learned from analogy and living speech, as Professor Sayce suggests, than from dead literature," or it may be added from the questions of origin and precedence.

In conclusion Mr. Stetson remarked that he did not wish to convey the impression that the absence of unanimity in concepts and confusion in terminology is peculiar to the writers on philology; he feared that they might be found in a greater or less degree in all philosophical inquiries.

He also expressed the opinion that students generally, in view of the prevailing contradictions, the dearth of recorded facts, and superabundance of hypotheses, are not inclined to accept without question the present claim of comparative philology as a science, and that while extremely valuable work has been and is being done,—especially in the division of linguistics, a study which has been practically born within our memory,—its essays and instruction are too frequently founded upon hypotheses "which furnish no perceptible evidence of truth or of value in their practical application."

J. H. McCormick,
Secretary.

DISCUSSION AND CORRESPONDENCE.

HOMOLOGIES OF THE WING VEINS OF HYMENOPTERA.

Very important investigations of the morphology of the venation of the wings of insects have recently been made by Professor Comstock in his 'Manual for the Study of Insects,' published in 1895, and more recently by Comstock and Needham, in a series of articles published in the *American Naturalist*, 1898–99, reissued as a pamphlet of 124 pages and 90 figures by the Comstock Publishing Company.

While I accept their principles, the application of them and a comparison of the figures lead me to a different conclusion with regard to homologies of the wing-veins of hymenoptera, which in connection with my studies of the bees it has been very important for me to work out. In the Manual vein M is regarded as three-branched, as in the diptera, but in the later articles this vein is regarded as four-branched.

In the first place I regard the wing of *Macroxyela* (Manual, p. 606, fig. 705) as a better example of the typical hymenopterous wing than the composite wing produced by a combination of the wing of *Macroxyela* and *Pamphilius* (*Am. Nat.*, 414; figs. 38–39). But the latter will illustrate my views.

My conclusions are: that the cross-vein m connects M_2 and $M_3 + Cu_1$, as in the wing of