

SCIENTIFIC JOURNALS AND ARTICLES.

The Journal of Experimental Zoology, Vol. III., No. 1 (February, 1906), contains the following papers: Edmund B. Wilson, 'Studies on Chromosomes, III.: The Sexual Differences of the Chromosome-groups in Hemiptera, with some Considerations on the Determination and Heredity of Sex.' This article presents the final result of a comparison of the chromosome-groups in the Hemiptera-heteroptera, and shows that the two sexes exhibit constant differences that are traceable to the mode of fertilization, the spermatozoa being predestined in equal numbers as male-producing and female-producing forms. A general discussion of sex-production in relation to the chromosomes is given. David D. Whitney, 'An Examination of the Effects of Mechanical Shocks and Vibrations upon the Rate of Development of Fertilized Eggs.' Fertilized eggs of *Arbacia*, *Asterias*, *Fundulus* and *Ctenolabrus* were subjected to slight and violent mechanical shocks and vibrations from a few seconds to several hours with no acceleration of cell division occurring in the early stages, provided the temperature was kept uniform. John W. Scott, 'Morphology of the Parthenogenetic Development of Amphitrite.' A close comparison is made between the early development of the eggs of *Amphitrite* and the development produced in unfertilized eggs by certain salt-solutions or mechanical agitation. Charles R. Stockard, 'The Development of *Fundulus Heteroclitus* in Solutions of Lithium Chlorid, with Appendix on its Development in Fresh Water.' Lithium chlorid in both fresh and sea water solutions was found to produce characteristic abnormalities in various stages of the development of the fish; varying the concentration of the solution varied the degree of abnormality induced. *Fundulus* eggs developed in fresh water more slowly than normally; only a small percentage hatched and these died very soon after. E. A. Andrews, 'Partial Regeneration of the Sperm-receptacle in Crayfish.' Removal of the phylogenetically new but physiologically necessary external sperm receptacle of adult female crayfish was followed by regeneration of an organ very

similar to the early larval state of the normal receptacle. A. J. Goldfarb, 'Experimental Study of Light as a Factor in the Regeneration of Hydroids.' Colonies of *Eudendrium ramosum*, under the influence of previous illumination, regenerate hydranths, whether the colony be exposed or not; when not under such influence little or no regeneration takes place, unless colony be exposed; and exposure of one tenth to one sixth of a minute may suffice. An exposure of three to five hours, though generally not less than two days, is required for regeneration of hydranths of *Pennaria tiarella*.

THE November-December number of *The Journal of Geology* opens with a paper by Dr. T. W. Stanton on 'The Morrison Formation and its Relations with the Comanche Series and the Dakota Formation.' Dr. Stanton says that these beds have been under discussion since 1877 and that the question whether the Morrison formation is Jurassic or Cretaceous is still to be answered. Dr. G. M. Murgoci, of the University of Bucharest, contributes an article on the 'Tertiary Formations of Oltenia (the western part of Roumania) with regard to Salt, Petroleum and Mineral Springs.' This is illustrated by a map, eleven figures and a synoptic table. The concluding contribution is a discussion of 'The Pleistocene Formations of Sankaty Head, Nantucket,' by J. Howard Wilson.

The American Geologist for November contains a paper by Professor G. Frederick Wright, on 'Glacial Movements in Southern Sweden,' which is illustrated by one plate. This is followed by W. G. Tight's article on the 'Bolson Plains of the Southwest.' Mr. Warren Upham discusses the 'Glacial Lakes and Marine Submergence in the Hudson-Champlain Valley.' Professor C. R. Keyes contributes a paper on 'The Jurassic Horizon around the Southern End of the Rocky Mountains.' Anna I. Jonas gives a review of the occurrence and origin of the known 'Serpentines in the Neighborhood of Philadelphia' and W. O. Hotchkiss gives 'An Explanation of the Phenomena seen in the Becke Method of Determining Index of Refraction.' Those

who expect to attend the International Geological Congress in the city of Mexico next September will be interested to read the paper by F. N. Guild on 'El Instituto Geologica de Mexico.' The number concludes with an interesting editorial on the consolidation of the *Geologist* with *Economic Geology*.

SOCIETIES AND ACADEMIES.

THE AMERICAN PHYSICAL SOCIETY.

A REGULAR meeting of the Physical Society was held in Fayerweather Hall, Columbia University, New York city, on Saturday, February 24, 1906. President Barus presided.

On motion the president, the secretary and E. B. Rosa were made a committee to prepare a memorial to Congress urging the passage of the pending bill providing for the use of the metric system in all the government departments.

On motion a committee was appointed consisting of A. G. Webster (chairman), M. I. Pupin and P. C. Hewitt, to consider the practicability of securing for the Physical Society an endowment fund, the income of which shall be available to meet the expense of committees appointed by the society to investigate and report on special topics of importance.

The following papers were read:

W. G. CADY: 'A Direct-recording Magnetic Declinometer.'

W. G. CADY: 'A Machine for Compounding Sine Curves.'

A. W. SMITH: 'The Damping of a Ballistic Galvanometer.' (Read by title.)

E. L. NICHOLS and ERNEST MERRITT: 'Further Experiments on the Decay of Phosphorescence in Sidot Blende.'

E. L. NICHOLS and ERNEST MERRITT: 'The Decay of Phosphorescence in a Certain Specimen of Willemite.'

E. B. ROSA: 'The Gray Absolute Electrodynamometer.'

B. B. BOLTWOOD: 'On the Relative Proportion of the Total α -ray Activity of Radioactive Minerals due to the Separate Radioactive Constituents.'

H. M. DADOURIAN: 'The Radioactivity of Thorium.'

CARL BARUS: 'Nucleation and Ionization in CO_2 and Coal Gas.'

H. T. BARNES: 'Temperature Records of Nocturnal Radiation.'

E. F. NICHOLS: 'On the Possible Separation of Electric Charges by Centrifugal Accelerations.'

The spring meeting of the society will be held in Washington.

ERNEST MERRITT,
Secretary.

THE SAN FRANCISCO SECTION OF THE AMERICAN MATHEMATICAL SOCIETY.

THE ninth regular meeting of the San Francisco Section of the American Mathematical Society was held at Stanford University, on February 24, 1906. Sixteen members of the society were in attendance; in addition to these there were present a number of high school teachers of mathematics who are not members of the society. The following papers were read and discussed during the two sessions of the section:

DR. J. H. McDONALD: 'The theory of the reduction of hyperelliptic integrals of the first kind and of genus 2 to elliptic integrals by a transformation of the n th order.'

DR. W. A. MANNING: 'On multiple transitive groups.'

MR. ARTHUR RANUM: 'A new kind of congruence-group and its application to the group of isomorphisms of any abelian group.'

PROFESSOR D. N. LEHMER: 'On the orderly listing of substitutions.'

PROFESSOR D. N. LEHMER: 'Note on the values of z of given modulus which give maximum or minimum values to the modulus of a given rational integral function of z .'

PROFESSOR R. E. ALLARDICE: 'Note on Legendre's equation.'

PROFESSOR R. E. ALLARDICE: 'On the multiple points of unicursal curves.'

PROFESSOR E. J. WILCZYNSKI: 'Outline of a projective differential geometry of curved surfaces.'

MR. E. T. BELL: 'Method of dealing with the problems connected with prime numbers.'

DR. T. M. PUTNAM: 'Theorems on perfect numbers.'

DR. J. H. McDONALD: 'A method of simultaneous approximation to two consecutive roots of an algebraic equation of degree n all whose roots are real.'

DR. J. H. McDONALD: 'Remarks on the calculation of roots of Bessel functions.'