all grades of education have made during recent years, there continues to exist such a spirit of general unrest and criticism of results as to preclude any feeling of satisfaction or security to serious students and workers in education. In the controversy between the educational progressives and the educational conservatives, society in general has assumed a defensible position and has accepted the program for progress as rapidly as the scientific soundness of that program was demonstrated. Our educational science in the past has been decidedly individualistic and the scientific problems of education have not been analyzed and delimited so as to permit the practical utilization of the collected results of accomplished investigation or the cooperative efforts of individual investigators. The real obstacle to progress has been the lack of coordinated and cooperative research. There is need to-day for scientific insight rather than emotional propagandism. Governmentally the center of gravity is shifting from the *state* to the *nation*. The traditional balance between state and federal activities has been overthrown and the signs of the times indicate the development of many new social functions, the full and adequate performance of which will depend upon the national government. Education, especially in its elementary and secondary stages, is the one subject of vital significance to human welfare, the scientific investigation of which the national government has not generously subsidized and encouraged. The expansion of United States Bureau of Education so as to enable it to serve as the central laboratory for American research in education, undertaking that now not undertaken, coordinating and organizing that now being attempted in a haphazard and incidental manner by individual institutions and societies, and causing it thereby to assume the leadership now so much needed for the real advance of American education seems to offer the greatest opportunity for the new federalism.

Mr. Moore's paper will be printed in full in SCIENCE.

At the second session of the section the topic "American College Education and Life" was treated by Professors Josiah Royce, of Harvard; Wm. North Rice, of Wesleyan; James H. Tufts, of Chicago, and Mr. Abraham Flexner, of the Carnegie Foundation for the Advancement of Teaching. These papers have been printed in full in SCIENCE for March 12 and 19.

Two joint sessions were held: one with the American Psychological Association and the other with the American Federation of Teachers of the Mathematical and the Natural Sciences. At the first of these joint sessions the following program was given:

"Psychological Investigations that will help the Educator," by Professor E. A. Kirkpatrick.

"Studies in Number Consciousness," by Professor C. H. Judd.

"The Factors of General Ability," by Professor E. L. Thorndike.

"Homogeneous Content in the Measurement of Memory," by Professor C. E. Seashore.

"The General Effects of Special Practise in Memory," by Professor W. F. Dearborn.

"The Study and Treatment of Retardation," by Professor Lightner Witmer.

The report of this meeting has been published in the Proceedings of the American Psychological Association.

The other joint session with the science teachers was given up to a symposium on "The Problems of Science Teaching" by President Ira Remsen, Jonns Hopkins University, and Messrs. Wm. T. Campbell, Boston Latin School; George F. Stradling, Northeast Manual Training High School, Philadelphia; John M. Coulter, The University of Chicago, and Lyman C. Newell, Boston University. The report of this meeting has been published in SCIENCE for April 30, in connection with the report of the American Federation, and also in *School Science and Mathematics* for March and April, 1909.

C. R. MANN,
Secretary

THE ENTOMOLOGICAL SOCIETY OF AMERICA

THE fourth meeting of the Entomological Society of America was held in Baltimore, December 30 and 31, 1908, in affiliation with the American Association for the Advancement of Science.

The meeting was called to order by the president, Dr. W. M. Wheeler, in the Eastern High School, at 11 A.M., December 31. Dr. Fernald read the report of the committee on nomenclature. Moved and carried that this report be received and printed and discussed one year later, and that this should be the general policy in dealing with these reports. This report is appended. The managing editor made an informal report upon the condition of the *Annals*. The president announced the death during the year of Dr. W. H. Ashmead, an honorary fellow; Dr. James Fletcher,

a fellow, and of three members, C. Abbott Davis, Albert V. Taylor and Alexander Craw. The president announced that he had appointed committees to draw up suitable resolutions upon the death of Drs. Ashmead and Fletcher. These resolutions are appended. The secretary read a communication from W. C. Wood suggesting action looking toward abolishing the tariff on insects. Moved and carried, "That it is the sense of this society that the duty on insects is objectionable and should be abolished." The matter was referred to the executive committee with power. Adjournment until 1:00 P.M.

At that time the meeting was called to order by the first vice-president, Dr. J. B. Smith. The report of the nominating committee was read, and in accordance therewith, the secretary was instructed to cast a ballot for the following officers, which was done:

President—Dr. Henry Skinner.

First Vice-president—Professor Herbert Osborn.

Second Vice-president—Dr. A. D. Hopkins.

Secretary-Treasurer—J. Chester Bradley.

Additional Members of the Executive Committee—Professor J. H. Comstock, Dr. W. M. Wheeler, Mr. E. A. Schwarz, Dr. John B. Smith, Rev. Professor C. J. S. Bethune, Professor Lawrence Bruner.

Member of Committee on Nomenclature to Serve Three Years—Dr. E. P. Felt, to succeed himself.

There being no further business, papers were read as follows:

Notes on a Lecanio-diaspid: W. C. O'Kane.

A. N. Caudell spoke briefly on a method that he had adopted for preserving types. He uses Riker mounts for this purpose.

Contributions to our Knowledge of the Host Relations of Ticks: W. A. Hooker.

Discussion by Messrs. Skinner, Cooley, Viereck, Bruner and Miss Mitchell.

At 3 P.M. a joint session with Section F of the American Association for the Advancement of Science was held in the Eastern High School. Dr. J. B. Smith presided over the meeting. The following papers were read:

Investigations of Toxoptera graminum and its Parasites: Mr. F. M. Webster.

This paper was published in Science, February 12, 1909, p. 278.

Discussion by Professor Washburn and Mr. Hayhurst.

On the Muscular System of Spiders' Legs: A. Petrunkevitch.

A Note on the Habits of the Wall-bee, Chalicodoma muraria: J. N. Comstock.

This insect is very abundant at Dendera, Egypt, where it is covering the walls of the ancient temple, that have been unearthed, with its cement-like nests, rendering it impossible to read the inscriptions upon them.

Evolution and Adaptation in the Palpi of Male Spiders: J. A. Nelson.

To be published in full in the *Annals*. Discussion by Drs. Hopkins and Petrunkevitch.

Species, Varieties, Races, etc.: J. B. Smith.

Discussion was postponed until after the reading of the next paper.

What is a Species? H. Skinner.

Considerable discussion was evoked by these two papers, Messrs. Williston, Fernald, Felt, Viereck, Schwarz, Caudell and others participating.

Adjournment.

At 10 A.M. on December 31, the meeting was called to order by Dr. Wheeler, and the following papers read:

Death-feigning by Zaitha fluminea: H. P. Severin. Read by Professor Osborn.

Some Habits of Seed-infesting Chalcis Flies: C. R. Crosby.

The Development of the Scent-pockets of Anosia: W. A. Riley.

The pupal development of the scent-pocket or, as it is proposed to designate it, the murotheca, of the male Monarch butterfly was discussed. Its future position is indicated in the earliest pupa by the richness of the supply of tracheoles, indicative of the greater physiological activity in this region. Before pigmentation is apparent in the rest of the wing the murotheca stands out as a densely pigmented black disk overlapping vein Cu_2. Sections show that the androconia originate on the free surface of the upper wing membrane, which pushes out over the vein and later in pupal life folds on itself, giving rise to the pocket-like murotheca with its opening directed caudad. The structure of the androconal glands was briefly discussed.

The Tracheal Supply in the Central Nervous System of the Larva of Corydalis: William A. Hilton, Cornell University.

There are three pairs of tracheal branches going to the brain and two to the subesophageal ganglion. The first thoracic has one pair and a median tracheal branch. All the other ganglia have one pair except the last or eighth abdominal,

which has, in addition to the branches similar to the others of the other ganglia, large branches from the system of the seventh ganglion. The connectives between the ganglia with the exception of those between the subesophageal and first thoracic and those between the seventh and eighth, get all of their branches from the ganglia above and below them. In the case of the first exception, there are two additional branches from the outside. In the case of the second, all of the connective supply comes from the system of the seventh ganglion. There is in each ganglion a very complete superficial and deep network of large and small branches. The tracheoles in the center of the ganglia are *very* numerous and very intricately woven together, but in no place was anastomosis found.

Observations on the Taxonomy of the Cecidomyiidæ: E. P. FELT.

Recording and Mapping the Entomological Fauna of a State: FRANKLIN SHERMAN, Jr., State Department of Agriculture, Raleigh, N. C.

The 5 × 8 card is used as the unit, one side being rather closely ruled, while on the other side is printed an outline map of the state. Each insect is given a card—the divisions into orders, families and genera being indicated by appropriate guide-cards. All records as to place and date of capture are written in condensed form on the ruled side, while on the map a dot is placed for each locality. Gradually these records will define the different life-zones of the state and will indicate the approximate distribution of each species.

Rediscovery of the Bibionid Genus Eupeitenus: D. W. COQUILLETT.

In 1834 Macquart described *Penthetria atra* n. sp. from a male specimen in Serville's collection, captured at Philadelphia, Pa., since which time the species has not been taken again until April 26, 1908, on which date Mr. H. S. Harbeck collected a female specimen at Germantown, a suburb of Philadelphia. Walker, in 1838, referred two British American specimens to this species, but there is no certainty that his identification was correct. Macquart's figure is very faulty. In 1838 Macquart erected a new genus, *Eupeitenus*, for this species.

In the absence of the authors, or for other reasons, the following were read by title only:

Local Relations of Allied Species: S. A. FORBES.

On Some Terms used in Systematics: A. PETRUNKEVITCH.

A Colony of Mound-building Ants: E. A. ANDREWS.

The Conception of Unit-systems in Biology: W. E. RITTER.

Some Further Remarks on the Systematic Affinities of the Phoridæ: C. T. BRUES.

A Monographic Catalogue of the Myrmarid Genus Camptoptera Foerster, with Description of One New North American Form: A. A. GIRAULT.

Studies on Aphididæ II.: J. J. DAVIS.

A Newportia in Utah: R. V. CHAMBERLIN.

The report from the excutive committee was read and, with all its provisions and recommendations, adopted.

The executive committee announced the election of the following fellows: Samuel W. Williston, Theodore Dru Allison Cockerell, Ephraim Porter Felt, Elmer Darwin Ball, Alexander Dyer MacGillivray.

Mr. Viereck moved to ask the committee on nomenclature to define what constitutes a species and variety, taking into consideration what the ornithologists have done, and that they bring the same up before the Commission on Nomenclature of the International Congress of Zoology one year before the next meeting of that congress.

Adjournment.

At 8 P.M., in the assembly room of McCoy Hall, the annual public address was given before the society by Dr. E. B. Poulton, Hope professor of zoology in the University of Oxford, on "Mimicry in the Butterflies of North America." The speaker was introduced by Vice-president Smith. A large and appreciative audience was in attendance. The address was illustrated by many beautiful colored slides.

J. CHESTER BRADLEY,
Secretary-Treasurer

RESOLUTIONS ON THE DEATH OF DR. WM. H. ASHMEAD

William Harris Ashmead, naturalist, honorary fellow of this society, died on October 17, 1908. We, his colleagues, would hereby give expression to our sorrow in the loss of a leader and a friend —one who gave himself unsparingly to the advancement of the science we cherish, who made himself by his zeal and industry one of the foremost students of the Hymenoptera in the world, and who furthered our progress by his numerous and valuable papers and by the prompt and generous aid he lent to every student who asked his expert knowledge and assistance. We gratefully acknowledge our debt to him, and we desire to place on record this testimonial of our esteem for him as a man, our pride in his successful career, our high regard for his scientific work, and our

sincere sense of irreparable loss at his passing away.

J. H. COMSTOCK,
J. G. NEEDHAM,
J. C. BRADLEY,
Committee

RESOLUTIONS ON THE DEATH OF DR. JAMES FLETCHER

WHEREAS, By the untimely removal of Dr. James Fletcher, the Entomological Society of America has lost—the first by death—one of its original fellows, and former vice-president, who presided at the Chicago meeting one year ago; and

WHEREAS, Dr. Fletcher, by reason of his nobility of character, kindness of heart and zeal, tempered by good judgment, was known and beloved among scientific men not only throughout the whole of the United States and the Dominion of Canada, but also abroad, as a careful, conscientious, scientific worker, a true Christian and a thorough gentleman; and

WHEREAS, His death, almost in the prime of life, is a serious loss to the applied science of entomology as well as of botany in America; therefore, be it

Resolved, That by and through these resolutions the members of this society express their grief over this loss, to two nations, of this truly fine, good man and colleague; and be it further

Resolved, That a page of the *Annals* of this society be set aside for the purpose of placing these resolutions on record and that the secretary be instructed to send a copy thereof to the bereaved family.

F. M. WEBSTER
F. H. CHITTENDEN
C. L. MARLATT

REPORT OF THE COMMITTEE ON NOMENCLATURE

Your committee desires to report that since its appointment, four matters have been presented for its consideration. Of these, one was the consideration of a particular case and was soon settled. The second is still under consideration; the third it has not, as yet, been able to take up, and the conclusions which the committee have reached upon the fourth case are herewith presented.

The nomenclature of gall insects was referred to the committee as the result of a paper by Dr. E. P. Felt presented at the last meeting. The committee is not unanimous on all points, but considers it desirable to present the following:

Report on the Nomenclature of Gall Insects.

In the literature relating to galls and gall insects, there are found several different kinds of description, accompanied by names.

1. Those relating to the galls only, with names intended to apply to the galls, not to their inhabitants.

2. Those relating to the galls only, but with specific names referred to particular insect genera, and intended to apply to the gall insects themselves, these being known at the time only from their work.

3. Those relating to the galls and the contained larvæ, with names proposed to be applied to the insects.

4. Those relating to the galls and the adult insects bred therefrom, and sometimes also to the larvæ, with names proposed for the insects in the usual manner.

5. Those relating to the adult insects, the galls being unknown, with names as usual.

I. It is agreed that in cases falling under 1, the names proposed do not enter zoological nomenclature. It is also obvious that in cases 4 and 5, the names are correctly proposed, and available for use if otherwise in accordance with the international rules.

II. It is the opinion of the committee that specific names based on larvæ (case 3) are available, and may be used.

III. With regard to the description of the gall, it is recognized that it forms a valuable part of the diagnosis of any gall insect, and that without it the recognition of the species may be difficult or practically impossible, especially when the description is not very detailed or precise. The committee is willing to accept a name based on the description of an adult or larva plus gall, even though the name would not be recognizable or of certain application were the account of the gall excluded from consideration.

IV. With regard to names applied as in case 2, intended to refer to the then unknown makers of known galls, it is the sense of the committee that, whenever possible, these names should be adopted.

V. The committee is not wholly in agreement as to whether it is obligatory to maintain names (if otherwise valid) proposed as in case 2; or whether, when they are maintained, the original author and date should be cited, or the author and date of the publication in which the insect itself is first described. The majority of the committee, however, is against the obligatory recognition of names accompanied by descriptions of galls only, and holds that when these are adopted, they properly enter nomenclature at the time of the description of the insect itself.

VI. The committee agrees, that whatever may be the ultimate ruling on the last point, there are many practical difficulties in the way of recognizing names proposed as in case 2, so that even were such names held to be available, many of them would have to be rejected as of uncertain application. It is perfectly clear that no rules will absolve an author from using his critical judgment in the several cases that come before him; and after the rules have declared a name available from their standpoint, it may be a long way to availability from the standpoint of practical identification.

The committee is greatly indebted to Dr. C. W. Stiles, the secretary of the International Commission on Zoological Nomenclature, for a full and luminous discussion of the matters in dispute.

H. T. FERNALD
T. D. A. COCKERELL
E. P. FELT

SOCIETIES AND ACADEMIES

THE MICHIGAN ACADEMY OF SCIENCE

THE 15th annual meeting of the academy was held at Ann Arbor, Mich., March 31 and April 1 and 2. The meeting was made the occasion of a Darwin Centenary Celebration, and the Research Club of the University of Michigan and the Michigan Schoolmasters' Club cooperated with the academy in furnishing special programs. The papers presented were as follows:

Program of the Darwin Celebration

Darwin Program of the Academy of Science.

Address of the president: "The Beginnings of Life from the View-point of a Bacteriologist," Dr. Charles E. Marshall.

"Theories of Animal Coloration, especially Warning Coloration," Professor Jacob Reighard.

"A Contribution to the Theory of Orthogenesis," Dr. Alexander Ruthven.

"American Paleontology and Neo-Lamarckism," Professor E. C. Case.

"The Mutation Theory from the Botanical View-point," Dr. Henri de Leng Hus.

The above papers were, for the most part, devoted to a discussion of the methods of evolution, from the standpoint of the original work of the speakers.

Public address under the auspices of the Research Club of the University of Michigan: "Darwinism and Paleontology," Professor W. B. Scott, Princeton University. In this lecture Professor Scott reviewed the evidence of evolution furnished by paleontology, and discussed the character of the evidence, using as illustrations the horse, camel, rhinoceros and other mammalian series.

Joint Session of the Science Teachers Section of the Academy and the Biological Section of the Schoolmasters' Club, S. D. Magers, chairman.

The Effect of the Darwin Doctrines:

"On Biology," Professor C. B. Davenport.

"On Psychology," Professor N. A. Harvey.

"On Education," President E. G. Lancaster.

"On Religion," Rev. Carl S. Patton.

As indicated by the titles, the papers presented at this meeting were concerned with the influence of the Darwinian theories upon the different fields of thought represented by the speakers.

Regular Program

Section of Agriculture, A. J. Patten, vice-president. (Held at the Michigan Agricultural College, April 14.)

"Some Reminiscences of the Attitude of Harvard Professors toward Darwin's Work," W. J. Beal.

"Darwin's Influence on Plant Breeding," H. J. Eustace.

"Darwin's Influence on Animal Breeding," A. C. Anderson.

"Further Experimental Work on the Interaction of Plant Roots," J. B. Dandeno.

"Advanced Methods in Milk Analysis," W. E. Robison.

"A Discussion of the Value of Raw Rock Phosphate for Fertilizing Purposes," A. J. Patten.

Section of Botany, Wm. E. Praeger, vice-president.

"Osmotic Theories, with Special Reference to van't Hoff's Law," J. B. Dandeno.

"Investigation on Bordeaux Mixture," J. B. Dandeno.

"The Rapid Extension of Weeds in Michigan," W. J. Beal.

"Origin of the Flora of Local Peat Bogs," Geo. P. Burns.

"The Effect of Longitudinal Compression upon the Production of Mechanical Tissue in Stems," L. H. Pennington.

"The Plasticity of Some of the Compositæ around Ann Arbor," S. Alexander.

"The Phytogeographical Relations of the Mount Ktaadn Flora," L. H. Harvey.

"Notes on Plant Pathology," J. B. Pollock.

"The Carbon Nutrition of a Fungus," Rose M. Taylor and J. B. Pollock.

"The Culture of Fern Prothallia," Elizabeth D. Wuist.