

photographs of Cunningham's Comet by L. E. Cunningham and Fletcher Watson were exhibited. Photographs of the planets in light of different wavelengths were shown by E. C. Slipper, and photographs by J. B. Edson and others of the illuminated ring of atmosphere of Venus at inferior conjunction were shown. The first quantitative results of combinations of direct photographs and radial velocities for determining space motions of prominences were presented by H. E. Sawyer, J. Brodie and O. Mohler. Other papers were concerned with such questions as the equilibrium of interstellar matter, the effects of tidal action on light curves of eclipsing binaries having eccentric orbits, and a theory of spiral structure in nebulae. At one session the retiring vice-president for Section D, Everett I. Yowell, delivered an address on "The Motions of the Stars."

A reception and tea were given the members of the section and the society at the Flower Observatory of the University of Pennsylvania by Dr. and Mrs. Olivier. The Rittenhouse Astronomical Society served refreshments after an evening demonstration at the Fels Planetarium. At the annual dinner of the society announcement was made of the award of the Annie J. Cannon Prize to Miss Julie Vinter Hansen, of the Royal Observatory of Copenhagen, Denmark. Miss Hansen has won distinction by her work on the orbits of comets. Attendance, about 160.

SECTION ON GEOLOGY AND GEOGRAPHY (E) AND AFFILIATED SOCIETIES

(From report by Howard A. Meyerhoff)

Section E held 9 sessions, starting on Dec. 27 and closing on Dec. 30. Approximately 325 persons attended the sessions in the course of the four days, although there was a marked turn-over in the audience as the subjects changed. But on at least three occasions there were more than 100 persons in attendance at an individual session.

In arranging the program the section enjoyed the cooperation of the Section on Physics (B), the Geological Society of America, the Association of American Geographers and the Philadelphia Geological Society.

On Friday morning, sections B and E met in a joint session to consider "Some Applications of Physics in the Earth Sciences," which was well attended by both physicists and geologists. It was unanimously agreed that the effort to acquaint the two groups of scientists with problems in both fields was worthwhile and successful.

The Philadelphia Geological Society sponsored a symposium on "Igneous Rocks of the Appalachian Mountains System" on Saturday and Sunday. A group of distinguished speakers participated in the

program, which attracted many specialists in Appalachian geology. The Sunday afternoon session on the same subject was well attended, and discussions were both enthusiastic and vigorous.

On Saturday evening, at Bryn Mawr, Kirk Bryan delivered his retiring vice-presidential address on "The Geologic Antiquity of Man in North America." A large audience was present and attended the smoker given afterward by the Department of Geology at Bryn Mawr.

On Monday the section met jointly with the Association of American Geographers for a symposium on the "Geography of National Defense." The pertinence of the papers was such as to attract attention, and this session was unquestionably the most timely of those sponsored by the geologists and geographers. Other sessions dealt with the geology of the Atlantic Coastal Plain and with recent research on Appalachian structure, stratigraphy and sub-surface water.

SECTION ON THE ZOOLOGICAL SCIENCES (F) AND AFFILIATED SOCIETIES

(From reports by George A. Baitsell, L. V. Domm,
Ernest N. Cory, Clarence E. Mickel
and O. R. McCoy)

Section F (George A. Baitsell, *secretary*) met in joint sessions with its affiliated societies. At the annual Zoologists' Dinner (attendance, 302) Leon J. Cole, retiring vice-president for Section F, delivered his vice-presidential address on "Each After His Kind."

The American Society of Zoologists (L. V. Domm, *secretary*) held its 38th annual meeting Dec. 30, 1940-Jan. 1, 1941, inclusive, joining with Section F in the annual zoologists' dinner and with the Ecological Society of America in a symposium on "Population Problems in Protozoa" and with the American Society of Naturalists, the Botanical Society of America and the American Society of Plant Physiologists in a symposium on "Experimental Control of Development and Differentiation." The meeting was noteworthy for the high character of the two symposia, the large number of papers presented (182 papers read, 40 demonstrations presented and 125 papers read by title) and the large attendance at the programs (about 800 at the regular sessions).

The first joint symposium, under the leadership of Lorande L. Woodruff, consisted of 6 papers which presented a critical and lucid survey of "Population Problems in Protozoa." The importance of the subject and the eminence of the participants (Lorande L. Woodruff, G. Evelyn Hutchinson, Richard P. Hall, Willis Johnson, W. H. Taliaferro and W. C. Allee) are proved by an attendance of nearly 1,200 persons, unquestionably the largest number ever to attend a

symposium organized by the society. For the second joint symposium see report, below, of the American Society of Naturalists.

Frederick L. Hisaw, a former president of the society, organized a symposium on the problem of "The Endocrine Control of the Mammalian Reproductive Cycle," the participants in it being Dr. Hisaw, William C. Young and Edwin B. Astwood, who together presented a critical and well-coordinated account of this very interesting, important and widely investigated problem.

The number of papers read in person was by far the largest which has ever appeared on a program of the society. The demonstration program was likewise larger than any ever before prepared by members of the society. A special feature was the silent and sound cinema program, the attendance at which was estimated at well over 400.

The following officers were elected: *President*, R. E. Coker; *vice-president*, J. P. Visscher; *member of executive committee*, Wesley R. Coe.

The American Association of Economic Entomologists (Ernest N. Cory, *secretary*) held 14 sessions, including symposia, before which 103 addresses and papers were presented. The society held a joint symposium with the Entomological Society of America on "Breeding of Cultivated Plants Resistant to Insect Attack," the participants in which were R. O. Snelling, J. H. Biggers, C. M. Packard, S. F. Bailey and R. H. Painter. The Section of Plant Quarantine and Inspection held a joint session with the American Phytopathological Society, George S. Langford presiding, at which papers were presented by the chairman, W. Howard Rankin, K. G. Parker, Donald L. Collins and R. H. Porter. An afternoon session continued with a symposium on "Plant Quarantine as Barriers to Interstate Trade" at which papers were presented by S. A. Rohwer, D. D. Mackie and Richard P. White, followed by discussions by M. S. Yoemans, T. J. Headlee and E. L. Chambers.

The Pea Aphid Conference, L. P. Ditman presiding, listened to a history of the pea aphid by W. H. White and a discussion of attitudes of canners to the pea aphid problem by Frank App and C. G. Woodbury, and an address on "Some Pitfalls of Statistical Analysis" by W. H. Kemp. The Section of Teaching, C. L. Metcalf presiding, held a symposium at which 18 teachers participated. The Section of Extension held a panel discussion on extension methods and coordination of entomology with subject-matter in other fields. The Section of Apiculture held a program of nine papers. Forty-eight papers were presented at the general sessions of the society. Attendance, about 340.

The society and the Entomological Society of America joined in the Entomologists' Dinner with an attendance of about 300.

Officers were elected as follows: *President*, J. R. Parker; *first vice-president*, Leonard Haseman.

The Entomological Society of America (Clarence E. Mickel, *secretary-treasurer*) held 5 regular sessions at which 50 papers were presented on a wide variety of subjects, including morphology, taxonomy, physiology, ecology, geographical distribution and nomenclature. Fine colored motion pictures of insects and insect-eating plants were shown at some of the sessions. Approximately 250 members of the society attended the general sessions.

A joint symposium was held with the American Association of Economic Entomologists on "The Breeding of Cultivated Plants Resistant to Insect Attack," P. N. Annand presiding. The first two speakers discussed the broad aspects of the problem, while the remainder enumerated results that had been attained with special groups of plants. Attendance, about 300.

One of the highlights of the meeting was the Annual Public Address given on Friday evening by R. E. Snodgrass on "The Evolution of the Arthropods." Dr. Snodgrass presented a theory of the phylogenetic development of the arthropods from annelid-like ancestors, of the possible development of the annelids themselves from the Coelenterates, and of the relationship between the various classes of arthropods. The lecture was followed by an informal reception tendered by the American Entomological Society to all visiting entomologists. Attendance, about 375.

An innovation was a taxonomists' conference attended by about 125 persons. A joint session was held with the Ecological Society of America, the program being equally divided between the two societies.

Officers of the society for 1941 are: *President*, W. B. Herms; *first vice-president*, A. C. Baker; *second vice-president*, R. H. Painter; *secretary-treasurer*, Clarence E. Mickel.

The American Society of Parasitologists (O. R. McCoy, *secretary*) held its 16th annual meeting, David H. Wenrich presiding as president. The program contained 91 titles representing the fields of protozoology, helminthology and medical entomology. In addition, the society was one of the joint sponsors of the symposium on Human Malaria, arranged under the auspices of Section N, to which many members contributed.

The opening session on Monday was devoted largely to papers in the field of veterinary parasitology, while in the afternoon, medical parasitology was the chief topic of discussion. Papers by J. Allen Scott on "Schistosomiasis in Venezuela" and by Quentin M. Geiman on "*Leishmania braziliensis*" emphasized some of the unusual public health problems that are to be encountered in the Caribbean territory where the United States is preparing to establish defense bases.

Papers on protozoology were presented at the Tues-

day morning session, at the conclusion of which the presidential address on "The Morphology of Some Protozoan Parasites in Relation to Microtechnique" was delivered by David H. Wenrich. Tuesday noon the annual Parasitologists' Luncheon was attended by 158 members and guests, the largest attendance in the history of the society. In the afternoon 31 papers were presented in a demonstration program during which tea was served. The concluding sessions on Wednesday were devoted to papers on helminthology with emphasis on trematode life history studies, a field in which rapid progress has been made in recent years. Total attendance, about 250.

The following officers were elected for 1941: *President*, James E. Ackert; *vice-president*, Justin Andrews; *treasurer*, for two years, Lloyd E. Rozeboom; *members of the council*, to serve four years, Donald L. Augustine and Norman R. Stoll; *members of the editorial board*, to serve four years, Richard P. Hall, E. Harold Hinman and Justus F. Mueller.

SECTION ON BOTANICAL SCIENCES (G) AND AFFILIATED SOCIETIES

(From reports by John T. Buchholz, Paul R. Burkholder, Edwin M. Betts, Henry N. Andrews, Jr., John M. Fogg, Jr., J. A. Pinckard, W. E. Loomis, J. N. Couch, Paul D. Voth, H. A. Gleason and R. M. Tryon, Jr.)

The Section on Botanical Sciences met in joint session with the Botanical Society of America, the American Phytopathological Society, the American Society of Plant Physiologists, the Mycological Society of America, the Sullivant Moss Society and the American Fern Society, with an attendance of about 600. The president of the American Phytopathological Society, Charles Chupp, presided in the absence of M. L. Fernald, vice-president for the section. The program consisted of the address of the retiring vice-president for the section, Neil E. Stevens, on "Botanical Research by Unfashionable Technics." This address was followed by three invitation addresses: A. S. Foster on "Comparative Studies on the Structure of the Shoot Apex in Seed Plants"; Wm. A. Albrecht on "Plant and the Exchangeable Calcium of the Soil"; and O. L. Inman on "Chlorophyll as a Part of the Photosynthetic Mechanism." The address of Dr. Albrecht featured also the rôle of colloidal clays in providing an enormous absorption surface for ions. Attendance about 600.

The Botanical Society of America (Paul R. Burkholder, *secretary*; Edwin M. Betts, Henry N. Andrews, Jr., and John M. Fogg, Jr., *secretaries* of sections of the society) held its 35th annual meeting from Dec. 28, 1940, to Jan. 1, 1941, with its program organized under its four sections. The number of papers pre-

sented in regular sessions of the society was 148. A number of joint sessions were held by cooperation of some of the sections with other plant science organizations. The annual dinner for all botanists was held on Tuesday evening with an attendance of 370. Edgar Nelson Transeau, president of the Botanical Society of America, presided at the dinner and introduced Karl M. Wiegand, retiring president, who spoke on "Fifty Years of Taxonomic Botany in America."

The following are the officers of the Botanical Society of America, Inc., for 1941: *President*, J. T. Buchholz; *vice-president*, S. F. Trelease; *secretary*, Paul R. Burkholder; *treasurer*, Paul Weatherwax.

The General Section of the society held 5 sessions, at which 60 papers were presented on a variety of subjects. The average attendance was about 150. More than one third of the papers were devoted to phases of plant anatomy. In a report on the developmental pattern and cell constitution of the stem in dwarfed maize, the action of the gene d_1 in reducing plant stature was attributed primarily to its effect on the ribmeristem and reduced elongation of the internodal parenchyma cells. The origin of vascular rays in the cambium of conifers and other woody plants and the general structure of phloem cells in 126 species of monocots were reported. Zonal structure of the large dome-shaped shoot apex of *Dioon edule* was of special interest.

The method of division in vacuolate plant cells was described in some detail. In early prophase cytoplasmic strands tend to become aggregated into a more or less continuous diaphragm occupying the position where the division wall will later be laid down. The first evidence of the polarity of cells is provided by their cytoplasmic configuration. Studies on cellulose fibril formation in the chloroplasts of marine algae showed that cellulose fibrils or particles are discharged from the plastids and subsequently deposited in a state of precise orientation in the cell wall.

Other contributions were on cytology and morphology, including papers on various aspects of polyploidy. Two authors described the use of periclinal chimeras with various combinations of $2n$, $4n$ and $8n$ components in studying initiation and development of the leaf and floral organs in *Datura*.

Officers of the General Section of the society for 1941 are: *Chairman*, E. F. Castetter; *secretary*, Edwin M. Betts.

The Paleobotanical Section of the society met for 3 half-day sessions for the presentation of technical papers, a discussion of nomenclature and demonstration of certain modern techniques and fossil specimens. Eleven papers were presented and about 35 persons attended the three sessions.

Bridging the fields of botany and geology, two

Science

SECTION ON THE ZOOLOGICAL SCIENCES (F) AND AFFILIATED SOCIETIES

George A. Baitsell, L. V. Domm, Ernest N. Cory, Clarence E. Mickel and O. R. McCoy

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