tinuously for forty-five consecutive days and at the end of this time all the eggs had hatched. However, no difference either in the time of hatching, or in the general appearance and activity was observed between the fish hatched in the magnet and those in the control.

Observations were also made under the same conditions on eggs of the species *Amblystoma punctatum* which were placed in vessels similar to those used for the rainbow trout: in order to guard against any stray currents, the receptacle containing the control specimens was placed in an iron box in an adjoining room. Under these circumstances the magnetic field was applied continuously for twenty-six consecutive days, and again no difference between the specimens in the magnetic field and those in control vessel was observed.

Further experiments were carried on with rapidly multiplying organisms. Strains of a small bacillus, *B. coli communior,* as well as of a large bacillus, *B. megatherium,* were placed within a small incubator in the center of the coil. Control specimens, at the same temperature, were placed in the thermostat. Culture and staining of the bacteria were done in a uniform manner; but here also no difference in growth or morphology was observed.

These results are in accord with the conclusions of previous experimenters. All these investigations seem to infer that in the case of growth, matter is composed of atoms of which the electrons are in a state of static equilibrium. This evidence supports Thompson's conception of the nature of the atom as conceived for the solid or liquid state. On the other hand, had any changes been observed due to the influence of the magnetic field, growth would then follow more as a gaseous phenomenon, and involve the consideration of Bohr's concept of the atom. One would not be justified in concluding that growth involves only matter in the solid or liquid state; but as gases are involved also in the process of growth, it would seem that they either suffer a change in their atomic configuration and reach a state of static equilibrium, or that they are not assimilated in a state of stable dynamic equilibrium by the organism.

FREDERICK W. LEE
FERDINAND C. LEE

DEPARTMENT OF ANATOMY,
THE JOHNS HOPKINS UNIVERSITY

THE LOS ANGELES MEETING

II

WESTERN SOCIETY OF SOIL MANAGEMENT AND PLANT NUTRITION

THE Western Society of Soil Management held its second annual meeting in Los Angeles on September 20 and 21, immediately following the meeting of the Pacific Division of the American Association for the Advancement of Science. The papers were grouped into four sections, each occupying a half-day's session, according to the following program:

Thursday Morning, September 20

THE SOIL SOLUTION

The nature and promise of the soil solution: JOHN S. BURD.

The relation between the soil solution and the water extract of alkali soils: P. L. HIBBARD.

Secular changes in the soil solution: JOHN S. BURD.

The autotaxic curve as a means of studying soil colloids: A. E. VINSON.

Can we predict the crop producing power of soils from chemical analyses? W. F. GERICKE.

Thursday Afternoon, September 20

SYMPOSIUM ON ALKALI

Replaceable bases in relation to alkali soils: W. P. KELLEY.

The rôle of calcium carbonate in soil alkalinity: A. B. CUMMINS.

The relation of certain alkali salts to the growth of plants: A. R. DAVIS and D. R. HOAGLAND.

The alkali tolerance of plants considered as a phenomenon of adaptation: J. F. BREAZEALE.

The effects of sodium chloride on young orange trees and their recovery: H. S. REED and A. R. C. HAAS.

Thursday Evening, September 20

Paulais Hotel.

Business meeting and banquet.

Friday Morning, September 21

SYMPOSIUM ON SOIL MOISTURE

Comparison of established laws in hydraulics to recent investigations concerning the movement of soil moisture: O. W. ISRAELSON.

The variability in the composition of the ground water of alkali soils: E. E. THOMAS.

Soil moisture conditions above a ground water table and its relation to alkali: W. W. MCLAUGHLIN.

The movement of soil moisture: T. J. VEIHMEYER.

Friday Afternoon, September 21

THE USE OF SULFUR IN AGRICULTURE

The supply of sulfur in soils: D. S. JENNINGS.

Further studies of the gains and losses of soil sulfur: J. S. JONES.

Field experiments with sulfur as a fertilizer: W. L. POWERS.

The present status of the problem regarding the utilization of sulfur as a treatment for alkali soils: C. D. SAMUELS.

The effect of sulfur on soils: J. L. ST. JOHN.

Saturday, September 22

Visit to the Citrus Experiment Station, Riverside, California.

The society was organized at Salt Lake City in June, 1922, as the result of an "Alkali Conference" held with the Pacific Division. It was soon realized from the diversity of papers offered and interest shown that although alkali was the central theme, its

consideration involved the three-fold relation: the plant, the soil, and the soil moisture. Hence the broader scope of the society as indicated by its name. The purpose of the society is to facilitate an exchange of ideas and to promote good fellowship among the numerous soil scientists of the Pacific and Rocky Mountain States, without engaging in publication.

At the Los Angeles meeting it was decided to affiliate with the Pacific Division, but to hold program sessions of the society either immediately before or after those of the Pacific Division. The officers for the first year were: W. P. Kelley, *President,* Citrus Experiment Station, Riverside, California; O. W. Israelson, *Vice-president,* Utah Agricultural College, Logan, Utah; Robert Stewart, *Secretary-Treasurer,* University of Nevada, Reno, Nevada. The officers for the ensuing year are: A. E. Vinson, *President,* University of Arizona, Tucson, Arizona; W. L. Powers, *Vice-president,* Oregon Agricultural College, Corvallis, Oregon; D. S. Jennings, *Secretary-Treasurer,* Utah Agricultural College, Logan, Utah.

A. E. VINSON

PACIFIC DIVISION OF THE PLANT PHYSIOLOGICAL SECTION OF THE BOTANICAL SOCIETY OF AMERICA

THE Pacific Division of the Plant Physiological Section of the Botanical Society of America held its second annual meeting at Los Angeles in conjunction with the other affiliated societies of the Pacific Division of the American Association for the Advancement of Science, September 17–20. Two sessions were held on Tuesday at which papers of general physiological interest were presented and discussed. Wednesday forenoon was given over to a symposium on "Growth and Permeability" with discussion lead by Dr. D. T. MacDougal, Desert Botanical Laboratory; Dr. H. S. Reed, Citrus Experiment Station, and Drs. A. R. Davis and D. R. Hoagland, University of California. On Wednesday afternoon the Plant Physiological Section met with the plant pathologists, economic entomologists and ecologists in a symposium on "Ecological factors influencing the distribution and severity of insect pests and plant diseases." Dr. E. T. Bartholomew, of the Citrus Experiment Station, lead the discussion for the plant physiologists.

The attendance at the meetings was good and the discussions indicated a marked degree of interest in the papers presented. Judging by the interest in the meetings for the two years that this new section of the Pacific Division of the American Association for the Advancement of Science has been in existence, it has an interesting and profitable future before it.

The officers for the coming year are Dr. Geo. B. Rigg, University of Washington, *President,* and Dr. F. E. Denney, U. S. D. A., 142 So. Anderson St., Los Angeles, *Secretary.* It was left for the executive committee to choose the vice-president after it had been determined where the meetings were to be held next year.

GEORGE B. RIGG,
Secretary

THE PACIFIC COAST ENTOMOLOGICAL SOCIETY

THE ninety-first meeting of the society was held at the University of Southern California, Los Angeles, on September 11.

Upon motion of Dr. E. P. Van Duzee, seconded by R. E. Campbell, Dr. J. A. Comstock was elected chairman for the meeting and H. E. Burke, secretary.

The following members and guests were present: A. J. Basinger, H. E. Burke, R. E. Campbell, J. A. Comstock, F. R. Cole, H. S. Fawcett, C. K. Fisher, R. D. Hartman, Trevor Kincaid, A. O. Larson, Isabel McCracken, H. S. Smith, H. E. Summers, E. P. Van Duzee, Mr. and Mrs. W. H. Volck, Mr. and Mrs. W. S. Wright, Mr. Osterhout.

Problems of the amateur entomologist: W. S. WRIGHT. Discussion by Comstock, Van Duzee and Wright.

Entomology at the California Academy of Sciences: MR. E. P. VAN DUZEE. Discussion by Comstock, Wright and Van Duzee.

Curious diptera from the Philippines and adjacent regions: MR. F. R. COLE.

The alder sawfly. The European earwig: MR. TREVOR KINCAID.

The rediscovery of a lost species: MR. J. A. COMSTOCK. Discussion by Wright, Comstock and Van Duzee.

After an informal discussion the meeting adjourned.

H. E. BURKE,
Secretary pro tem.

PACIFIC SLOPE BRANCH AMERICAN ASSOCIATION OF ECONOMIC ENTOMOLOGISTS

THE members of the Pacific Slope Branch of the American Association of Economic Entomologists assembled on September 17 and proceeded with the election of new officers as follows:

Chairman	H. S. Smith
Vice-chairman	C. M. Packard
Secretary-treasurer	R. E. Campbell

Members of the Affiliation Committee are W. B. Herms, chairman, and E. P. Van Duzee.

A very satisfactory attendance was recorded and

the meeting was one of especial interest, although a number of the members were compelled to return to their homes in Berkeley because of the fire. The representation of the western district was not at all satisfactory inasmuch as the attendance was almost entirely from California. Many of the western states have not sent a representative to the meetings for several years, and it is hoped that they will realize the importance of attending the meetings in order to make the Pacific Slope Branch really worthwhile.

The program was largely in the form of a symposium discussing chiefly dusting, biological control and the relations of insect pests in the distribution of plant diseases.

E. O. ESSIG,
Secretary

PACIFIC FISHERIES SOCIETY

THE meeting of the Pacific Fisheries Association was called to order by President Cobb on September 18. Inasmuch as the minutes of the last meeting were not available these could not be read. President Cobb appointed the following committees:

I. *Nominations Committee:* Mr. W. B. Scofield, Professor Kincaid, Professor Fasten and Professor Starks.

II. *Auditing Committee:* Professor E. V. Smith and Professor Kincaid.

III. *Resolutions Committee:* Mr. Seale, Mr. W. L. Scofield, Mr. Thompson and Mr. Bowder.

IV. *Committee for Place of Next Meeting:* Mr. Crandall, Mr. Seale and Professor Kincaid.

The report of the treasurer was read and accepted. Applicants for new membership were considered, voted upon, and elected. Mr. Bowder reported arrangements for a trip around the harbor of Los Angeles for Thursday morning. The program of the afternoon consisted of a paper by Mr. Thompson, entitled, "What the State of California is doing to conserve the food fishes of Southern California." A discussion followed the presentation of the paper. At 4 p. m. the meeting adjourned to meet with the Western Society of Naturalists in order to view pictures of the birds of Laysan Island and also of the Tuna fisheries in California.

The second session of the organization was held the following morning, September 19, when the Nominations Committee reported the following officers for the ensuing year 1923–1924:

President, Dennis Winn, Seattle, Washington.

First vice-president, Will Thompson, California.

Second vice-president, C. McLean Fraser, Vancouver, B. C.

Secretary, Clarence Anderson, Seattle, Washington.

Treasurer, Clarence Anderson, Seattle, Washington.

Executive Committee, John N. Cobb, Seattle; N. B. Scofield, San Francisco; E. A. Seaborg, Seattle; J. W. Kinney, Seattle; Barton Warren Evermann, San Francisco; Alvin Seale, San Francisco.

Mr. Seale, of the Resolutions Committee, presented the following resolutions which were unanimously supported by the organization:

I.

WHEREAS, The building of dams in streams in connection with irrigation and power projects is proving a serious menace to our runs of anadromous fishes, especially when there have been installed unsuitable fishways or none at all.

THEREFORE, BE IT RESOLVED, That the Pacific Fisheries Society in convention assembled at Los Angeles, California, September 17–20, 1923, requests the U. S. Reclamation Commission, and such other public officials as may have jurisdiction in such matters, to require that the problem of assisting anadromous and other fishes in getting over such obstructions, and the young in working their way back to their natural habitat in the sea, be taken up and considered along with the engineering and other problems relating to each project; and this Society promises every aid possible in solving the biological phases of the problems.

II.

WHEREAS, It is a known fact that the salmon fisheries of Alaska are not producing as formerly, the decline being due partly to lack of adequate regulation and partly to other causes; and

WHEREAS, The Department of Commerce has been attempting to meet existing conditions by the establishment of reserves in those districts most vitally affected and has already established several such, said reserves being necessary on account of the inability to secure a comprehensive fisheries code which could be readily administered and which would adequately protect these districts; and

NOW, THEREFORE, BE IT RESOLVED, That it is the sense of the Pacific Fisheries Society in convention assembled at Los Angeles, California, September 17–20, 1923, that we heartily endorse the creation of the reserve referred to, and our Secretary is hereby instructed to send a copy of this resolution to the President of the United States, to the Secretary of Commerce, and to the United States Commissioner of Fisheries.

III.

RESOLUTIONS RE AN INTERNATIONAL FISHERIES TREATY AND AN INTERNATIONAL COMMISSION FOR THE STUDY OF FISHERY PROBLEMS OF THE NORTH PACIFIC, ADOPTED BY THE PACIFIC FISHERIES SOCIETY AT LOS ANGELES, SEPTEMBER 19, 1923.

WHEREAS, It is known that many valuable species of marine mammals such as fur seals, sea otters, elepnant seals and whales, and many species of important food fishes such as salmon and halibut, formerly occurred in the Pacific in such vast numbers as to constitute the objects of fisheries whose animal products were worth more than one hundred million dollars, and

WHEREAS, Nearly all of those great natural resources have been seriously depleted, many of them even to commercial extinction, through greed, short-sightedness and ill-considered fishery methods, and

WHEREAS, It is known that small remnants of fur-seal and sea-otter herds and small numbers of whales and of other commercially valuable species still remain in certain places, and

WHEREAS, The rapid recovery of the Alaska fur-seal herd in the short period of 10 years from complete commercial ruin to an annual production of more than $1,500,000.00, as a result of the international fur-seal treaty of 1911, demonstrates conclusively the wonderful recuperative power of such depleted natural resources of the sea under international cooperation, and justifies the belief that other depleted fisheries can be rehabilitated through similar cooperation among the nations concerned, and

WHEREAS, It is conservatively estimated that these resources when rehabilitated will yield to the world a regular annual product of more than one half billion dollars in value: therefore, be it

RESOLVED, That the Pacific Fisheries Society strongly urges the Honorable the Secretary of State to invite the various maritime countries of the world, particularly those bordering on, or interested in, the Pacific, to send delegates to a convention to meet in Washington at an early date for the purpose of negotiating an International Treaty for the restoration, proper utilization and conservation of the vanishing natural fishery resources of the Pacific; and, be it further

RESOLVED, That the Pacific Fisheries Society recommends that the governments of the countries bordering on the Pacific enter into correspondence for the purpose of establishing an International Commission for the scientific study of the biology, physics and chemistry of the Pacific in the interest of the restoration, proper utilization and conservation of its vanishing natural resources.

NATHAN FASTEN,
Secretary

THE WESTERN SOCIETY OF NATURALISTS

THE Western Society of Naturalists met on September 18 and 19, during the general meetings of the Pacific Division of the American Association for the Advancement of Science at the University of Southern California. On the morning of the eighteenth, the society had a joint session with the Cooper Ornithological Club, and in the afternoon a joint symposium with the Ecological Society of America. Immediately following the symposium Mr. Donald R. Dickey, of Pasadena, showed his beautiful motion pictures of the birds of Laysan Island before a large and very enthusiastic audience.

On Wednesday morning, the nineteenth, there was a short business meeting of the naturalists, at which the officers for the next year were elected as follows: H. B. Torrey, University of Oregon, *president*; Nathan Fasten, Oregon Agricultural College, *vice-president;* C. O. Esterly, Occidental College, *secretary-treasurer*; A. B. Ulrey, University of Southern California and Le Roy Abrams, Stanford University, *members of the Executive Committee.* After the business meeting there was a joint session with the Ecological Society for the presentation of papers of ecological interest.

Two sessions were necessary for Wednesday afternoon. At one of these, which was in conjunction with the Southern California Section of the American Society of Mammalogists, Mr. Dickey again delighted a large audience, this time with his motion picture, "Game trails of the north woods." The other session was for the reading of papers, most of which were concerned with physiology.

The following are the titles of the papers read at the different sessions:

Tuesday morning, September 18

Additions to the distribution records of the Drosophilinae of southern California: CATHERINE V. BEERS.

Sonic depth finder and some possible uses in marine biological collecting: W. C. CRANDALL.

The need of another international fur-seal treaty: BARTON WARREN EVERMANN.

Some observations on the bird life of Death Valley: J. GRINNELL.

Barriers in relation to species-forming: DAVID STARR JORDAN.

The geologic history of the fox sparrows: J. EUGENE LAW.

Some factors in fish classification: E. C. STARKS.

Notes on the present status of the band-tailed pigeon on the Pacific Coast: W. P. TAYLOR.

A remarkable Anthoceros: D. H. CAMPBELL.

Tuesday afternoon, September 18

Joint symposium with the Ecological Society of America. Subject: Evolutionary and ecological aspects of distribution.

The origin and affinities of the floral elements of California: LE ROY ABRAMS.

The ecological and distributional features of the deserts of California: FORREST SHREVE.

Isolation as an evolutionary factor, with special reference to birds and mammals in California: J. GRINNELL.

Some factors in the evolution of desert mammals: F. B. SUMNER.

Wednesday morning, September 19

Joint session with the Ecological Society of America.

Recent studies on microplankton of the southern California region: W. E. ALLEN.

Some features of the vegetation and the climate of arid South Africa: W. A. CANNON.

Factors in survival and growth of juvenile Unionidae: B. J. ANSON and A. D. HOWARD. (Read by A. D. Howard.)

Infertility of transplanted oysters: TREVOR KINCAID.

Wednesday afternoon, September 19

First session

Science publicity: W. E. ALLEN.

The sea environment of natural resources contrasted with that on the land in relation to conservation: BARTON WARREN EVERMANN.

International auxiliary language: present status and prospective value to science: H. B. FROST.

Life-history notes on the tree mouse of the humid coast belt: A. B. HOWELL.

Uniformity in the use and connotation of certain place names: E. C. JAEGER.

The biotic factor in forestry: E. C. MUNNS. (Read by A. G. Vestal.)

The conservation of upland game birds in the state of Washington: W. P. TAYLOR.

Conservation of fur seals: G. DALLAS HANNA.

Second session

Experiments in the transplantation of the hypophysis in tadpoles: B. M. ALLEN.

Comparative stages in the spermatogenesis of various cancer crabs: NATHAN FASTEN.

Influence of time and temperature on the rate of growth of certain tadpoles: H. S. FAWCETT.

Control of polarity and growth by means of the electric current: E. J. LUND.

Continuous production of electrical energy by Obelia: E. J. LUND.

The cytology and breeding behavior of two species hybrids of the genus Crepis: MARGARET MANN.

Acid production in excised mammalian muscle: E. G. MARTIN and A. C. AMBLER. (Read by E. G. Martin.)

The effect of oestruation on activity of the albino rat: J. R. SLONAKER.

A comparison of the effect of desiccated thyroid and thyroxin on the structure and behavior of Paramecium: M. C. RIDDLE and H. B. TORREY. (Read by H. B. Torrey.)

The effect of desiccated thyroid on the color and moulting of the common fowl: BENJAMIN HORNING and H. B. TORREY. (Read by H. B. Torrey.)

The inhibitory action of desiccated thyroid on the development of the testis in fowls: BENJAMIN HORNING and H. B. TORREY. (Read by H. B. Torrey.)

Lutear cells and sexual dimorphism of feathering in wild birds: H. B. YOCOM. (Read by H. B. Torrey.)

Demonstration: Life-history of the round sting ray, Urolophus halleri: A. B. ULREY.

C. O. ESTERLY,
Secretary

PACIFIC BRANCH PALEONTOLOGICAL SOCIETY

THE meeting of the Pacific Branch Paleontological Society was called to order by Vice-president A. O. Woodford at 9 a. m., on September 18, at the Los Angeles Museum of History, Science and Art, Exposition Park.

The following papers were then read:

Note on the fossil content of the San Rafael limestone of the San Rafael mountains, Santa Barbara County, California: M. C. ISRAELSKY.

Marine Eocene horizons of Western North America: B. L. CLARK.

A study of the faunal and stratigraphic relations of the Middle and Lower Miocene of the Santa Ana Mountains, Southern California: C. D. MESERVE.

The cretaceous deposits of the Northern Andes: F. M. ANDERSON.

Fossil diatoms of California from a historical standpoint: C. DALLAS HANNA.

The meeting adjourned for luncheon.

At 2.15 p. m. the meeting was again called to order by Vice-president A. O. Woodford and the following papers were read:

Protesting the species-maker: The point of view of the practical paleontologist: A. J. TIEJE.

The western extent of the painted desert formation and its fauna: C. L. CAMP.

Classification and relationships of the edentates of Rancho La Brea: C. STOCK.

Program for further study of succession of faunas and floras in the John Day region of Eastern Oregon: JOHN C. MERRIAM.

CHESTER STOCK,
Secretary

THE ECOLOGICAL SOCIETY OF AMERICA

Tuesday morning, September 18

The problem of relative values in a life cycle: W. E. ALLEN. The paper emphasized the need of adequate attention to all stages of the life cycle, as well as to the particular stage immediately concerned in the problem at hand.

Field studies of carbon dioxide absorption by plant leaves: FORMAN T. MCLEAN. (Read by title.) Methods and results of experiments on leaves of coconut, rice and sugar-cane were described. The food-manufacturing power of sugar-cane is lowered when the leaf-tips roll up at mid-day in dry weather. This lowering of rate becomes more marked as the drought period lengthens.

The leaf structure of Acacia: HOWARD DE FOREST. (Read by title.)

The influence of precipitation on growth of Monterey pine and redwood: FORREST SHREVE. Diameter increase as indicated by rings in the stump is only a rough measure of increase at different heights in the trunk. Individual trees show very little agreement with each other and with the precipitation, except during a few of the years for which records are available. For these few years agreement was close. Tree-ring records should therefore be interpreted with caution.

California grassland vegetation in the vicinity of Palo Alto: ARTHUR G. VESTAL. The chief dominants are Stipa setigera, Koeleria cristata and Melica imperfecta. Of the 150 grassland species of the area, 73 are annuals, a high proportion. The most conspicuous and abundant

plants are species of Calochortus, Brodiaea, Chlorogalum, Sisyrinchium, Ranunculus, Eschscholtzia, Lupinus, Trifolium, Nemophila, Linanthus, Orthocarpus and Baeria. The plants characteristic of moist habitats are in decline when those of dry habitats are reaching their peak (about April 25). A similar seasonal relation holds as between annuals and perennials.

Some relations of the Zuni prairie-dog to vegetation in northern Arizona: WALTER P. TAYLOR. The grazing ranges are seriously depleted by the prairie-dog, which eats the same grasses as do the cattle, in the same order of preference. The prairie-dogs eat almost as much as the cattle of most kinds of grasses, and more of one kind (drop-seed). They should be exterminated.

Studies in transpiration of tree seedlings: G. A. PEARSON. Yellow pine, Douglas fir and other trees were studied. Methods are being developed which permit comparison of different species, not in the conventional terms of water-loss per unit of leaf area, but in terms of the size of the plant, which is of greater moment in forestry.

Increase of growth-rate in cut-over yellow pine: HERMAN KRAUCH. (Read by G. A. Pearson.) Diameter growth was studied in a forest thinned 27 years before. Cores obtained with the increment borer were exhibited. The growth-rings formed after thinning were 3 to 6 times as wide as the earlier rings, showing most graphically the suppressing influence of competition.

Tuesday afternoon, September 18

Joint symposium with the Western Society of Naturalists: Evolutionary and Ecological aspects of distribution in California.

Floral elements and floral affinities in California: LE ROY ABRAMS. The present flora, recruited at different times from different sources, is made up chiefly of three elements: boreal, warm-temperate and west-American (or Mexican). A Californian element of restricted range, sometimes separately recognized, may be included in the west-American. There is also a slight representation of austral or south-hemisphere plants. Distribution-maps of selected genera were used for illustration.

Ecological features of the plant life of the desert: FORREST SHREVE. The California deserts are differentiated by the progressive increase of dryness eastward, into the fairly luxuriant desert-border vegetation of the western Mojave, with its Joshua-trees and other characteristic plants and the simpler, monotonous and far more resistant vegetation farther east, consisting chiefly of creosote-bush, with Franseria also. The creosote-bush is a truly remarkable plant to endure, as it does, rainless periods as long as 32 months. A further distinction between the California deserts and the quite different succulent desert of southern Arizona is caused partly by the lessening eastward of the winter rainfall from the Pacific, with gradual replacement farther east by late-summer rainfall from the Gulf of Mexico, and partly by the intolerance of freezing temperatures shown by most Arizona desert plants. The western Mojave and Arizona vegetations have remained distinct, due as much to intense aridity in the zone between them as to differences in ecological conditions.

Isolation as an evolutionary factor, with special reference to birds and mammals in California: JOSEPH GRINNELL. A concept of evolution as it actually occurs in nature. In a given isolated region it seems that the environment, by reason of the opportunities or places for individual kinds of animals which it may afford (ecological niches), plays a large part in determining the directions of the modifications which will occur in whatever animal material may be at hand. A new form which may arise does not become a species until it has successfully met the conditions of life as it finds them in nature. Species do not arise suddenly: the process requires time. This concept is a form of natural selection.

Some factors in the evolution of desert mammals: F. B. SUMNER. Desert animals are not so different from other animals nor so wonderfully endowed with resistant powers as some persons have thought. Small desert mammals, for example, do not withstand the heat and dryness of the soil surface, they avoid it by means of nocturnal and underground habits. While most desert animals must get along without drinking, succulent parts of plants are eagerly devoured when opportunity affords. The spininess of so many desert plants has undoubtedly contributed to their survival. Desert animals have evolved slowly from animals of adjoining environments.

After the symposium Mr. Donald R. Dickey's remarkable motion pictures of the bird life of Laysan Island were shown. Mr. Dickey told of the many ecological problems presented by this concentration of bird life in the Pacific. The expected reestablishment of vegetation on the island as a result of the extermination of the rabbits, which it is hoped was complete, and the possible effect upon the bird life, are developments which ecologists will await with interest. On Wednesday another series of pictures, on wild life in the New Brunswick forests, was presented. Moose, deer and other animals, as well as the modes of obtaining the photographs, were exceptionally well shown. In both series, the slow-motion analysis of animal activities was an outstanding feature.

On Wednesday morning the Ecological Society met again with the Western Society of Naturalists. The six papers presented were ecological in character, as were also a number of those in the afternoon program of the Naturalists.

The dinner for ecologists on Wednesday evening was held at a downtown coffee-house. The absence of speeches is a feature of this dinner.

On Thursday, September 20, a field excursion in the San Gabriel mountains was conducted by Dr. Philip Munz and Mr. Marcus E. Jones, of Pomona College. Chaparral, forest and valley scrub vegetation are very well shown in the route traversed. The visitors were delightfully entertained by the college people.

A. G. VESTAL,
Western Secretary