# Reports of Sections and Societies, Berkeley Meeting

## Section on Mathematics (A)

Section A enjoyed well-attended meetings. On 30–31 Dec., it met jointly with the American Mathematical Society. Eighteen papers were presented, and there were two invited addresses. These were on "Reflection laws for linear elliptic equations" by Hans Lewy (University of California, Berkeley) and on "Transition points in differential equations" by H. F. Bohnenblust (California Institute of Technology).

The section was cosponsor of almost all meetings of the *Third Berkeley Symposium on Mathematical Statistics and Probability*. These meetings, extending throughout the week, were devoted to mathematical statistics, to statistical mechanics, and to statistics in biology and genetics, medicine and public health, astronomy, and industrial research and psychology.

The section was also cosponsor of the programs on *Applications of Poisson and Exponential Distributions to Physics and Industry* and on *The Meaning of Probability to the Engineer, Mathematician and Physicist*, of the American Statistical Association—Committee of Statistics in the Physical Sciences.

By way of entertainment, the Institute of Mathematical Statistics held a beer party, of which the section was cosponsor, on Wednesday evening, and a Mathematics and Statistics dinner was given on Thursday evening. On the latter occasion the toastmistress was Mina Rees (Hunter College), chairman of Section A, and the speaker was C. B. Tompkins (University of California, Los Angeles). His subject was the organization of the problems of the Institute for Numerical Analysis. The newly elected chairman of Section A is H. F. Bohnenblust (California Institute of Technology).

RUDOLPH E. LANGER, *Secretary*

## American Statistical Association (A2)

The American Statistical Association held a Western Regional Meeting, in conjunction with the 121st meeting of the AAAS, on 27–30 Dec. This was the first regional meeting to be held by the ASA on the Pacific Coast.

ASA was the sponsor or cosponsor of 16 separate sessions, which covered a wide variety of subjects, as follows: "Statistics in biology and genetics"; "Applications of poisson and exponential distributions to physics and industry"; "Regional unemployment estimates"; statistical mechanics"; "Regional indexes of business activity"; "Statistics in medicine and public health"; Reliability of complex systems"; "Statistics in astronomy—The spatial distribution of galaxies"; "Probability and induction"; "Pacific coast population trends"; "Statistics in astronomy—The distribution of stars in the Hertzsprung-Russell diagram"; "Mathematical statistics"; "Statistics in industrial research"; "Statistics in psychology"; "The meaning of probability to the engineer, mathematician, and physicist—panel"; "Social structure of cities." A session on regional economic analysis originally scheduled was canceled after the program was printed.

Attendance in the various sessions ranged from 25 to 270. Statisticians from all parts of the country registered for the meeting. It is the general consensus of those who attended that the meeting was highly successful.

M. I. GERSHENSON, *Program Chairman*

## Institute of Mathematical Statistics (A3)

The 64th meeting (and the 17th annual meeting) of the Institute of Mathematical Statistics was held 27–30 Dec. In addition, a number of the sessions were held with the American Mathematical Society, the American Statistical Association, the Biometric Society, Western North American Region, and the Third Berkeley Symposium on Mathematical Statistics and Probability.

The sessions covered a wide variety of subjects from the purely theoretical (mathematical statistics and probability theory) to the applicational (astronomy, biology, fisheries, industrial research, physics, psychology, and public health). There were two special invited papers: Herman Chernoff, Stanford University, spoke on "Large sample theory in the parametric case," and Jerzy Neyman (University of California) spoke on "Probabilistic treatment of phenomena: stochastic models and interpolatory formulae." There were also three sessions of contributed papers.

EVELYN FIX, *Associate Secretary for the Western Region*

## Pacific Coast Committee on Social Statistics of the Social Science Research Council (A4)

The Pacific Coast Committee on Social Statistics met in conjunction with the 121st meeting of the AAAS. The committee cosponsored four sessions, as follows: "Regional unemployment estimates," "Regional indexes of business activity," "Pacific Coast population trends," and "The social structure of cities." All these sessions were highly successful and well attended.

The committee held a business meeting on 28 Dec. and made plans for a conference in the spring of 1955 on the statistics of labor-management relations. A subcommittee was appointed to make plans for a conference on crime statistics, probably to be held in the spring of 1956.

M. I. GERSHENSON, *Chairman*

## Third Berkeley Symposium on Mathematical Statistics and Probability (A5)

The first part of the *Third Berkeley Symposium on Mathematical Statistics and Probability*, emphasizing applications, was held 26–30 Dec. at the Statistical Laboratory. Reflecting the interests of the laboratory, the 11 sessions held were distributed among the following eight domains of statistical research: biology, one session (struggle for existence and genetics); astronomy, two sessions (spatial distribution of galaxies and HR diagram); problems of health, one session; statistical mechanics, one session; philosophy of science, one session (probability and induction); industrial research, one session; problems of psychology, one session; and mathematical statistics proper, two sessions.

It is hoped that, following the tradition established by the first two symposiums, held in 1945–46 and in 1950, respectively, the texts of the 31 papers presented will soon be published by the University of California Press in the *Proceedings of the Third Symposium*.

The second part of the Third Symposium, emphasizing theory, will be held in the summer of 1955. This is planned as a prolonged seminar extending through July and Au-

gust, and several participants are expected from abroad.

The Third Symposium is organized with the support of the Air Research and Development Command, of the National Science Foundation, of the Office of Naval Research, and of the Office of Ordnance Research. It was cosponsored by the AAAS and also, in whole or in part, by nine scientific societies: American Mathematical Society, American Physical Society, American Statistical Association, Astronomical Society of the Pacific, Biometric Society–Western North American Region, Ecological Society of America, Institute of Mathematical Statistics, Philosophy of Science Association, and Western Psychological Society.

J. NEYMAN, *Director, Statistical Laboratory*
*University of California, Berkeley*

## Section on Physics (B)

At the Berkeley meeting Section B cosponsored the following symposiums and meetings: a session on statistical mechanics on 27 Dec. which was part of a symposium on *Mathematical Statistics and Probability*, a 3-day meeting of the American Physical Society 28–30 Dec., a 3-day meeting of the Meteorological Society on the same days; and two sessions of a symposium in biological and medical physics on 30 Dec. There was also a dinner arranged by the Physical Society and cosponsored by Section B on Thursday evening at the Men's Faculty Club. A. C. Helmholz (University of California) was toastmaster and Raymond T. Birge, chairman of the physics department (University of California) gave an interesting talk on "Science and pseudo science."

For most physicists the comprehensive program of the Physical Society was the major event of the meeting. There were 21 sessions, of these six sessions were invited papers and 15 sessions were largely contributed papers. Research and new developments in high-energy nuclear physics were featured in several sessions. The new bevatron at the Radiation Laboratory has recently been operated to give a $6.1 \times 10^9$-ev proton beam. In this energy range an interesting phenomenon is the production of K-mesons (965 times the electron mass) in addition to pions and muons. G. K. Green (Brookhaven Laboratory) described the plans for a $25 \times 10^9$-ev proton synchrotron, and construction of this will start soon.

This year the AAAS Newcomb Cleveland prize for an outstanding contribution to science was awarded to a physicist. The recipient was D. H. Alpert (Westinghouse Electric Corporation) for his paper on "Experiments at very low pressures." He has developed methods to produce and measure pressures as low as $10^{-12}$ mm of mercury.

The staff of the Physics Department and of the Radiation Laboratory were excellent hosts. For visiting physicists, the tours of the installations of the Radiation Laboratory were a most interesting feature. On Thursday evening the Radiation Laboratory group were hosts at a cocktail party for physicists at the Claremont Hotel.

At the council meeting Alan T. Waterman, director of the National Science Foundation was elected chairman of Section B and a vice president of the AAAS for 1955. The section committee elected Joyce A. Bearden, professor of physics at Johns Hopkins University, as a committee member for a 4-year term.

FRED L. MOHLER, *Secretary*

## Section on Chemistry (C)

The meetings of the chemistry section, consisted of three sessions of submitted papers in various areas, two sessions of a symposium on petroleum chemistry, two sessions of a symposium on viruses and nucleic acids, and two sessions of a symposium on the harnessing of biological resources. Those who were fortunate enough to attend one or more of these informative and interesting meetings were well repaid for the effort and other sacrifices involved in attending this annual meeting of the AAAS. Sincere appreciation is expressed to the symposiums chairman and the various speakers who contributed to the production of these excellent sessions.

The 1955 annual meeting of the AAAS will be held in Atlanta, Georgia, during the holiday season. It is not too early to begin now to plan on presenting a paper before the chemistry section at this meeting. Abstracts and, if possible, copies of the completed paper should be sent to Ed. F. Degering, 26 Robinhood Rd., Natick, Mass., or to Roberts S. Ingols, chairman, Section C, Georgia Institute of Technology, Engineering Experiment Station, Atlanta, Ga., on or before 1 Sept. 1955.

ED. F. DEGERING, *Secretary*

## American Chemical Society, California Section (C2)

The broad scope of petroleum chemistry was illustrated at the recent symposium held at the Berkeley meeting. The first paper dealt with the isolation and identification of sulfur compounds, a continuing basic problem of the industry. The next three papers described the novel and varied uses being made of radioisotopes as tracers in determining the course of reactions, the fate of components of fuels in engines, and in measuring flow rates in refinery equipment.

The concept that petroleum is a source of chemical raw materials, as well as a source of fuels and lubricants, was illustrated by the next four papers. The first two were concerned with aliphatic chemicals derived from acrolein, which, in turn, is made from propylene, a petroleum gas, and with silicate esters, which have novel properties, and may lead to many new applications. The derivation of aromatic acids, which are constituents of synthetic fibers and plastics, from petroleum by the oxidation of aromatic acids, and the chemistry of alkylation were the subjects of the last two papers in this group.

The last three papers dealt with recent developments in petroleum refining. The first described a new method of removal of mercaptans from gasoline, a necessary step in refining to remove objectionable odor. The next two described the use of hydrogen as a refining agent. They showed how hydrogenation could now be economically applied to many refinery fractions with resulting removal of impurities and general marked improvement in refining characteristics and properties.

JOHN W. GIVENS, *Program Chairman*

## Section on Astronomy (D)

Section D and the Astronomical Society of the Pacific met jointly to present an elaborate and varied program. The Meteoritical Society held separate sessions—a result of the increasing activity in this field.

Three important symposiums were held. The first, arranged by the Astronomical Society of the Pacific, was on *The Nebular Red Shift*. Allan R. Sandage gave a fine summary of the observational data, and H. P. Robertson's paper on the theoretical aspects was read by L. G. Henyey. The second, arranged by the Statistical Laboratory, University of California, was concerned with *The Spatial Distribution of Galaxies*. Papers were presented by Fritz

Zwicky; by J. Neyman, Elizabeth L. Scott, and C. D. Shane; and by G. C. McVittie. There was a considerable amount of very lively discussion during and after this symposium. The third, also arranged by the statisticians, was on *The Hertzsprung-Russell Diagram.* Speakers were Bengt Stromgren, J. L. Greenstein, G. E. Kron, Harold Johnson, and Olin Eggen.

The contributed papers covered a wide range—from the classical field of astrometry to the new and rapidly developing field of radio astronomy. The latter field accounted for one-sixth of the program.

Highlights of the meeting were the special demonstration of the Morrison Planetarium on the evening of 27 Dec., and the trip to the Lick Observatory on 30 Dec.

The dinner at the Women's Faculty Club on 29 Dec. was an especially happy occasion. Seth B. Nicholson, the new chariman of Section D, was toastmaster. Speakers were Joel Stebbins and Harlow Shapley, the latter being a former president of the AAAS. Stebbins discussed "The decline of American astronomy since the introduction of the Ph.D. degree," and Shapley was equally serious during most of his remarks.

Following the dinner, a large audience listened to Bart J. Bok give his retiring vice-presidential address on "The new science of radio astronomy." This splendid survey of the field showed how rapid the advances have been. This is particularly noteworthy in the field of galactic structure, where the work has been done since the detection of the 21-cm hydrogen line in 1950. Bok and his students have been leaders in this field, and it was a privilege to hear such an authoritative and interesting presentation.

Nicholas U. Mayall, Joel Stebbins, and Otto Struve presided at the symposiums. Gerald M. Clemence, vice president and chairman of Section D, presided at all other sessions. Thanks are due to these gentlemen and to Louis G. Henyey and the other members of the local program committee for helping to make this meeting a memorable one.

FRANK K. EDMONDSON, *Secretary*

## Meteoritical Society (D2)

The 17th meeting of the Meteoritical Society was held 27–30 Dec. with the AAAS in Berkeley. Twenty-one papers, broadly representative of the field of meteoritics, were presented in the course of four sessions. The papers could be classified loosely under the following three headings: (*i*) papers dealing with the recovery and preliminary description of newly found or newly fallen meteorites; in this group was a particularly significant paper on meteoritic material found at the Wolf Creek Crater in western Australia; (*ii*) papers dealing with the mineralogy and laboratory investigation of meteorites; (*iii*) papers dealing with the nature and motions of meteors, produced by meteorites in the earth's atmosphere.

Since this was an electoral meeting of the society, it terminated formally with the address of the retiring president, L. F. Brady (Museum of Northern Arizona). The following officers were elected for 4-year terms: president, D. M. Barringer (Barringer Crater Company, Philadelphia); vice presidents, Carl W. Beck (Indiana University); Dorrit Hoffleit (Harvard College Observatory); and Stuart H. Perry (Adrian, Mich.); secretary, John A. Russell (University of Southern California); treasurer, Paul W. Healy (University of New Mexico); editor, Frederick C. Leonard (University of California, Los Angeles); and director of the meteor section, Lincoln LaPaz (University of New Mexico).

The society shared invitations with the Astronomical Society of the Pacific to a special demonstration of the Morrison Planetarium in San Francisco and to the Lick Observatory on Mount Hamilton. In the course of the Morrison Planetarium demonstration, a fireball was flashed across the planetarium sky. The lecturer thereupon gave the meteoriticists present the extraordinary experience of seeing the same fireball in a repeat performance. Those making the trip to the Lick Observatory were the dinner guests of Director and Mrs. C. D. Shane. The highlight of the observatory tour was the inspection of the new 120-in. telescope and the shop in which the optical work on the mirrors for the instrument is being done.

The society banquet was held at Yamato's Sukiyaki House in San Francisco where, for nearly 2 hr, gastronomy was as close as any one came to the subject matter of Section D of the AAAS.

JOHN A. RUSSELL, *Secretary*

## Section on Geology and Geography (E)

Section E presented sessions for general papers in both geology and geography, and a two-session symposium on air-borne devices and aerial photography entitled *Earth Science from the Air.* The contributed papers of the general sessions were of high caliber and in general were well illustrated. The number of papers presented and the good attendance at the two sessions on general geography reflect a greater interest by the geographers in the section than in the recent past, and consequently a better balance in the over-all program is being attained.

The symposium *Earth Science from the Air* was a current review of the use, and an evaluation of the potential, of aerial photography and air-borne instruments. The several aspects of this subject were discussed by the country's foremost workers in this relatively new but firmly established field of science. Two motion pictures, one in 3-D, added to the popular appeal of this program and a considerable portion of the audience represented the agriculture, engineering, and physics sections.

As in previous meetings, Section E presented the address by the retiring vice president at an evening smoker. M. F. Burrill, director of the division of geography, U.S. Department of the Interior, spoke on "Toponymic generics in the United States." In reporting on the progress of preparing a dictionary and atlas of generic terms of physical features in the United States, Burrill drew attention to the need for greater uniformity in the meaning of such terms and the desirability of their common use by both scientists and the lay public.

An added attraction of the section's Berkeley program was the geologic field trip arranged by the California Division of Mines. A geologic guidebook of the San Francisco Bay counties provided the basis for the tour of the Bay area. The Division of Mines also provided technical personnel to show members and guests of AAAS through its mineral exhibit.

JACK B. GRAHAM, *Secretary*

## National Speleological Society (E7)

The program of the National Speleological Society, cosponsored by the American Nature Study Society, convened 28 Dec., with a welcome extended to the 45 members and guests present by Charles E. Mohr, presiding chariman.

To begin the session, Ruth E. Hopson presented a commentary "Lava tube caves" featuring a series of color

slides of the Lava Beds National Monument. Much work remains within the monument grounds on the identification of plants and animals, on the origin of lava tube cave features, and on plant and animal ecology. Information concerning many recent discoveries of "blind cave salamanders" was presented by James Kezer. With possible reflections on the causes of blindness, experiments reveal great differences in the amount of degeneracy of salamander eyes when the salamander's metamorphosis takes place in the presence or absence of light. Large periodic variations of salamander populations in underground locations were disclosed by Charles E. Mohr in his paper "Migration of cave animals." He also indicated the importance of some migration studies in public-health problems; for example, bats may become rabid and carry the disease hundreds of miles.

William R. Halliday's paper, "Glacial correlation of western caves," discussed tentative, theoretical considerations of cave growth in glacial periods and also in transitions from one glacial period to another. In support of these considerations, examples of an individual cavern's features and their possible connection with glacial periods were cited. Emphasizing the scientific importance of cave life, G. Nicholas stressed the "Biological aspects of cave conservation." While collecting of specimens is one factor in destroying cave life, he pointed out that many seemingly harmless alterations of environment can have drastic effects on animal and plant populations. An abstract of Ray DeSaussure's paper, "Solution of speleothems," which discusses factors affecting deposition and resolution of speleothems, was read by Mohr.

Chairman Mohr concluded the meeting with a discussion of National Speleological Society publication policy in relation to its effect on cave conservation.

HOWARD A. SHUGART, *Program Chairman*

## Section on Zoological Sciences (F)

The program in the zoological sciences at the Berkeley meeting aroused much national, as well as local, interest and drew large audiences, even though relatively few of the national societies participated with complete programs. Its strength resulted from the large number of symposiums that cut across societal and even sectional boundaries. Most of these different symposiums were cosponsored by Section F and by strong West Coast societies or by the Western sections of the national organizations. The interest developed in these intergroup symposiums offers very real evidence of the wisdom of the Arden House memorandum of the AAAS.

The most extensive single program in the biological field (FG) was that of the Western Society of Naturalists. This covered sessions for contributed papers in all major areas, not only for its own members, but for all biologists from any part of the country. In addition, with the cosponsorship of Sections C, F, and G, it conducted a daylong symposium on *Photochemical Effects in Biological and Biochemical Systems* and with Sections F and G another on *The Cell.* These two well-planned symposiums of invited papers each drew audiences of more than 1000.

Another program that ran throughout the meeting and attracted much attention was the *International Conference on Animal Venoms* sponsored by Sections F and N. Speakers at this conference came from all over the United States and from many foreign countries.

The one national society exclusively in the zoological field that ran a full-scale program throughout the Berkeley meeting was the Society of Systematic Zoology. Its program began with a symposium on *Animal Courtship Patterns* and ended with the zoologists' dinner, with an address by H. W. Stunkard, president of the Society of Systematic Zoology and vice president of AAAS for Section F.

Two additional programs, which cut across several fields, aroused much interest among biologists. These were the *Third Berkeley Symposium on Mathematics and Statistics* (Section A5), and the program of the Donner Laboratory of Biophysics (Section N5).

All of these programs showed careful planning and coordination and were highly interesting to the visiting biologists. Their success demonstrates that the local zoological societies in any large area of the country can arrange programs of national interest, especially with cooperation from local research centers and national society officers. They demonstrate the growing interest in symposiums that cut across traditional subject borders.

It is hoped that arrangements for similar programs and symposiums may be arranged for the Atlanta meeting of AAAS in 1955. Interested groups are asked to communicate with the section secretary at an early date.

H. H. PLOUGH, *Secretary*

## International Conference on Animal Venoms (F1)

The International Conference on Animal Venoms was held in Berkeley, California, December 27–30, 1954, as part of the 121st annual meeting of the American Association for Advancement of Science. More than 60 papers concerning the venoms of poisonous reptiles, arthropods and insects, a mammal, fishes and other marine organisms, including sea snakes, were contributed by experts from many parts of the world. Consideration was given to the zoological biochemical, and pharmacological, as well as the clinical, aspects of the problem of venoms and envenomation. The sessions were conducted on an informal but serious basis, and much good work on the dissociation of venoms and isolation of toxic components was reported.

Clinical features of importance brought out by the papers and subsequent discussions included: (i) Presence of a hyaluronidase-like substance in venoms, which causes rapid spread and absorption. (ii) Advisability of immediate application of a tourniquet if possible. (iii) Therapeutic ineffectiveness of incision and suction after insect and arthropod bites and stings, and, unless applied immediately, after reptile envenomation. (iv) Absence of action by ACTH and cortisone against reptile or spider venoms. (v) Recommendation of antihistamines to counteract sensitivity reactions. (vi) Heparin, used in treatment of envenomation with strongly coagulating venoms, afforded benefits that seemed to extend beyond its anticoagulating effects. (vii) Use of antivenom was universally approved for treatment of reptile and arthropod envenomation; the various serums available throughout the world for this purpose were listed. (viii) Development, refinement, and standardization of a new antivenom against the entire family Crotalidae were described. (ix) Addition of hyaluronidase to antivenom for subcutaneous injection apparently permits more rapid and efficient combination of venom and antivenom in the tissues. (x) Although some clinicians employ cooling of a snake-bitten extremity as a palliative and to slow absorption of the venom, the risks were emphasized, as exemplified in water exposure and immersion foot cases seen during the Korean War.

NANDOR PORGES and ELEANOR E. BUCKLEY, *Program Chairmen*

## Cooper Ornithological Society (F2)

The Cooper Ornithological Society which now has a membership exceeding 1500, with representation in all 48 states as well as 29 foreign countries, had a very successful half-day program on the afternoon of 29 Dec. More than 100 members and guests attended. The following papers were presented: "Movements of adults and dispersal of juvenile salt marsh song sparrows" by Richard F. Johnston; "The avifauna of Drake's Bay shellmound" by Joan Malloy; "Andrew Jackson Grayson, bird painter of the western wilderness" by Lois C. Stone; "Effect of environmental changes on bird life in the San Francisco Bay region" by Junea W. Kelly; "Evolution of feeding adaptations in Darwin's finches (Geospizinae)" by Robert I. Bowman.

ROBERT T. ORR, *Program Chairman*

## Society of Systematic Zoology (F6)

For its 7th annual meeting, the Society of Systematic Zoology was the guest of its Pacific Section, which arranged most of the program. On this first occasion for western zoologists to participate "at home," the program was carried largely by the section members.

Special features included a symposium, four public lectures, a behind-the-scenes tour of the California Academy of Sciences in San Francisco (including the Steinhart Aquarium and a special show in the Morrison Planetarium), an unusually attractive book lounge where refreshments were served, a film on the Galapagos Islands, and two well-attended dinners open to all zoologists.

The retiring president of the SSZ, Horace W. Stunkard, was also a vice president of the AAAS and chairman of Section F—Zoological Sciences. He gave his entertaining presidential address at the zoologists' dinner on the subject, "Freedom, bondage, and the welfare state," relating these concepts to animals of many groups and to their evolution, degeneration, and parasitism.

Officers for 1955 are president, L. M. Klauber; president elect, G. W. Wharton, Jr.; secretary-treasurer, R. E. Blackwelder. It was decided to hold the 1955 annual meeting with the AAAS at Atlanta, Ga.

RICHARD E. BLACKWELDER, *Secretary*

## American Society of Limnology and Oceanography (FG1)

The four sessions for contributed papers included 21 on oceanographic and 13 on limnological subjects. In addition a symposium on *Recent Advances in Biological Oceanography* was arranged by R. W. Hiatt to review many aspects of this section of our fields. The meeting concluded in a joint session with the Western Society of Naturalists under the direction of Robert Bieri to discuss the *Distribution of Plankton of the North Pacific Ocean.* Concurrently with this meeting there was a visit to the River and Harbor Model Laboratory and the Algal Research Project at Richmond. The society was fortunate in having this visit arranged for them by the Department of Engineering of the University of California.

Among the many papers that aroused special interest, mention might be made of Joel Hedgpeth's provocative discussion of "The function of systematics in limnology and oceanography" and of Marie P. Fish's excellent and entertaining summary of our knowledge of "Sound production by marine animals" which she *illustrated* by sound film.

At the business meeting D. G. Frey was elected president and D. W. Pritchard vice president for the coming year, while consideration was given to the possibility of starting a journal for the publication of papers in the society's field.

G. L. PICKARD, *Secretary, Pacific Section*

## Ecological Society of America (FG5)

The ecological program was arranged by the Western Section of ESA. The program included two sessions of contributed papers, two symposiums, joint sponsorship of the *Third Berkeley Symposium on Mathematical Statistics and Probability,* a field trip, and a dinner meeting. Attendance was good. Among the few officers of the society present from the East were the retiring president, J. E. Potzger, and the finance committee chairman, Paul B. Sears, now president elect of the AAAS.

The contributed papers were on such subjects as the use of predatory mites for effectively controlling cyclamen mite populations, methods for measuring rodent movements, and the ecology of deer and rodent populations.

The subjects of the two symposiums were *Marking Organisms in Ecological Studies* and *Dew as an Ecological Factor.* The symposium on marking of animals treated various methods of marking animals including tagging, fin clipping, toe clipping, tatooing, ear marking, and branding. The paper on the use of radioisotopes in marking organisms suggested an array of important problems and evoked wide interest. The danger of considering radioisotopes as universally useful in ecological research was emphasized. The symposium on dew dealt with the relationship of dew to agricultural crops, forest trees, reptiles, and game. The valuable discussion of the papers emphasized the importance of dew and the need for greater consideration of this ecological factor.

The field trip, attended by about 30 members and led by Herbert L. Mason, included Muir Woods and Mount Tamalpais where the effect of serpentine soils on vegetation was demonstrated.

One of the highlights of the ecological meeting was the Monday evening dinner address entitled "The nature and problems of the plant community" by Herbert L. Mason, professor of botany and director of the Herbarium in the University of California at Berkeley.

CURTIS L. NEWCOMBE, *Secretary, Western Section*

## National Association of Biology Teachers (FG6)

The 17th annual meeting of the association consisted of three symposiums, a group discussion of biology laboratory problems, an all-day field trip, and a report on conservation education practices in use in the western states. The symposium, *Biology for Pleasure,* which ranged from recording the sounds of familiar animals to a study of unexpected life forms in the high Himalayas, stressed many ways by which the esthetic can be combined with the factual in teaching biology. *Biology for Living* presented the ecological approach as an effective means for teaching students to make proper use of living things. Two teachers demonstrated by means of slides and movies how effectively they are using the ecological approach in their high school teaching. *Biology for Survival* presented survival techniques used by various organisms, man included. A. Starker Leopold's ideas on predation excited much favorable comment.

At the annual luncheon of the association, William Weston's address on "Fungi as aids to the teacher" was

a most complete presentation of the ways teachers may use fungi to illustrate the major biological principles. Group discussions of laboratory problems in biology were followed by reports of each group to the entire audience. The tea on Tuesday afternoon, at the headquarters of the Audubon Society, gave opportunity for members to become better acquainted.

The joint field trip with the American Nature Study Society to Muir Woods and the chaparral near the Alpine Club Lodge on Mount Tamalpais was under the direction of Arthur Nelson and Thomas Howell. Friday morning was devoted to reports on special practices in conservation education that are in use in the western states. A report of the latest developments of the NABT Conservation Project by Richard L. Weaver terminated the meeting.

Officers for 1955 are H. Charles, president; Paul Webster, secretary-treasurer; John Harrold, president elect; Edna Higbee, first vice president; and Enid Larson, second vice president.

H. CHARLES, *President*

## Society of General Physiologists (FG7)

A single session of 11 papers was held on 27 Dec., presided over by C. Stacey French. While this was essentially a western regional meeting of the society there were speakers as far east as Oak Ridge and New Orleans. Reflecting the fact that the society is interested in physiological phenomena common to all organisms, papers dealing with both plant and animal material appeared on the program. The society also cosponsored, with the Western Society of Naturalists and the Western Section of the American Society of Plant Physiologists, a symposium on *The Cell*, held the morning and afternoon of 29 Dec., with G. E. Palade, V. H. Cheldelin, R. Y. Stanier, R. C. Backus, Hans Ris, D. Mazia, D. I. Arnon, and J. J. Wolken as speakers and C. B. van Niel and M. Alfert presiding. A paper by K. R. Porter was read in his absence.

ALBERT TYLER, *Program Chairman*

## Western Society of Naturalists (FG8)

For the Western Society of Naturalists, the Berkeley meetings provided an opportunity to extend to its annual winter meetings its long-established summer practice of joining with other constituent groups of the Pacific section of the AAAS in organizing special programs. The broad scope of the society, often reexamined and as often reaffirmed, provided a framework for variety and made it the natural host of members of biological groups not meeting with the AAAS this year. Seven half-day sessions of submitted papers included, with boundaries somewhat overlapping, two on physiology, two on natural history, and one each on vertebrate anatomy and physiology, on marine zoology, and on protozoology and parasitology. Arthur C. Giese, the retiring president, gave the annual address, "The rise of cellular physiology."

Special sessions included a symposium on *Natural Resources of the West* organized and led by R. C. Miller and two full-day panels, *The Cell* arranged by Daniel Mazia and R. Y. Stanier and *Photochemical Effects in Biological and Biochemical Systems* organized by A. D. McLaren. The largest single group of papers, those on *Science in the Arctic*, was planned jointly with the Arctic Institute of North America, whose representatives, M. J. Dunbar, chairman of the institute board, and I. L. Wiggins, a past president of the Western Society, led sessions and presented papers during the one evening and four half-day sessions. Reports came from most of the American institutions carrying on biological studies in the Arctic. One portion of this program, *Plankton Studies in the North Pacific* organized by Robert Bieri, was jointly sponsored by the American Society of Limnology and Oceanography.

The society voted to meet with the AIBS at Stanford University in Sept. 1957, dropping the December meeting that year, and to recommend that the Pacific Section, AAAS hold its 1957 meetings at the same time and place. The annual meeting for 1955 will be held at the University of California at Davis.

The society elected the following officers: president, Lyman Benson (Pomona College); vice president, Albert Tyler (California Institute of Technology); secretary, Demorest Davenport (Santa Barbara College, University of California); and member-at-large, Bradley Scheer (University of Oregon). Ivan Pratt (Oregon State College) continues as treasurer and L. R. Blinks (National Science Foundation) and A. W. Martin (University of Washington) as representatives on the AAAS Council.

J. L. MOHR, *Retiring Secretary*

## American Phytopathological Society, Pacific Division (G1)

The program was composed entirely of symposiums and discussion sessions on phases of soil-inhabiting microorganisms and the control of diseases caused by plant pathogens of the soil. Attendance was far greater than expected. More than 200 crowded each session. Twice it was necessary to move to larger rooms to accommodate those interested.

These sessions emphasized that, while crop rotation is very beneficial, it alone is not a solution to the control of many soil borne plant diseases. The proper sequence of crops in rotation, however, shows much promise in disease control. Papers and discussion at these sessions pointed out the complexity of interaction of soil components, environment, cultural practices, and succession of crops. They demonstrated nevertheless that such were not beyond comprehension by illustrations of the successful analysis of some of them.

One of the highlights of the meeting was a talk by William H. Weston (Harvard University) at the banquet held jointly with the mycologists. Dr. Weston characterized advances of plant pathology during the past 32 years and pointed a way for the future.

H. H. McKinney, USDA, Beltsville, opened the discussion on soil-borne virus diseases as he reviewed many experiments with this group of cereal diseases. Other speakers at this session outlined evidence for soil retention of the rattle disease of tobacco and potatoes, big vein of lettuce, and the grape diseases, yellow mosaic and fanleaf. Among those contributing to the discussion on assay methods, J. W. Gerdemann (University of Illinois) illustrated techniques used for separating a spore stage of an apparent mycorrhiza from the soil and a method of testing pathogenicity of his isolates.

This program of symposiums and discussion on soil-borne plant-disease problems was very interesting and stimulating. Plant pathologists from several states attended the meetings and contributed to its success.

On behalf of the Pacific Division of the American Phytopathological Society, I wish to thank the many

who put so much effort into the well-organized and smooth-running Berkeley meetings of the AAAS.

WM. B. HEWITT, *Program Chairman*

## Section on Anthropology (H)

The various sessions of Section H were well attended (about 60 to 130 persons at each) primarily, of course, by members from the west-coast states. Notable contributions to the two-session symposium *Culture Change in the Pacific Area* were made by the four participants from the 49th or 50th "state," Hawaii—Kenneth Emory, Samuel Elbert, Leonard Mason, and Alexander Spoehr. The last arranged the symposium and also delivered the public lecture of the Pacific Science Board "The human background of Pacific science," which, though not originally so scheduled, was in fact a major contribution to the section program.

The other symposium sponsored by Section H dealt with the contribution of studies of India and Pakistan to social science theory; David Mandelbaum planned this session. Section H also held two lively sessions of contributed papers and cosponsored the social science dinner, which was addressed by J. B. Condliffe.

G. W. LASKER, *Secretary*

## Section on Psychology (I)

Three sessions of invited papers and three of submitted papers were arranged by Section I. In addition the section cosponsored six other sessions arranged by the Western Psychological Association, the Society for Research in Child Development, and the Third Berkeley Symposium on Mathematical Statistics. One group of invited papers dealt with the problem, *How Can Behavior Theory Best Handle the Construct of Motivation*; a second group had as a central theme, *The Nervous System and Behavior*; and a third considered *Psychological Factors in Highway Safety*. Section M—Engineering cosponsored the highway safety program.

The Western Psychological Association arranged symposiums on *Present Status of Psychoanalytic Theory, Sex Differences in Personality and Intellectual Development,* and *Perception: Learned and Unlearned.*

The vice-presidential address was given by Donald B. Lindsley. In his address, entitled "Crossroads of psychology and neurophysiology," Lindsley gave an excellent review of some of the recent neurophysiological research on the reticular formation and diffuse thalamocortical projection system and used examples from his own research to show how this kind of information from neurophysiology may be applied to psychological problems. Lindsley will be succeeded as vice president by S. S. Stevens.

Section I joined with Section K in sponsoring a social sciences dinner and the vice presidential address of Section K.

WILLIAM N. NEFF, *Secretary*

## Section on Social and Economic Sciences (K)

The 1954 meeting was the best planned and best attended meeting in which Section K has participated in many years. The program had been developed by an interdisciplinary committee under the chairmanship of Harold E. Jones (University of California) and dealt primarily with problems of concern in the region.

A joint session with Section M was concerned with the appraisal of natural resources development, particularly in relation to benefit-cost analysis and the benefits that flow from engineering in natural resources development. Joint sessions with the American Statistical Association and the Pacific Coast Committee on Social Statistics of the Social Science Research Council were concerned with the social structure of cities and Pacific Coast population trends. A session was devoted to the organization of research for western regional development. At a dinner meeting sponsored jointly with Sections H, I, and Q, John B. Condliffe delivered the vice-presidential address on "International consequences of scientific research." Meetings were also held by the Committee for Social Physics, which devoted two sessions to a discussion of diffusion theory, and by the Society for the Advancement of Criminology, which devoted two sessions to discussion of various aspects of education in criminology. Jointly with the National Academy of Economics and Political Science and Pi Gamma Mu, a symposium was held on *National Defense against Atomic Attack.*

Conrad Taeuber was nominated as chairman of the section and Donald P. Ray was elected as secretary. Leonard S. Cottrell, Jr. was elected to a 4-year term on the section committee.

CONRAD TAEUBER, *Secretary*

## Section on Engineering (M)

We feel that the Berkeley program held 27–30 Dec. was highly successful. There were 11 sessions cosponsored by Section M in which 39 papers were presented, of these the section contributed 17 papers. The attendance was excellent, varying from 56 to 240 at any one session, with an estimated total attendance of 1450. The attendance at each session justified our belief that engineers are interested in problems of general interest to society. Our participation was welcomed by the cosponsors, and each expressed a desire that we of Section M continue to participate in the discussion of these problems. The section expresses its thanks to Sections E, I, K, and O for their cooperation and to the Western Society of Soil Science, the American Geophysical Union, the American Society for Engineering Education, and the Engineering Manpower Commission for their cosponsored joint programs.

Our session on natural resources stimulated outstanding discussion from the floor and each paper was well received. Frank Baron's paper "Benefits from engineering in natural resources development" clearly indicates the role of an engineer in the development of our natural resources.

The symposium *Water Supplies and Irrigation* was of special interest to engineers, government workers, agriculturists, and the people of California. Water is a basic necessity to the economy of this state. Its control and utilization is vital to existence. The paper on "Water rights for agriculture" by W. A. Hutchins of the USDA clearly demonstrated the need for adequate legal control of water and its uses. Other papers presented at this session outlined the efforts for the reclamation of water and the steps that are being taken to relieve water shortage. Each of the speakers and discussants is to be commended for his honest approach to this basic problem.

The session on "Psychological factors in highway sefety" indicated a need for further study on the problem of human behavior in an automotive age. We of engineering are equally concerned with this problem since it directly bears upon the technical problems of highway design. We note with interest the studies on driver attitudes that have been made by the psychologists.

Lauren B. Hitchcock, president of the Southern California Air Pollution Foundation, organized an outstanding symposium on *Air Pollution*. Each paper clearly defined the problem and contributed to its solution. This is a new and vital field in which the combined efforts of engineers, doctors, agriculturists, chemists, meteorologists, lawyers, and economists are needed for a solution.

The 1955 officers are Clarence E. Davies (American Society of Mechanical Engineers), chairman, and Frank D. Carvin (Illinois Institute of Technology), secretary. Members of the committee at large are E. L. Chandler (1955), E. F. Murphy (1956), C. F. Kayan (1957), and M. L. Towle (1958). Chairman of the general program committee is I. P. Orens (Newark College of Engineering); chairman of the Atlanta meeting program committee is Mario J. Goglia (Georgia Institute of Technology).

FRANK D. CARVIN, *Secretary*
CAMERON M. SMITH, *Secretary, Berkeley Program Committee*

## Section on Medical Sciences (N)

This section consponsored several symposiums with other AAAS sections and participating societies. The main effort of the section, however, was the arrangement of a 2-day symposium on *Growth, Normal and Abnormal.* The program was arranged by Howard R. Bierman (City of Hope Medical Center, Duarte, Calif.). Paul Weiss, in a paper entitled "The nature of growth," outlined many of the basic problems confronting investigators in this field in addition to reporting some of the important new observations from his own laboratory, particularly those related to local tissue factors that modify the growth processes. Several papers were devoted to an evaluation of the effect of growth hormone on both normal and malignant growth.

A particularly significant paper was presented by Choh Hao Li on "The hypophyseal of growth hormone, its chemical nature and its action." Charles Huggins, in the vice-presidential address, discussed the effect on modifying the steroid molecule on growth of specific tissues, directing his attention primarily to steroids of estrogenic activity. Edwin E. Osgood presented a very interesting and important paper outlining a new technique of plotting the rate of growth on log-log paper. Straight-line relationships that are obtained make the analysis of data recorded in this way relatively simple. The discussions led by Wendell Stanley, Charles Huggins, Hans Lisser, and Frederick Crescitelli added much to the instructive and stimulating discussions at the end of each session.

ALLAN D. BASS, *Secretary*

## American Psychiatric Association (N3)

On 30 Dec., the American Psychiatric Association cosponsored two meetings: "Panel on clinical applications of chlorpromazine and reserpine," in two parts, and "Panel on mechanism of drugs with behavioral effects" with Section N.

After the program had been announced, it became necessary to make a number of changes in speakers' names because of unavoidable absences. As finally revised, panel members for "Clinical applications of chlorpromazine" included Lester H. Margolis, Ames Fischer, Robert N. Butler, and Alexander Simon (University of California School of Medicine and the Langley-Porter Clinic, Department of Mental Hygiene, State of California); Anthony Sainz (Cherokee Mental Health Institute); and Vernon Kinross-Wright (Baylor University). Panel members for "Clinical applications of reserpine" included Nathan S. Kline (Rockland State Hospital); Leo E. Hollister, Leo Traub, and Wallace G. Beckman (Veterans Administration Hospital, Palo Alto); and A. E. Bennett (Merrick Memorial Hospital).

The morning panels arranged by Jacques S. Gottlieb (University of Miami, Florida) were presided over by Walter Freeman (formerly at George Washington University) in the absence of Gottlieb. Kline presided over the afternoon session.

The clinicians using either reserpine or chlorpromazine (or both) were all in agreement that these drugs represented a tremendous advance in the treatment of psychiatric patients. Caution was expressed against making exorbitant claims since the extent of clinical application is not yet fully known. Successes were reported in the treatment of outpatients with less need for referral to state hospitals. Within the state hospitals, both recently admitted and chronic patients, who were refractory to other types of therapy, responded to one or another of these drugs. The double blind studies and other control testing demonstrated beyond question the effectiveness of the medications in schizophrenia and in neurotics. There was, however, disagreement concerning the usefulness in affective disorders.

Both drugs were reported to produce Parkinsonism and convulsions in certain cases when used in large dosages. These were reversible upon reduction of the drug. Other side effects were considered minor. Dosage range and regime of treatment differed widely. Up to 4000 mg of chlorpromazine and 240 mgs of reserpine daily were reported but these were exceptional. Average range of chlorpromazine dosage was from 500 to 2500 mg. The average range of reserpine dosage was from 5 to 20 mg. The need for intramuscular preparations of the reserpine in psychotics was stressed.

It was urged that both of these drugs be considered as representative of central depressants rather than unique pharmaceuticals. It was suggested that both of them produced sedation, central nervous system depression, respiratory stimulation followed by depression, release of antidiuretic hormone, pseudocyesis and decrease of fertility, sympatholytic action in large doses, convulsions, and local anesthesia. It was stressed that both of these drugs (and others of the same type) have all of the afore-mentioned properties to a greater or lesser degree. The site of action of one property of the drug does not necessarily indicate that this is the same *locus operandi* of another property, that is, the drugs have multiple sites of action as well as multiple actions. Clarification of the pharmacology and relationship to other known drugs may suggest the development of many more related substances.

Chlorpromazine activates the abnormality in the epileptic encephalogram. In the schizophrenic or normal, the patient becomes clinically sleepy and no electroencephalographic changes other than sleep waves are noted. Chlorpromazine was found to antagonize mescaline physiologically and psychologically as evidenced by electroencephalogram, pulse, blood pressure, pupillary diameter, and subjective experience.

The psychotic state produced by lysergic acid diethylamide was felt to be not identical with that found in schizophrenia but there were sufficient similarities to suggest that a biochemical factor is involved in schizophrenia.

NATHAN S. KLINE, *Program Cochairman*

## Society for Experimental Biology and Medicine, Southern California and Pacific Coast Sections (N7)

Our meeting was most successful. Upward of 100 people attended the sessions or contributed papers and the symposium on *Adrenal-Pituitary Relationships*. The morning session for contributed papers was presided over by Paul Starr (University of Southern California), and the afternoon symposium was presided over by Herbert Evans. Both sessions stimulated considerable interesting discussion.

ROBERT H. DREISBACH, *Secretary*

## Section on Dentistry (Nd)

Section Nd held two sessions on 28 Dec. in Lewis Hall; 75 people were present. At the morning session Wendell L. Wylie presided. The general theme of the program was growth and development of the facial and oral tissues.

Rodney Mathews (University of California) discussed the factors involved in craniofacial morphology. He stressed the influence of heredity and illustrated his thesis by growth records of identical twins in which similar growth patterns were evident.

The effects of postnatal environment were discussed by Alton Moore (University of Washington). He stated that childhood malocclusion does not correct itself but, if not treated, persists in adult life. He showed the effects of thumb and tongue sucking, mouth breathing, and cleft palate. The deformities resulting from habits may severely affect tooth arrangement but do not affect growth centers of the face. He then discussed the probabilities of changing facial contours by orthodontic interference.

Robert Ricketts (Pacific Palisades) discussed the handling of postoperative cleft-palate cases and stressed the need for group study by orthodontists, prosthodontists, speech therapists, and mental hygiene experts, to effect an orderly rehabilitation program.

The last paper of the first session was given by J. C. Muhler (Indiana University) who presented data concerning the effectiveness of stannous fluoride as an anticariogenic agent. The data he presented indicated that it is a much more effective caries-prevention agent than sodium fluoride. His data were drawn from laboratory and animal experimentations and large numbers of children. No positive conclusions were drawn, but his splendid presentation clearly indicated that his investigations should be continued and checked by others.

The afternoon session was devoted to a symposium on *Radiation Hazards in the Dental Office*, with Gordon M. Fitzgerald presiding. A film prepared by the National Bureau of Standards and the American Dental Association was shown. R. L. Dobson (University of California Radiation Center) stressed the dangers of long-time exposure to small-intensity radiation. He reviewed the erythematous changes, burns, and blood dyscrasia, especially leukemia in x-ray handlers. He presented data indicating that the span of life may be shortened by continued low-grade exposure to radiation. William E. Nolan (University of California Radiation Center) described the hazards in 75 percent of dental offices he had surveyed. He stressed the need for the use of film badges, an aluminum filter in the tube, extended type of cone shield with small aperture, and lead screens that extend to the floor. He warned the operator against holding the film in the mouth of the patient with his finger or steadying the tube by holding it with the hand. Care should also be exercised to avoid radiation of people in adjacent rooms. He advised all dentists to have periodic surveys made of their x-ray equipment and its operation by experts.

Gordon Fitzgerald (University of California) illustrated safe practices of dental x-ray operation, stressing the value of the long cone and fast films that are safer and give better detail in the radiographs. The use of high voltage with a tube filter and a columnation of the beam was also recommended.

The section also cosponsored a symposium on preparation for medical and dental education in liberal arts colleges offered by Alpha Epsilon Delta Honor Society. Dentistry was represented by Willard C. Fleming (University of California).

Section Nd sent a resolution to the AAAS Council which reaffirmed its support of fluoridation of communal water supplies as a means of preventing dental caries. The council passed the resolution.

The seminar was summarized by B. V. A. Low Beer (University of California). This was a most informative and constructive seminar.

The following officers were elected: chairman and vice president, H. Trendley Dean; secretary, Russell W. Bunting; committee-at-large, Willard C. Fleming, 1955, Wendell L. Wylie, 1956, Thomas J. Hill, 1957, and James H. Shaw, 1958. Council representatives include H. Trendley Dean, S. Wah Leung, and George C. Paffenbarger; the chairman of local arrangements for the 1955 meeting will be J. F. Volker (University of Alabama).

R. W. BUNTING, *Secretary*

## Section on Pharmacy (Np)

Section Np held four sessions on 28–29 Dec. at Berkeley. A total of 23 original research studies were reported and three panel discussions were held.

Two papers pertaining to nonnarcotic analgesics were of special interest. J. Hidalgo and Victor P. Seeberg (Cutter Laboratories) showed that salicylamide shares the antipyretic activity of salicylates and that it does not bind to serum proteins. Further, the brain level is reached rapidly as compared with aspirin where the same level was reached slowly. Salicylamide is excreted more rapidly than the salicylic compounds of the acetylsalicylic acid type. L. D. Edwards, T. S. Miya, and R. D. Gibson (Purdue University) described a biological method for the evaluation of nonnarcotic analgesics, using a stimulating apparatus simple in design and application that compares favorably with any procedure reported for laboratory animals. Utilizing their technique, the authors showed that salicylamide is more rapidly effective than acetylsalicylic acid and that it reaches a high level of activity more rapidly than do the salicylates.

Several papers reporting on radioactive isotopes as tools in research were presented. E. Ramstad and H. Lieberman (Purdue University) showed that the Krebs tricarboxylic acid cycle is nonoperative in *Bryophyllum calycinum*. Autoradiograms of the plant extract prepared by chromatography showed that the most highly labeled products formed from acetate with and without inhibitors was succinate rather than the citrate indicated in the Krebs cycle.

H. W. Youngken, Jr., and E. H. Djao (University of Washington) studied the uptake of acetate carboxyl carbon-14 by *Digitalis purpurea* from hydroponic culture and the incorporation of the acetate carboxyl carbon-14

by digitalis glycosides. Results indicate that the root tissues accumulate carbon in sufficient amounts in a 12-hr period, but that accumulation in the leaves in the same period is proportionately very low.

J. E. Christian, F. N. Andrews, L. D. Edwards, and P. C. Merker determined the residual hormone in the carcasses of estrogen-treated chickens and found that there was no significant difference in the estrogenic activity between the residues of the diethylstilbestrol-treated and control animals.

J. E. Christian, G. J. Sperandio, and P. W. Gerding (Purdue University) utilized labeled compounds to study the retention of an insect repellent in an emulsified base at the site of application and gave the results of an improved dimethyl phthalate formulation for prolonged activity.

Although panel discussions on ways and means of improving pharmacy service and the administrative responsibilities of the hospital pharmacist attracted considerable interest, the chief interest was in the panel discussion on hazardous domestic pesticides and household chemicals. Bernard E. Conley (American Medical Association) and A. C. Blackmann (California Division of Industrial Safety) brought out that drugs, pesticides, paint products, toys, art and hobby supplies, cleaning, polishing, and sanitizing agents, as well as plastics, solvents, fuels, and other materials are hazardous in normal use and about the home. A five-point program designed to encourage informative labeling and safe packaging, develop antidotes, standardize nomenclature, develop evaluating criterions, and sponsor an educational program were presented. T. C. Daniels (University of California) suggested that the distribution of potentially dangerous compounds must eventually be restricted to those who thoroughly understand the hazards involved and who are prepared to inform the public on how the hazardous compounds may be safely used. Leo R. Gardner (California Spraying Chemical Corporation) emphasized the educational programs being carried out by the Federal Government, our universities, farm extension services, National Safety Council, the Farm Bureau, county agents, and manufacturers. In particular, he emphasized the necessity of a proper disposal procedure for empty containers. In general, it was concluded that the tremendous values gained through the use of more than 3000 new hazardous chemical and other agents might be enhanced by proper controls and knowledge directed toward their safe use.

GLENN L. JENKINS, *Secretary*

## Section on Agriculture (O)

Section O presented a program of four half-day symposiums at the Berkeley meetings: *Soil Management in Western Agriculture, Water Supplies and Irrigation, Seed Production in the Western States,* and *Problems in Horticultural Crops.* These four programs were arranged and presided over by Horace B. Cheney (Oregon State College) and F. J. Veihmeyer, Frank G. Parsons, and John H. MacGillivray (University of California, Davis), respectively. Space does not permit a review of all the excellent papers presented. A complete copy of the Section O program can be found in *Science* 120, 911 (1954) and *Agron. J.* 46, No. 11, 531 (1954).

H. E. Hayward (U.S. Salinity Laboratory, Riverside, Calif.) speaking on soil management remarked that there were 24 million acres of irrigated land in the 17 western states, and that the future calls for as much as 30 million acres. Estimates indicate that of the 8.5 million acres of land that probably can be irrigated, some degree of salinity affects 30 percent of this acreage.

The symposium on *Water Supplies and Irrigation* attracted a total of 175 persons. The growing demands for water and the supply available appeared to be the $64 question in California. A. D. Edmondston, state engineer of California, told where future sources of water could be located. From an environmental standpoint, the western states are ideally located for the production of seed crops of grasses, legumes, vegetables, and flowers. Frank G. Cuthbertson (Ferry-Morse Seed Company) reviewed the history and present trends of vegetable seed production in the western states. It was suggested that this paper might be published in installments in the *Seed World.* If this is done, it will furnish an excellent source of information for those interested. The fourth symposium covered five divisions of horticultural crops: namely, floriculture, breeding of vegetable crops, advances in viticulture, transportation of fruits and vegetables, and developments in subtropical agriculture. These five subjects, as well as those in the other symposiums, were very ably discussed. The average attendance at the four sessions was 90. Because of the type of programs, the audience was almost equally divided among research scientists, industry, and those with a general interest in agriculture.

F. D. KEIM, *Secretary*

## Section on Education (Q)

The meetings of Section Q consisted of two sections for general papers, some symposiums, and several sessions in cooperation with other sections or affiliated societies. The American Educational Research Association helped develop two sessions, the International Council for Exceptional Children, two sessions, and the California Educational Research Association helped on one session. There were also joint sessions with the Society of Research in Child Development and Section I. Section Q also joined in the dinner meeting sponsored by Section K.

The caliber of papers was generally very high. Symposiums on reading and on the education of exceptional children were especially noteworthy. Mention should also be made of the symposium developed by the AAAS Cooperative Committee on the Teaching of Science and Mathematics at which excellent papers were presented.

There appears to be a definite place for a few sessions of general papers, but the joint sessions with other sections and the affiliated societies seem to be becoming highly desirable features of these meetings.

DEAN A. WORCESTER, *Secretary*

## National Science Teachers Association (Q5)

As a part of the recent AAAS meetings in Berkeley, the National Science Teachers Association conducted its Winter Regional Conference, 27, 28, and 29 Dec. This was one of a pattern of three regional conferences and one national convention held by NSTA during 1954.

The Western Region in whose interests this conference was carried out includes the seven western states plus Hawaii and Alaska. Actually, conference participants came from all parts of the nation—not a few from the eastern seaboard. Registration and attendance records show names of more than 700 people participating. On this basis, it is conservative to estimate an actual conference attendance of at least 800, while the actual num-

ɔr of different persons involved might be closer to 1000! his is by all odds the largest regional conference ever ɪnducted by NSTA.

Keynote speakers during the 3-day session were Wil-am G. Sweeney (San Jose State College), who addressed general session on "The schools their problems, and ɔu," and John S. Richardson (Ohio State University), ho spoke to all conference delegates on "Science teach-'s face their problems." Each of these major addresses as followed by a series of planned discussion groups. One ɪtire morning general session was devoted to surveys of ɔcent research in science education and analyses of the gnificance of this research to science teachers. This re-ɔarch session was jointly sponsored by the National Sci-ɪce Teachers Association, the National Association for esearch in Science Teaching, AAAS Section Q (Educa-on), the AAAS Cooperative Committee on the Teaching f Science and Mathematics, and the Western Society of faturalists.

Other highlights of the conference included a social ɪixer arranged by the Elementary School Science Asso-iation of northern California, and featuring selected ortions from the General Electric "House of Magic." Vell over 300 people attended a luncheon program at 'hich NSTA president Walter S. Lapp presided over a This is your NSTA" program. During the last general ession, the association honored Edna W. Bailey, profes-or of education emeritus (University of California), one f the West Coast's very early pioneers in science educa-ion. Closing events of the busy 3-day schedule were Try-it-yourself" science exhibits and the ever-popular Here's-how-I-do-it" demonstrations of classroom proce-ɪures in science teaching.

General chairman for the NSTA Western Regionl Con-'erence was Robert Stellberg (San Francisco State Col-ege), and president elect of NSTA. He was ably assisted ɔy 69 members of local committees and received helpful ɪdvice from scores of others throughout the nation, par-ɪicularly in the West. A total of 152 different persons ɔarticipated directly in the presentation of various parts ɔf the conference program.

ROBERT STOLLBERG, *Program Chairman*

## Conference on Scientific Editorial Problems (X6)

The third annual Conference on Scientific Editorial Problems consisted of four sessions. The first session on 29 Dec., was concerned with manuals for complex instruments and was presided over by Leslie E. Neville. Speakers included Henry E. Marschalk (Publications Branch, Bureau of Ordnance, Department of the Navy), "Technical manuals—their increasing importance to industry and defense"; Charles A. Scarlott (Technical Information Services, Stanford Research Institute), "The technical manual and its readers"; and J. George Adashko (Ford Instrument Company), "Editorial and graphic techniques in preparing the technical manual."

The second session considered the problem of effective technical writing and was presided over by Milton O. Lee. Speakers were John Foster, Jr. (Columbia University), "Effective technical writing"; Kenneth A. Townley (Bureau of Mineral Resources, Department of National Development, Commonwealth of Australia) paper read by Graham Unikel (Stanford University), "Clarity in geological writing"; D. T. McAllister (Technical Information Department, U.S. Naval Ordnance Test Station, China Lake, Calif.), "Is there accepted scientific jargon?" and Alton L. Blakeslee (Associated Press), "Better communication between scientists and the public."

The third session was devoted to scientific journals and was presided over by the chairman of the conference. Speakers included J. Murry Luck (*Annual Reviews of Biochemistry* and *Annual Reviews, Inc.*), "Reviews"; William C. Steere, (Biological and Medical Sciences Division of the National Science Foundation), "Some problems of professional botanical journals"; Robert C. Miller (California Academy of Sciences), "Care and Training of authors"; and Howard A. Meyerhoff (Scientific Manpower Commission), "Useless publication."

The final session held 30 Dec., considered military and industrial technical reports and was presided over by A. E. Tyler. This session was cosponsored by the Technical Publishing Society. Speakers were Charles De Vore (Naval Research Laboratory), "Technical information—communication for research"; Nash Candelaria (Nuclear Engineering and Manufacturing Department, North American Aviation, Inc.), "Security and the editor"; Brownlee Haydon (The Rand Corporation), "Communicating research results"; and Donald H. Hale (Research and Engineering Command, U.S. Army Chemical Corps), "The technical report—its use in military planning." A message from Donald A. Quarles, Assistant Secretary of Defense for Research and Development, was read to the conference by Hale.

Plans are being made for the fourth Conference on Scientific Editorial Problems to be held in conjunction with the 1955 AAAS meeting in Atlanta.

MARIAN FINEMAN, *Chairman*

## Scientific Manpower Commission (X13)

The fourth annual conference on scientific manpower devoted its two half-day sessions to consideration of certain aspects of training and utilization of scientific and technical personnel.

The first session on 28 Dec. concerned itself with the general theme *Implications of the Findings of the Commission on Human Resources and Advanced Training.* Lee A. DuBridge (California Institute of Technology), discussed the report from the standpoint of the natural sciences and noted the sizable, although by no means unlimited, potential of human talent that could be utilized with proper training to meet specialized personnel needs. Conrad Taeuber, (Bureau of the Census) spoke on social science implications and stressed the social scientist's interest in the factors underlying the youth's decision of whether to take advanced training. Ralph W. Tyler (Center for Advanced Study in the Behavioral Sciences) discussed science teaching with particular note of the need to bridge the gap between college and high-school instructional levels. Discussants for the program included Marsh White (Pennsylvania State), Donald W. Taylor (Stanford University), and John R. Mayor (University of Wisconsin).

On 29 Dec. a session was devoted to *Prospective Developments in the Utilization of Scientists and Engineers.* Raymond H. Ewell (National Science Foundation) reported on the level of Federal Government expenditures for research and development and noted that a level of about $1.8 billion was reached in 1953 with some decline since. A. L. Lyman (California Research Corporation) estimated industrial research expenditures at a 1955 level of $1850 million which represents about a 16-percent increase from 1953. Jesse E. Hobson (Stanford Research

Institute) opened the discussion on these papers and questioned whether larger government appropriations are the most desirable method of encouraging basic research. Methods of encouraging greater direct expenditures from industry may be more effective.

Ralph Chaney (University of California) read Congressman Hinshaw's paper on new military manpower legislation. This paper pointed out that the United States has few advantages over the Soviet Union in any test of strength. A principal source of our strength lies in our people and their abilities to originate and develop new ideas or things. It becomes particularly important to utilize these talents in ways that will contribute to maximum strength. It is proposed that a special manpower council be established as the agency responsible for the decision whether an individual with scientific or technical competence shall serve in a military or in a civilian capacity.

Papers are now being collected for publication by the National Science Foundation. A limited number of copies will be available for distribution by that agency.

THOMAS J. MILLS, *Program Director*

## Scientific Research Society of America (X14)

The sixth annual convention of the Scientific Research Society of America was held at Berkeley, on 30 Dec. in conjunction with the annual meeting of the AAAS. A total membership of about 4000 in 31 branches and clubs and the membership-at-large group was reported. H. M. O'Bryan (Sylvania Electric Products) was elected to complete the term of the late Karl T. Compton as a member of the board of governors, and O'Bryan, C. G. Suits (General Electric Company), and C. N. Kimball (Midwest Research Institute) were elected to the board for 3-year terms beginning 1 July 1955. Officers of RESA are J. W. Barker, chairman, who will be succeeded by Wallace R. Brode on 1 July, and Donald B. Prentice, director and treasurer.

The annual RESA address was given before an audience of more than 1000 by Vannevar Bush, president of the Carnegie Institution of Washington. Bush also received the William Procter prize for scientific achievement.

DONALD B. PRENTICE, *Director*

*I value in a scientific mind, most of all, that love of truth, that care in its pursuit, and that humility of mind which makes the possibility of error always present more than any other quality. This is the mind which has built up modern science to its present perfection, which has laid one stone upon the other with such care that it today offers to the world the most complete monument to human reason. This is the mind which is destined to govern the world in the future, and to solve the problems pertaining to politics and humanity as well as to inanimate nature. It is the only mind which appreciates the imperfections of the human reason, and is thus careful to guard against them. It is the only mind that values truth as it should be valued and ignores all personal feeling in its pursuit.*—H. A. ROWLAND.