

Fourth Berkeley Meeting

Preliminary announcement of programs
for the 132nd annual meeting, 26-31 December 1965,
and call for papers by AAAS sections.

Raymond L. Taylor

Though, technically, this year's 132nd meeting of the AAAS will also be the *Fourth Berkeley Meeting*, it will be only the second time that the full-scale national *winter* meeting of the Association has been held west of the Rockies. The first two Berkeley meetings, held jointly with the AAAS Pacific Division, were in August 1915 and June 1934.

The first large "Christmas meeting," on the campus of the University of California, 26-31 December 1954, was such a pleasant occasion that it is expected that a great many of the 3856 registrants of 11 years ago will return to Berkeley this year, and it is expected that a large number of other scientists, teachers, and science-minded students will join their Pacific Coast colleagues. Attendance may substantially exceed the 5000 persons conservatively anticipated. Fortunately, since this will be during vacation time, this number will scarcely crowd a campus which has classrooms to accommodate 27,000 students.

Not only will the meeting be comfortable and convenient but, with headquarters in the handsome Associated Students of the University of California (ASUC) Student Center Building, it will border on the luxurious! The University of California campus is so compact that all session rooms are very close to the Center where delegates may meet each other or view the exhibits and Science Theatre films between papers.

Sleeping accommodations will be varied but adequate. In addition to the hotels and motels of Berkeley, there are now three new University residential halls—*within one short block of the campus*. Together these three halls can provide sleeping accommodations in attractive rooms, meals, and all-day phone

service, for 2500 persons. Parking facilities are ample.

The migratory meetings of the AAAS have been responsive to the nation's growth. As the center of population has shifted westward, and as AAAS membership has expanded, the Association's meetings in the West also have increased—though, at first, only gradually. The fifth meeting of the Association, in 1851 in Cincinnati, was the first meeting held west of the Appalachians. In 1872, the 21st meeting, in Dubuque, Iowa, reached the Mississippi. In 1901, the Association's 50th meeting was held in Denver, in the shadow of the Continental Divide, and then, 14 years later, the "Pacific Rim" at last was reached. This 67th, or "First Pacific Coast Meeting" of the AAAS, 2-7 August, 1915, was held with the double purpose of "aiding in the development of science in that region" and celebrating the completion of the Panama Canal. At first, though it was also called a San Francisco meeting, the "First Berkeley Meeting" would have been more descriptive since a large majority of the sessions were held on that campus of the University of California. There were evening sessions in San Francisco, downtown Berkeley, and a few on the grounds of the Panama-Pacific International Exposition next to the Presidio. Also, a full day was scheduled at Stanford University. Incidentally, though the Pacific Division of the Association had been organized and was a participant in 1915, the Division counts as its first meeting the one in San Diego, August 1916.

With the first Pacific Coast meeting a success, it is not surprising that thereafter, whenever possible, the national AAAS met summers with the Pacific Division—in 1922, at Salt Lake City; in 1923, at Los Angeles; in 1925,

at Portland, Ore.; in 1931, at Pasadena; in 1934, at Berkeley; and latest, in 1940, at Seattle.

As in 1954, when the Board of Directors of the Association accepted the invitation of the University of California to meet on the Pacific Coast, again this year the vote was unanimous and upon condition that it would not interrupt the sizeable regular June meetings of the Pacific Division. It was further agreed that the administrative office of the Division would not be called upon to lend assistance beyond advice, information, and good wishes. Accordingly, the Pacific Division has scheduled its 1965 and 1966 meetings in Riverside, California, and Seattle. Although the December AAAS meeting in Berkeley will not be a joint meeting with the Pacific Division, a number of its constituent societies—and its individual members—will play host to their colleagues from other parts of the country.

The Fourth Berkeley Meeting will be memorable in a number of respects, as will be apparent from the detailed synopsis to follow. Moreover, it should be noted that the city of Berkeley and nearby San Francisco, as well as the entire Bay Area, are worth a visit for themselves alone. (See the box, *The San Francisco Bay Area; the University of California at Berkeley*.)

General Chairmen

Appropriate for a meeting on a campus that also represents the entire University of California and the whole Bay Area, the AAAS is most fortunate in having for its General Chairman Donald H. McLaughlin, chairman of the board, Homestake Mining Company, and chairman (1958-60), and currently vice chairman, of the Board of Regents of the University of California. In a long and distinguished career as a mining geologist and engineer, Dr. McLaughlin was a long-time faculty member at Harvard and successively a dean of mining and of engineering at the University of California, Berkeley.

Scope of the Meeting

Those who have attended recent AAAS meetings are well aware that no other scientific meeting presents such a variety of important and attractive symposia in all major fields of science, or affords such opportunities for interdis-

The author is associate administrative secretary of the AAAS.

ciplinary programs and special events of general interest. There has been a steady growth in the variety of the sessions and a corresponding increase in the attendance—a reflection of the ever-increasing attractiveness of the programs.

The emphasis at the meeting is on symposia, even among the societies that, necessarily, must have sessions for short papers that report current research. Many of the symposia are planned to be of particular assistance to college teachers. Some of the many symposia, or their constituent papers, are eventually published—as AAAS symposium volumes, as articles in *Science*, or as articles in specialized journals—but not all are published and, in any event, there is a time lapse. Moreover, only by attending can one meet the authors face to face and discuss points of mutual interest.

There will be special sessions, principally in the evening, sponsored or co-sponsored by the AAAS as a whole. Among the general sessions there will be programs arranged by the Committee on Meetings—including five selected interdisciplinary symposia—and other sessions arranged by other AAAS committees and by the Academy Conference. Each of the 20 AAAS sections has arranged a strong program, some of them four to six sessions in length. And, this year, the array of societies—with programs ranging from a single session to a full 5-day national meeting—is impressive in number and in variety.

Twelve societies will have national meetings—the American Society of Zoologists alone anticipate 22 sessions for contributed papers and 20 sessions for symposia; 41 other societies will have special programs of one to ten sessions in length. There will be at least 30 additional organizations cosponsoring the programs arranged by AAAS sections or by other societies. For the most part, persons attending will select the programs that most appeal to them as specialists, but nearly all will also enjoy some of the AAAS special and general sessions. These programs and those of the participating societies, as well as of the sections, will be found in the detailed sections that follow.

Special Sessions

The Committee on AAAS Meetings, responsible for the general pattern of the meeting and the general sessions,

The San Francisco Bay Area and the University of California at Berkeley

Those who have yet to see the San Francisco Area indeed have a memorable experience to encounter. From the air, the cold, deep Pacific and rocky shore; the Coast Range—a rugged backdrop for old-new, cosmopolitan San Francisco; the 60-mile long Bay from Palo Alto to Vallejo; the Golden Gate or strait that connects bay and ocean; the graceful bridge that spans it; and the high hills to the east, behind Oakland and Berkeley—all these are a great, a magnificent panorama. The view from Grizzly Peak, overhanging the Berkeley campus, is unforgettable—whether one is there in the morning when the fog is rolling eastward, or at night, when each pinpoint of light on both sides of the water and along the great Bay Bridge are veritable exclamation points!

Innumerable references will inform the visitor to San Francisco about Union Square, Chinatown, Fisherman's Wharf, Nob Hill, Telegraph Hill, Presidio, and Zoo, but they may not say enough about the California Academy of Sciences Museum, Aquarium, and Planetarium, all together in Golden Gate Park. The many academic institutions in the metropolitan area and Mt. Tamalpais and Muir Woods, both on the Marin Peninsula, should also be seen if possible.

Space does not permit an extended treatment of the University of California—now with nine campuses (Berkeley, Davis, Irvine, Los Angeles, Riverside, San Diego, San Francisco, Santa Barbara, and Santa Cruz). The parent institution, Berkeley, was established in 1868. The entire university, which currently has reached an enrollment of 68,000, will have facilities for 130,000 by 1981.

The Berkeley campus proper is about one-half mile wide and extends eastward, and uphill, about a mile. The 530-acre campus includes an impressive assemblage of buildings, remarkable for the number and size of their lecture halls. There are many features on the campus—the Campanile, the cyclotron, the new organ in the Hertz Hall of Music, the eucalyptus trees, and Strawberry Canyon—all of which will be remembered after the meeting.

and the "Moving Frontiers of Science" program, has outlined its usual attractive series of special sessions and general events. In chronological order, these are as follows:

26 December, evening. Part I of "Moving Frontiers of Science." This program, which consists of lectures by authorities in various fields, is planned to be of general interest to all who attend the Berkeley meeting and to present recent developments in a particular science in terms intelligible to scientists in other disciplines. All sections and many of the participating societies have left these lecture periods open in preparing their schedules.

The first paper on this first evening of the meeting will be given by F. Clark Howell, visiting professor at the University of California, Berkeley, who will return after June to his post as Sibley professor of anthropology, University

of Chicago. His topic will be "Significant Advances in Human Evolutionary Studies."

27 December, evening. The annual AAAS Distinguished Lecture, regularly scheduled for the second evening of the meeting, will be given by George W. Beadle, chancellor of the University of Chicago, recent Nobel prize winner for his work on *Neurospora*, in genetics, and a symposium speaker and the president-elect of the Association when the AAAS met in Berkeley in 1954.

28 December, morning. The five interdisciplinary symposia, selected by the Committee on Meetings, will be presented concurrently. The first of these, in the physical, biological, and agricultural sciences, is Part III of the seven-session symposium of the AAAS section on Agriculture (O), "Ground-level Climatology." It is being arranged

by Robert H. Shaw, department of agronomy, Iowa State University of Science and Technology, Ames. Among the cosponsors are the AAAS sections on Physics (B); Geology and Geography (E); Zoological Sciences (F); and Botanical Sciences (G); the American Meteorological Society; and the Society of American Foresters, Northern California Section.

An interdisciplinary symposium in the chemical and biological sciences is a two-session symposium, "Proteins and Nucleic Acids," being arranged for the AAAS section on Chemistry (C) by Wendell M. Stanley, director, Virus Laboratory, University of California, Berkeley.

The interdisciplinary symposium in the medical, dental, and pharmaceutical sciences, "Materials Science in Medicine, Dentistry, and Pharmacy," has resulted from the merger of two proposed symposia in the programs of the AAAS sections on Dentistry (Nd) and Pharmaceutical Sciences (Np). Part I will be given in the morning session on 28 December; the program arranger is John Autian, director, Drug-Plastic Research Laboratory, University of Texas. Scope of the symposium includes both materials used to repair or replace tissues and organs, and compatibility of tissues in contact with them. The AAAS section on Medical Sciences (N) will cosponsor this program.

An interdisciplinary symposium in the biological and behavioral sciences will be "Behavior, Brain, and Biochemistry" arranged by David Krech, professor of psychology, University of California, Berkeley. Among the cosponsors are the AAAS section on Psychology (I), and the Western Psychological Association.

In the social sciences, the interdisciplinary symposium will be "Mathematical Bases in Economic Planning" arranged by Ithiel de Sola Pool, Massachusetts Institute of Technology. It will be cosponsored by the AAAS sections on Mathematics (A) and Social and Economic Sciences (K) and will include several prominent experts from abroad.

28 December, afternoon. Part II of "Moving Frontiers of Science." One lecture, to be given by a prominent physicist, will deal with some appropriate aspects of high energy physics. The other lecture will be given by Jerome Y. Lettvin, a neurophysiologist in the Research Laboratory of Electronics, Massachusetts Institute of Technology.

His general topic will be "The Physiological Basis of Mental Activity."

The Sixth George Sarton Memorial Lecture, sponsored by the George Sarton Memorial Foundation, is scheduled to follow the "Moving Frontiers" lectures on the afternoon of 28 December. This year's speaker has not yet been announced by the Foundation.

28 December, evening. Address of the retiring president of the AAAS, Laurence M. Gould. Preceding the address, there will be a brief word of welcome from Donald H. McLaughlin, general chairman of the Fourth Berkeley Meeting. Announcements will be made of two awards—the Newcomb Cleveland prize for 1964 and the current Socio-Psychological prize. A reception for all registrants follows, with refreshments provided.

29 December, evening. The annual joint address of the Society of the Sigma Xi and the United Chapters of Phi Beta Kappa has not yet been decided.

30 December, evening. The annual illustrated lecture and film of the National Geographic Society, usually a first showing, again will be held.

Special Program on Civil Defense

At last year's AAAS Council Meeting it was voted to accept the suggestion of the Committee on Council Affairs to hold an all-day major symposium on civil defense. The Committee on Council Affairs appointed a steering committee consisting of T. C. Byerly, U.S. Department of Agriculture, Washington, D.C.; Barry Commoner, Shaw School of Botany, Washington University; Henry Eyring, University of Utah; and H. Bentley Glass, Johns Hopkins University. The Committee on Meetings has scheduled this program for 27 December.

Other General Events

The AAAS Southwestern and Rocky Mountain Division's *Committee on Desert and Arid Zones Research* will have a symposium on "Evolving Water Law: The Growing Conflict Between Federal and State Governments," arranged by Joel E. Fletcher, Utah State University, Logan, on 29 December.

The *Commission on Science Education* (John R. Mayor, AAAS) plans a session in which there will be Reports

of Course Content Projects in the Social Sciences, and another session for a Panel on Needs in Junior High School Science.

The *Academy Conference*, founded in 1927 as a committee of the AAAS, is composed of the official representatives of the 46 academies of science affiliated with the AAAS. The Conference has had a program at each annual meeting of the Association since 1928. This year's 37th meeting will be held on 27 December. There will be a full day of sessions. At the business meeting in the morning, reports of the individual academies will be distributed and discussed. A paper on "How State Academies of Science Can Help Improve Science Education in Their Respective States" will be given by John R. Mayor, director of education for the AAAS.

The afternoon session, with president-elect James A. Rutledge presiding, will be devoted to "The Academies Between Meetings-II." This second in the series of major problems with which the senior academies are concerned will be devoted to undergraduate curricula in the sciences. It will be arranged by J. Teague Self, University of Oklahoma. The day will conclude with the annual Academy Conference Dinner and the Conference presidential address by Karlem Riess; past-president J. Teague Self will preside.

The session for the American Junior Academy of Science Program will be held on 28 December.

The Academy Conference also will sponsor the 19th Annual Junior Scientists Assembly, a program for selected high school students interested in science and scientific careers. The assembly will be held either 29 December in San Francisco, or 31 December on the campus of the University of California, Berkeley.

AAAS Council Meeting

This year the AAAS Council will meet on only one day, 30 December. The session will begin at 9:00 a.m. and continue until all business is transacted. Because the election of the AAAS president-elect and of new members of the Board of Directors is conducted by mail, with results simply announced, more time is available for consideration of matters that affect all science and society. The work of the Council is materially assisted by the Committee on Council Affairs.

Science Theatre

The AAAS Science Theatre, a regular feature of the Association's annual meeting since 1947, again will show a choice selection of science films, foreign and domestic. These films will be shown in a special room reached through the exhibit area. The theatre will run each film at least twice, so that those who are interested in a particular film will have more than one opportunity to see it.

At the AAAS meetings of the past several years, a number of the films evoked spontaneous applause! It is believed that they may do as well in 1965.

As with the Exposition, young people under 16 are neither registered nor admitted to the Science Theatre.

Science Exhibits

The importance of the Fourth Berkeley meeting has already been recognized by those who produce the books, instruments, and materials which scientists and teachers use. Applications for exhibit booths on the lower level of the ASUC Student Center have been received at a most gratifying rate from both eastern and western firms. At this time, 7 months in advance of the meeting, relatively few booths remain to be assigned.

This year's Annual Exposition of Science and Industry will be one of the most attractive ever presented. Leading publishers, optical companies, instrument makers, and many suppliers of laboratory materials and equipment will show their latest publications and products. In addition, there will be selected displays of the research activities of large industrial firms and exhibits of governmental agencies.

Incidentally, the Exposition is not at all like a science fair and it is *not* intended for young people below the college, or the exceptional high school senior level; most of the exhibits are too technical for younger students of science. (To meet the interests of the latter, the Association's Academy Conference annually arranges a Junior Scientists Assembly, at which eminent scientists address a large audience of high school students on aspects of science and scientific careers.) In the best interests of exhibitors and those interested in their displays, only registrants are admitted to the Exposition and *young persons under 16 are neither registered nor admitted.*

Call for Papers by AAAS Sections

Six sections of the Association will arrange sessions for contributed papers at the Berkeley meeting.

(**Note:** Contributed papers in astronomy, ecology, animal behavior, mathematics, or zoological sciences should be submitted to the appropriate society program officer of the American Astronomical Society, Ecological Society of America, Animal Behavior Society, American Mathematical Society, or American Society of Zoologists, respectively, rather than to any section officer.)

The secretaries of the AAAS sections to whom titles and abstracts of papers should be sent, *not later than 30 September*, are as follows:

C-Chemistry. Analytical, physical, inorganic chemistry, John W. Otvos, Shell Development Company, Emeryville, California.

E-Geology and Geography. Richard H. Mahard, Department of Geology and Geography, Denison University, Granville, Ohio.

G-Botanical Sciences. Warren H. Wagner, Jr., Department of Botany, University of Michigan, Ann Arbor, Mich.

H-Anthropology. Eleanor Leacock, Polytechnic Institute of Brooklyn, 333 Jay Street, Brooklyn 1, New York.

Np-Pharmaceutical Sciences. Joseph P. Buckley, School of Pharmacy, University of Pittsburgh, Pittsburgh, Pa. 15213

Q-Education. F. B. Dutton, Science and Mathematics Teaching Center, Michigan State University, East Lansing, Mich. 48823

Although the general deadline is 30 September, most sections and subsequently the AAAS office, would be pleased to receive titles as much in advance of that date as possible.

Housing and Transportation

The meeting will be convenient, comfortable, and moderate in costs despite its size and complexity. Those who drive from within the territory of the Pacific Division will have a wide variety of choices among hotel, motel, and residential hall accommodations. Also, ample parking facilities will be available to attendees not only where they sleep but on the campus, because of the university vacation period. Persons who do not travel by auto will also find the three large, new Residential Halls particularly convenient, since they are but a short block from the campus and closest to the ASUC Student Center and the university buildings where the sessions are to be held.

There are frequent buses to all parts of Berkeley; to other East Bay cities; and to San Francisco, about 10 miles away on the double-decked, 7-lane, 8-mile Bay Bridge. There are also a few taxis which can be booked by telephone. Currently, limousine service from the Oakland Airport to Berkeley hotels is \$2; a similar special service from the San Francisco International Airport is expected to be available. Also, helicopter service connects both airports with Berkeley.

Hotels in Berkeley include the Claremont (300 rooms), Ashby Avenue and Tunnel Road, one mile from the campus; Durant (200 rooms), 2600 Durant Avenue, one block from the campus; and the Shattuck (250 rooms), Shattuck Street and Allston Way, about one block from the west entrance of the campus, or four blocks to the Student Center.

Special low rates have been established at several levels. Complete details will be announced in *Science* in July, at which time there will be coupons for housing and advance registration among the advertising pages. (To secure the special rates, registrants must use the hotel-motel-residential hall room coupon, and should send it directly to the AAAS Housing Bureau in Berkeley *after the July announcement appears.*) As usual, advance registrants will receive the *General Program* early in December.

Because this is a campus meeting, and the ASUC Student Center Building will be AAAS Headquarters, no hotel will be the headquarters of any section or society. (Groups that very much wish to be together can be accommodated in the Residential Halls, if prior arrangements are made through my office and

if block bookings can be made early in the reservations period—which begins with the July announcement in *Science*.) Societies or sections that require a headquarters for committee meetings and the like, or lounges, can be assigned rooms on the campus.

Programs. A synopsis of the programs, arranged by disciplines, follows. The names given in parentheses are those of section and society officers or other program chairmen.

Mathematics (A)

The program of Section A (Wallace Givens, Argonne National Laboratory) includes a symposium, "The New Mathematics," with the general theme, the developing programs in mathematics education. In addition to a report to the scientific public there will be emphasis on the need for advice from scientists in other disciplines. Speakers will include: E. G. Begle (School Mathematics Study Group Project, Stanford University); Paul C. Rosenbloom (Minnesota Mathematics and Science Teaching Project, University of Minnesota); and Max Beberman (Committee on School Mathematics, University of Illinois). The vice-presidential address will be given by Bernard Friedman (University of California, Berkeley). His topic will be the direction of mathematics development in its relation to the other sciences.

On 29 December the *American Mathematical Society* (R. S. Pierce, University of Washington, associate secretary of the Society) will hold a full one-day meeting with seven sessions for contributed papers—four concurrent in the morning, three concurrent in the afternoon. A feature in the afternoon will be the invited address, "Bi-harmonic Boundary Value Problems," by T. M. Cherry (University of Melbourne and University of Washington).

On 30 December the *Society for Industrial and Applied Mathematics* (William J. Jameson, Jr., Collins Radio Company, Cedar Rapids, Iowa) will hold a session with invited addresses. The program may involve educational needs in applied mathematics. The *Association for Computing Machinery* (Harry Huskey, Computing Center, University of California, Berkeley) will sponsor a program, tentatively scheduled for this day. Details are still to be arranged.

The program of the *National Council of Teachers of Mathematics* (James D. Gates, NEA Building, Washington, D.C. 20036) is scheduled for 29 December.

Physics (B)

Section B (Stanley S. Ballard, University of Florida) will sponsor a session devoted to a description and discussion of the new college physics courses now being developed on the University of California campuses. The Physicists' Luncheon, which will be jointly sponsored by *Sigma Pi Sigma* (Marsh W. White, Pennsylvania State University), will feature the vice-presidential address of Emilio Segrè (University of California, Berkeley).

Space Science

The *American Astronautical Society* (Paul B. Richards, General Precision, Inc., Little Falls, New Jersey) will have another important two-session symposium—Recent Developments in Space Flight Mechanics—29 December. The symposium will consist of seven expository lectures by the invited experts. The topics, which can be named at this time, include Trajectory Design for Mission Analysis, Analytical Celestial Mechanics, Powered Space Flight, Trajectory Determination from Observational Data, Rigid Body Dynamics of Space Vehicles, and Reentry Flight Analysis.

Chemistry (C)

The program of Section C (A. H. Batchelder and John Y. Beach, California Research Corporation, San Francisco), to be held jointly with the *American Chemical Society, California Section* (R. L. LeTourneau, California Research Corporation, Richmond) consists of sessions for contributed papers and two symposia. The initial papers on 27 December (Harry S. Mosher, Stanford University) will be on Nonprotein Neurotoxins. One part of the symposium, "Proteins and Nucleic Acids," arranged by Wendell M. Stanley (University of California, Berkeley), will be on the afternoon of 27 December; the second part, on the morning of 28 December, is an interdisciplinary symposium, co-sponsored by Section N. On 29 December there will be two sessions on "Recent Developments in the Study of Energy Transfer," arranged by George C. Pimentel (University of California, Berkeley) and Harmon W. Brown (Varian Associates, Palo Alto, Calif.). On 30 December, John W. Otvos (Shell Development Company, Emeryville,

Calif.) has arranged sessions for contributed papers in analytical, physical, and inorganic chemistry.

Details of the program of the *American Association of Clinical Chemists* (Joseph Gast, University of San Francisco) for its annual regional meeting with the AAAS are not yet available. The meeting will have sessions for contributed papers and perhaps a symposium, 26 or 27 December.

Astronomy (D)

Section D (Frank Bradshaw Wood, University of Pennsylvania) will co-sponsor all sessions of the American Astronomical Society and, possibly, may arrange a symposium jointly with AAAS section on Physics (B).

The national meeting of the *American Astronomical Society* (G. C. McVittie, University of Illinois Observatory, and Ivan R. King, University of California, Berkeley) will begin with council meetings the morning and afternoon of 26 December and will continue through the afternoon of 30 December. Most of the sessions will consist of contributed papers, but there will also be a Helen B. Warner Prize Lecture, and the Astronomers' Dinner.

Whether the *Astronomical Society of the Pacific* (Sturla Einarsson, University of California, Berkeley) will sponsor a separate session is uncertain in view of the AAS meeting.

Geology and Geography (E)

The program of Section E (Richard H. Mahard, Denison University) will begin with a two-session symposium honoring Carl O. Sauer with his former students participating; it will be arranged by M. W. Mikesell (University of Chicago). The Section E Dinner and the retiring vice-presidential address of Trevor Lloyd (McGill University) will be held the evening of 27 December.

On 29 December there will be symposia on Provincial and Immigrant Elements in Western Terrestrial Tertiary Faunas (Charles A. Repenning, U.S. Geological Survey, Menlo Park, California) and Extraterrestrial Sedimentologic Processes and Conditions (Jack R. Van Lopik, Texas Instruments, Inc., Dallas).

On 30 December a symposium on Current Work in Engineering Geology is scheduled. Contributed papers in geology will also be presented.

Section E will cosponsor the program of the national *Association of American Geographers*, organized by the *Association of Pacific Coast Geographers*, 28 December. This will include a group of invited papers in geography (Richard M. Highsmith, Jr., Oregon State University, Corvallis) and a symposium, "Remote Scanning of Environment" (James P. Latham, Florida Atlantic University, Boca Raton).

The *National Geographic Society* will present its annual lecture and film, 30 December.

The *National Speleological Society* (George W. Moore, U.S. Geological Survey, Menlo Park, California) will have a session on Limestone Hydrology, 29 December, jointly sponsored by Section E and the *Geological Society of America*.

Zoological Sciences (F)

The program of Section F (David W. Bishop, Carnegie Institution of Washington, Baltimore) will be merged with the extensive programs of zoological societies that are active participants. Section F will have, jointly with the *Society of General Physiologists* and the *ASZ Division of Comparative Physiology*, a four-session, interdisciplinary and international symposium, 27 and 29 December, on "Molecular Mechanisms of Temperature Adaptation," arranged by C. Ladd Prosser (University of Illinois). At the Zoologists' Dinner, 29 December, the address of retiring vice president C. Ladd Prosser, "Physical Factors in Speciation," may be considered the terminal paper of this symposium. Section F will cosponsor the symposia of the societies affiliated with it, and will help arrange the Biologists' Smoker, 27 December. There will be a business meeting, just before or after the ASZ meeting.

The *American Fisheries Society* (Ernest O. Salo, Humboldt State Teachers College, Arcata, California) will have a special meeting with the AAAS. Details are not yet available.

The national meeting of the *American Society of Zoologists* (A. Glenn Richards, University of Minnesota) will include 22 sessions for contributed papers and some 20 symposia sessions, over a span of the four days, 27–30 December. Meetings of the Policy and Executive Committees are scheduled for 26 December. The four-session symposium, "Molecular Mechanisms of Temperature Adaptation," has already been

mentioned. Other symposia will be: "Hypothalamic Control of the Anterior Pituitary," arranged for the Division of Comparative Endocrinology by Donald S. Farner (Washington State University); "Pituitary Gland: Comparative Aspects," arranged for the Division of Comparative Endocrinology by Walter Chavin (Wayne State University); "Problems in Invertebrate Embryology," four sessions arranged for the Division of Developmental Biology by R. L. Fernald (University of Washington) and A. C. Clement (Emory University), and cosponsored by the Division of Invertebrate Zoology; "Neurosecretion of Invertebrates Other Than Insects," four sessions arranged for the Division of Invertebrate Zoology by C. J. Goodnight (Purdue University) and cosponsored by the Division of Comparative Endocrinology; and "The Vertebrate Ear," arranged for the Division of Vertebrate Morphology by R. J. Baldauf (Texas A & M University). The business meeting will be 29 December. Local representative of the ASZ is Ralph I. Smith (University of California, Berkeley).

The program of the recently organized *Animal Behavior Society* (Edwin M. Banks, University of Toronto, but University of Illinois after 15 August) for its first regular meeting with the AAAS includes a two-session symposium, 28 December, "Recent Findings in the Experimental Analysis of Aggression," arranged by Roger E. Ulrich (Illinois Wesleyan University), cosponsored by the Section of Animal Behavior and Sociobiology, Ecological Society of America; the Division of Animal Behavior, American Society of Zoologists; and by the AAAS section on Psychology (I). Speakers are: J. P. Scott, who will chair the session; Frank Bronson; Jose M. R. Delgado; George Reynolds; Travis Thompson; and Roger Ulrich. There will be five sessions for contributed papers, 28–31 December, and the Animal Behaviorists' Luncheon and business meeting, 29 December.

The annual meeting of the *Herpetologists' League* (Frederick B. Turner, University of California, Los Angeles) will comprise several sessions for contributed papers, Council meetings, a Fellows meeting, and a meal function, 29 and 30 December.

The national annual meeting of the *Society of Systematic Zoology* (Jerome G. Rozen, Jr., American Museum of Natural History) will consist of three symposia, two sessions for contributed papers, the annual business meeting, and the executive committee meeting,

26–29 December. Two of the symposia are entitled: "Systematic Studies on Collections of the Galapagos International Scientific Project," and "What Should We Teach in Systematics?"

Biological Sciences (FG)

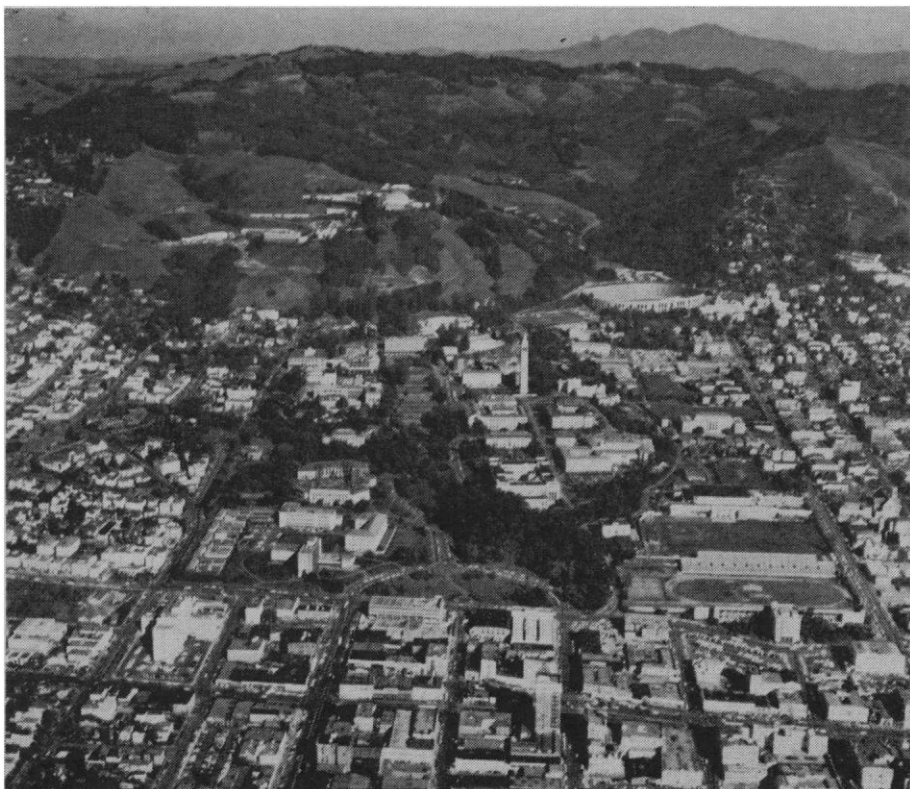
The program of the annual national meeting of the *American Society of Naturalists* (Carl L. Hubbs, Scripps Institute of Oceanography, La Jolla, California) will include a two-session symposium, "A Survey of Past Changes in the Biological Environment," the presidential address of H. Bentley Glass (Johns Hopkins University), and the business meeting of the society.

The *Ecological Society of America* is organizing its customary program with the AAAS, with Oscar H. Paris (Department of Zoology, University of California, Berkeley) as local program chairman. The dates selected are 27–29 December. Symposia planned include "Primary Productivity of Natural Ecosystems," arranged by Stanley P. Gessel (College of Forestry, University of Washington); and "Behavior and Bioenergetics of Animals," arranged by R. Z. Brown (Adelphi College). There will be sessions for invited papers on "Population and Community Bioenergetics" and on "Diversity and Abundance in Natural Communities." Several one-day field trips in the San Francisco Bay Area are planned.

There will also be a series of sessions for contributed papers in plant ecology, animal ecology, and other ecology. Titles and abstracts, not over 150 words, should be sent to G. M. Woodwell (Department of Biology, Brookhaven National Laboratory, Upton, Long Island, New York) by 1 September. Details will be published in the September *Bulletin* of the Ecological Society of America.

The sessions for contributed papers on animal behavior in the ESA's section on Animal Behavior and Sociobiology will be held jointly with the Division of Animal Behavior of the American Society of Zoologists and the recently formed Animal Behavior Society. Titles and abstracts for animal behavior papers should be sent to E. M. Banks (University of Toronto, Toronto, Ontario, Canada by 15 August; University of Illinois, Urbana, thereafter) by 1 September.

Mountain Lake Biological Station "Alumni" who are present at the meeting again will sponsor an annual break-



Berkeley campus, University of California. [Berkeley Chamber of Commerce]

fast with the AAAS for all persons who have ever been students, investigators, or staff members at the Station. It is possible that one of the alternate directors, J. L. Riopel or J. J. Murray, Jr., may be present.

The regular annual meeting of the *Western Society of Naturalists* (James M. Craig, Oregon State University) will include a two session symposium, "Polar Lore Since Fifty-Four," 29 December, arranged by James M. Craig. It will be cosponsored by the Arctic Institute of North America. There will be concurrent sessions for contributed papers and a business meeting, 30 December.

Sections F and G will cosponsor a Biologists' Smoker from 9:30 till 11 p.m., 27 December.

Botanical Sciences (G)

Section G (Warren H. Wagner, Jr., University of Michigan) will continue its series of symposia sessions, "Plant Biology Today: Advances and Challenges," invited review papers on basic topics for biology teachers to keep them informed on recent advances, 29 December. The program is cosponsored by the Botanical Society of America. Between these sessions there will be a luncheon for all botanists at which Ira L. Wiggins (Stanford University) will

deliver his vice-presidential address. There will also be one or more sessions for contributed papers, cosponsored by the Pacific Section of the Botanical Society of America.

Anthropology (H)

The program of Section H (Eleanor Leacock, Polytechnic Institute of Brooklyn) will have a two-session symposium on India, 27 December; a four-session symposium on Current Topics in Human Variation, 29 and 30 December; and a concurrent two-session symposium on Mathematical Modes of Kinship, 29 December. The vice-presidential address by Albert C. Spaulding (University of Oregon), will be followed by a cocktail party. There will be one or more sessions for contributed papers, 30 December.

Psychology (I)

The meeting of Section I (Frank W. Finger, University of Virginia) will be a joint enterprise with the *Western Psychological Association* (Gerald A. Mendelsohn, University of California, Berkeley). The vice-presidential address of Benton J. Underwood (Northwestern University) will be combined with a

symposium entitled, "Verbal Learning: Acquisition Variables and Processes," on the afternoon of 29 December. Speakers include: Leo J. Postman, Rudolph W. Schulz, William Epstein, Neal F. Johnson, Leonard M. Horowitz, Kent Dallett, and Geoffrey Keppel. A second symposium on the same day will be "Behavior Genetics," organized by Gerald McClearn (University of Colorado). Speakers will include William Meredith and James McGaugh. There will be two additional symposia on 30 December. Section I will cosponsor the interdisciplinary symposium, the morning of 28 December, on "Behavior, Brain, and Biochemistry," arranged by David Krech (University of California, Berkeley). There may be contributed papers, sponsored by the *Western Psychological Association*.

Social and Economic Sciences (K)

Section K (Ithiel de Sola Pool, Massachusetts Institute of Technology) will have the primary responsibility for the AAAS interdisciplinary symposium, "Mathematical Bases in Economic Planning." The section will cosponsor appropriate sessions of the "K series." The vice-presidential address will be given by criminologist Thorsten Sellin (University of Pennsylvania) in the program of the American Society of Criminology.

It is planned that the *American Economic Association* (Joseph J. Spengler, Duke University) will have a program of invited papers, cosponsored by Section K, 26 December, that will complement the interdisciplinary symposium, "Mathematical Bases in Economic Planning." Because this program is held early in the meeting period, AEA members may attend both the AAAS meeting and their own national meeting, to be held in New York from 27 to 29 December.

The *American Political Science Association* will have its customary special program, 27 December, cosponsored by Section K. It will be arranged by H. Field Haviland, Jr., Director of Foreign Policy Studies, Brookings Institution, Washington, D.C.

The annual national meeting of the *American Society of Criminology*, 28-30 December, again is the responsibility of its president, Walter C. Reckless (Ohio State University), and will consist of six sessions of papers on Dangerous and Abnormal Offenders, Correctional Treatment, Research in

Criminology, Police Administration, Bail and the Indigent, and Crime and Poverty. The annual business meeting, the annual awards, and a memorial session—which will be combined with a luncheon and the vice-presidential address of Section K by Thorsten Sellin—will be on 29 December.

The *American Sociological Association* (William H. Form, Michigan State University) will have two symposia, "Population Concomitants to Urbanization in Developing Societies," and "Social Scientists in Policy Making in Underdeveloped Societies," cosponsored by Section K.

Details of the program of the *Metric Association* (Robert P. Fischelis, Ohio Northern University) are not yet available.

The *National Institute of Social and Behavioral Science* (Donald P. Ray, 863 Benjamin Franklin Station, Washington, D.C. 20044) will have its usual session for selected contributed papers, the afternoon of 28 December.

The recently affiliated *Society for the Scientific Study of Religion* (Samuel Z. Klausner, Society for the Scientific Study of Religion, Washington, D.C.) is planning a meeting with the AAAS for the first time. The probable title of the general session will be "Social Conditions for a Scientific Study of Religion." Other sessions will constitute an SSSR West Coast regional meeting.

History and Philosophy of Science (L)

The program of Section L (Norwood Russell Hanson, Yale University) is expected to be a series of symposia on philosophical subjects, organized by C. West Churchman (University of California, Berkeley). The *Philosophy of Science Association* (Adolf Grünbaum, University of Pittsburgh) may be a joint sponsor. A retiring vice-presidential address will be given by John E. Murdoch (Harvard University).

The 11th annual meeting of the *Society for General Systems Research* (Herman Thal-Larsen, University of California, Berkeley) will consist of eight sessions as follows: Contributed papers, morning, 27 December; "Mathematics of General Systems," arranged by Mihajlo Mesarovic (Case Institute of Technology), the afternoon, 27 December; "The Psychiatric Sciences: The Potential Contribution of Systems Research," arranged by John MacIver (U.S. Steel Corporation, Pittsburgh), morning, 29 December; "Nets—Social and Neuron-

ic," arranged by W. Ross Ashby (University of Illinois), afternoon, 29 December; "General System Theory and Education, Part I," arranged by Ronald G. Jones (Education and Psychology Center, Pennsylvania State University), morning, 30 December; "General System Theory and Education, Part II," arranged by Ronald G. Jones, afternoon, 30 December; "General Systems Approach in the Public Sector," arranged by R. Zieke (Aerospace Corporation, San Bernardino, California), morning, 31 December; and contributed papers, afternoon, 31 December.

The *Society for the History of Technology* (Melvin Kranzberg, Case Institute of Technology) will have a joint session with Section L.

Engineering (M)

The program of Section M (Newman A. Hall, Commission on Engineering Education, Washington, D.C., and Charles F. Savage, General Electric Company, New York) will include a two-session symposium, held jointly with AAAS section on Agriculture (O) (Robert E. Stewart, Ohio State University), on "Systems Engineering in Agriculture." The program will consist of a review of the current status of operations research and of systems engineering, and optimizing techniques in agricultural production systems. A second two-session symposium on "Extraterrestrial Life" will deal with exobiology in the solar system, and with communication with extraterrestrial intelligence. Speakers from several appropriate disciplines are being selected by Paul Rosenberg (Paul Rosenberg Associates, Pelham, New York).

The successful reception of Section M's Engineering Film Theatre at Montreal has encouraged the intention this year to allow still more time for outstanding engineering films.

Medical Sciences (N)

As in previous years, Section N (Robert E. Olson, University of Pittsburgh Graduate School of Public Health) will have a four-session symposium with both American and foreign participants. This year's subject is "Mode of Action of Steroid Hormones." A. Baird Hastings (Scripps Clinic and Research Foundation, La Jolla, Calif.) will give the vice-presidential address. Section N will also

cosponsor the joint symposium of Sections Nd and Np on "Materials Science in Medicine, Dentistry, and Pharmacy" and Section C's symposium, "Proteins and Nucleic Acids."

It is anticipated that the annual program of *Alpha Epsilon Delta* (Maurice L. Moore, national secretary, Bronxville, New York) will include a symposium on "Pacific Coast Medical School Requirements and Admission Procedures," which will be followed by the annual luncheon and address, and by a tour of local medical facilities.

The *American Association of Bioanalysts, Western Region* (Mario Menesini, 1287 Rudgear Road, Walnut Creek, California) will have a meeting with sessions for contributed papers.

The *American Physiological Society* is sponsoring a symposium on Oögenesis and Development, arranged by Ray M. Iverson (University of Miami) and Robert E. Smith (University of California Medical School, Los Angeles).

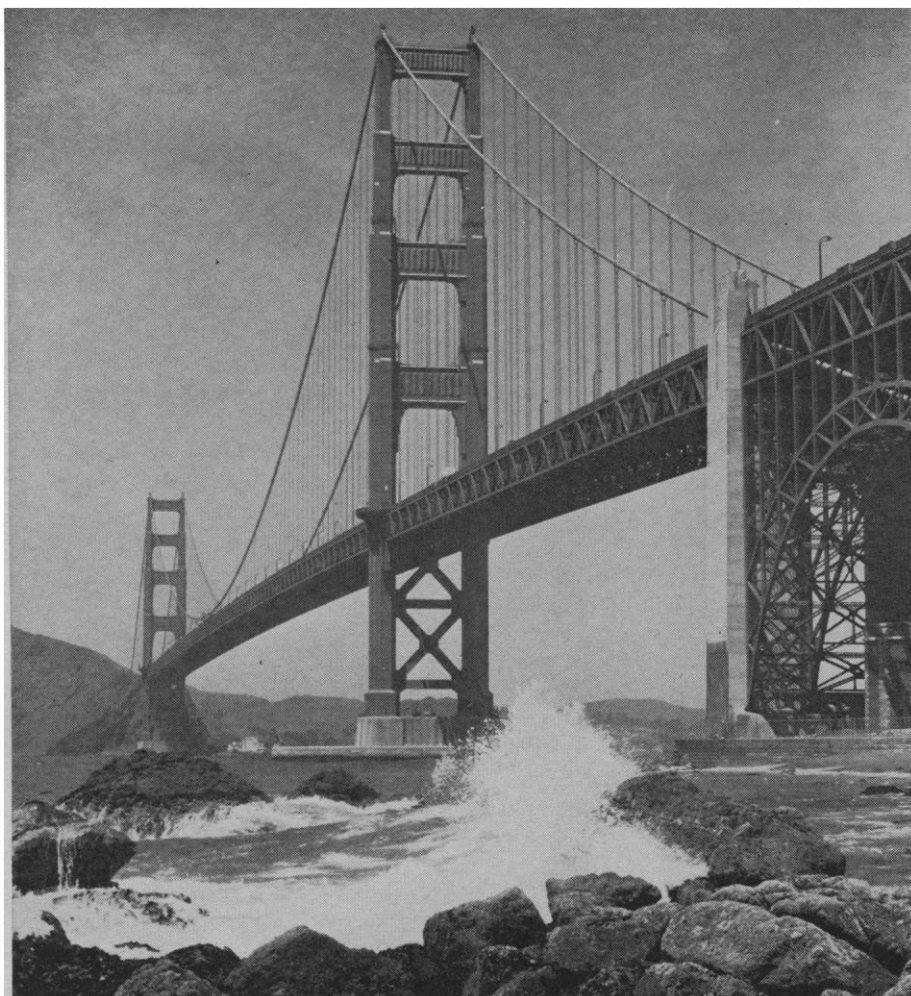
The *American Society for Microbiology, Northern California-Hawaiian Branch* (Kendrick J. Taylor, Cutter Laboratories, Berkeley) will have a day of sessions, 29 December.

The *California Veterinary Medical Association* (A. G. Edward, University of California, Davis) will have two sessions, 27 December, for a group of ten invited papers on "Animals on the Verge of Discovery"—various types of vertebrates, other than common rodents and rabbits, suitable for biomedical research. The day will conclude with a dinner.

The *Society for Experimental Biology and Medicine, Pacific Coast Section* will have three sessions for contributed papers, 27 and 28 December, arranged by Ernest L. Dobson (Donner Laboratory, University of California, Berkeley).

Dentistry (Nd)

Section Nd (Seymour J. Kreshover, National Institute of Dental Research, Bethesda, Md.) will sponsor two two-session symposia at Berkeley. The first, "The Behavioral Sciences in Dentistry," will be held 27 December. Recent interest in this area indicates that it is timely to examine some of the work in the behavioral sciences that can be related to dentistry. Papers concerned with the theoretical concepts and methods used in studies of such phenomena as pain, fear, and anxiety



Golden Gate Bridge, San Francisco, California.

will be given, and also several papers concerned with the present early interdisciplinary efforts in the two fields, such as studies on the cleft palate and stress.

The second symposium, the AAAS interdisciplinary symposium on "Materials Science in Medicine, Dentistry, and Pharmacy," is jointly planned with the AAAS section on Pharmaceutical Sciences (Np), and will be held the mornings of 28 and 29 December. Recent advances in medicine and dentistry have enhanced the need for providing materials which can be utilized in repairing or replacing tissues and organs damaged as a result of trauma or disease. The wide range of mechanical properties available in some metallic and polymeric materials makes them attractive candidates for such uses. However, even though a material possesses the desired physical properties, there is no assurance that it may be successfully utilized in the body. Tissue acceptance or biologic receptivity is of prime importance for the long-term utilization of materials for biomechanical application. As arranged by John Autian (Drug-Plastic Research Laboratory, University of Texas),

the symposium will also include the indirect effects of plastics on tissues, and other drug-plastic considerations. Representatives of the Food and Drug Administration will discuss the role of the FDA in the field of materials used in medicine, dentistry, and pharmacy. Sections and societies cosponsoring these symposia will be announced later.

Pharmaceutical Sciences (Np)

In addition to joint sponsorship of the "Materials Science in Medicine, Dentistry and Pharmacy" symposium discussed previously, the program of Section Np (Joseph P. Buckley, University of Pittsburgh), 28-30 December, is expected to include sessions for contributed papers on hospital pharmacy; a luncheon and the vice-presidential address of John E. Christion (Purdue University); contributed papers in general pharmacy; and the Pharmacists' Reception and Dinner, 29 December.

Section Np's program, in its entirety, will be cosponsored by the American Association of Colleges of Pharmacy; the American College of Apothecaries;

the American Society of Hospital Pharmacists; the American Pharmaceutical Association, Scientific Section; and the National Association of Boards of Pharmacy.

Agriculture (O)

Section O (Robert H. Shaw, Iowa State University, Ames) will have a seven-session symposium on "Ground-level Climatology." Sessions I and II on 27 December, held jointly with the *Society of American Foresters, Northern California Section* (Edward C. Stone, University of California, Berkeley), will be concerned with climate as a factor in forest distribution, productivity, and use.

Session III, 28 December, will be the AAAS interdisciplinary symposium session previously discussed.

Sessions IV-VII, 29 and 30 December, will consist of papers on the ecological effects of the microenvironment on agricultural activities and potentialities, with respect to both plants and animals.

Among the cosponsors of the whole program are AAAS sections on Physics (B), Geology and Geography (E), Zoological Sciences (F), Botanical Sciences (G), the American Meteorological Society, and the American Society of Range Management.

Industrial Science (P)

Section P (Burton V. Dean, Case Institute of Technology) is planning two sessions on 29 December. The morning session will be "The Computerized University," chaired by Ralph W. Gerard (University of California, Irvine). The afternoon session may be "The State of the Art and the Prospects for Data Gathering, Storage, Transformation, and Retrieval," chaired by Merrill Flood. At the annual luncheon, R. Holley Keebler (Northern Electric Ltd., Montreal) will give the retiring vice-presidential address with current vice president Allen T. Bonnell (Community College of Philadelphia) presiding. The section will also confer the 1965 Industrial Award and cosponsor appropriate programs.

It is expected that *The Institute of Management Sciences* (Merrill Flood, Mental Health Research Institute, Ann Arbor, Michigan) will cosponsor Section P's symposium and may also have other sessions of its own.

Education (Q)

The program of Section Q (Frederic B. Dutton, Science and Mathematics Teaching Center, Michigan State University) will have appropriate joint programs with AERA, arranged by William Cooley (American Institutes for Research, Pittsburgh) and NARST, arranged by Abraham S. Fischler (University of California, Berkeley); sessions for contributed papers; a business meeting; and the vice-presidential address of James A. Rutledge (University of Nebraska). A feature will be the two-session International Science Education Symposium, arranged by Arthur H. Livermore (AAAS). This program will include discussions of curriculum reforms in developing countries (for example, Africa) and in developed countries (for example, the Nuffield Project in Great Britain).

The science teaching societies (ANSS, NABT, NARST, and NSTA) that regularly meet with the AAAS, again joined by the CASMT, as usual will have a coordinated program with the AAAS. The coordinator this year is Harry K. Wong (Menlo-Atherton High School, Atherton, California). There will be three joint film sessions, 27–29 December, again arranged by J. David Lockard (University of Maryland); a joint major session, “Implementing Science Programs”; a joint mixer, 27 December; and a joint summary session and buffet, 28 December. There will be a series of concurrent sessions similar to the coordinated programs of recent years.

The annual national meeting of the *American Nature Study Society*, arranged by Howard E. Weaver (University of Illinois), includes, in addition to board meetings, two morning and three afternoon sessions; an ANSS-sponsored luncheon, 28 December; a Naturalists’ “At Home”; and the annual field trip with NABT, 30 December.

The annual national meeting of the *National Association of Biology Teachers* (Harry K. Wong) is similar to that of the ANSS program in pattern.

The regional meeting of the *National Science Teachers Association*, arranged by the national associate executive secretary, Albert F. Eiss (NSTA, Washington, D.C.), will consist of two or more sessions. The NSTA regional affiliate, the *California Science Teachers Association*, will assist and serve as host.

Information and Communication (T)

In general, Section T’s program (Phyllis V. Parkins, *Biological Abstracts*) is expected to follow the successful pattern of last year. There will be a two-session symposium, “Science Information and Communication in Mainland China,” arranged by Karl F. Heumann and Robert B. Sheeks (National Academy of Sciences); a panel discussion; a luncheon and an address by a distinguished speaker; and the vice-presidential address of Robert C. Miller (California Academy of Sciences).

The *Society of Technical Writers and Publishers* (Gunther Marx, Illinois Institute of Technology Research Institute) is arranging a joint session with Section T.

The *National Association of Science Writers* (Leonard S. Zahn, Hill & Knowlton, Inc., 150 East 42nd Street, New York) will have a business meeting, probably an invited speaker, and the annual dinner at which the AAAS-Westinghouse Science Writing Awards are announced.

Statistics (U)

The program of Section U (Morris B. Ullman, 7604 Cayuga Avenue, Bethesda, Md.) again will consist largely of joint sessions with other sections. The program begins 26 December with a session on Numerical Taxonomy, held jointly with the *Biomedical Information-Processing Organization* and arranged by Max A. Woodbury (New York University Medical School). The vice-presidential address will be given by Thornton Fry (National Center for Atmospheric Research, Boulder, Colorado).

On 27 December there will be a joint symposium with the *American Statistical Association*, and the AAAS section on Information and Communication (T), on the “Formal Testing of Information Systems,” arranged by Ezra Glaser (U.S. Patent Office), and a session on the “Statistics of Mental Health,” arranged by Everett S. Lee (University of Pennsylvania). Section U also plans to participate in sessions on “The Computerized University,” with the AAAS section on Industrial Science (P); and on “Measuring Quality in Education,” with AAAS sections on Education (Q) and Psychology (I).

Section U will cosponsor the December sessions of the *Fifth Berkeley Symposium on Mathematical Statistics and Probability*, organized by Lucien M. LeCam and Jerzy Neyman (University of California, Berkeley), which will be held in connection with the AAAS meeting. The theoretical part of this symposium, as well as sessions on applications, will be held 21 June to 18 July, 1965, but additional sessions, more specifically with applications to problems of Health, Biology, and Meteorology, will be held in conjunction with the AAAS meeting.

There will be a symposium on “Statistical Methods of Bioassay,” arranged by D. S. Robson (Cornell University), under the joint sponsorship of the *Biometric Society (ENAR)* and the AAAS sections on Pharmaceutical Sciences (Np) and Statistics (U).

Science in General (X)

A number of organizations, too general in their interests to be placed in any sectional series or under any specific discipline, constitute the “X series” in the printed *General Program* of the annual meeting. In this preliminary synopsis, the programs of one of these—the Academy Conference—has already been mentioned, under “Other General Events.”

The annual meeting of *Sigma Delta Epsilon*, graduate women’s scientific fraternity, is the responsibility of the national president, Agnes Hansen (University of Minnesota). There will be a series of board and council meetings, a luncheon for all women in science, and the grand chapter dinner and meeting. A headquarters room will be maintained throughout the meeting period, 27–30 December.

The 66th annual convention of the *Society of the Sigma Xi* (Thomas T. Holme, Society of the Sigma Xi, New Haven) will be held on the morning of 29 December before a luncheon. In the evening of 29 December, the Society will join with the *United Chapters of Phi Beta Kappa* (Carl Billman, Phi Beta Kappa, Washington, D.C.) in sponsoring the annual address with the AAAS. Since the inauguration of the series in 1922, these distinguished lectures, of interest to all participants, have been a valued feature of the AAAS annual meeting.