Jenney Manufacturing Co.
Kendall Company, Bauer & Black Division
Arthur D. Little, Inc. (exhibitor also)
Chas. T. Main, Inc.
Monsanto Chemical Company (exhibitor also)
New England Gas and Electric System
Norton Company
Pitney-Bowes, Inc.
Saco-Lowell Shops
Sprague Electric Company
United Aircraft Corporation
United-Carr Fastener Corporation
United Shoe Machinery Corp.
Whitin Machine Works

Their generous contributions are gratefully acknowledged.

Reports of Sections and Societies, Boston Meeting

Section on Mathematics (A)

Section A met Dec. 28. On this occasion W. T. Martin delivered his retiring address as vice president. The title of the address was "Some probability distributions arising in the mathematical theory of Brownian motion." The session was presided over by the secretary. The attendance was 40.

RUDOLPH E. LANGER, *Secretary*

Section on Physics (B)

A symposium on *Physics of the upper atmosphere* was arranged by Walter Baginsky of the Air Force Cambridge Research Center (AFCRC) and was presented in two sessions, Dec. 28.

Ludwig Katz, AFCRC, discussed the theoretical relations expected to exist between magnetic fluctuations and currents in the ionosphere. D. G. Knapp, Coast and Geodetic Survey, discussed the magnetic measurements, and T. N. Gautier of the National Bureau of Standards described experimental measurements of ionospheric winds based on ionospheric reflection of radio waves.

F. S. Johnson, J. D. Purcell, and R. Tousey of the Naval Research Laboratory presented the final results of the NRL programs of spectroscopic observations from rockets. These results were analyzed to derive the spectral distribution of solar radiation outside the earth's atmosphere in the ultraviolet. Soft x-rays make an important contribution to the ionizing radiation.

A. C. Faire, A. L. Aden (AFCRC), and O. T. Fundingsland, Electronic Defense Laboratories, described laboratory experiments on the recombination coefficients of atmospheric gases using microwave technics.

An important contribution to the symposium was the address of the retiring chairman of Section B, E. O. Hulburt of the Naval Research Laboratory, "Magnetic storms, aurorae, ionosphere, and zodiacal light." He gave a comprehensive survey of the current status of the observations and theories of these phenomena.

M. O'Day (AFCRC) described the broad program of research of his laboratory, in which rockets have been used to obtain upper-air measurements. S. N. Ghosh of Wentworth Institute discussed the theoretical interrelations of these measurements. R. A. Minzner (AFCRC) summarized the current status of upper-air temperature as a function of altitude. J. Pressman (AFCRC) covered variations of atmospheric temperature in the ozone layer.

The program, as a whole, gave an excellent summary of the important new developments in research on upper air phenomena.

A symposium on *Physics in biology,* arranged by Richard S. Bear of MIT, was held in two sessions Dec. 29. A very wide range of applications of physics to biological phenomena was covered. Only a few of the interesting contributions will be listed.

A paper by Alexander Hollaender of the Oak Ridge National Laboratory on the reversal of biological effects of radiation under continued irradiation showed that this surprising effect occurs in many organisms. A paper by Barbara W. Low of Harvard Medical School on three-dimensional features of protein structures was beautifully illustrated with large scale models, which made her presentation of this subject very effective. Gordon L. Brownell of Massachusetts General Hospital and MIT described important developments on the localization of tumors by radioisotopic tracers. The circumstance that certain radioisotopes concentrate in tumors makes it possible by modern crystal counter technics to localize deep lying tumors. The technic has been useful in locating brain tumors.

Section B was cosponsor of two symposia arranged by Section D on *Radio astronomy* and on the *Origin of meteorites.* The American Meteorological Society arranged symposia on *Cloud physics* and *Synoptic meteorology.*

A physicists' dinner, Dec. 28, was arranged by Sigma Pi Sigma and cosponsored by Section B. Dr. Waterman gave a talk on the program of the National Science Foundation.

FRED L. MOHLER, *Secretary*

Section on Chemistry (C)

Those who had the opportunity of attending the sessions of Section C enjoyed a number of both informative and interesting papers. About 66 attended the dinner meeting, at which Randolph T. Major gave an unusually good talk on the topic, "Of food, feed, and drugs."

The Section C program consisted of one session of submitted papers, and six sessions of symposia of somewhat general interest. A contributed paper by Earl B. Working, on the measurement of shrinkage in woolens, arrived too late for inclusion in the printed program.

The symposia sessions were devoted to topics such as: *Comparative nutrition requirements of animal species,* Part I, arranged by Robert S. Harris, and Part II, arranged by Fredrick J. Stare; *Chemicals in food,* arranged by Charles N. Frey; *Recent advances in food technology,* arranged by Bernard E. Proctor; *Growth and nutrition of plants,* arranged by P. W. Zimmerman; and *Chemistry of the sea as related to food problems,* arranged by Harden F. Taylor. One came away with the feeling that he had been well indoctrinated with respect to what the plants, animals, and fish must eat in order that he himself may eat properly.

It is not too early to begin to plan for the meetings of Section C to be held in San Francisco during the holiday season, 1954, and it is not too early to begin to prepare a tip-top paper for presentation at that meeting. One thousand dollars will be awarded for the best origi-

nal paper submitted during the San Francisco meeting of the AAAS.

ED. F. DEGERING, *Secretary*

Alpha Chi Sigma (C1)

Alpha Chi Sigma, a professional chemistry fraternity, held a luncheon meeting at the Hotel Sheraton Plaza on Tuesday, Dec. 29. It was attended by 11 members who represented 9 collegiate and professional chapters. An informal discussion of the current activities of the professional branch of the fraternity was held. These activities include affiliation with the AAAS, with the National Safety Council, and the support of the American Chemical Society Award in pure chemistry.

EDWARD R. ATKINSON, *Program Chairman*

Section on Astronomy (D)

The meetings of Section D had the largest attendance, approximately 150, of any during my four years as secretary. The program consisted of two top-level symposia and the address of the retiring chairman.

The symposium on *Radio astronomy*, organized by Bart J. Bok, began on Saturday afternoon. The first session featured general survey talks. John P. Hagen summarized the solar radio work, and pointed out the differences between the radiation at centimeter and meter wavelengths. Among the important astrophysical results discussed was the confirmation of the predicted limb brightening by high resolution.

Peter M. Millman discussed the advances in radio observations of meteors since the great Giacobinid shower of Oct., 1946, paying particular attention to rates, heights, velocities, orbits, and wind velocities. The detection of daytime meteor showers and of winds in the upper atmosphere with speeds up to 100 mi/hr are important new contributions of this field. The well-supported conclusion that there are no meteors with hyperbolic velocities would seem to be the last word on this controversial question.

Grote Reber, in "Galactic radio waves," gave a general historical survey, beginning with the negative results of Lodge (1894–99) and Nordmann (1905), and the discovery of "cosmic static" by Jansky in 1931. Reber's own work began as a private venture in 1937, and the instrument of diameter 31 ft that he built was the first radio telescope. For the past two and a half years, Reber has been working on the top of Mount Haleakala in Hawaii at an elevation of 10,020 ft. He uses the reflection of the radio waves from the ocean to do interferometry at low frequencies for the study of discrete sources.

Harold I. Ewen, codiscoverer of the 21-cm radiation from interstellar hydrogen, gave a summary of the theoretical background and observational developments in this field.

The second session was devoted to discrete sources. F. G. Smith and B. Y. Mills discussed recent work at Cambridge, England, and at the Radio Physics Laboratory in Australia. Resolving power is the chief problem, and most purposes are best served at wavelengths shorter than 1 m by a large-aperture single antenna. At longer wavelengths, it is better to use interferometric technics. Identifications with astronomical objects have now been suggested for nearly two dozen celestial radio sources. Excluding the moon and sun, these may be classified as normal galaxies, gaseous nebulae within our own galaxy, and abnormal galaxies. Shapes and sizes (ranging from one minute of arc to several degrees) have been measured for 14 sources.

Sunday morning was devoted to an excursion to see the 24-ft radio telescope at the Agassiz Station of the Harvard College Observatory. The "unusual" Boston weather helped to make this trip comfortable as well as interesting.

The Sunday afternoon session began with the address of the retiring chairman of Section D, Charlotte Moore Sitterly, on "Atoms and ions in the sun." Sixty-seven elements have been identified in the sun, of which three are dubiously identified, and one is found only in the spectrum of the solar corona. Rocket spectra, predicted lines, and other useful technics were discussed.

The symposium concluded with a panel discussion of current research projects by: C. Gordon Little, on "Current researches at the Jodrell Bank Experimental Station of the University of Manchester;" Merle A. Tuve, "Radio hydrogen observations at the Carnegie Institution;" John D. Kraus, "The enlarged Ohio State University radio telescope and the program for its operation;" Fred T. Haddock, "Galactic sources measured at λ 9.4 cm;" and A. Edward Lilley, on "21 cm research with the radio telescope at Agassiz Station of Harvard Observatory."

The three sessions of the symposium on the *Origin of meteorites* were held on Wednesday. This stimulating program was organized by H. H. Uhlig and Fred L. Whipple. Participants, including those whose papers were read for them, included H. C. Urey, F. Paneth, C. C. Wylie, F. L. Whipple, R. N. Thomas, E. P. Henderson, S. H. Perry, Harrison Brown, H. H. Uhlig, W. H. Pinson, H. H. Nininger, Walter Wahl, S. K. Roy, Robert K. Wyant, Harmon Craig, George Edwards, Giovanni Boato, and S. F. Singer.

The contributions to the symposium fell for the most part into three principal categories: (1) ages of meteorites; (2) distribution of elements in meteorites; and (3) structure of meteorites. The age determinations from helium are falsified by the effect of cosmic rays, but it is possible to correct for this to a certain extent. Perhaps it may be possible in the future to use the meteorite data to estimate the prehistoric intensity of cosmic rays.

The distribution of elements can be explained if the meteorites are fragments of a planetary body with a mass less than one-tenth the mass of the earth. However, high temperatures and pressures are required to produce some of the observed structures, and a number of technical problems relating to this were discussed by different speakers.

It seemed to be generally agreed that the evidence now at hand leads to the conclusion that the meteorites are the result of a collision between two asteroids. Other than this, there were many differences of opinion about details, and the best way to summarize the symposium is to quote Harrison Brown's remark: "I defy anyone to do that."

The Astronomical League became an Associated Society by action of the AAAS Council. They were represented at the Boston meeting by an exhibit in Mechanics Hall prepared by the Amateur Telescope Makers of Boston.

FRANK K. EDMONDSON, *Secretary*

Section on Geology and Geography (E)

The program of Section E reflected greater participation by the geography membership than heretofore, thus resulting in essentially equal emphasis on sessions of interest to the two sciences. Although general sessions were held for both geology and geography, the principal contribution resulted from symposia on several timely and vital issues. Chief of these was the problem of *Water*

for industry, arranged by the Section and cosponsored by Sections M and P, the Geological Society of America, the New England Division of the American Association of Geographers, and the American Geophysical Union. The problems of water supply for industry, both present and future, were discussed in terms of the available supply, the requirements, patterns of industrial location, disposal of wastes, cleanup of streams, and concepts of overall development and use.

A symposium on *New England geology* focused attention on the numerous problems of stratigraphic correlation, origin and age of igneous and metamorphic rocks, structural geology, physiography, and glacial geology of the New England area.

A symposium on *The metropolis* defined the functions of cities, their commercial patterns, residential patterns, and the spacing of new growth. Factors that may alter past patterns of metropolitan growth, such as new sources of energy, new technologies in utilities, air transportation development, and vulnerability to atomic attack, were analyzed. The need for urban research, which lags far behind rural research, was emphasized.

Symposia, cosponsored by the Section, included *Regional analysis,* arranged by Section K; *The economic state of New England,* arranged by Section E; and *Origin of meteorites,* arranged by Section D.

A highlight of the Section program was the vice-presidential address and smoker, held at the Harvard Faculty Club. The address, by Arthur C. Trowbridge, was entitled "Mississippi River and Gulf Coast terraces and sediments as related to Pleistocene history—a problem." Dr. Trowbridge reviewed the conventional concepts of Pleistocene events and presented several modifications of the range and stands of sea level resulting from glacial maxima and intervening complete deglaciations. Some evidence in the Gulf of Mexico for sea levels considerably lower than the present was discussed. The speaker raised many provocative issues and a lively discussion followed.

JACK B. GRAHAM, *Secretary*

National Geographic Society (E3)

The National Geographic Society's annual lecture, given Dec. 27 by Volkmar Wentzel, was attended by about 3000 persons. Mr. Wentzel's color motion picture, "Into the heart of Africa," was enthusiastically received by the audience. Meredith F. Burrill added greatly to the program with his fine introduction of Mr. Wentzel.

This year, for the first time, a count was made of persons visiting our exhibit. The number was 1600 persons, most of whom actually stopped to talk with John R. Hoopes and E. C. Canova, our representatives. The results greatly surpassed last year's activity.

RALPH GRAY, *Chief of School Service*

National Speleological Society (E4)

The meeting of the National Speleological Society, Dec. 26, presided over by Harold B. Hitchcock, was attended by about 25 members. Six scientific papers were given.

In the first paper, Brother G. Nicholas emphasized the value of caves as archeological sites. In caves in southwestern United States much material relating to prehistoric human culture has been found, dating back to the Folsom period and possibly even beyond. In eastern caves, the chief remains found are of animals, usually Pleistocene. Even caves that have been long known and frequently visited are promising sites, for the remains are often deeply buried.

E. DeBellard Pietri's paper, read by Charles E. Mohr, contained new observations on the Oil Birds, or Guacharos, of the great Guacharo Cave in Venezuela. These large night-flying birds nest in the absolute darkness of this cave and a few others nearby. Formerly slaughtered by thousands for their oil, they are now protected by the government, which in 1949 set aside the cave as "Alexander von Humboldt National Park." Following this, Donald B. Griffin told how these Oil Birds find their way in the dark. He had previously studied the acoustic echolocation system used by bats, and he demonstrated tape recordings and oscillograms of the clicks these birds make as they fly in the dark. Unlike bat signals, these clicks are audible and have frequencies around 7000 cy/sec and lasting 2 to 5 millisec.

The last three papers were on cave bats. President Mohr spoke on the decrease in bat population of caves, noticed in recent years. He presented several theories for the cause of this decrease, but did not choose between them. He did emphasize the scarcity of data and the need for more midwinter bat census work. Peter J. Bels described the large-scale bat banding program being carried out in the old limestone mines of the Maastricht region of the Netherlands, in which one to two thousand bats are banded each winter; bats (*Rh. Ferrum-Equinum*) banded up to 14½ yr before have been found alive. Chairman Hitchcock concluded the meeting with a paper on his studies of the rare Leib's Bat (or Least Bat) which, he found, lives in caves in winter and in crannies in barns in summer.

GEORGE EHRENFRIED

Section on Zoological Sciences (F)

Section F, although not sponsoring a separate meeting at Boston, cooperated most closely in cosponsoring other major scientific zoological programs and symposia. The zoology programs at the Boston meeting were exceptionally well planned and coordinated. The papers and presentations were excellent, and the attendance at most sections was near room capacity. The dinners of the various affiliated zoological societies were well planned and addresses of retiring section chairmen were most stimulating.

Plans and programs for the Berkeley meetings were enthusiastically discussed. Members wishing to present scientific papers or conduct symposia are urged to contact the secretary of Section F so that satisfactory arrangements may be made.

J. H. BODINE, *Secretary*

American Society of Zoologists (F1)

Sessions were held Dec. 28–30. They were highlighted by unusually well attended paper-reading sessions; interest ran high and there was, at times, vigorous exchange of information and opinion.

The presidential symposium on *Bioluminescence as a tool in the study of cell processes,* with John Buck, A. M. Chase, F. H. Johnson, and W. D. McElroy as speakers, and E. Newton Harvey as chairman, was attended by over 400. Many thought it was one of the best in recent years.

The Society was fortunate in having at its annual dinner an address by Paul Weiss, vice president of Section F. He spoke brilliantly of how beauty in nature and in art depend upon orderly pattern with some degree of freedom. The address, entitled "Beauty and the beast: life and the rule of order," was illustrated by examples from nature and from occidental and oriental works of art.

The officers for 1954 are: president, J. Walter Wilson,

Brown University; vice president, Frank A. Brown, Jr., Northwestern University; secretary, S. Meryl Rose, University of Illinois; treasurer, Theodore L. Jahn, University of California at Los Angeles.

S. MERYL ROSE, *Secretary*

Society of Systematic Zoology (F4)

The sixth annual meeting of the Society of Systematic Zoology was highlighted by three symposia, the annual book exhibit, and an open house and smoker. So much interest was shown in the contributed papers that the session had to be moved to a larger room.

The election of officers for 1954 was announced as follows: president, Horace W. Stunkard of New York University, by automatic succession; president-elect, Laurence M. Klauber of San Diego, Calif.; secretary-treasurer, Richard E. Blackwelder of Washington, D. C., for a new term of two years; new councillors, Curtis W. Sabrosky of Washington, D. C., and F. A. Urquhart of Toronto, Ont.

Again a major attraction of the meeting was the headquarters lounge of the society, where 518 recent books on many zoological subjects were available for examination at leisure. This is an increase of 180 books over last year, with 20 new publishers involved. Many monographs and new journals were exhibited, including the new edition of the Hassell, *et al., Index-Catalogue of Medical and Veterinary Zoology,* in 18 parts. The 48-page list of books previously exhibited was nearly matched by a 30-page supplement. Many copies of each were distributed.

Membership in the SSZ has now topped 1300. The new Pacific Section of the SSZ has not yet counted the returns from its first circulation, but it hopes to include 200 members next year.

With the cooperation of the Society for the Study of Evolution and the Museum of Comparative Zoology, a very successful open house and smoker was held in the office of the director of the Museum, A. S. Romer. Many old acquaintances were renewed there and many new ones begun.

The annual meeting of the SSZ in 1954 will be held with the AAAS in Berkeley.

R. E. BLACKWELDER, *Secretary-Treasurer*

American Society of Human Genetics (FG2)

The sixth annual meeting was held Dec. 27–30. The program was well balanced and was composed of excellent papers. There were three morning sessions with short papers and three afternoon sessions devoted to symposia on *Genetic factors affecting intelligence* and *Human genetics and medical education.* Two of the symposia initiated by the Society were shared by other societies; all were well attended.

The dinner and the address by President C. P. Oliver, on "The genetic population," were attended by 115 persons.

The following officers were elected: president, James V. Neel; vice president, A. F. Blakeslee; president-elect, Curt Stern; directors, Ray C. Anderson, H. Bentley Glass, and A. G. Steinberg.

The next meetings will be in Gainesville, Fla., on Sept. 5–9.

SHELDON C. REED, *Secretary*

American Society of Naturalists (FG3)

The American Society of Naturalists held its 71st annual meeting Dec. 28–30. On Dec. 28, Harold H. Plough presided at the symposium on *Some biological effects of radiation from nuclear detonations.* This symposium was arranged by Alexander Hollaender and was cosponsored by the Genetics Society of America. Subjects and speakers were: "Chromosomal breakage in *Trandescantia,*" Alan D. Conger; "The production of chromosome rearrangements in *Drosophila,*" E. B. Lewis; "Visible and lethal mutations in *Drosophila,*" George H. Mickey; "The effect of neutrons on thymic and circulating lymphocytes of the mouse," Robert Carter, V. P. Bond, James T. Brennan, and E. P. Cronkite; and "Genetic and developmental effects on mice," William L. Russell.

At the annual business meeting, new officers elected were: president, Milislav Demerec; vice president, Ralph W. Chaney; treasurer, Carl P. Swanson (for 3 yr); members of the Editorial Board of *The American Naturalist,* A. S. Foster, Jack Schultz, and G. L. Stebbins (for 3 yr) The next annual meeting will be held with the AIBS in Gainesville, Fla., Sept. 5–9.

On Dec. 29, a symposium arranged by Richard S. Bear on *Physics in biology* was cosponsored by Section B. This symposium was presented in two parts, with Vice President Hollaender presiding at the afternoon session.

The Naturalists dinner was held Dec. 30. In the enforced absence of President L. J. Stadler, owing to illness, his presidential address on "The gene" was read by Bentley Glass. It was a masterful presentation of the subject, with a clear analysis of the known facts discovered through experiment and observation, and of theoretical speculation, awaiting further experiment for verification.

Beta Beta Beta (FG4)

Beta Beta Beta held its biennial convention Dec. 28 and 29. The session Dec. 28 was devoted to preliminary business affairs and planning for the various programs of the society during the next two years.

The session Dec. 29 followed a luncheon at the Sheraton Plaza Hotel. The Convention's speaker was Edmund W. Sinnott, dean of the Graduate School, Yale University, who spoke on "Biology and teleology." Dean Sinnott's address was followed by a plenary session of the society.

FRANK G. BROOKS, *Secretary*

Genetics Society of America (FG6)

The Genetics Society of America met Dec. 28–30. Seventy-two short papers and 12 demonstration papers were on the program. It was necessary as a consequence to hold concurrent sessions on three half-days. On one morning 6 papers were read on the invitation program; these had been selected by a program committee from among the papers submitted for the general program.

On Dec. 28, the Genetics Society and the American Naturalists sponsored a symposium on *Some biological effects of radiation from nuclear detonations*; and on Dec. 30, the Genetics Society, the American Society of Human Genetics, and the American Society for the Study of Evolution sponsored a symposium on *Genetics and races of man.*

The business meeting was held Dec. 29. Members attending numbered 155. The new officers elected were: J. T. Patterson, president; R. A. Brink, vice president; and N. H. Giles, Jr., treasurer for three years.

CLARENCE P. OLIVER, *Secretary*

National Association of Biology Teachers (FG7)

The meeting of the National Association of Biology Teachers began Dec. 27 with a progress report and plans

for the future of the very active conservation committee. Fifty members, representing regional and state chairmen, took part in this inspiring review of a job well done.

The session Dec. 28 followed the theme of *Human conservation* and stressed recent discoveries in antibiotics, reported by Dale Scholz; narcotic addiction in the United States, by Lois Higgins; and alcohol addiction in the United States, by R. G. McCarthy. This session closed with a panel discussion on *How to effectively teach units on alcohol, narcotics, and tobacco.*

The Dec. 29 session was on the theme, *Your biology classroom problems,* especially on making biology interesting and practical to the slow learner. Group work followed on a wide variety of problems: field trips, clubs, projects, visual aids, school forest, animals and plants in the laboratory, and proper use of the textbook. All had the pleasure of listening to the reports of each group later in the afternoon.

On Dec. 30 there was a field trip jointly with the ANSS. The biology teachers edited the fine group of materials collected by the conservation committee, Dec. 31 and Jan. 1. It was inspiring to see classroom teachers sacrifice a holiday for a truly professional task.

ARTHUR J. BAKER, *President*

Section on Botanical Sciences (G)

The Section on Botanical Sciences sponsored a two-session symposium on *The uses of large scale algal cultures,* arranged by Barry Commoner, and cosponsored by the New England Section, American Society of Plant Physiologists. This symposium was notable for the quality of its reports and discussions by the mixed panel of academic and industrial investigators and business men.

Section G acted as cosponsor for two symposia. First was the AAAS general symposium on *Species which feed mankind,* arranged by Paul C. Manglesdorf and M. R. Irwin. The first session, presided over by Karl S. Quisenberry, was concerned with plant species and, after a general discussion of the world's principal food species, gave its attention in four papers to maize, America's principal food species. The second session, presided over by Roy C. Newton, approached the problem of animal food species through discussions of agriculture and chemistry, and the roles of nutrition, physiology, and genetics. Section G also cosponsored Section C's symposium on *Growth and nutrition of plants,* arranged by P. W. Zimmerman, which was concerned with chelating materials, soil conditioners, organic sprays, and foliar nutrition—all currently important subjects.

Section G was also host to the Second National Pollen Conference, arranged by Stanley A. Cain and cosponsored by the Ecological Society of America. This conference met in three sessions. The first session was concerned with the important deep profiles from Mexico City and dealt not only with the usual pollen analysis and climatic speculations, but with integrated statistical and petrographic analyses. Fossil maize from the profile came in for special consideration with its identification from pre-archeological levels and studies of pollen variation of it and its relatives. The second session was mostly concerned with palynological problems in Quebec and other northern regions, giving special attention to problems of profile interpretation and the nature of pollen rain and transport. The third session took up problems in palynological technics and ranged from the uses of pollen in genetic studies to its application in coal stratigraphy and the geology of ancient strandlines, from the use of size-frequency in species identification to technics of permafrost study. The pollen conference and the jointly sponsored symposia show a firm belief in the Association's important role in providing for the consideration of trans-disciplinary matters in science.

The section also provided three sessions for the reading of contributed papers and sponsored a dinner for all botanists. On the latter occasion Edgar Anderson, vice president for Section G, spoke on the "Role of hybridization in evolution," in which he emphasized strongly the importance of introgression in producing intraspecific variability.

STANLEY A. CAIN, *Secretary*

Section on Anthropology (H)

The sessions of Section H consisted of 37 papers exclusive of those read by title. There were three symposia and two sessions for contributed papers.

Evon Z. Vogt arranged a symposium on *Theoretical models for the study of culture change.* It included his own analysis, "Some suggestions for a theoretical model for the study of acculturation," mention of which inadvertently had been omitted from the printed program. The other contributions concerned the application of theoretical models in archaeology, linguistics, evolution, kinship, and communication. The audience participated in a discussion of the extent to which the concepts which had been mentioned can be usefully applied in empirical studies.

Douglas S. Byers gathered together, for a symposium on the *Indians of New England,* a group of investigators whose own studies have been in archaeology, ethnology, and history. They described, among other things, the relations of the various Indians of the region with one another and with the colonists.

A symposium of two sessions on *Nonhuman primates and the problems of human evolution,* arranged by James A. Gavan, encompassed the present status of palaeontological, morphological, and psychological knowledge of the primates. Most of the contributions were therefore by nonanthropologists in the narrow sense. However, Ernest A. Hooton, in opening the symposium, and William L. Straus, Jr., in closing it, emphasized the ways in which these studies are significant for understanding human evolution. Dr. Gavan plans to edit this symposium for publication as a single issue of *Human Biology.*

Douglas Haring presided at the annual dinner. Clyde Kluckhohn delivered the vice-presidential address, on "The present position of anthropology." He emphasized the essential importance to any anthropologist of the diverse aspects of the subject, as a social science, as a humanity, and as biology.

The contributed papers were also of wide interest. All fields of anthropology were represented and yet each paper, following the precepts of Professor Kluckhohn's talk of the previous evening, was addressed to anthropology as a whole. Archaeological, linguistic, economic, and sociological aspects were treated in each case in a wider context. One especially noteworthy paper described the teaching of a course in anthropology in which some of the students take the role of informants while others take the role of ethnologists to act out what they are learning; it was amusing to note the similarity between some of the classroom situations which were mentioned and real field experiences.

Approximately 90 to 120 persons attended each symposium, and the other sessions were also well attended.

GABRIEL LASKER, *Secretary*

Section on Psychology (I)

Programs sponsored or cosponsored by Section I on Dec. 27–30 consisted of two general sessions of short, submitted papers and five symposia. One symposium, organized by Burton S. Rosner, included 6 invited papers dealing with the social behavior of animals and men. The speakers surveyed evidence pertaining to insects, lower vertebrates, subprimate mammals, nonhuman primates, and man.

A second symposium, on brain function, was arranged by Walter Rosenglyth; the five papers dealt with effects of anesthesia on evoked potentials, relations between the nervous system and the adrenal cortex, functions of the inferior temporal cortex in visual discrimination, and effects of brain injuries in human beings. E. B. Newman organized a symposium of six papers on sensory processes; topics covered included brightness contrast in pigeons, vibratory sensation in the skin as a basis for communication, a neurophysiological model for olfactory discrimination, scaling procedures for loudness and brightness, and a discussion of the interpretation of neurological models for psychophysical phenomena.

A series of four invited papers on *Human engineering and information theory* was arranged by Leonard C. Mead. These papers were concerned with information theory as a model of the organism, as related to visual displays, as related to display-control relationships, and as it pertains to man-machine systems.

In cooperation with Section H (Anthropology), Section I sponsored 11 invited papers treating primate evolution and behavior. The first session consisted of 8 papers dealing with evidence concerning evolution of primates, including man. The 3 papers of the second session dealt with grouping behavior of nonhuman primates, mental evolution in primates, and the cultural capacity of the chimpanzee.

Together with the Committee for the Study of Animal Societies under Natural Conditions, the American Zoological Society, and the Ecological Society of America, Section I shared the responsibility for a program of submitted papers dealing with a variety of subjects ranging from factors controlling ovulation in barn swallows to the experiential and hormonal control of sexual behavior in male cats.

The remaining open session of submitted papers also dealt with a number of different subjects including investigations of the Rorschach Test, activity levels of young chimpanzees and human psychotics, emotion and coronary disease, and physiological damage resulting from emotional stress.

The vice-presidential address was delivered by Frank A. Beach on the subject, "Development of the individual from conception to conceptualization."

Donald Lindsley was elected vice president of the Section for 1954, and J. C. R. Licklider was elected member-at-large to the Council, to serve for 3 years.

FRANK A. BEACH, *Vice President*

Section on Social and Economic Sciences (K)

Cooperation between the social sciences and other disciplines was the dominant feature of the sessions arranged by Section K at the 1953 meeting. The Section contributed one session to the symposium on the *Scientist in American society*, including papers on the beliefs and expectations of the public and on the social psychology of political loyalty in liberal and totalitarian societies. In cooperation with Sections E and M, Section K joined with the Committee of New England of the National Planning Association in an all-day symposium on *The economic state of New England.* The Committee for Social Physics continued the work begun in earlier years with two sessions dealing with the formulation of general principles of social physics and with indicated areas for the application of social physics.

In cooperation with Section M and with the National Academy of Economics and Political Science, as well as Pi Gamma Mu, a program was arranged dealing with *Scientific research and national security.* A symposium on *The metropolis* was arranged jointly with Section E. The Society for the Advancement of Criminology and the Society for Social Responsibility in Science arranged for sessions on *A scientific approach to the problems of delinquency.*

CONRAD TAEUBER, *Secretary*

AAAS Committee for Social Physics (K1)

The Committee conducted two sessions Dec. 30. The morning session was cosponsored by the Institute for the Unity of Science, with P. W. Bridgman of Harvard University in the chair. Presiding in the afternoon was R. E. Bassett of the University of New Hampshire.

Program speakers were J. Q. Stewart, J. D. Hamilton, S. C. Dodd, G. E. Pendray, J. C. Scurlock, and H. G. Dyke. Thus, contributions were included from an astronomer, a physiologist, a sociologist, a public relations counsel, an engineer, and an attorney. The structure of social physics has developed to the point where integration of an unprecedentedly wide range of phenomena is in sight.

Active discussion from the floor added comments representative of an even more varied spectrum of investigators and scholars. Attendance reached 40. Stuart C. Dodd, Department of Sociology, University of Washington, will arrange a program for the Berkeley meeting.

JOHN Q. STEWART, *Secretary*

National Academy of Economics and Political Science (K2)

The symposium session of the National Academy of Economics and Political Science, held Dec. 29, was arranged jointly with Sections K and M, and with the collaboration of the National Social Science Honor Society, Pi Gamma Mu. The general subject was *Scientific research and national security.* Alan T. Waterman, director of the National Science Foundation, spoke on the role of government in matters pertaining to basic research; he pointed out the need for adequate government support of basic research within definitely defined areas. Mervin J. Kelly, president of the Bell Telephone Laboratories, in discussing the developments in industrial research and their relation to national security, emphasized the preparedness of the United States to meet aggression, realized by the contribution of the research of the free industries of capitalism. J. Carlton Ward, Jr., president of the Vitro Corporation of America, dealt with scientific research and the development of the national economic and industrial potential; his paper indicated the need for progress through scientific research which would maintain not only the nation's economy but also its philosophy, freedoms, and integrity. Clarence E. Davies, chairman of Section M, presided at the session.

Prior to the joint session, a luncheon was tendered by Pi Gamma Mu in honor of the program participants, Section K and M officers, administrative officers of the AAAS, and the officers of the National Academy of Economics and Political Science.

DONALD P. RAY, *Executive Secretary*

Society for the Advancement of Criminology (K4)

A symposium on *A scientific approach to the problem of delinquency* was held jointly with Section K on Dec. 30. In attendance were more than 100 persons, including police officials, probation and parole officers, faculty members of colleges and universities in the area, psychiatrists, and members of the staff of the Senate Committee on Juvenile Delinquency attended the session.

The chairman, Donal E. J. MacNamara, discussed the problem of delinquency in its historical context, discounting both qualitatively and quantitatively much of the present scare mongering, quoting from the literature of past centuries to indicate that "the younger generation has always gone to Hell, and then somehow been reclaimed or rehabilitated to bemoan the rapid descent of their successors to the same region." He attacked current statistics as inaccurate and self-serving. James Brennan discussed the nation-wide juvenile delinquency increase (approximately 25–30 percent) as a police problem. He emphasized the necessity of specially selected and specially trained juvenile police officers, and pointed up the traumatic effect of the usual police-juvenile contact. Great stress was placed on the role of community organizations.

Mahmoud El Sebai, inspector of Egyptian Police, presented an excellent survey of the police-crime problem in Egypt. He pointed out that the postwar period, especially in those areas of Egyptian-English conflict, and the necessary confusion resulting from internal political unrest had created an enormous problem in homeless, unsupervised youth—complicated by poverty and by inadequate public facilities (health, education, police services, institutions). There are no trained juvenile officers and no specially organized juvenile police units but attention is now being directed toward the problem.

Jack Sokol presented the paper of Melitta Schmideberg of the Association for Psychiatric Treatment of Offenders, who was ill. Dr. Schmideberg emphasized the desirability of greatly increased noninstitutional therapeutic facilities, such as outpatient psychiatric care, guidance clinics, improved probation services, and greatly increased recreational and health facilities. Richard O. Arther presented an analysis of 200 juvenile cases before the Chicago courts that were handled by John Reid Associates (polygraph examiners). In each case the ordinarily accepted testimony (usually presented by adults) was enough to show "guilt beyond reasonable doubt." When tested on the Reid Polygraph (lie detector recording cardio-pneumo-psychogalvanic and muscular responses), 89 of these 200 proved innocent (showed no fear reaction on critical questions related to the alleged crimes) and were released. Of 5700 cases handled by Reid and his associates, the factor of known error was 0.0007. This compares with a 2-percent error reported by Russell Chatham in screening tests of AEC personnel.

Michael Cullinane of the Massachusetts State Police led the discussion.

DONAL E. J. MACNAMARA, *Panel Chairman*

Section on History and Philosophy of Science (L)

The program of Section L began with a joint session sponsored by the Philosophy of Science Association and the Institute for the Unity of Science, as well as by the American Academy of Arts and Sciences and the National Science Foundation, in connection with the Conference on the Validation of Scientific Theories. This meeting, as well as other sessions of the Conference, will be described in more detail in *Science*. One hundred and fifty persons were present.

On Dec. 28 a joint session was held with the History of Science Society on *Science and its history—three currents of interpretation*. It was devoted to a discussion of three somewhat different points of view toward the work of the historians of science. Father Joseph T. Clark began by referring to the debt of the history of science in France to the stimulus of Auguste Comte; his paper reviewed the evidence of a lack of true historical knowledge behind Comte's theory of the three stages of intellectual revolution, and developed arguments for the effective coexistence of theological, philosophical, and scientific studies at all periods of human history. David Joravsky presented a detailed analysis of the attitudes toward science expressed in the writings of Marx, Engels, Lenin, and Stalin, and showed how these writings were variously interpreted in the Soviet Union and how these attitudes helped explain the controversies over science, and the attitudes displayed in recent writings on the history of science in Russia. Alexandre Koyré traced the French tradition in the history of science from its origins in the late 18th century, in the work of Montucla, Lalande, Delambre and others; and in the speculations of Turgot, and reviewed the influence which the historical school of philosophy (Duhem, Meyerson, and others) exerted upon the interpretations of the history of science.

On Dec. 29 a joint session was held with Section Q on *Science and general education*. This theme was discussed from different angles by Karl Lark-Horovitz of Purdue, Marston Bates of Michigan, Thomas H. Hall of Washington University, and Kirtley Mather of Harvard. A paper on the same subject was read for Joel H. Hilderbrand of California. The first four speakers discussed the content that they used in actual courses on science intended to serve the general needs of nonscience majors; while Dr. Hilderbrand urged that the "general education" of science majors be made concomitant with (rather than to precede) their work in science itself. Some 65 persons attended this session and there was lively discussion.

The retiring vice-presidential address was given by Richard H. Shryock of the Johns Hopkins University on "Changing concepts in American medicine over three centuries." Dr. Shryock analyzed the concepts of certain medical leaders who were typical of successive eras, and concluded that medical progress advanced in ascending spirals rather than in a straight line. About 45 persons attended.

A session for contributed papers with Richard H. Shryock as chairman was held on Dec. 29. Papers were read on a variety of topics. Charles E. Whitmore spoke on "The language of science," Father William Kane, O.P., on "The naturalistic approach to natural science," and Alden A. Potter, on "Sex in science." A paper by Laura Guggenbuhl on "Karl Wilhelm Fenerbach (1800–1834), mathematician" was read by title only. Father Kane suggested that, in addition to the effective use of quantitative studies of natural phenomena, modern science should also continue to give heed to the Aristotelian concept of qualities "inherent in the nature of things." Mr. Potter discussed the relation of sex to Malthusian viewpoints and to population problems at large.

RAYMOND J. SEEGER, *Secretary*

Section on Engineering (M)

The program included 13 sessions in which 48 papers were presented. One session, developed under the direction of E. F. Murphy of the Veterans Administration, was on

the topic, "Communication aids for the blind." Another session, under the direction of I. P. Orens, Newark College of Engineering, was on the topic, "Highway safety." These sessions were well received and led to four press releases in Boston and New York papers, as well as a radio broadcast over Station WVDA on Dec. 31.

Eleven sessions were cosponsored by Section M and American Book Publishers Council, Conference on Scientific Manpower, National Research Council, and Sections I, N, E, and P.

To advertise the meeting, 7000 programs were printed and mailed to the members of the New England Engineering Society. The Section expresses its thanks to the New England Engineering Society and to Emmart La Crosse of Stone and Webster Corporation for their cooperation in obtaining this publicity.

FRANK D. CARVIN, *Secretary*

Subsection on Medicine (N1)

This subsection cosponsored several symposia with other sections of the society. However, its main effort was the arrangement of a two-day symposium on *Antimetabolites and cancer*, with papers presented on all important aspects of this subject. Sidney Weinhouse began the program with a discussion of "Metabolic fuels in the cancer cell." Major emphasis in succeeding papers was placed on the essential metabolites leading to synthesis of nucleic acids in bacteria, Tetrahymena, and mammalian cells. Agents interfering with the utilization of the nucleic acid precursors were discussed by several speakers. As these antimetabolites soon become ineffective as a result of the development of resistance, Bernard D. Davis, C. A. Nichol, and Howard E. Skipper directed their remarks to a discussion of the mechanisms of resistance. The use of antimetabolites in treating experimental as well as human cancer was reviewed by Sidney Farber and Joseph Burchenal. The most significant recent advances made in this field of cancer chemotherapy were summarized and evaluated by David Goddard and Jacob Furth.

ALLAN D. BASS, *Secretary*

Subsection on Dentistry (N2)

Section N2 held three symposium sessions Dec. 29 in the Harvard School of Dental Medicine. The attendance was 125.

The first session was devoted to *Recent animal experimentations in caries research*, directed by R. F. Sognnaes. P. H. Keyes of Harvard illustrated various types of experimental caries by both polarized and nonpolarized light, and described methods of observing and recording animal caries *in vivo*. The genetic factors of experimental caries, presented by H. R. Hunt of Michigan State College, were based on observations made on 9000 rats over a period of 18 yr. J. H. Shaw of Harvard gave experimental evidence indicating the effects of diet in development and caries rates of animals. The influence of possible salivary factors were outlined by D. Weisberger and A. Schwartz of Harvard; they showed that desalivation of animals increased caries and that the parotid secretion is an important caries inhibitor. In discussing the oral environmental factors, F. Torland of the University of Chicago showed that animals fed by stomach tubes developed no caries. He also described an experiment carried on by the Zoller Institute, in cooperation with Notre Dame University, involving 22 germ-free rats; these rats, fed on a highly cariogenic diet, were entirely caries free. The effects of various metallic and organic compounds in the diet of animals as caries inhibitors were presented by J. Hein of Rochester; he pointed out the wide range of differences in effects on different animals. R. Fitzgerald of NIDR presented data on the effects of antibiotics on animal caries; penicillin and Polymyzin B. were most effective in rats.

The second session was devoted to a consideration of *Pathologic disturbances of the dental pulp resulting from dental operative procedures*, under the direction of H. A. Zander of Minnesota. I. Schour of Illinois discussed the rat incisor as an index of local disturbances; he showed microphotographs depicting various pulp degenerations and regenerations following the placement of various types of filling materials in incisor and molar teeth of rats. Similar experimentations on dogs were reported by V. F. Lisanti of Tufts College, who showed the protective effects of cortisone administration. The discussion was continued by Gerrit Bevelander of New York University, who illustrated pulpal changes in the human tooth.

The third session was a symposium on *Periodontia*. The chairman, Cyril D. Marshall-Day of Tufts College, called attention to the rapid increase of periodontal disease and the need for research to meet this problem. Various phases of the problem were discussed by Irving Glickman and Samuel Trusky of Tufts College, L. M. Greebry of Illinois, and David Weisberger of Harvard University.

RUSSELL W. BUNTING, *Secretary*

Alpha Epsilon Delta (N4)

The needs of the medical and dental schools for an adequate supply of well-qualified applicants were discussed at the session of Alpha Epsilon Delta, national premedical honor society, held Dec. 29. About 70 persons were in attendance.

James M. Faulkner, dean of the School of Medicine, Boston University, called attention to the recent sharp decrease in the number of applicants with superior academic records and pointed out the importance of attracting outstanding talent for the medical profession. The number of applicants has been steadily declining for the past several years and there are evidences that some medical schools are now being forced to admit candidates with inferior qualifications, he said. While the problem is not yet acute, the current trend could lead to serious consequences. Dr. Faulkner warned that, as expansion programs now under way are completed and the new medical schools now in the final stages of development are in full operation, there will be an even greater increase in the facilities for medical student enrollment which may well lead to a general shortage of good medical school candidates. In commenting on Dean Faulkner's remarks, Harold C. Wiggers, dean of the Albany Medical College of Union University, echoed the same concern and suggested various ways of attracting competent students to the medical field.

James R. Blayney, director of the Walter G. Zoller Memorial Dental Clinic of the University of Chicago, and Paul K. Losch of the Harvard School of Dental Medicine, pointed out that while the number of applicants to the dental schools has gradually increased, dental education, too, is in need of more well-qualified candidates. Both speakers emphasized that the standards of dental education are being raised continually, with requirements now being of the same high level of undergraduate education and competence as for the medical schools.

In the informal discussion, various spokesmen pointed out that the shortage of competent premedical and pre-

dental students is similar to the problems of the other science areas. It was agreed that all available means should be employed to encourage more outstanding students to enter the scientific field. The problem is becoming acute and should be emphasized throughout the educational system, particularly among high school students.

Alpha Epsilon Delta will hold its tenth national convention at Indiana University, March 25–27. It will include a regional conference on premedical education, which is being organized in cooperation with Indiana University.

MAURICE L. MOORE, *National Secretary*

American Association of Hospital Consultants (N7)

Three addresses were given at the meeting of the American Association of Hospital Consultants, Dec. 30, on the general theme, *The research function of the hospital.* E. M. Bluestone, immediate past president, was in the chair.

Jack Masur, assistant surgeon general, U.S. Public Health Service, in reviewing the "Varieties of laboratory service in hospitals," analyzed the scope of the work and the staffs required in hospitals of different sizes and types. Dean A. Clark, director of the Massachusetts General Hospital, discussed "A hospital research program" as it had been developed at his own hospital. An increasing problem is the mounting indirect costs for research which are not covered by the budgets of various funds made available for specific items of research. Harvey Agnew, professor of Hospital Administration, Toronto University, outlined "Developments in physical and chemical research (including atomic research) that have a relationship to hospital laboratories." The many new developments in the laboratory fields have necessitated more extensive and especially designed laboratories; the use of isotopes, particularly, has required the setting up of special facilities. An excellent discussion was led by Cecil G. Sheps, director of Beth Israel Hospital, Boston.

Officers for 1954 are: president, Harvey Agnew, Toronto; vice president, Jack Masur, Washington; secretary-treasurer, Jacque Norman, Greenville, S. C.; executive members, E. M. Bluestone, New York, and Charles A. Wilinsky, Boston.

JACQUE NORMAN, *Secretary*

American Psychiatric Association (N13)

At the meeting of the American Psychiatric Association, held Dec. 30, five papers were presented: "The genesis of man," Leonard R. Sillman, New York City; "Some emotional uses of money," William Kaufman, Bridgeport, Conn.; "Negative reinforcement, negative cathexis, and anxiety in fantasy," William Seeman, Rochester, Minn.; "Comparative study of recent trends in psychiatric treatment in Europe and the United States," Martha Brunner-Orne, Westwood, Mass.; "Studies with mescaline: electroencephalographic responses following electroshock therapy," Sidney Merlis and Wallace Hunter, New York City.

JACOB E. FINESINGER, *Program Chairman*

Section on Agriculture (O)

The program of Section O dealt, in accord with the location of the meeting, with *Agronomic problems of the northeastern states.* One group of papers considered soil resources, deterioration, and methods of soil conservation and improvement. Another group was concerned with crop production and utilization.

A much increased use of lime was advocated, also a fuller utilization of small grains as a source of fall and spring pasture. The possibility of increased production of hay and pasture through use of improved seed and proper fertilization was pointed out. Emphasis was placed on the fact that this increased yield of hay and grass would meet livestock requirements and leave ample land for the growing of much more corn; it would virtually eliminate the large expenditure now made by farmers for concentrated feed.

The scientific basis for a proper utilization of green manure was presented. Sources of adapted legume seeds, the development of improved strains of hybrid corn, and of disease-resistant potatoes and wheat were discussed. The possible utilization of surplus potatoes for cow feed was also presented.

Attendance was fairly satisfactory but was not commensurate with the quality of the papers presented.

C. E. MILLAR, *Secretary*

Section on Industrial Science (P)

The meeting of the Industrial Science Section, arranged this year in collaboration with *Fortune* magazine and the New England Council, was an unqualified success. The interest of New England businessmen, educators, and scientists in the symposium, *Identification and development of senior executives: contributions of modern science,* was attested in an attendance of close to 200 at the morning session, 180 at the luncheon meeting, and 200 at the afternoon session.

A meeting of the Executive Committee was held Dec. 29. George L. Parkhurst, vice president of the Standard Oil Company of California, was made chairman of the Section for 1954, succeeding Francis Curtis.

American Industrial Hygiene Association (P1)

Joint sessions were held with Sections P and N Dec. 29 and 30. About 100 Association members were in attendance.

Fifteen outstanding papers were given at the three sessions. Most of the papers were based on research, although several review papers were included. The paper on "Effects of combinations of sulphuric acid mists and sulphur dioxide on guinea pigs," by Mary Amdur of the Harvard School of Public Health, created much interest because of the implications of connection with the smog problem.

Officers elected for the New England Sessions of the American Industrial Hygiene Association were: president, Robert Thompson, General Electric Co., Lynn, Mass.; secretary-treasurer, Arthur Houghton, Liberty Mutual Insurance Co., Boston.

WILLIAM M. PIERCE, *Program Chairman*

Section on Education (Q)

The program of Section Q, Dec. 27–30, consisted of 10 sessions and in addition two joint sessions; one was with the AAAS Cooperative Committee on the teaching of science in the high school and one was with Section L on the place of science in general education. The lowest attendance at any session was about 30.

Of the sessions of Section Q, one was sponsored and arranged by the American Educational Research Association, through G. V. Lannholm. There were two sessions of contributed papers by members of the section and two sessions of "first" papers by younger persons upon in-

vitation. There were four symposia. One of these, *On the prediction of child development and its educational implications,* was arranged by J. R. Wittenborn of Yale; among other things, the value of tests as single criteria of prediction of infants was severely discounted. A panel discussion on *Why teachers do or do not use films,* arranged by Mark A. May of Yale, revealed that many of the reasons usually accepted for failing to use films are not the real ones. Neither availability nor sex of the teacher are important conditions.

A third symposium was arranged by D. D. Durrell and was continued by him in his address as chairman of the Section. This related to difficulties in learning among normal children. Careful researches emphasizing individual problems were presented. A symposium on industrial efficiency, which has been conducted at the meetings for the past several years, was continued with a large attendance and active interest. This was arranged by N. F. Stump.

D. A. WORCESTER, *Secretary*

AAAS Cooperative Committee on the Teaching of Science and Mathematics (Q1)

In a symposium on *The next generation of young scientists and their science teachers,* held jointly with Section Q on Dec. 27, the speakers discussed two facets of the topic, namely, the critical shortage of scientists and mathematicians facing the United States in the years ahead, and the procedures by which the shortage might be alleviated. Fletcher G. Watson of Harvard University reported on the conclusions of the Harvard Conference held during the summer of 1953; he pointed out that the critical shortage in the years ahead will be found not only in the supply of scientists and mathematicians but also in the supply of teachers available for training them.

The methods for increasing the available supply of trained personnel were discussed from two viewpoints. Miss Jacqueline V. Buck of Grosse Pointe, Mich., defended the single-track approach for teaching science and mathematics in the schools. Hugh R. Templeton, supervisor of science of The University of the State of New York supported the double-track approach. The first approach considers the specialized science courses such as physics and chemistry as extensions of a general education program in science required of all students. The double-track approach suggests that two types of students are now attending high school—the college-bound type and those for whom high school is a terminal point. For the college-bound group a program of science is developed which includes biology, chemistry, physics, and earth science. For the noncollege bound students, a two-year sequence is prescribed—one year of biological science and another year of physical science.

While no unanimity of opinion was attained, both speakers agreed that further study was needed to clarify the problem, and that the proponents of both systems had the same fundamental objective, namely, increasing the supply of scientists and mathematicians.

MORRIS MEISTER, *Program Chairman*

National Science Teachers Association (Q3)

The National Science Teachers Association appreciated the opportunity to hold another of its regional conferences in conjunction with the Boston meeting. The local committee, under the chairmanship of John G. Read of Boston University, developed an unusual type of program and the sessions were well attended. One of the highlights was the group-dynamics approach to the question, "What does an effective science teacher *do*?" Eight small groups discussed aspects of the question and reported back to the large group. The composite report will appear in an early issue of *The Science Teacher.*

A demonstration lesson in the teaching of elementary school science was attended by nearly 300 elementary teachers. As usual, the "Here's how I do it" sessions were among the most popular program features, emphasizing as they do the workbench technics and materials of the science teacher.

The NSTA Executive Committee held one meeting that lasted from 7:30 P.M. until 1:15 A.M. Important actions taken included: (1) approval of certain projects suggested by the publications committee; (2) final approval of plans for the Association's 1954 national convention, Chicago, Apr. 1–3; (3) approval for regional conferences to be held in October at the University of Oklahoma Biological Station, Lake Texoma, and on Dec. 27–30 at Berkeley. The treasurer's report indicated a bright outlook for the year and the membership report revealed the highest NSTA enrollment yet attained, 6767 members and subscribers as of Dec. 15.

The 1954 action program of the Future Scientists of America Foundation was explained during the "Reports from inside NSTA" session. Emphasis during 1954 will be on improvement of the laboratory aspect of science instruction, preparation of a booklet on "A career as a science teacher," and a program to encourage summer employment of science teachers in science-based industries.

ROBERT H. CARLETON, *Executive Secretary*

The Academy Conference (X1)

The annual meeting of the Academy Conference was attended by 45 persons, 38 of whom were the official delegates of 30 of the 41 active academies of science affiliated with the AAAS. This attendance constitutes a new record of representation, both as to delegates and academies. At the business meeting reports of the Committee to Study Cooperation among the Academies of Science, presented by Austin R. Middleton, and the Committee to Study Cooperation between the Academies of Science and the Academy Conference, presented by F. E. E. Germann, were adopted. Amendments to the constitution and a set of by-laws, proposed by a committee headed by Clinton L. Baker, were approved. It was voted to appoint a committee to study public relations in the matter of attitudes towards science, and also a committee composed two subcommittees to study activities and operations of junior and collegiate academies. The officers for 1954 are: Leland H. Taylor, president-elect; Wayne Taylor, president; Percival Robertson, retiring president; and Shirley P. Miller, secretary-treasurer.

Following the business session, three-minute reports from delegates of 28 academies informed the Conference of recent significant accomplishments and activities. Three panel presentations followed by round-table discussions occupied the afternoon session. These were centered around the following topics: Opportunities of secretaries to serve their respective academies; Opportunities of academies to serve the high school teacher; and Opportunities of academies to serve the general public.

The Academy Conference, through its standing committee appointed for the purpose, sponsored the Juinor Scientists Assembly, under the chairmanship of Elbert C. Weaver.

LELAND H. TAYLOR, *Secretary*

American Book Publishers Council and American Textbook Publishers Institute (X3, X6)

The symposium on *Transmission of ideas,* held jointly with Section M, brought to an audience of over 100 people a kaleidoscopic view of some of the exciting new ideas and developments in the realm of communication. Richard Thornton, editor of the College Department of Ginn and Company, presided at the morning session, and Bradford Wiley, vice president of John Wiley and Sons, presided in the afternoon.

Rudolf Flesch of New York University, in discussing writing, emphasized the value of redundancy and the importance of eliminating "semantic noise." Ralph Buchsbaum of the University of Pittsburgh discussed the effective use of illustrations to convey ideas and to repeat and supplement material in written form. The fascinating possibilities of the Photon, the electronic typesetting machine, were reviewed with illustrations by S. H. Caldwell of M.I.T. Leonard C. Mead of Tufts College explained the use of peak stress format in typesetting, which has resulted in as much as a 20-percent increase in reader comprehension. Finally, Carroll V. Newsom of The University of the State of New York outlined the opportunities offered by radio and television, especially the latter, for communicating ideas and in general education.

It is seldom that five papers in a symposium of this sort prove so consistent with one another and so well coordinated without prior planning. The speaker often asked one of the other speakers to comment on questions from the audience, since questions stimulated by one paper frequently had direct bearing on the subject matter of other papers. The liveliness and discernment of the questions asked after each paper were a tribute both to the quality of the audience and to the interest and effectiveness of the papers themselves.

WILLIAM E. SPAULDING
JOHN A. BEHNKE

American Geophysical Union (X4)

The 31st regional meeting of the American Geophysical Union was held Dec. 28–30. On Dec. 30, a program of 14 papers, covering the fields of terrestrial magnetism and electricity, oceanography, meteorology, hydrology, geodesy, and seismology, was presented. The speakers represented such institutions as the Geophysics Research Directorate of the Air Force Cambridge Research Center, Woods Hole Oceanographic Institution, Lamont Geological Observatory of Columbia University, Wayne University, Harvard University, Massachusetts Institute of Technology, and the commercial firm of Wallace E. Howell Associates.

The morning session, under the chairmanship of Edward H. Smith, director of the Woods Hole Oceanographic Institution, was quite varied, with participation by four of the eight sections of the AGU. The afternoon session, under James A. Peoples of the Air Force Cambridge Research Center, was devoted almost exclusively to seismology.

Between 22 and 30 geophysicists were present during the morning session. During the afternoon, attendance varied between 45 and 60. The program committee was pleased and honored to have in attendance the Rev. James B. Macelwane, S.J., and Dr. John Putnam Marble, national president and general secretary, respectively.

The AGU was also cosponsor for the symposia on the *Physics of the upper atmosphere* on Dec. 28, the *Sea frontier* on Dec. 29, and *Water for industry* on Dec. 29.

The 35th annual meeting of the AGU will be held on May 3–5 in Washington, D. C.

WALTER BAGINSKY, *Secretary, Program Committee*

American Nature Study Society (X5)

The sessions of the American Nature Study Society were well attended and challenging. In the opening session, Dec. 26, on *New technics in nature photography,* the camera gun, stroboscopic flash, and 3-D photography were discussed. In the evening the members had an opportunity to admire the camera skill of their president, Roger Tory Peterson, when they previewed his film record of a 3000-mi trip on the North American continent. This trip was taken last summer in the company of James Fisher, British ornithologist and editor, who had been Dr. Peterson's host on his 1952 trip to study European birds. A total of 602 birds were seen by Dr. Peterson on the North American tour; this is the best record for North America in any one year, exceeding Guy Emerson's record of 497 birds in 1940. After the film showing, members had a chance to demonstrate their skill by kodachromes on various subjects.

Other programs dealing with nature activities, forms of publicity and nature education, nature study for everyone, and the practical application of ecology rounded out the meetings.

The joint National Association of Biology Teachers and American Nature Study Society field trip to the north shore of Massachusetts was held Dec. 30. There persons interested in ornithology enjoyed watching 44 different species of birds on the ocean, the shore, and in the Parker River National Wildlife Refuge. Other members of the group devoted their time to exploring the tide pools, the beach, and the dunes. The trip was planned by C. Russell Mason of the Massachusetts Audubon Society and skillfully led by Ruth Emery, Mary Lea Grimes, C. Russell Mason, Charles Mohr, E. Laurence Palmer, Roger Tory Peterson, William G. Vinal, and Richard Weaver.

Officers of the American Nature Study Society are: president, Ruth Hopson, Eugene, Oregon; vice president, Richard Weaver, University of Mich.; treasurer, Gilbert Mouser, Okemos, Mich.; secretary, Helen B. Ross, State Teachers College, Fitchburg, Mass.

Conference on Scientific Editorial Problems, II (X8)

The attendance at the second Conference on Scientific Editorial Problems, on Dec. 27, was indicative of a vital interest in such matters among authors, editors, and publishers. The records showed an increase of 125 percent over the attendance at the first Conference, held in St. Louis in 1952.

Leading editors and publishers discussed topics which were of general interest to all persons in the audience. W. Albert Noyes, Jr., editor of the *Journal of the American Chemical Society,* spoke on "Probable trends in scientific publications as viewed from the editor's office." Milton O. Lee, managing editor of the *American Journal of Physiology, Journal of Applied Physiology,* and *Physiological Reviews,* discussed "Problems in financial management of scientific journals." George S. Tulloch, editor of the *Bulletin of the Brooklyn Entomological Society,* reviewed "Problems of the editor of a small journal."

Ruth C. Christman, acting executive editor of *Science* and *The Scientific Monthly,* discussed "Illustrations for scientific publications." Richard M. Hewitt, Division of

Publications, The Mayo Clinic, explained "Exposition as applied to medicine: some of the difficulties." Joseph D. Elder, science editor, Harvard University Press, presented "Jargon, good and bad." Ralph Smith, vice president and editorial director of McGraw-Hill Publishing Company, spoke on "Publishing as applied science." Ralph R. Shaw, Librarian, U.S. Department of Agriculture, discussed "Electronic handling of scientific information." A lively discussion followed the addresses.

The Conference on Scientific Editorial Problems will meet again with the AAAS in 1954.

MARIAN FINEMAN, *Chairman*

Conference on Scientific Manpower, III (X9)

The third Conference on Scientific Manpower continued the practice of recent Association meetings in devoting some sessions to existing problems relating to scientific manpower in the fields of physical, biological, engineering, and social sciences. This year's sponsors included the Engineering Manpower Commission, the Scientific Manpower Commission, the National Research Council through its Office of Scientific Personnel, the National Science Foundation, and Section M.

The Conference was held in three sessions, Dec. 28 and 29. The first two sessions dealt with *The present situation respecting scientific and engineering manpower.* The need for science teachers was treated by Fletcher G. Watson; industry's needs for scientists and engineers, by M. M. Boring; and Selective Service policy, by Joel P. Griffing. James M. Mitchell spoke on military requirements, and John F. Hilliard on defense mobilization requirements aspects. A summary and evaluation of all these papers was presented by Dael Wolfle. The two sessions were chaired by Howard A. Meyerhoff and Alan T. Waterman, respectively.

The Dec. 29 session was devoted to consideration of *The utilization of specialized manpower abroad.* Papers on Germany were read by Richard T. Arnold, on Canada by William R. Dymond, on the United Kingdom by W. A. Macfarlane, and on Russia by M. H. Trytten. Detlev W. Bronk presided.

Papers are now being collected for publication by the National Science Foundation. It is hoped that the Conference may become a regular feature of the AAAS annual meetings, and afford a forum for timely consideration of topics of importance to those concerned with scientific and engineering manpower.

THOMAS J. MILLS, *Program Chairman*

National Association of Science Writers (X11)

The annual winter meeting of the National Association of Science Writers, held Dec. 28, was one of the largest in its history. Perhaps the most important matter brought up during discussions of current and projected activities was a special Founder's Day celebration to be held during the fall of this year, and marking the 20th anniversary of the Association. The celebration will be a full-scale affair and will honor the charter members. Plans are under way to invite national and industrial leaders, as well as American and foreign scientists, and it is probable that important phases of the affair will be conducted in cooperation with the AAAS and its Council. Further developments will be communicated to *Science* as they occur.

Preceding the business meeting, more than 125 members and their guests were present at a reception and dinner arranged by M.I.T. and President James Killian. After the meeting, the group attended a symposium, *Science and the public,* at which there was free and open (but off-the-record) discussions of past, present, and future science reporters. The speakers were: Richard H. Bolt, director of Acoustics Laboratory, M.I.T.; Dean W. C. White, vice president of Northeastern University; Duncan MacDonald, dean of Graduate Studies, Boston University; and Paul Bartlett, professor of chemistry at Harvard University. Louis M. Lyons of the Nieman Foundation presided.

JOHN E. PFEIFFER, *Secretary*

The Scientific Research Society of America (X16)

The annual convention of The Scientific Research Society of America (RESA) was held on Dec. 29. Among other items of business, the following new members of the governing board were elected for three-year terms beginning July 1: Albert J. Phillips, director of research, American Smelting & Refining Co., South Plainfield, New Jersey; Harold Vagtborg, president, Southwest Research Institute, San Antonio, Texas; and Philip M. Morse, Physics Department, Massachusetts Institute of Technology.

The annual RESA address was given by David B. Steinman, his subject being "Suspension bridges—the aerodynamic problem and its solution." Following the address, the $1000 William Procter Prize for Scientific Achievement was awarded to Dr. Steinman.

DONALD B. PRENTICE, *Director*

United Chapters of Phi Beta Kappa (X18)

The annual address of the United Chapters of Phi Beta Kappa was delivered Dec. 30 by Leonard Carmichael of the Smithsonian Institution. His subject was "Science and social conservatism." Kirtley F. Mather of Harvard University presided. There were more than 400 in attendance; the lecture was followed by a lively and extended discussion.

CARL BILLMAN, *Secretary*