

The Graf-Apsco Co.
E. Leitz, Inc.
The Rayoscope Company

Special Exhibits

AAAS Annual International Photography-in-Science Salon
American Documentation Institute
Animal Welfare Institute
City Planning Commission of Philadelphia
The Coca-Cola Company
Community Chest of Philadelphia (space endowed by Publicker Industries, Inc.)
Cooperative Bureau for Teachers
The Franklin Institute (space endowed, in part, by The Midvale Company)
The Human Resources Research Center
Library of Congress, Navy Research Section
National Bureau of Standards
Naval Research Laboratory and Naval Ordnance Laboratory

Technical Exhibits of Industries

The American Tobacco Company
The Atlantic Refining Company
Atlas Powder Co.
The Bell Telephone Company of Pennsylvania
The Chemstrand Corporation
Dodge Steel Co.
E. I. du Pont de Nemours & Co., Inc.
General Electric Company
Hercules Powder Company
Koppers Company, Inc.
The Kuljian Corp.
Monsanto Chemical Company
Philip Morris & Co. Ltd., Inc.
Philadelphia Electric Company
Philco Corporation
Polaroid Corporation
Proctor & Schwartz, Inc.
Rohm & Haas Company
Socony-Vacuum Oil Company, Inc.
Westinghouse Electric Corporation



Reports of Sections and Societies¹

THE Association sponsored two general symposia, "Soviet Science" and "Operation Knowledge." The two sessions devoted to a critical but dispassionate survey of the genetics, physiology, pathology, psychology and psychiatry, mathematics, physics, chemistry, soil science, and social science in the USSR drew capacity audiences and attracted such widespread interest that plans are being evolved for early publication of all the papers presented. Conway Zirkle, of the University of Pennsylvania, vice president of the AAAS and chairman of the Section on the History and Philosophy of Science (L), arranged the program and is assembling the material for publication.

William F. Hewitt, Jr., of Howard University, who organized the symposium on "Operation Knowledge," reports that the three sessions of this general AAAS symposium were attended by 50-100 persons on December 30 at Convention Hall. The 14 papers covered several aspects of science communications: primary publication, abstracting services, hindrances to and promotion of international movement of scientists, an international language for Western science, cooperative intramural communications groups in colleges, universities, and professional schools, a proposed society of communications scientists, the scientific education of laymen, the nature of documentation in general and its advancement by libraries, by the American Chemical Society, and by the American Documentation Institute. Academic, industrial, and governmental speakers took part. Luther Evans, librarian of Congress, presided in the afternoon when Detlev Bronk was unexpectedly called away. Returns are still coming in from the questionnaire distributed by Samuel Miles, inquiring about interest in a com-

prehensive organization of scientists concerned with communications. Members of the audience expressed their conviction that communications constitute a fundamentally appropriate and extremely important area for general AAAS discussion and activity, and their hope that future programs will include integrative discussions of specific aspects of communications.

Section on Physics (B)

Three meetings were held on December 27. In the morning a conference was devoted to the problems of maintaining "Physical Research in the Universities." Urner Liddel discussed the "Forces Affecting the Research Trends in Physics." This was a forthright analysis of the problems of government support and the preservation of individual imagination and initiative in basic research. Norman F. Ramsey spoke on "University Physics in a Continuing National Emergency." On the basis of his experience with governmental enterprises in research and development, contrasted with the university to which he has returned, he discussed the role of the university in education and research, stressing the long-term importance of the universities' contribution to the strength of our nation. Lyman J. Briggs presided at an afternoon conference concerned with "Applied Physics," chiefly the activities in government organizations. Hugh L. Dryden gave a most interesting picture of the advances in aeronautical science under the title "The Role of Physics in Aeronautical Development." Thomas H. Johnson discussed the scope and nature of research in the field of "Physics in the Atomic Energy Program." Philip M. Morse described the concepts, methods, and growing importance of operational analysis under the title "Physics and Operations Research." He analyzed the role and contribution of physical thinking.

The affairs and the future of Section B were considered at a dinner meeting, at which Arthur H. Compton presided.

FREDERICK S. BRACKETT, *Secretary*

¹ Key symbols correspond to those in the General Program.

Oak Ridge Institute of Nuclear Studies (B2)
Isotopes Division,
U. S. Atomic Energy Commission (B3)

A three-part symposium on "Cancer Therapy with Radioisotopes" was sponsored by the Oak Ridge Institute of Nuclear Studies in its role as an associated society of the AAAS. Joining with the institute in sponsoring the symposium was the Isotopes Division of the U. S. Atomic Energy Commission.

The symposium was given in the ballroom of the Municipal Auditorium with morning, afternoon, and evening sessions on December 28. The six papers on the morning program were concerned with internally administered radioisotopes, and the five afternoon papers dealt with the use of radioisotopes as teletherapy units. The three papers on the evening session took a long view of radioisotopes and their implications in cancer research.

The consensus was that specific isotopes are of established value in treating specific types of cancer. The greatest value of radioisotopes in the field will continue to be as a research tool in determining the mechanism of the cancer process. Additionally, these materials from the atomic energy program may become outstanding adjuncts to diagnosis.

The major radioisotopes used internally are iodine, phosphorus, and gold—with gold¹⁹⁸ coming up to a strong third place in therapy. L. A. Erf, of Jefferson Medical College, expressed the interesting view that leukemia may be a deficiency disease on the order of pernicious anemia and may yield to a treatment as simple as vitamin B₁₂. William H. Beierwaltes, of the University of Michigan, reported on the status of iodine therapy, and Gould A. Andrews, of the Medical Division at Oak Ridge, reported on the status of radiogold therapy. In discussing newer isotopes, H. D. Bruner, also of the Institute Medical Division, pointed to work done by Mueller (of Switzerland) and others in attaching radiogold to particles of varying sizes, thus obtaining highly selective radiation. He said that radioactive astatine, which appeared to behave as a halogen, had been tested and found to follow the course of iodine in a biologic system.

In other papers on the morning program S. Allan Lough, assistant chief, Isotopes Division, AEC, traced the growth of isotope use in cancer therapy, and J. A. Cox, superintendent, Pile Operations Department, Oak Ridge National Laboratory, noted the need of a high flux reactor to provide additional quantities and qualities of radioisotopes for medical use. Richard Chamberlain, of the University of Pennsylvania School of Medicine, led discussion of the morning papers.

The gist of the afternoon papers on teletherapy developments was that a number of radioisotopes can deliver the same radiation doses as radium or x-ray machines, with much greater economy, flexibility, and adaptability. Of those discussed, cesium, a fission product, seemed to offer unusual promise because of its long half-life (33 years) and desirable radiation characteristic (0.662 mev γ), as well as the fact that it is a fission product. (Cobalt, the isotope now in use for teletherapy, is produced by neutron irradiation and is expensive of the neutron economy.) Other isotopes discussed were cerium, iridium, and europium. It was pointed out that the high levels of radiation involved in preparing teletherapy sources from fission products require a considerable extension of present techniques and facilities before such sources can be made available. Max Cutler, Chicago Tumor Institute, who led the discussion on the afternoon program, predicted that

the appearance of radioisotopes on the teletherapy scene would prove to be a powerful stimulus to radiation treatment of cancer.

At the evening session, Paul C. Aebersold, chief, Isotopes Division, AEC, traced the ascent of radioisotopes to their present position as one of the most powerful research tools in the medical field. A. H. Holland, Jr., medical director of Armour Laboratories, then outlined the responsibilities which the use of radioisotopes imposes on the physician using them, notably their potential ability to provide harmful side effects many years after therapy is discontinued, not to speak of possible genetic effects. Shields Warren, director of the Division of Biology and Medicine, AEC, speaking from the standpoint of administrator as well as pathologist, found in radioisotopes an exceedingly valuable new tool in cancer research, with a less valuable role in diagnosis and therapy. But, as Dr. Cutler pointed out, even a slight increase in efficiency over present treatment methods may be the difference between saving and losing a patient.

MARSHALL BRUCE, *Chairman*
Medical Division Oak Ridge Institute of Nuclear Studies

Section on Chemistry (C)

Section C sponsored or cosponsored 16 sessions, consisting of two sessions of submitted papers and the following symposia: two on improvement of soil structure, arranged by F. E. Bear and C. E. Millar; one on monomolecular layers, arranged by Harry H. Sobotka; three on "Operation Knowledge," arranged by William F. Hewitt, Jr., and moderated by Detlev W. Bronk, Kirtley F. Mather, and Samuel R. Powers; one on recent advances in catalysis, arranged by E. H. Riddle; two on recent advances in petroleum and petroleum technology, arranged by Alex G. Oblad and H. Heinemann; two on scientific evidence pertaining to the time of death, arranged by Samuel A. Levinson and Ralph F. Turner; two on stream pollution and industrial wastes, arranged by George G. Beal and W. B. Hart; and one on the chemistry of colchicine and 7-membered carbocyclic rings, arranged by Glenn E. Ulliot. The titles and authors of these various papers are listed in the General Program.

Among the papers presented but not listed in the General Program were: "The National Cooperative Undergraduate Chemical Research Program," by Ethaline Cortelyou; "The Age of Skeletal Remains," by William E. B. Hall; and "Problems of Duration of Interment of Human Skeletal Remains," by Wilton M. Krogman.

An unusual program is planned for the St. Louis meeting, December 26-31, with sessions for submitted papers on Friday and Saturday and symposia of various types on the "Contributions of Chemistry to Engineering and Industry" on the succeeding days. Authors interested in submitting papers are reminded that a prize of \$1000 is awarded for one of the best papers presented at the AAAS meetings. Papers for Section C should be sent on or before September 1 to Ed. F. Degering, Secretary, Section C, Buckman Laboratories, Inc., 1256 N. McLean St., Memphis 7, Tenn.

ED. F. DEGERING, *Secretary*

Section on Astronomy (D)

The meeting of Section D was scheduled to follow the meeting of the American Astronomical Society in Cleveland. The program consisted of the address of the retiring chairman, C. D. Shane, and a symposium on techniques and instrumentation in astronomical photoelectric

photometry arranged by Frank Bradshaw Wood, of the University of Pennsylvania.

Dr. Shane's address, entitled "A Cosmic Census," was an account of some of the recent work with the 20-inch photographic telescope of the Lick Observatory of the University of California. The Rittenhouse Astronomical Society and the Amateur Astronomers of the Franklin Institute met jointly with Section D to hear this lecture, at which Harold L. Alden presided.

The symposium, held on the morning of December 31, had as speakers: A. P. Linnell (Amherst), J. S. Hall (U. S. Naval Observatory), W. Blitstein (U. of Pennsylvania and Franklin Institute), Bengt Strömberg (Chicago), and A. E. Whitford (Wisconsin). Direct current, alternating current, and pulse-counting techniques were discussed by the first three speakers. Recent European developments were described by Dr. Strömberg, and Dr. Whitford summarized the symposium.

All sessions were held at the Franklin Institute, and thanks are due to I. M. Levitt, director of the Fels Planetarium, and John Streeter, assistant director, for the excellent arrangements that they provided.

FRANK K. EDMONDSON, *Secretary*

Section on Geology and Geography (E)

The sessions of Section E were held at the Philadelphia Municipal Auditorium and Bryn Mawr College, December 27 and 28. Approximately 200 individuals participated, with attendance varying from 30 to 80 at various sessions. The program included: general geology, two sessions, 13 papers; geography, two sessions, 11 papers; symposium on "The Nation's Water: Want, Waste, and Why," one session, three papers, six planned discussions; program on "Crystalline Rocks of the Appalachians," two sessions, 11 papers; program on "Foreign Petroleum Geology," two sessions, 12 papers; Section E smoker; and the vice-presidential address by Kenneth K. Landes. The geography program was organized by Meredith F. Burrill, the program on "Crystalline Rocks of the Appalachians," by Robert Balk and Leland Horberg; the program on "Foreign Petroleum Geology," by A. W. Weeks; and the symposium on water resources, by Jack B. Graham. The vice-presidential address and smoker were held at Bryn Mawr College, where the Department of Geology acted as host. Arrangements were made by E. H. Watson and A. W. Weeks and about 70 attended. A special program, including abstracts of papers, was made available by The Geological Society of America.

The regular section elections and council actions resulted in the election of the following: *vice president and chairman*, A. C. Trowbridge; *retiring vice president*, George W. White; and *elected Section Committee member*, Charles F. Deiss.

LELAND HORBERG, *Secretary*

National Speleological Society (E4)

The session of the National Speleological Society, which was held on Friday afternoon, December 28, was attended by approximately 25 persons, including both members of the society and nonmembers. Papers were presented by Charles E. Mohr, president of the society, William E. Davies, vice president in charge of scientific and technical activities, and Carl Gaum, of the Philadelphia Grotto.

Since neither William R. Halliday nor George W. Moore, both of whom are members of the Denver Grotto of the Society, were able to attend the session in person,

it was necessary to have their respective papers read *in absentia*. Burton S. Faust, executive vice president of the society and chairman of the session, read Dr. Halliday's paper, and Mr. Moore's paper was read by Rudolph Gaum, of the Philadelphia Grotto.

It is desired to take this opportunity to express to the members of the Philadelphia Grotto on behalf of the Committee on Program and Activities, on behalf of the society membership as a whole, and especially on behalf of those who were fortunate enough to be able to attend the session, the most sincere appreciation for the arrangements for the meeting, for the enjoyable social hour and refreshments that followed the formal proceedings, and for their splendid assistance and cooperation in every possible manner.

At the meeting of the Executive Committee of the society, which was held the same evening, plans were further perfected and a tentative program outlined for the tenth annual national convention of the society, scheduled for April 18-20 of this year at the Hotel Alexander in Hagerstown, Md.

WM. J. FOSTER, *Member*
Program and Activities Committee

Section on Zoological Sciences (F)

Section F sponsored and cooperated in numerous symposia in biological and related fields. These meetings were on the whole extremely well attended, and in most cases the meeting rooms were filled to capacity. The Biologists Smoker may well be considered an outstanding success.

A marked cooperative spirit seemed to exist between the constituent societies and Section F. The scope of society and sectional activities in the field of zoology is amply demonstrated in the reports that follow.

J. H. BODINE, *Secretary*

Society of Protozoologists (F1)

It should be stated at the start that Society of Protozoologists was officially adopted as the name of the group previously called the American Society of Protozoologists, and the constitution and bylaws were approved at the business meeting on December 28. Eighty-nine new members were voted into the society, so that the total charter membership is about 300. The program of papers on December 27-29 included papers on nutritional requirements, synthesis, effect of antibiotics and other compounds, life-cycle, cytology, taxonomy, and host-parasite relationships, the first three subjects predominating. Notable was L. R. Cleveland's presentation of photomicrographs of certain living protozoa during division.

R. R. Kudo, of the University of Illinois, was elected president for the coming year. Harold Kirby was elected vice president; Reginald D. Manwell, treasurer; William Balamuth, member of the Executive Committee; and R. F. Nigrelli, representative on the AAAS Council. The undersigned will continue for another year as secretary. Time and place of the next annual meeting will be determined in the near future.

E. R. BECKER, *Secretary*

The American Society of Zoologists (F2)

The meeting of the society held in Philadelphia December 27-30 was one of the best attended and most successful the society has ever held. At this meeting Franz Schrader was elected president, Viktor Hamburger, vice president, and S. Meryl Rose, secretary.

The 1952 annual meeting will be held on the Cornell University campus at Ithaca, N. Y., September 8-10, with other members of the American Institute of Biological Sciences. The Executive Committee decided to request the secretary to take a poll of the membership as a guide in the decision as to whether the 1953 annual meeting should be held with the AIBS in Madison, Wis., in September, or with the AAAS in Boston in December.

The call for papers for the 1952 meeting in Ithaca will be mailed to members about April 20. The deadline for the receipt of titles and abstracts will be June 1.

WALTER N. HESS, *Secretary*

The Society of Systematic Zoology (F4)

The fourth annual meeting of the society was by all criteria its most successful. It included a symposium, a session for papers, the annual breakfast and business meeting, and the lounge and book exhibit, which proved so popular last year.

The subject of the symposium was "The Classification of Animals." The speakers were Alfred S. Romer, Alan Boyden, and Th. Dobzhansky. More than 300 zoologists attended this interesting session.

The society's headquarters room was again opened to all zoologists as a lounge. More than 300 zoological books were on display, from general texts and reference books to specialized monographs and faunal studies. A special exhibit showed a complete set of the 50 zoological publications of the Smithsonian Institution in 1950 and 1951, including the "Miscellaneous Collections," the *Bulletin*, and the *Proceedings of the U. S. National Museum*. It is estimated that 500 zoologists visited the lounge and examined the books.

After the council meeting the detailed plans for the new journal *Systematic Zoology* were announced, and color proofs of the cover were exhibited. Publication is planned for March 1952.

A definite agreement was announced under which the SSZ will act as subscription agent for the *Zoological Record*. Orders for current and back numbers will be transmitted, with payment in dollars, through the society. All zoologists are urged to cooperate with the *Zoological Record* by subscribing to one or more sections.

Results of the election of officers were announced: *president-elect*, H. B. Hungerford, University of Kansas; *secretary-treasurer*, R. E. Blackwelder; *councillors 1952-55*, D. F. Hoffmeister and H. W. Manter. Alfred S. Romer is *president* for 1952, by automatic succession.

The widespread interest in systematic zoology is shown by the rapid growth of the society in only four years to pass its first goal of 1000 members.

The 1952 annual meeting was set for St. Louis with the AAAS, December 27-30. The society will also cooperate in other meetings whenever possible.

R. E. BLACKWELDER, *Secretary-Treasurer*

American Microscopical Society (FG1)

The sixty-eighth annual meeting of the society was held at the Benjamin Franklin Hotel, Philadelphia, December 27-29. The annual luncheon and business meeting of the Executive Committee convened Thursday noon, December 27, President David C. Chandler presiding.

On Friday afternoon a symposium of five excellent papers on the subject "Modern Methods for Microscopy II" attracted an interested audience, which varied between 50 and 95 people. Oscar W. Richards, who had served during the past year as program chairman, pre-

sided at the meeting. As indicated in the title, this was the second consecutive symposium on this general topic, the previous one having been presented by this society at its annual meeting in Cleveland December 29, 1950. A third program on the same general topic will constitute a part of the sixty-ninth annual meeting to be held during 1952.

At the annual business meeting, many details of society business were transacted, and the following officers for 1952 were elected: *president*, Frank E. Eggleton, University of Michigan; *first vice president*, G. W. Martin, University of Iowa; *second vice president*, Martin W. Johnson, Scripps Institution; *secretary-editor*, C. J. D. Brown, Montana State College; *elected member of Executive Committee*, T. L. Jahn, University of California, Los Angeles. The first three of the new officers serve for one year each; the secretary-editor and elected member of the Executive Committee, for three years each. Dr. Brown's and Dr. Jahn's terms will be 1952-54. In addition to these officers, the *treasurer* and the *custodian* continue in office through 1952, as do also R. V. Bangham and O. W. Richards, *elected executive committeemen*. A. M. Chickering and C. J. D. Brown were appointed as representatives of the society on the council of the AAAS for 1952 and 1953.

The society voted to meet at Ithaca, N. Y., in September 1952, with the AIBS, subject to completion of appropriate arrangements with that organization. Preliminary consideration was given to proposed changes in membership dues and subscription rates; to the consequent requisite changes in the constitution and bylaws of the society; to selection of a repository for historically valuable records and properties; and to the possible desirability of adding a historian-librarian to the list of elected officers. In recognition of the inherent nature of these items, the society instructed the new president to appoint committees to study each of the proposals and to report their recommendations to the society through the Executive Committee prior to the next annual meeting.

FRANK E. EGGLETON, *Secretary*

Eastern North American Region, Biometric Society (FG4)

On December 27 and 28 the Eastern North American Region of the Biometric Society held a meeting jointly with AAAS Sections A (Mathematics) and H (Anthropology) and the American Society of Naturalists at the Bellevue-Stratford Hotel. The three sessions arranged under the able direction of Chairman J. N. Spuhler and his committee were devoted to a review of mathematical biology, to statistics as applied to special biological problems, and to a symposium on "The Use of Statistical Models to Interpret Data on Human Population Genetics." The December 27 morning session was under the chairmanship of H. Levene and featured talks by N. Rashevsky, A. Shimbel, and G. Karreman. The afternoon session—the symposium—was headed by M. W. Smith and was devoted to papers by C. C. Li, J. V. Neel, B. Glass, and J. N. Spuhler and D. J. Hager, with a discussion by H. Levene. The Friday morning session was presided over by M. Whittinghill and featured papers by M. L. Clark and F. X. Lynch, and M. Skibinsky, with a discussion by J. A. Rafferty and R. E. Comstock.

WALTER T. FEDERER, *Secretary-Treasurer*

Section on Botanical Sciences (G)

For some years past Section G has had very short pro-

grams, but in any year that the botanical societies do not meet with the AAAS, the section program is expanded. This year there were 16 sessions, 74 papers and speeches, and a total of 75 different participants. Several sessions were cooperative. Joint sessions were held with sections C, F, and O, with the Botanical Society of America, the Ecological Society of America, the Philadelphia Botanical Club, and the Phycological Society of America; and a joint-session symposium of Sections F and G was co-sponsored by the American Society of Protozoologists, American Society of Zoologists, Genetics Society of America, and Botanical Society of America. Five symposia in eight sessions were presented by Section G, one jointly with Section F, one with Sections C and O, one with the Botanical Society of America, and one with the Ecological Society of America. Two sessions of the Phycological Society of America were held jointly with Section G, as was the open meeting of the Philadelphia Botanical Club. The five symposia were on "The Use of Isotopes in Botany," arranged by Alexander Hollaender; "Improvement of Soil Structure," "New Jersey Pine Barrens," "Sex in Microorganisms," arranged by D. H. Wenrich; and "Foods and People," arranged by Gove Hambidge, the last being a panel discussion by representatives of ECA, TCA, FAO, and other agencies and institutions.

Four sessions were provided for the reading of 37 contributed papers. Since there has been some question raised as to the need for Section G to arrange sessions for contributed papers, it is of interest to record that the persons contributing papers represented 27 different institutions and came from 15 different states and the District of Columbia. Furthermore, the states represented were by no means restricted to the near-by Atlantic seaboard, for they included Michigan, Illinois, Minnesota, Arkansas, Colorado, Oregon, Washington, and California. At future meetings Section G will provide sessions for the reading of contributed papers to the extent that the AAAS membership requires.

In addition to the significant symposia that have already been mentioned, attention should be called to two important speeches. One was the special invitational lecture by D. I. Axelrod, University of California, Los Angeles, who spoke on "A Theory of Angiosperm Evolution," the other was the distinguished vice-presidential address given at the section banquet by Ivey F. Lewis, University of Virginia, on "Biological Principles and National Planning."

STANLEY A. CAIN, *Secretary*

Section on Anthropology (H)

In 1951 Section H held its largest meetings to date. Thirteen sessions, in which 74 persons participated, were held from Thursday, December 27, through Sunday morning, December 30. Eight of the sessions were joint meetings with the Society for Research in Child Development, the Society for American Archaeology (2), the Biometric Society: Eastern North American Region, the Eastern Division of the American Philosophical Association, the American Sociological Society, the Society for Applied Anthropology, and the University Museum of the University of Pennsylvania. Attendance at sessions ran from forty to three hundred persons.

The dinner, held on Saturday evening, was also well attended. Guests were drawn about equally from anthropology and philosophy, since a number of philosophers attending meetings at Bryn Mawr stayed over for the joint

session in the afternoon and for the dinner. The presiding officer, George Boas, Philosophy Department of Johns Hopkins, was introduced by Clyde Kluckhohn of Harvard, chairman of Section H. Margaret Mead, of the American Museum of Natural History, gave the retiring vice-presidential address, citing data from her recent trip to Australia and underlining the importance of personal factors in the history of colonization.

Two excellent sessions were devoted to contributed papers. It is the section's policy to encourage such papers. Possibly, however, because of the fact that the meetings of other anthropological societies do not require as much advance notice as do the elaborate programs of the AAAS, many persons offered titles and abstracts too late for inclusion. It is hoped that this unfortunate situation may be corrected in the future, and it was noted with satisfaction that the anthropologists whose papers had to be excluded for lack of space on the program attended the meetings anyway.

As is usual in its meetings, Section H also gave prominence to symposia. Several of these centered upon cross-disciplinary contributions. Psychology and anthropology contributed jointly to "Sex Education and its Relation to the Sexual Behavior of Children and Young Adults;" and statistics, genetics, and anthropology joined in a symposium on the "Use of Statistical Models to Interpret Data on Human Population Genetics." Sociology and anthropology united in a discussion of "Social Structure;" and it is noteworthy, as Talcott Parsons, of Harvard, pointed out in his summation as chairman, that this subject was viewed by both disciplines from the vantage point of empirical data. Certain differences in the conceptual schema of anthropology and sociology exist, yet these were set aside, both in the papers and in the discussion from the floor, in favor of constructive and cooperative consideration of the subject at hand. Such an observation augurs well for the future of cross-disciplinary research—a type of research too often recognized more by intent than by practice.

Philosophy and anthropology contributed jointly to views upon "Cultural Relativism." Richard Brandt, of the Philosophy Department of Swarthmore, is to be particularly congratulated for the success of this symposium. One of the participants, Ralph Linton, of Yale, was unable to attend for reasons of health, but Dorothy D. Lee, anthropologist from Vassar, and Grace de Laguna, philosopher, of Bryn Mawr, were good enough to act as discussants of the papers by Clyde Kluckhohn and Phillip Blair Rice. Discussion from the floor and between the participants indicated the success of this arrangement.

The largest symposium of the Section H program covered five separate sessions. It dealt with "Prehistoric and Historic Asia and Transpacific Contacts with the New World." The problem of transpacific contacts, which has been of prime concern to anthropologists since the Jessup Expedition went to the northern Pacific in the last century, has recently been given popular appeal through the adventurous voyage of the *Kon-Tiki*. The symposium considered it from many angles: geographically from the Arctic, the Near East, India, and Latin America; chronologically from the Neolithic to the immediate present; and academically from the materials of archaeology, classical archaeology, ethnology, history, and botany.

Lauriston Ward, of Harvard, James B. Griffin, of Michigan, and J. Louis Giddings and Froelich Rainey, of Pennsylvania, helped immeasurably in the organization of the Transpacific symposium. Although it attracted

scholars from the West Coast, the session on modern Asian affairs had the poorest attendance of any Section H meeting. This may be variously explained. Two possible explanations—that scientists are little interested in international affairs and that Americans are little concerned with Asia—lead to a conclusion that is discouraging in the present state of world affairs. In actual accomplishment, however, the results of the symposium suggest the opposite prospect. The more technical sessions were probably the best received of any of the Section H offerings. Mr. Ward's sessions on the "Prehistory and History of Asia and the Near East" were so productive and so provocative, that he was asked by the participants and the audience to explore the possibilities of forming a continuing association of persons working in these fields. Since the advancement of science is best served through the sustained exchange of scientific results, and through just such continuing associations of scientists, perhaps no more encouraging and rewarding comment than this could be made upon the Philadelphia meetings in anthropology.

MARIAN W. SMITH, *Secretary*

Section on the Social and Economic Sciences (K)

The Section K program this year was developed as a series of joint meetings involving an examination of a number of current problems with representatives of other scientific groups. At a joint session with the National Academy of Economics and Political Science in collaboration with Pi Gamma Mu, Marion Folsom, chairman of the Board, Committee for Economic Development, outlined problems and prospects under the current program of economic mobilization and raised questions of balance between the civilian and the military effort and the efforts which would need to be taken to provide the desired output without incurring inflation. In the discussion, particular emphasis was placed on the question of whether the current effort can be considered as temporary or whether the country faces a long period of rearmament. A joint session with Section M carried further the discussions of social physics, which had been a feature of the 1950 meeting. A session on research needs and opportunities and developmental programs considered especially agricultural development in the Near East and in Latin America and also reported on the results of studies of noneconomic barriers to economic development, with particular reference to the Far East. This program, dealing with agricultural development in areas of population pressure, was closely related to the symposium on foods and people which was held later. The problems of scientific manpower, from the standpoint of supply and demand, training, and placement were discussed in joint sessions with the Conference on Scientific Manpower.

The section also cooperated with Alpha Epsilon Delta in a program on premedical education and social health and with the Society for Social Responsibility in Science in a panel discussion on the individual responsibility of the scientist. A program jointly arranged with the American Home Economics Association dealt with family life and home economics, summarizing trends and problems in marriage counseling, and some of the more recent research on child development.

H. R. Tolley was nominated as chairman of the section and Arthur E. Burns was elected to the 4-year term on the Section Committee.

CONRAD TAEUBER, *Secretary*

The National Academy of Economics and Political Science (K3)

The general subject of the Philadelphia session of the National Academy of Economics and Political Science was "Economic Mobilization: Problems and Prospects." The academy met jointly with Section K of the AAAS and with the collaboration of the National Social Science Honor Society—Pi Gamma Mu.

Program participants included W. Leon Godshall, of Lehigh University, presiding officer; Marion B. Folsom, chairman of the Board, Committee for Economic Development, and treasurer, Eastman Kodak Company, principal speaker; and Ewan Clague, commissioner of the Bureau of Labor Statistics, C. Jared Ingersoll, director of the Pennsylvania Railroad, and Charles R. Whittlesey, of the University of Pennsylvania, as members of the panel.

The important points developed at the session included a suggested reorientation of the government system of price and wage controls to that of a flexible system based on cost factors, with the gradual elimination of the system, and a new savings bond to yield a higher rate of interest for the purpose of stimulating savings and aiding in financing the mobilization program.

The thirtieth annual sessions of the academy will be held in Washington, D. C., in the late spring of this year. The topic for development will be announced in the Spring issue of the quarterly journal of the National Academy, *Social Science*, and in *SCIENCE*; complete programs will be forwarded to all members of the academy.

DONALD P. RAY, *Secretary*

Pi Gamma Mu (K5)

The annual Pi Gamma Mu luncheon in honor of officers of the National Academy of Economics and Political Science, and of the social science section of the AAAS, and speakers on their programs, was held on December 27. S. Howard Patterson, professor of economics in the University of Pennsylvania, president emeritus of the honor society, presided at the luncheon session, presenting citations and special Pi Gamma Mu honor keys to the special guests: Harold E. Stassen, president of the University of Pennsylvania, and Detlev W. Bronk, president of the Johns Hopkins University and new president of the American Association for the Advancement of Science. Both guests responded with brief addresses and appropriate expressions of appreciation for the honors bestowed upon them by the host society.

Immediately following the luncheon session, the Board of Trustees of Pi Gamma Mu convened in the same hotel for its annual meeting. Important items of business consisted of final verification of amendments to the charter and constitution of Pi Gamma Mu, whereby its affairs will be administered by seven trustees instead of five. Five trustees will be elected by the national convention and two trustees-at-large will be chosen by the Board of Trustees.

For the first time in the history of the society, a student advisor was present and participated in the annual meeting. Lucille Lopez Santos, of Our Lady of the Lake College, San Antonio, Texas, was elected by the eleventh biennial convention in June 1951 to this newly created office.

The trustees resolved in this meeting that the national life membership fee of Pi Gamma Mu should be increased from \$7.00 to \$10.00, effective September 1, 1952. This

is the second time since the founding of Pi Gamma Mu in 1924 that the membership fee has been increased, the last time being in 1940.

EFFIE B. URQUHART, *Secretary*

Philosophy of Science Association (L3)

The purpose of the two association meetings in the morning and the afternoon of December 29 was to discuss the concept of value as it appears in the various sciences and in philosophy. The aim was to discover whether there is a common agreement of meaning on the concept of value in the different disciplines, or whether, if differences do occur, the sciences could look forward to formulating a coherent concept through disciplinary approach.

In the morning sessions the concept of value was treated by Malcolm G. Preston, of the University of Pennsylvania, with respect to experimental work on some psychological determinations of value. The concept of value was also discussed with respect to some new developments in market research by Wroe Alderson, of Alderson & Sessions.

In the afternoon session Abraham Edel, of City College of New York, discussed the notion of value as it appears in the various philosophical theories of value. He contrasted the pragmatic and positivistic approaches and argued for the possibility of a coherent theory of value. Sebastian B. Littauer, of Columbia University, discussed the concept of value as it appears in modern industrial quality control. He argued that value is essentially implicit in the notion of quality.

Though the meetings did not come to any conclusion concerning a notion of a coordinated definition of "value," it was apparent that there is an excellent opportunity for an interdisciplinary approach.

C. WEST CHURCHMAN, *Secretary-Treasurer*

Section on Engineering (M)

The activities of Section M during the past year included: (1) the development of the program for the annual meeting; (2) participation in the program development of the Centennial of Engineering, to be held in Chicago in September 1952; and (3) preliminary plans for the St. Louis meeting for December 1952. We have continued our effort to obtain the cooperation of the various affiliated societies and are receiving excellent cooperation from the American Society of Mechanical Engineers. In the midst of these activities and plans the section suffered a serious loss in the sudden death of its chairman, B. A. Bakhmeteff.

The secretary of the section, F. D. Carvin, was appointed AAAS representative to the Coordinating Committee of the Centennial of Engineering 1952 and has been attending the monthly meetings of the committee in Chicago. We plan to hold one meeting of the section on September 2, 1952, at the Centennial in Chicago and to make our St. Louis meeting in December the closing engineering meeting of the Centennial.

At the annual meeting in Philadelphia, the section conducted 15 sessions and presented 42 papers on a wide variety of subjects. The meetings in general were poorly attended. Your committee is quite discouraged by the lack of interest shown by engineers in the annual meeting.

The Secretary of Section M extends the thanks of the section to the following individuals and organizations for their cooperation in developing the program for the annual meeting: G. Edward Pendray, New York, Social

Physics Group; B. B. Day, American Society for Quality Control; O. B. Schier, III, American Society for Mechanical Engineers; Eugene K. Murphy, Veterans Administration; H. B. Allen, Franklin Institute; I. P. Orens, Newark College of Engineering; L. N. Gulick, Engineering College, University of Pennsylvania; J. S. Morehouse, Villanova College; R. C. Disque, Drexel Institute of Technology; W. E. Reaser, Swarthmore College; and R. M. Hogan, Engineering Manpower Commission.

The annual meeting of the Executive Committee of Section M was held Wednesday, December 26. Those present were C. E. Davies (chairman-elect), B. B. Day, and F. D. Carvin. The meeting confirmed the following officers and Executive Committee members for 1952: *vice president and chairman*, Clarence E. Davies, ASME, New York; *retiring chairman*, B. A. Bakhmeteff (deceased); *secretary*, Frank D. Carvin (1952), Illinois Institute of Technology, Chicago; *Executive Committee*: Irving P. Orens (1952), Newark College of Engineering; G. Edward Pendray (1953), New York; Henry B. Allen; Larry Chandler (1955), American Society of Civil Engineers, New York.

The section extends greetings to our new affiliate, the American Society for Quality Control.

The general topic for the annual meeting to be held in St. Louis in December 1952 will be "The Contribution of Science and Mathematics to Engineering and Industry." The AAAS plans to honor engineering at the annual meeting in recognition of the Centennial of Engineering 1952. All affiliated societies are invited to take an active part in planning our program for this meeting.

F. D. CARVIN, *Secretary*

Subsection on Medicine (N1)

The program of the subsection on medicine was devoted to a four-session symposium of 19 papers on various aspects of arteriosclerosis and the aging process, organized with the cooperation of the American Geriatrics Society, the Society for the Study of Arteriosclerosis, and the Gerontological Society. David Barr, of Cornell University Medical College, who was appointed vice president of the Association and chairman of Section N, replacing the late Malcolm Soule, introduced the symposium with a discussion of the distribution of cholesterol and phospholipids in free and bound form in various clinical conditions. Other speakers discussed the role of dietary and endogenous cholesterol, of arterial pressure, and of subendothelial hemorrhage in the genesis of atherosclerosis; the relative value of total as opposed to protein-bound cholesterol levels for discrimination between normal and arteriosclerotic groups; and cardiovascular function as modified by arterial disease, obesity, and senescence. Attendance at the sessions varied between 150 and 250.

A summary of the program, prepared by Harry E. Ungerleider, will be published in an early issue of *Geriatrics*.

G. K. MOE, *Secretary*

Subsection on Dentistry (N2)

The subsection on dentistry held three successful and profitable sessions on December 28 and 29. The Friday afternoon session, with James H. Shaw presiding, was devoted to a discussion of "Fluoridation as a Public Health Measure." At the Saturday meetings consideration was given to the use of radioisotopes in dental re-

search and recent developments in the study of tooth structure. Audiences ranging from 60 to 80 heard and discussed the 15 papers presented on the programs.

RUSSELL W. BUNTING, *Secretary*

Subsection on Pharmacy (N3)

The subsection on pharmacy held six sessions during the Philadelphia meeting. All six were joint meetings of the subsection, the American Pharmaceutical Association Scientific Section, and the American Society of Hospital Pharmacists. Twenty-five papers reporting original research were presented, and two panel discussions were held.

H. S. Bailey, Jr., and J. E. Christian, Purdue University, School of Pharmacy, described a procedure for the synthesis of urethan with N^{15} in the amide group. A. R. Biamonte and G. H. Schneller, Calco Chemical Division, American Cyanamid Company, gave details of experimental and analytical procedures in a study of the solubility of triple sulfonamide mixtures at different pH ranges and in the presence of suitable buffers. M. J. Rodman, Rutgers University, College of Pharmacy, evaluated the anhidrotic action of atropine on human thermoregulatory sweating.

E. V. Svedres and G. L. Jenkins, Purdue University, School of Pharmacy, reported on the synthesis of three new types of derivatives of the fluorene nucleus—2-aminofluorene, 2,7-diaminofluorene, and 2,2'-diamino-9,9'-spirobifluorene. T. J. Macek, Research and Development Division, Merck & Co., Inc., told of studies on crystalline vitamin B_{12} with reference to stability and formulation of pharmaceutical preparations. V. E. Tyler, Jr., and A. E. Schwarting, University of Connecticut, College of Pharmacy, showed that paper partition chromatography is of value in the separation of pairs of interconvertible isomerides among the ergot alkaloids.

J. R. Stockton and R. Zuckerman, Sharp & Dohme, Inc., studied a potentiometric method of assay for sodium *p*-aminosalicylate (sodium PAS) and found that an aqueous solution of the compound dissolved in propylene glycol and isopropyl alcohol treated with a solution of perchloric acid in the same solvents caused measurable increments in the pH changes. D. A. Schlichting and G. L. Jenkins, Research Laboratories, Wm. S. Merrell Co., reported on the synthesis of a lactone related to the cardiac aglycons. S. Scheindlin, A. Lee, and I. Griffith, Philadelphia College of Pharmacy and Science, established that riboflavin markedly intensifies the action of light on folic acid through oxidative cleavage.

M. Burke, T. L. Flanagan, R. L. Young, S. D. Bailey, and A. E. Heming, Research Division, Smith, Kline & French Laboratories, presented a new sensitive assay for khellin in serum based on its polarographic reduction. J. W. E. Harrison, C. M. Ambrus, and J. L. Ambrus, Philadelphia College of Pharmacy and Science, studied the habituation, tolerance, and dependence on the drugs amphetamine and desoxyephedrine in rats.

J. L. Ambrus, C. M. Ambrus, J. W. E. Harrison, C. E. Moser, and C. E. Leonard, Philadelphia College of Pharmacy and Science, showed that the effect of hypnotic, as well as general anesthetic, drugs is increased by the concomitant administration of antihistamine drugs. L. Gershenfeld and B. Witlin, Philadelphia College of Pharmacy and Science, investigated iodine solution as a sporocidal agent. R. J. Ferlauto, E. J. Fellows, S. D. Bailey, W. C. Ellenbogen, and A. Heming, Smith, Kline & French Laboratories, reported on Neo-penil, a new antibiotic compound, which is the diethylaminoethyl ester

of penicillin G. B. M. Sutton and J. B. Data, Purdue University, School of Pharmacy, reported on a series of 2-amino derivatives of certain alkoxy alkanes. A. J. McBay, Massachusetts College of Pharmacy, reported on simplified pH approximations. P. G. Shaw and R. Bogash, Memorial Hospital, Wilmington, Del., reported work with sodium cellulose sulfate as a new medium for the suspension of barium sulfate. Fine dispersion and thorough suspension of the barium gives greater range of roentgenologic opacity, finer detail, and clearer differentiation of certain tissues. A. Purdum, Johns Hopkins University Hospital, acted as group leader and moderator in a panel discussion of specific research studies needed in hospital pharmacy. T. A. Manzelli and H. L. Flack described the preparation of a mixed bed deionizer for the hospital pharmacist.

B. E. Conley, of the American Medical Association Laboratories, was moderator of a panel discussion on the subject "Newer Toxicants of Medical, Economic and Pharmaceutical Interest." A. J. Lehman, Pharmacology Division, Food and Drug Administration, presented the pharmacological viewpoint, E. E. Fleck, Bureau of Entomology and Plant Quarantine, presented the chemical viewpoint, F. F. Heyroth, Kettering Institute for Applied Physiology, presented the pathological viewpoint, and R. Blackwell Smith, Pharmacy School, Medical College of Virginia, gave the medical-pharmaceutical viewpoint. K. P. DuBois, Toxicity Laboratory, University of Chicago, gave the chemistry and therapeutic applications of organo-phosphorus compounds.

GLENN L. JENKINS, *Secretary*

Section on Agriculture (O)

The section presented a two-day program and cooperated with Sections C and G in sponsoring a program that filled a third day. The papers presented during the first two days dealt with the interrelationship of soil and plant and animal nutrition. Some valuable summations of our knowledge concerning soil deficiencies of both major and micronutrients were presented. The roles of these elements in plant nutrition were discussed, and the effects of deficiencies on the nutrition of both plants and animals were brought out. The concentration of selenium in some plants and its toxicity to animals were also considered. Papers dealing with human nutrition appeared to be of especial interest to the audience.

During the third day's program results of research with a new material prepared by the Monsanto Chemical Company for the improvement of the mechanical condition of soils were presented. The papers elicited much discussion.

All programs were well attended, and a somewhat larger room would have been a convenience.

C. E. MILLAR, *Secretary*

Section on Industrial Science (P)

On July 1, 1951, the Executive Committee of the AAAS officially formed the Section on Industrial Science, pursuant to a vote of the Council, and a nucleus of the Section Committee was appointed. The objectives and scope of the section were developed as follows: (1) to advance the knowledge and application of science to industry; (2) to further the interests and status of scientists engaged in research, education, or other work having to do with the development, application, and use of scientific principles and knowledge to problems of industrial operation and management; and (3) to promote public un-

derstanding and appreciation of the importance and promise of industrial science in human progress and welfare.

At Philadelphia the new Section on Industrial Science held its first formal meeting. On Friday, December 28, Detlev W. Bronk officially installed the section and gave it the blessing of the AAAS. Following the installation, Edward R. Weidlein, president of the Mellon Institute, presented the keynote address, the theme being "Bridging the Gap." Dr. Weidlein discussed the coordination of the philosophies of those engaged in pure research and those engaged in applied or industrial research.

The program for Saturday morning was concerned with "Industrial Science Today." Presiding was H. Thomas Hallowell, Jr., president of Standard Pressed Steel Corporation. The speakers included Robert E. Wilson, chairman of the board, Standard Oil Company (Ind.), who discussed the petroleum industry; Hiland G. Batcheller, chairman of the board, Allegheny Ludlum Steel Corporation, who discussed the steel industry; J. B. Fisk, director of research, Bell Telephone Laboratories, the communications industry; Norman A. Shepard, chemical director, American Cyanamid Company, the chemical industry; and E. H. Volwiler, president of Abbott Laboratories, the pharmaceutical industry.

On Saturday afternoon, a panel presented various aspects of "Industrial Science Tomorrow" from the viewpoints of the consultant, the educator, the research institute, and the government. The speakers included Lillian M. Gilbreth, president, Gilbreth, Inc.; James Creese, president, Drexel Institute of Technology; Frank C. Croxton, assistant director, Battelle Memorial Institute; and Alan T. Waterman, director of the National Science Foundation. John S. Zinsser, chairman of the board, Sharp & Dohme, Inc., presided.

The final session on Sunday morning was concerned with "Public Aspects of Industrial Science," with Edward Hopkinson, Jr., of Drexel & Company, presiding. The subjects were broad and included: "The Contributions of Industry to Scientific Education," C. L. Emerson, vice president, Georgia Institute of Technology; "Industrial Science and Community Health," Charles L. Dunham, chief, Medical Branch, Division of Biology and Medicine, U. S. Atomic Energy Commission; "The New Industry and the Community," Robert A. Neary, chief, Plant-Town Community Relations Section, Public Relations Department, Aluminum Company of America; and "Industrial Science and Community Relations," G. Edward Pendray, president, Pendray & Company.

The general policy of the AAAS, as set forth in the Arden House Statement and the remarks made by Kirtley F. Mather at the Secretaries' Luncheon, cannot be over-emphasized as they concern the future of Section P. In fact, these policies and philosophies would appear to establish a foundation from which Section P will be able to take strength and grow, for they point toward a departure from the state of isolation of individual sections and toward coordination of effort among the several sections. Section P should admirably serve as a common meeting ground for the application of principles that come from not only the sections having to do with the physical sciences but also those concerned with the social sciences.

N. V. HENDRICKS, *Secretary*

The American Industrial Hygiene Association (P1)

The American Industrial Hygiene Association held its

first interim meeting with Section P of the AAAS on December 28. Approximately 5% of the membership was present. The annual meeting of the association will be held in Cincinnati, April 22-24, 1952, at which time newly elected officers will be installed. Tentatively it is planned to arrange an interim meeting with the AAAS in St. Louis in 1952.

HENRY F. SMYTH, JR., *Executive Secretary*

Society for Industrial Microbiology (P2)

The Society for Industrial Microbiology held its meetings under the auspices of the newly inaugurated Section P of the AAAS. A program of contributed papers was presented at the first session on December 27. The remainder of the formal program was devoted to symposia dealing with the general topic of "Microbiologic Assay." President Duggar introduced these symposia with an excellent historical review of the utilization of micro-organisms in various types of assays. Topics discussed included fungi in the discovery of essential elements, microbiological determination of vitamins, amino acids, laboratory evaluation of antibiotics, testing agricultural fungicides, and tests in military specifications in deterioration prevention. As an index to the interest in these topics, the ballroom of the Sylvania Hotel, where the program was held, was taxed to its capacity.

Friday, December 28, was devoted to guided tours to Frankford Arsenal, Philadelphia Quartermaster Depot, Eastern Regional Laboratory of the Department of Agriculture, Rohm & Haas Co., and Smith, Kline & French Laboratories. These tours were well attended.

The secretary announced the newly elected officers for 1952: *president*—Benjamin M. Duggar, Lederle Laboratories; *vice president*—Kenneth Raper, mycologist, Northern Regional Research Laboratories; *director*—Walter N. Ezekiel, Navy Bureau of Ordnance. Continuing officers are the *secretary*, C. L. Porter, Purdue University, and two *directors*—Alden B. Hatch and John S. Karling.

C. L. PORTER, *Secretary*

Section on Education (Q)

The program of Section Q was unusually successful this year. Only one author was unable to be present, and the papers were of uniformly high quality. The attendance, too, was higher than at any other recent meeting. The average was more than 50, and in some instances more than 100 persons were attracted to a program.

The customary joint session was held with Section I, Psychology, and both of the vice-presidential addresses attracted a great deal of comment. The symposium on visual problems in industry was a continuation of the one held a year ago and was attended primarily by those engaged in training programs in industry. A two-session symposium on the teaching of science, arranged by S. R. Powers, vice president of the section, was one of the features of the program, and a third session was given over to reports of research studies in that area. A series of papers presented factual evidence concerning pupils' school achievement at present as compared with earlier times. In only a few instances does it appear that the product of the schools is less efficient than formerly. In some cases no differences were reported. In most studies a difference was found in favor of the present, and there is much that was not given in the curriculum at all in earlier years. It was emphatically recognized, however, that the schools are far from their goals.

As the Association's symposium "Operation Knowl-

edge?" was a direct continuation of a symposium of Section Q at the Cleveland meeting and was in this instance originated and promoted by Section Q, it should be mentioned here as a part of our report. The papers on this symposium represented a very wide range of interest and experience and reached an extremely high standard in both content and style. The attendance at each of the three sessions ran over a hundred.

D. A. WORCESTER, *Secretary*

National Science Teachers Association (Q2)

Judging by reports of those in attendance, the 1951 meeting of NSTA with the other science teaching societies of the AAAS was "the best yet" in the four-year-old series of joint meetings. Attendance was excellent, and the general nature of the individual NSTA sessions appealed strongly to classroom teachers.

Space limitations prevent mention of all the excellent contributions of the 30 or more NSTA program participants. However, the classroom demonstrations and "how-to-do-it's" presented by Hubert Alyea, Princeton University; Paul Brandwein, Forest Hills (N. Y.) High School; Richard Sutton, Haverford College; Elbert Weaver, Phillips Academy, Andover, Mass.; Dwight Solberger, Indiana (Pa.) State Teachers College; and Roland Gladieux, Kenmore (N. Y.) High School, stood out in the opinion of the attendants.

A notable and highly successful session the first afternoon of the conference was entirely devoted to the teaching of science in the elementary school. Glenn Blough, of the U. S. Office of Education, conducted a demonstration lesson with a fourth-grade group of youngsters from the Philadelphia schools, and a panel of discussants went on to consider such problems as materials for instruction, techniques and methods, integration, and evaluation.

Another innovation was a session devoted to health science and health education. Reports of actual practices in Oak Park, Ill., Atlanta, Ga., and Euclid, Ohio, served to set the stage for discussion by the group assembled and a representative of the American Association for Health, Physical Education, and Recreation.

"Tomorrow's Scientists and Engineers—Today's High School Youth" provided statistics and needs relative to scientific manpower, and in this connection the NSTA cooperative program with the Edison Foundation in holding Institutes for Science Teachers was reviewed. At this session, Walter Morrison, of the American Society for Metals, presented NSTA with a check for \$10,000 to underwrite a program of awards to science students, science departments, and science teachers. The program will be announced and launched this spring in all the high schools of the United States and Canada.

Arthur O. Baker, president of NSTA; Harold E. Wise, University of Nebraska, president-elect; and Robert H. Carleton, executive secretary, represented the association at the preliminary planning session for the 1952 meeting of the AAAS science teaching societies. It is anticipated that the societies will again meet with AAAS in St. Louis next December. Meanwhile, the next meeting of NSTA will be held June 26-28 at the University of Michigan.

ROBERT H. CARLETON, *Executive Secretary*

Conference on Scientific Manpower (X6)

At Philadelphia, a "Conference on Scientific Manpower" was, for the first time, a part of the Association's program. The objective of this conference was the

consideration of the vital problems involving scientific and technical manpower in all scientific fields, and its cosponsors were the AAAS Cooperative Committee on the Teaching of Science and Mathematics, Section I, Section K, Section M, Engineers' Club of Philadelphia, and the Engineers' Council for Professional Development. The program committee for this three-day conference consisted of Ralph M. Hogan, Manpower Branch, Human Resources Division, ONR (chairman); T. A. Marshall, Engineering Manpower Commission, Engineers' Joint Council; M. H. Trytten, Office of Scientific Personnel, NRC; and John A. Nagay, Manpower Branch, Human Resources Division, ONR (secretary).

Dr. Trytten presided at the session on "Supply and Demand for Scientific Personnel." David Rodnick, of the Economic Cooperation Administration, spoke on "Scientific Manpower behind the Iron Curtain," describing interesting and little-known differences in Soviet policies and those of the democracies regarding selection, training, and utilization of technical personnel. The policies governing the National Science Foundation program in granting fellowships for graduate study and in awarding grants for aid in basic research were outlined by Harry C. Kelly, who invited suggestions from scientists during the present period, while policies of the foundation are being formulated. A paper by J. F. Hilliard, of the Defense Manpower Administration, U. S. Department of Labor, emphasized the growing shortage of scientific and engineering manpower—represented by about 0.4% of the population of this nation. He spoke of the wisdom of encouraging democracy's growth in other nations through political and technological means, in order that the principles of democracy may be welded to our international enterprises and thus used as a major instrument of national policy. The question of supply and demand for social scientists was discussed by Elbridge Sibley, of the Social Science Research Council, who attributed the inexactness of data concerning this supply and demand to the meager support of research and training of professionally qualified research workers in these fields. Dr. Sibley offered the fact that memberships in the professional societies in social science fields provide a poor index of the total number of those who are professionally competent, since these societies lack strict requirements for entrance and membership. There is no unemployment in these fields; however, the demand in academic institutions is greatly reduced at present, whereas that of government is increased.

The session on post-baccalaureate training was presided over by George B. Thom, of the Newark College of Engineering. Guy Kleis, Westinghouse Electric Corporation, spoke on "In-service Training of Engineers and Scientists in Industry." Successful programs include work assignments and classroom instruction. The practice is not new in the large industries and is being adopted rapidly in the smaller ones. The same type of in-service training was discussed by W. G. Torpey, personnel officer of the Naval Research Laboratory, who outlined efforts made by government agencies to upgrade young workers through additional training, thereby increasing the quality of engineering and scientific personnel, now such a limiting factor in expanding research and developmental activities. The summer employment opportunities available in many government laboratories are especially valuable to junior physicists. The in-service training programs are similar in many respects to those of industry, but there appears to be a tendency in government-sponsored activity to lean toward near-by universities for off-campus

extension courses, which are often patterned for the needs of the particular laboratory sponsoring the training. Seminars and colloquia are common and advantageous in the government laboratories. The final paper of the session was that of Herbert E. Longenecker, dean of the Graduate School, University of Pittsburgh: "The Unique Contribution of the Graduate School in the Development of Human Resources." He presented the theory that national security faces a problem in human resources, the solution of which lies in further education in the graduate school. The alarmingly reduced enrollment in graduate schools might be countered by increased support from government and industry. The steady extension of graduate study programs to off-campus locations is a significant trend in education. Dr. Longenecker cited the lack of attention currently devoted to nontechnical fields in many graduate schools, and he deplored the tendency of college graduates to seek graduate work despite the fact that they possess the barest minimum of requirements for graduation at the bachelor level. Marsh W. White, Pennsylvania State College, summarized the papers of this session.

The final session of the conference, presided over by Dael Wolfe, was devoted to "Selection Techniques: Psychological Background." Henry Chauncey, president of the Educational Testing Service, released for the first time data concerning the results of the Selective Service College Qualification Test. These results were not only significant but, in some instances, startling. Important differences in test performance were noted in geographical regions; the Middle Atlantic states ranked highest and the Southern states lowest. In the major fields of study, engineering and physical sciences ranked highest, followed in rank by biological sciences, social sciences, humanities, arts, commerce, agriculture, and education. Of great interest and importance was the variability found among various colleges and universities, some institutions passing nearly 100% of students and others passing as few as 35%. Technical schools ranked consistently higher than the arts colleges. The original expectation that such tests, with rank in class, would serve effectively in qualifying capable students for deferment is confirmed by the findings. "The Effectiveness of a Selective Program for Scientists" was prepared by C. J. Lapp, Office of Scientific Personnel, NRC, who emphasized the benefits to society as a whole from fellowships. There have been 1,000 fellowships granted through the National Research Council, and although these were largely supported through private funds, the present tendency is toward government grants, with a much larger number available. Techniques of selection of fellows are necessarily different in the granting of government funds. These differences are due in part to pertinent government regulations, which were discussed by Dr. Lapp. John C. Flanagan, director of the American

Institute for Research at the University of Pittsburgh, presented the final paper of the symposium: "Measuring Research Effectiveness." Critical requirements for typical research jobs have been established, and tests based on those techniques are now in process of validation. Summarizer for this session was C. W. Hawley, National Security Resources Board.

It is most gratifying to those concerned with human resources in scientific and technical fields that conferences on this subject are to be a permanent feature of the AAAS annual program. Enthusiasm and singleness of thought and purpose were apparent in the group attending the conference. Questions were invited and encouraged after presentation of each paper, and they demonstrated the wisdom of gathering together those persons aware of the problems in scientific manpower in this country. All the papers presented at the conference are being printed in book form and will be available within the next two or three months from the Manpower Branch, Office of Naval Research, Department of the Navy, Washington, D. C.

MARSH W. WHITE
VIRGINIA M. BOLTON

Sigma Delta Epsilon (X13)

Sigma Delta Epsilon, Graduate Women's Scientific Fraternity, held its national convention December 27-29 in Philadelphia. This organization was founded in 1921 at Cornell University, and 1951 marked its thirtieth year.

The recipients of two research awards, given to members for research published in a scientific journal or presented at a scientific meeting, were announced. Margaret Green, of Ohio State University, was awarded \$500 for her paper on "Further Morphological Effects of the Short Ear Gene in the House Mouse." Two hundred dollars was given to Marie Farnsworth, of New York City, for her paper on "Ancient Pigments, Particularly Second Century B.C. Pigments from Corinth."

At the Grand Chapter meeting officers elected for 1952 were: *president*, Elizabeth Mackay, Department of Biological Sciences, Purdue University; *vice presidents*, Mildred Engelbrecht, Department of Bacteriology, University of Alabama, Mary Keefe, Department of Biology, College of St. Thomas, St. Paul, Minn.; *secretary*, Hellen Linkswiler, Laboratory of Human Nutrition, University of Alabama; *treasurer*, Mrs. Richard Lewis, Royal Oak, Mich.

The speaker for the luncheon for all women in science was Edith Quimby, along with Katherine B. Blodgett, a new national honorary member. Dr. Quimby spoke on "Dating of Archaeology and Paleontology by Radioactive Isotopes."

FRANCES L. NAYLOR, *Secretary*

