News and Notes

Engineering Education

Engineers should become more scientific, more creative, and more human. This evaluation of today's engineering education was the dominant theme of the 62nd annual meeting—largest in history—of the American Society for Engineering Education at the University of Illinois, 14–18 June. More than 1400 engineers, chiefly teachers from colleges in every state of the union and many foreign countries, registered for the meeting. They urged one another unanimously to devote more time to the basic sciences, engineering science, and the humanities—at the expense of engineering art and practice.

Industrial employers, agreeing with the educators, said that they were unwilling to have colleges sacrifice the sciences and humanities to provide time for studying technology or administration. They insisted that not only their research and development divisions but also their sales, manufacturing, and operating departments need engineers with strong scientific backgrounds. The extent of this move to strengthen science is obvious in an interim report of the A.S.E.E.'s Committee on Evaluation of Engineering Education released during the meeting. This proposal would have all engineering students—whether majoring in chemical, mechanical, electrical, civil, or other branches of the field—study in common almost five-sevenths of the total course. Only two-sevenths would be concentrated in the field of the major, and almost half of this would be as professional electives.

In his presidential address, Linton E. Grinter, dean of graduate studies at the University of Florida, said that colleges "must experiment with all possible methods of orienting engineering education more significantly toward basic and engineering science." The emphasis on science was continued by Lee A. DuBridge, president of the California Institute of Technology, who spoke at the celebration of the 50th anniversaries of the engineering experiment stations at the University of Illinois and at Iowa State College. "Maintain a close tie with the basic sciences," was DuBridge's advice. "An engineer, after all, is putting to practical use today what scientists discovered yesterday. . . . The main purpose of science is not to produce bombs and guns and radar—or even radios, refrigerators, and color television—but to advance human understanding."

Despite these high purposes of science, too few high-school students are being led to study it. Lenox R. Lohr, president of Chicago's Museum of Science and Industry, told the annual banquet of the Society that only 4 percent of his city's high-school students are studying physics and no more than 1.5 percent are studying solid geometry He commented that "Uninspired and inept instruction have too frequently made these all-important subjects a nightmare for the student"

This extensive discussion of the role of the basic sciences in engineering and engineering education was sparked by a year-long nation-wide study made possible by grants from the Engineers' Council for Professional Development, the Engineering Foundation, and the General Electric Co. These interim conclusions of the study were reported:

1) Mastery of a limited number of basic principles is far better than a superficial knowledge of expanded subject matter. Creative thinking, so essential in professional work, can result only after basic laws are mastered.

2) The training of engineers will have to take increasing notice of their position and influence in society and their recognized trend toward administrative and managerial positions.

3) The role of the engineer includes participation in research and development, plant operations, and engineering. To solve these technical problems requires the use of technology intimately mixed with economics and human relationships.

4) We shall have improved engineering education only when we have more good engineering teachers working in an environment in which they can function most effectively. Teaching ability should head the list of qualifications for appointments and promotions on engineering faculties.

5) Scientific advances force a new view of engineering education. The success of engineers in the last 10 yr has been due to the thoroughness with which fundamentals were taught. Predictions of atomic power and automatic control, for example, now indicate still broader activity, and the base of engineering education must therefore be further broadened. Only by increasing science in all curriculums can standards be raised.

Other highlights of the meeting included the following proposals and reports.

1) The demand from industry and government for new engineering talent continues to be greater than the current supply of graduates. Donald S. Bridgman of the American Telephone and Telegraph Co. reported a national survey showing that the decline in business activity and defense orders in 1954 has led to a 20-percent decrease in the need for engineers. But, he said, "with the relatively small classes graduating at this time, there is still substantial unfilled demand"

2) Eric A. Walker, dean of engineering at the Pennsylvania State University and chairman of the Engineering College Research Council, pointed out that "the colleges of engineering of the United States must be allowed to get into atomic research if they are to support and conduct a vigorous and up-to-date educational program preparing for careers in the general field of atomic energy."

3) Richard W. Schmelzer, assistant to the president at Rensselaer Polytechnic Institute and chairman of the A.S.E.E.'s Committee on Incentives for Good Teaching, proposed this formula for adding to the

stature of college teaching in America: "We need to create a climate of opinion so that the man who devotes himself primarily to teaching won't feel apologetic about it. . . ."

4) A special A.S.E.E. project to study the teaching of humanities and social sciences to engineers, financed by a $30,000 grant from the Carnegie Corporation, began work at a 2-day workshop session. The goal of the project, which is under the chairmanship of Edwin S. Burdell, president of Cooper Union, is to recommend ways by which engineering students' work in these liberal arts subjects may be strengthened.

5) A new plan to give foreign engineering students a chance to take summer jobs in American industry was discussed for the first time by F. M. Dawson of the State University of Iowa and Harold L. Hazen of the Massachusetts Institute of Technology.

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Science News

When speaking in support of amendments to the **Atomic Energy Act** last month, Secretary of State John Foster Dulles pointed out that our formerly exclusive knowledge of atomic energy is now at an end and that "our potential enemies have a knowledge vastly superior to that of most of the nations which we count as friends." He called this "an unhealthy state of affairs," which means that "the present very strict secrecy requirements of the 1946 Act no longer represent the wisest international policy."

A bill, HR 9500, has been introduced in Congress to authorize the appropriation of $990,000 to enable the regents of the **Smithsonian Institution** to prepare detailed plans for a new museum building on Constitution Avenue and the Mall between 12th St. and 14th St. NW, in Washington. The structure will have an unusual scope, for it will be both a museum of United States history and of science, engineering, and industry. The project is described as a "history book" of objects in which all elements of national progress will be represented and related. Instead of the clutter of cases and machines of the old building, the visitor will find a central series of halls devoted to successive periods of history. In each hall the exhibits will relate to one period, illustrating its dominant character against the background of the living and thinking of its time and emphasizing the significance of the period in national development. These stories will be told with original documents, machines, costumes, weapons, inventions, home furnishings, the personal effects of famous Americans, and many other classes of objects from all sections of the Smithsonian. Beyond these central halls will be many others in which the details of the development of particular devices will be illustrated.

It is expected that the new plan will attract to the national collections many significant objects now owned by individuals and historical and professional groups. Leonard Carmichael, secretary of the Smithsonian, feels that the new building presents an opportunity for a fresh positive statement of this country's cultural, political, and industrial contributions to world progress.

An **electronically controlled force-reflecting manipulator,** considered to be the most advanced general purpose manipulative device thus far produced, has been constructed by engineers at Argonne National Laboratory. Developed by Raymond C. Goertz and W. M. Thompson of the Laboratory's Remote Control Engineering Division, the manipulator was displayed at the recent Nuclear Engineering Congress in Ann Arbor.

Used in conjunction with Argonne's three-dimensional television system, it enables investigators to perform complex laboratory and process manipulations at a distance of several hundred feet or from behind a sealed barrier with a speed and dexterity approaching that of the unaided hand. The device, which reproduces the seven basic motions that are employed in grasping, lifting, moving, and turning objects, has specially designed servomechanisms that reflect the work loads and resistances back to the operator.

The **University of Michigan's Fifth Aleutian Expedition,** left by boat for Kodiak, Alaska, on 20 June and from there flew to Unalaska, second largest island in the Aleutians, where headquarters were established. Theodore P. Bank, Jr., research assistant, is field director of the expedition and his wife is recorder. Other participants are Aloys C. Metty, assistant professor of dentistry; John F. Plummer, archeologist now completing his doctoral work in anthropology; Ralph L. Puchalski and James F. Scott, both graduate students who will be assistants to Dr. Metty; John S. Lowther, doctoral student in botany; and Jay E. Ransom, linguist from California.

The group will conduct dental and anthropological studies in a number of Bering Sea Eskimo villages. Surveys will be made of dental problems among the Southwest Alaskan Eskimos to determine the differences between Aleut, Eskimo, and Indian tooth patterns for the purpose of testing racial-genetic likenesses.

Archeological excavations will be made in two large prehistoric Eskimo mounds in the Eastern Aleutians and also at a newly discovered burial cave in Unalaska. The cave has been closed by rocks for hundreds of years and, by Aleut legend, it is taboo to enter. In addition, archeological surveys will be conducted on the tip of the Alaska peninsula to look for new sites to be explored in the future.

A highlight of the trip will be the ascent of 7000-ft Makushin Volcano on Unalaska, the first made by anyone. The crater area of this active volcano will be mapped and the adjacent glacier studied. The group also plans to make a full-length motion picture about the Bering Sea Eskimos.

Financial support is being provided by the univer-

sity's Botanical Gardens, the Wenner-Gren Foundation for Anthropological Research, the University of Oklahoma, and the newly formed Institute for Regional Exploration—a nonprofit organization devoted to furthering expeditions all over the world. Help in the field will come from the Alaska Native Service and territorial and federal agencies. Photographic aid has been furnished by the Argus Camera Co., Ann Arbor. The university conducted expeditions to the Aleutians in 1948 and 1949 under auspices of the Office of Naval Research, and in 1950 under the sponsorship of its Michigan Memorial-Phoenix Project. Twenty islands have been explored.

During the fall of 1952 members of the Virus and Rickettsial Study Section of the Division of Research Grants, National Institutes of Health, heard reports that infectious **ectromelia** was present in certain mouse colonies of the United States. With the knowledge that the presence of such an infectious agent constituted a threat to the progress of medical and other research, the Study Section named a committee consisting of Richard E. Shope, chairman, Karl F. Meyer, Frank L. Horsfall, Jr., W. T. S. Thorp, and Edward P. Offutt, executive secretary, to consider this situation and the problems it presented, and to make recommendations to the proper authorities.

The committee's first activity was to advise research grantees of the situation by individual notices sent to approximately 2000 persons widely scattered over the United States and in a few foreign countries. Cooperation in reporting suspected outbreaks and established infections was requested. To date, more than 1200 replies have been received, with a breakdown in the following simple fashion: no mouse stocks present, 746; no unexplained disease present, 440; unexplained disease (low mortality makes ectromelia less likely), 13; infectious ectromelia believed present, 18; infectious ectromelia proved present, 4.

In addition to reporting the results of its survey, the committee wishes to furnish additional information to research users and suppliers of the mouse. Therefore a 10-page mimeographed report has been prepared that describes the disease in detail and lists literature references on the subject.

Two **stone idols,** one male and one female, have been found near a grave in the ancient Indian Etowah mound near Cartersville, Ga. The 2-ft painted figures are seated and are carved in remarkable detail; they also are decorated with copper plates and wear headdresses. The find was made by an expedition sponsored by the Georgia Historical Commission in cooperation with State Park Service. Archeologist in charge is Lewis H. Larson, Jr., who is working under the direction of Arthur R. Kelley of the University of Georgia.

The figures resemble others excavated from the Etowah mounds in the 1920's by the late Warren K. Moorehead. Like those discovered previously, the newly found images suggest strongly a link between the Etowan people who made them and the Aztecs of Mexico and Yucatan. Certain prevailing feature's are apparent in both the Etowan and Aztec art, notably the posture of the seated figure. If the Aztec concepts of art were introduced in Georgia by migration from Mexico, it must have been at a very early date.

A different theory had been proposed by Dr. Moorehead, namely, that the Muskhogean culture of the Etowan people might have developed in our Southland and the migration might have been westward to Mexico instead of in the reverse direction.

In a statement issued to the press on 29 June, following the AEC 4-to-1 vote to refuse him security clearance, **J. Robert Oppenheimer** said:

> I have seen the release of the Atomic Energy Commission. Dr. Henry D. Smyth's fair and considered statement, made with full knowledge of the facts, says what needs to be said.
>
> Without commenting on the security system which has brought all this about, I do have a further word to say. Our country is fortunate in its scientists, in their high skill, and their devotion. I know that they will work faithfully to preserve and strengthen this country. I hope that the fruit of their work will be used with humanity, with wisdom and with courage. I know that their counsel when sought will be given honestly and freely. I hope that it will be heard.

A formal protest, describing the current **Selective Service policy toward scientists and engineers** as contrary to law and detrimental to the true national interest, has been filed with Major General Lewis B. Hershey, Selective Service director, by the American Chemical Society. The protest, in the form of a letter signed by Alden H. Emery, executive secretary of the society, criticizes the "apparent decreasing selectivity of Selective Service" and cites the handling of deferments for scientists, engineers, and other specialists as a disturbing case in point. Although the law is designed to enable each man to serve where he can contribute most to national health and security, Selective Service officials seem to be paying less and less attention to this question in weighing deferments. Mr. Emery wrote:

> We feel strongly that certain individuals . . . can make greater contributions to national safety and well-being in civilian assignments than in the military forces. It always has been our contention that the relative importance of these two assignments should be weighed in each individual case.
>
> It is the belief of our Board of Directors that this is not being done and, indeed, that local boards are being encouraged by you and your assistants to consider industrial deferments simply as a period for training replacements.

In support of the view that Selective Service is becoming less selective, Mr. Emery reported that the number of occupational deferments dropped from 32,439 to fewer than 21,000 during the past year and a half, although "needs have not decreased similarly." Deferments have dropped especially fast in recent months—2986 between 1 Dec. 1953 and 1 Mar. 1954. Mr. Emery stated further:

If this rate continues there will be no occupational deferments to grant after 1955. . . . [The current deferment] policies represent the decisions of a few individuals, not the requirements of the law. They are accepted because they are popular with those segments of the public which do not realize that there is more to military defense than discharging weapons. No military strategist would send men armed with crossbows against an army equipped with atomic artillery. We have weapons and protective devices today far superior to those as recently as 10 years ago because of the work of civilian scientists and engineers teamed at an appropriate stage with professional military personnel. Are we going to cut off further progress in that direction? Are we saying that we have gone as far forward as we need to?

Scientists in the News

The winners of the American Foundation for Pharmaceutical Education's Edwin Leigh Newcomb Memorial awards for original essays in the field of pharmacognosy have been announced. The graduate student prize went jointly to **Shafik I. Balbaa,** now assistant pharmacognosist at Fouad I University in Cairo, Egypt, and **Carl H. Johnson** of the College of Pharmacy, University of Florida, for their paper, "A pharmcognostical study of the origin of lemongrass oil." The undergraduate winner was **J. L. Renaud** of the School of Pharmacy, Medical College of South Carolina. Presentation of the awards will be made 20 Aug. during the 1954 meeting of the Plant Science Seminar at The University of Connecticut.

Betty Jane Bamforth has been appointed associate professor of anesthesiology in the University of Wisconsin Medical School.

In June, **Burr A. Beach** retired from the University of Wisconsin with the rank of emeritus professor of veterinary science. After earning his degree in veterinary medicine at Ohio State University in 1909, he joined the staff of the University of Minnesota. In 1911 he went to the University of Wisconsin as instructor in agricultural bacteriology; by the following summer he had switched to the department of veterinary science. In 1913 Dr. Beach was named assistant professor, in 1919 associate professor, and in 1936 full professor. From 1938 to 1945 he headed his department.

Dr. Beach was the first veterinary scientist in Wisconsin to produce hog cholera serum and to promote its use throughout the state; he was among the first to make and use a fowl pox vaccine; and he was instrumental in the development of the technique of the complement fixation test, forerunner of the blood test now used. With the late E. G. Hastings, he isolated the first culture of the organism producing Johne's disease, making possible the manufacture of Johnin to help control it. He also shared in the early work on brucellosis in dairy cattle, and on reactor problems in tuberculosis testing.

In his honor, the Wisconsin Veterinary Medical Association last year set up the Burr A. Beach award of $100 to be given annually to the university's outstanding graduate student in veterinary science.

Jule G. Charney of the Institute for Advanced Study was the Woods Hole Oceanographic Associates Lecturer for 1954. He delivered a series of six lectures in meteorology entitled "Scale and stability in planetary fluid motions."

Chester W. Clark, chemical engineer and a colonel in the U.S. Army Ordnance Corps, has been ordered to the Far East and will report to the West Coast Port of Embarkation early in July. Until he was promoted to deputy commander last June, Col. Clark had been chief of the research and development division at Picatinny Arsenal since 1951.

Jean A. Curran has been made associate executive dean for medical education in the State University of New York. Dr. Curran, who for 17 yr has been dean of the university's College of Medicine in Brooklyn and its predecessor, the Long Island College of Medicine, will assist Carlyle Jacobsen, executive dean, in matters relating to program planning for the health professions. This responsibility has been carried by Dr. Jacobsen alone since the university acquired its two colleges of medicine (Brooklyn and Syracuse) in 1950. Though Dr. Curran will leave the deanship as soon as his successor can be appointed, he will continue as professor of the history of medicine at the College of Medicine in Brooklyn.

Columbia University has announced that **Harry Linn Fisher,** president of the American Chemical Society, has been designated as Chandler lecturer and medalist for 1954. Selected for his outstanding contributions to the organic chemistry and technology of rubber, he will deliver the lecture and receive the medal on 10 Nov.

Norman E. Gabel, associate professor of anthropology at Santa Barbara College of the University of California, plans to spend his sabbatical leave in the Fiji Islands where he will investigate the racial make-up of the Melanesian natives. He will take photographs and also make detailed measurements of the physical characteristics of the people, augmented with blood analysis studies. The expedition is a continuation of the work done in 1947 by Edward Gifford, director of the Museum of Anthropology at the University of California, Berkeley.

Roger Gaudry, professor of chemistry at Laval University, Quebec, has been appointed assistant director of research for Ayerst, McKenna & Harrison, Ltd., Montreal.

Willis A. Gibbons, associate director of research and development at the United States Rubber Co., has retired after more than 41 yr of service with the company. A pioneer in the company's research program and its director from 1928 to 1946, his major developments have included latex dipping of tire cord, a new

test for vulcanization, a new method of vulcanization, and the manufacture of rubber thread and other products directly from latex.

The bronze medallion award of merit of the American Heart Association has been presented to **Lillian M. Gilbreth, Winthrop W. Aldrich,** and **Alton L. Blakeslee.** Dr. Gilbreth, an authority on time and motion studies, directed the creation of the New York Heart Association's "Heart Kitchen," the forerunner of the American Heart Association's national program of work simplification for the cardiac housewife. Mr. Aldrich, U.S. Ambassador to the Court of St. James, served as national campaign treasurer for the Heart Fund from 1949 to 1952. Alton L. Blakeslee, science reporter for the Associated Press, was honored for helping to develop greater public understanding of advances in the cardiovascular field.

Anthony J. Lanza, pioneer in the field of industrial medicine, is retiring at the end of this academic year and has been made professor emeritus of New York University–Bellevue Medical Center's Post-Graduate Medical School. A faculty member since 1947, Dr. Lanza has served as professor and chairman of the department of industrial medicine and director of the Center's Institute of Industrial Medicine. He will continue to act as a consultant and to lend his support to the development program of the Medical Center.

Since receiving his M.D. degree from George Washington University in 1906, Dr. Lanza has held important posts in the Government, as well as in private industry. While serving with the U.S. Public Health Service during and after World War I, he established 10 branches of the Office of Industrial Hygiene, and he served 2 yr each in the U.S. Coast Guard and in the Tuberculosis Sanatorium in Fort Stanton, N.M. For 5 yr he was chief surgeon in the U.S. Bureau of Mines.

In 1921 the International Health Board of the Rockefeller Foundation sent Dr. Lanza to Australia, where he established the division of industrial hygiene in the Federal Health Department of the Commonwealth Government and served as adviser until 1924. From 1926 to 1947 he was assistant, and then associate, medical director of the Metropolitan Life Insurance Co.

During World War II Dr. Lanza served as a colonel in the Medical Corps and was head of the Division of Industrial Medicine, Preventive Medical Service, in the office of the Surgeon General of the Army. At the close of the war, Dr. Lanza received the William S. Knudsen award for his contribution to the field of industrial medicine in the U.S. Army. He is an adviser in industrial medicine for a number of industrial organizations and is chairman emeritus of the American Medical Association's Council of Industrial Medicine.

Erwin F. Lowry of Sylvania Electric Products Inc., has been named to receive the 1954 gold medal of the Illuminating Engineering Society, highest honor in the field of illumination. Presentation will be made at the Society's annual National Technical Conference in Atlantic City, 13 Sept.

Dr. Lowry is the first physicist engaged in light source research chosen to receive the award. Nearly 30 patents have resulted from his researches, almost all of which are related to gaseous discharge devices, especially cathodes. Most of his contributions to lighting are incorporated in the development of the fluorescent lamp.

Robert E. Marshak, chairman of the University of Rochester physics department, who has been in Europe for the past year lecturing and studying under a Guggenheim fellowship, will return to his duties at the University on 1 Sept. He served as an exchange professor at the Sorbonne, where he gave 30 lectures on high energy physics, and as a consultant for the various theoretical groups at the Institut d'Henri Poincaré, Ecole Normale Supérieure, and French Atomic Energy Commission. He also gave lectures in Switzerland, Denmark, Italy, Sweden, Belgium, and England, and this summer will lecture at the French Summer School for Theoretical Physics at Les Ouches.

Harry Most, specialist in tropical medicine, has been appointed Hermann M. Biggs professor of preventive medicine and chairman of the department at New York University-Bellevue Medical Center's College of Medicine. He has been acting chairman since last July.

H. Necheles, head of the department of gastrointestinal research at Michael Reese Hospital, Chicago, will be a guest of honor at the Pan American Congress of Gastroenterology in São Paulo, Brazil, 19–24 July. Following the congress he will lecture at the medical schools of Montevideo, Santiago, Buenos Aires, and Lima.

Claude E. O'Neal, chairman of the department of botany at Ohio Wesleyan University and professor of botany on the Allen Trimble Foundation, is retiring after 41 yr of service. He holds the A.B., A.M., and Ph.D. degrees from Indiana University, is a past president of the Ohio Academy of Science, and has twice served as vice president of the Academy's botanical section. Former students, including several botanists of international reputation, paid tribute to his teaching and leadership at a retirement dinner at Ohio Wesleyan University on 6 June. **George W. Burns,** professor of botany, has been appointed chairman of the Department of Botany to succeed Dr. O'Neal.

Horace G. Richards, associate curator of geology and paleontology in the Academy of Natural Sciences of Philadelphia, has left for the Middle East and Africa. His purpose is a study of the ancient shore lines of the Mediterranean and the Red Sea. He is accompanied by his assistant, **James L. Ruhle.** They will visit Italy, Lebanon, Jordan, Egypt, Eritrea, Ethiopia, and French Somaliland.

Arthur Roberts, cosmic ray specialist and professor

of physics at the University of Rochester, has been given a year's leave of absence to serve with the U.S. Office of Naval Research in Europe as scientific liaison officer in nuclear physics. He will leave for London in August.

Royal W. Sorensen, professor of electrical engineering emeritus of the California Institute of Technology, has been elected to honorary membership in the American Institute of Electrical Engineers. Only two other living Americans are listed in the AIEE year book as having been so honored. They are former President Herbert Hoover and Vannevar Bush, president of the Carnegie Institution of Washington. Prof. Sorensen is the second Caltech staff member to receive the honor, the first having been the late Robert A. Millikan.

Meetings

The **American Institute of Homeopathy** will meet 18–22 July at the Grand Hotel, Mackinac Island, Mich.

An advance announcement of a **Conference on Nuclear Engineering** to be held at the University of California at Los Angeles, 27–29 Apr. 1955, and an invitation to submit papers to be read at the gathering, have been issued by the university's departments of engineering at Los Angeles and at Berkeley. The Conference, offered through University Extension and sponsored by the principal national engineering societies, will consist of three 1-day sessions, each devoted to one of the following topics: "Nuclear reactor power extraction systems and auxiliaries" (liquid metal systems, high-pressure water systems, etc.); "Nuclear system dynamics" (power system dynamic behavior, reactors, instrumentation, and control, etc.); and "Radiation sources for industrial applications."

Any person wishing to present a paper on one of these topics should send the title and an unclassified 200-word abstract to Prof. T. J. Connolly, Dept. of Engineering, University of California, Los Angeles 24, *before 25 July.* A description of the AEC-approved security-clearance procedure for papers will be mailed with notice of tentative acceptance of these proposed papers. Preprints of the papers finally selected will be available at the time of the conference.

An **International Congress of Anatomy** will be held in Paris, 25–30 July 1955. Prof. Gaston Cordier, 45, Rue des Saints-Pères, Paris (6e), is in charge of arrangements.

The **New York State Geological Association** held its 26th annual field meeting at Vassar College, 30 Apr.–1 May. It was attended by 165 individuals representing some 30 institutions and organizations from 7 states and Canada. Field excursions in the Hudson valley included study of the stratigraphy and sedimentation between Catskill and High Falls, and from Poughkeepsie to Hudson; metamorphism of sediments in Dutchess County; and the geology of the crystallines in the Hudson Highlands, Bear Mountain region. John G. Woodruff of Colgate University, where next year's meeting will be held, was elected president for 1954–1955. Kurt E. Lowe, City College of New York, continues as permanent secretary.

An international symposium on **"Problems in physiology and pathology of the eye"** will be held at the State University of Iowa College of Medicine, 24–25 Sept. The program will include: Gunnar von Bahr, Uppsala, Sweden, "Corneal thickness: its measurement and changes"; Giambattista Bietti, Parma, Italy, "Ophthalmic problems in diabetes and hypoglycemia"; Hans Goldmann, Berne, Switzerland, "Slit-lamp microscopy of the fundus"; Eugene Wolff, London, "Ophthalmic pathology of fat"; G. B. J. Keiner, Zwolle, Netherlands, "Optomotor reflexes"; H. K. Müller, Bonn, Germany, "Phosphate metabolism of the lens"; J. Boeck, Gras, Austria, "Periarteritis nodosa and related diseases"; Harold Henkes, Rotterdam, Netherlands, "Electroretinography."

Members of the **Southern Society of Cancer Cytology** wishing to present papers at the forthcoming annual meeting of the society are requested to apply to the program chairman, Dr. Lois I. Platt, George Washington University School of Medicine, 23rd St. at Washington Circle, Washington, D.C. This annual meeting is held conjointly with that of the Southern Medical Association, which this year will take place in St. Louis, 8–11 Nov. Address inquiries concerning the society to the secretary, Dr. J. Ernest Ayre, 1155 N.W. 14 St., Miami, Fla.

Society Elections

American Society of Biological Chemists: pres., C. G. King, The Nutrition Foundation; pres.-elect, J. Murray Luck, Stanford University; sec., Philip Handler, Duke University; treas., Philip P. Cohen, University of Wisconsin.

American Society for Engineering Education: pres., Nathan W. Dougherty, University of Tennessee; v. pres., Leo J. Lassalle, Louisiana State University; v. pres., Harold K. Work, New York University.

American Society for Pharmacology and Experimental Therapeutics: pres., Charles M. Gruber, Sr.; pres.-elect, E. R. Gross; treas., James M. Dille; sec., Carl C. Pfeiffer; representatives to the AAAS Council, Hamilton Anderson and R. H. Driesbach.

The Econometric Society: pres., Wassily Leontief, Harvard University; v. pres., Richard Stone, University of Cambridge; sec., Rosson L. Cardwell, University of Chicago; treas., Alfred Cowles, University of Chicago.

Iowa Academy of Science: pres., R. W. Getchell, Iowa State Teachers College; v. pres., U. A. Hauber, St. Ambrose College; sec.-treas., J. L. Laffoon, Iowa State College.

Mississippi Academy of Science: pres. C. L. Deevers,

Mississippi College, Clinton; pres.-elect, W. F. McCormick, M.S.C.W., Columbus; sec.-treas., Clyde Q. Sheely, Mississippi State College.

New Hampshire Academy of Science: pres. Tudor Richards, St. Paul's School, Concord; v. pres., W. M. Rayton, Dartmouth College; sec.-treas., Huntington Curtis, Thayer School, Hanover.

North Dakota Academy of Science: pres., G. A. Abbott, University of North Dakota; v. pres., Harry B. Hart, Jamestown College; sec.-treas., J. Donald Henderson, University of North Dakota.

Education

A **Committee on Army Medical Education** has been formed by the National Academy of Sciences–National Research Council, at the request of the Army Medical Service. Organized on 5 June, it replaces the former advisory committee of the Army Medical Service Graduate School, Walter Reed Army Medical Center. The new committee, instead of being limited to the scope of operations of the school, will deal with professional education and training problems of the Army Medical Service in its entirety and will act in an advisory capacity to the surgeon general. Three main functional areas in which the committee could be of service were outlined at the organizational meeting.

To determine, analyze and evaluate those professional and technical fields where civilian developments must be supplemented to meet the requirements of national defense.

To review the professional and technical programs in the Army Medical Service to determine whether or not they adequately meet the professional and technical needs for defense.

To review educational methods and career patterns being employed by the Army Medical Service so as to determine whether they are designed to produce the leadership and professional requirements for defense.

Membership of the committee includes: Dean A. Clark, Massachusetts General Hospital, chairman; Joseph M. Hayman, Jr., Tufts College Medical School; Franklin C. McLean, University of Chicago; John H. Mulholland, New York University; I. S. Ravdin, University of Pennsylvania; Grant Taylor, University of Texas; Gaylord W. Anderson, University of Minnesota; and Tom Bradley, National Research Council, executive secretary.

A study and planning group, supported by a National Science Foundation grant, will be at the University of Wisconsin from 21 June to 14 Aug. to consider the complex details of a proposed **cosmotron** to be located in the Midwest. This conference is part of an over-all project to establish a nonclassified research laboratory housing the cosmotron, which may cost up to 30 million dollars and is expected to produce energies in the neighborhood of 25×10^9 ev. No similar instrument has yet been built, although two such research projects have been authorized and designs are currently being completed. One of these cosmotrons will be located at Brookhaven, and the other will be built in Europe under the aegis of a group of European countries.

The project being discussed at Wisconsin is sponsored by the Midwestern Universities Research Association, an organization of institutions that have agreed to pool their resources and personnel for atomic research. Members are the Universities of Wisconsin, Minnesota, Illinois, Indiana, and Iowa State College.

Dedication exercises for Harvard University's new **Gordon McKay Laboratory of Applied Science** were held on 16 June.

Hamilton College and **Rensselaer Polytechnic Institute** have combined in a 5-yr plan to give engineers and scientists a broader base of cultural training than is available in the usual 4-yr courses. The students will take 3 yr of work at Hamilton and 2 yr at Rensselaer.

The seventh annual **Humble Lectures in Science** program at the Baytown, Tex., refinery of Humble Oil & Refining Co. will be concluded with a 2-wk course, beginning 16 Aug., in corrosion and electrochemistry to be presented by Norman Hackerman, chairman of the department of chemistry at the University of Texas.

At **Lehigh University** the cornerstone has been laid for a new seven-story engineering testing center. When completed in the summer of 1955, the new building will be 130 ft long, 70 ft wide, and 94 ft high. It will house a 5-million-lb capacity hydraulic tension-compression machine. This new machine will be 57 ft high and will be serviced by a 20-ton crane. Together with auxiliary apparatus, it will make possible a vast expansion in the services heretofore offered industry of the East Coast in proof testing their products.

Seven smaller laboratories in the new center will contain soils, sanitary, and materials testing equipment as well as facilities for photoelastic, model, instrument, and electronic work. There will also be a library, conference rooms, two seminar rooms, and 27 offices.

The first successful use of the **Massachusetts Institute of Technology's new "shock tube"** has been reported. Built and being operated under the direction of Raymond L. Bisplinghoff and H. Guyford Stever of the aeronautical engineering laboratories, it is actually a two-sided research tool that can be used to expose aircraft models to a high-speed shock wave comparable to that associated with a nuclear bomb, or as a short-duration wind tunnel to show the flow of air around an airplane at speeds up to 1.5 times that of sound.

The U.S. Atomic Energy Commission has approved the allocation of fissionable material as fuel for a nuclear reactor to be built by the **University of Michigan.** The "swimming pool" type reactor will be used

for the training of engineers and for research sponsored by the university and by industry. It will be part of the Michigan Memorial-Phoenix Project, which has been established with private endowments for studies of the peacetime implications and applications of atomic energy.

Grants, Fellowships, and Awards

Twenty-seven fellowships are offered by the **American Association of University Women** to American women for advanced study or research during the academic year 1955–56. In general, the $2000 fellowships are awarded to young women who have completed residence work for the Ph.D. degree or who have already received the degree; the $2500–$3500 awards are for more mature scholars who need a year of uninterrupted time for writing and research. Unless otherwise specified, the fellowships are unrestricted as to subject and place of study.

Applications and supporting materials must be submitted by 15 Dec. For detailed information, address the Secretary, Committee on Fellowship Awards, American Association of University Women, 1634 Eye St. NW, Washington 6, D.C.

This year the **American Heart Association** and its affiliates have jointly bestowed 169 awards totaling $953,370.71 on scientists engaged in research in the field of heart and blood vessel diseases. These awards represent an increase of approximately $150,000 over the sum allotted to research support last year. At the same time, the number of applications worthy of support increased by nearly two-thirds, with the result that promising projects had to be denied support for lack of funds.

Eli Lilly and Co. has approved a grant to support the fifth congress of the International Society of Hemotology that is to take place in Paris, 6–12 Sept. Other grants approved recently are as follows:

University of Illinois. L. M. Henderson, dept. of chemistry and chemical engineering. Antithyrotoxic factor.

Indiana University. R. C. Starr, dept. of botany. Establishment of a culture collection of algae.

University of Louisville. R. H. Wiley, dept. of chemistry. Triazoles and related compounds as pharmaceuticals.

Massachusetts General Hospital. J. H. Currens. Antihypertensive drugs.

University of Michigan. T. Francis, Jr., dept. of epidemiology. Fellowship for N. Ishida of the School of Medicine, Sednai, Japan, to work on viruses.

Northwestern University. C. J. Barborka, Medical School. Studies relative to "Elorine sulfate."

University of Oklahoma. S. H. Wender, dept. of chemistry. Flavonoid compounds.

University of Toronto. E. Baer, dept. of synthetic chemistry. Synthesis of lipopeptides.

Vanderbilt University. V. S. LeQuire, dept. of anatomy. Mechanisms controlling lipemia.

Wayne University. C. Djerassi, dept. of chemistry. Predoctorate fellowship in organic chemical research.

One-year clinical fellowships in the management of poliomyelitis are being offered for the first time by the **National Foundation for Infantile Paralysis.** Applicants must have completed at least 1 yr of internship in an approved hospital. Stipends will range from $300–$400 a month depending upon marital status and number of dependents.

The Foundation also has announced new fellowships in the field of orthopedic surgery for candidates under 36 yr of age. They are offered primarily for resident training at approved centers, and will be awarded for periods of 6 mo to 3 yr depending upon the time necessary for the candidate to be prepared for certification by the American Board of Orthopedic Surgery. Eligibility requirements include a 2-yr internship and 1 yr of resident training in general surgery at an approved hospital. The stipend will be $300–$400 a month.

One fellowship in orthopedic surgery will be offered each year to an applicant who has already completed 3 yr of approved resident training in the subject and wishes to study for a year at Georgia Warm Springs Foundation. The yearly stipend is from $4500 to $7000. Exceptions to the age of limit of 36 yr may be made for this candidate.

All applicants must make their own arrangements with the training center before applying for a fellowship. They must also be American citizens or applicants for citizenship. Applications received by 1 Sept. will be considered in November; those received by 1 Dec. will be considered in February; those submitted by 1 Mar. will be considered in May. For further information, address the National Foundation for Infantile Paralysis, Division of Professional Education, 120 Broadway, New York 5.

The **National Vitamin Foundation, Inc.,** has allocated $55,085.00 to support an extensive program of clinical and laboratory research in the fields of vitamins and nutrition. Eleven new grants have been awarded to universities and medical centers throughout the country.

St. Louis University. W. F. Alexander. Relation of vitamin B_{12} to nerve cell metabolism, $4000.

State University of Iowa. W. B. Bean and R. E. Hodges. Human pantothenic acid deficiency, $5000.

University of North Dakota. W. J. Bo. Processes involved in metaplasia in the rat uterus following vitamin A deficiency and the relationship between estrogen and vitamin A deficiency in producing metaplasia in the rat uterus, $3135.

Johns Hopkins University. B. F. Chow. Biochemical studies on the process of aging, $6000.

University of California. L. D. Greenberg and J. F. Rinehart. Fundamental biochemical and morphological pathology of vitamin B deficiencies in the Rhesus monkey, $7500.

University of Illinois. B. C. Johnson. Role of vitamin B_{12} in animal nutrition, $4950.

University of Illinois. R. M. Kark. Carnitine (vitamin B_T) levels in the blood, urine, and skeletal muscle of healthy individuals and of patients with nutritional disease, $3600.

Michigan State College. R. W. Luecke. Quantitative requirements of the baby pig for certain B vitamins, $3000.

University of California. M. M. Nelson. Multiple congenital abnormalities produced by maternal vitamin deficiencies, $3000.

University of Toronto. E. W. McHenry. Vitamin B_6 and intermediary metabolism, $2900.

New York University. E. P. Ralli. Influence of nutritional and hormonal factors in patients with diabetes mellitus, $12,000.

The **New York Tuberculosis and Health Association** has announced that its **Miller Fellowship** will be available from 1 July 1955 to 30 June 1956. This fellowship

is designed to support a qualified investigator in medical or biological science who will devote full time to a research project in tuberculosis or allied problems. Assurance must be given that the applicant will be acceptable in the laboratory or clinic of his choice and that he will be provided with the facilities necessary for the pursuit of the work.

The annual stipend will be $5000. Renewal for one or more years is possible. *Applications should be submitted in duplicate by 1 Nov.* Forms may be obtained from the New York Tuberculosis and Health Association, 386 Fourth Ave., New York 16. Awards will be announced 15 Dec.

The **Ohio State University Research Foundation** is administering 11 contracts totaling $334,615.86. All of the contracts but one are with various agencies of the Air Force, Army and Navy. The single project sponsored by industry is a $50,000 study in the department of chemistry for the American Petroleum Institute, New York, concerning synthesis of hydrocarbons.

The Wisconsin Alumni Research Foundation (WARF) has provided the **University of Wisconsin** with $860,340, the largest grant in the foundation's 29-year-old history. Conrad A. Elvehjem, dean of the Graduate School and chairman of the university research committee that has responsibility for administering the grant, said that the annual grant from WARF enables the university to keep a healthy balance in the source of research funds available to its scientists. Dr. Elvehjem commented that:

> At the present time, approximately 70 percent of all research in American academic institutions is supported by the federal government. Any imbalance in the source of support or in the use of research funds will eventually lead to difficulties. Financial freedom is as important as academic freedom in the field of research.

Miscellaneous

The Directory of New Zealand Science is an address book of New Zealand scientists and scientific institutions. Edition 3 (1954) contains approximately 1600 personal entries, the names of some 700 instructors in agriculture and teachers of science in post-primary schools, 100 scientific institutions, 50 scientific societies, 150 suppliers of scientific equipment, 400 overseas firms providing scientific equipment having local agents, and a complete list of New Zealand journals that publish original scientific material. To order, write The Directory Editor, Box 1874, Wellington, New Zealand.

To further international cooperation, the Science Council of Japan, in collaboration with the Education Ministry, has compiled a new publication entitled *Japan Science Review—Medical Sciences.* The first volume has more than 800 pages and contains a detailed bibliography of approximately 4500 papers in medicine, pharmacy, and dentistry published in Japan during 1953. Also included are 1100 abstracts, in English, of the more important works. These are prepared in accordance with the UNESCO directions for abstract writing and are printed on heavy paper so that each may be cut to make a card of standard size for filing convenience. Arrangement of the contents follows the Universal Decimal Classification system. This review may be obtained from a bookseller in Japan or directly from the publisher, Gihodo, 5, Akasada-Tameike, Minato-ku, Tokyo.

A call for **identical twins,** in which either or both members suffer from multiple sclerosis, has been made by the National Multiple Sclerosis Society in an effort to further research into the possible hereditary and environmental causes of the disease. Twins responding will be asked to cooperate in a scientific study of their lives and medical histories.

Because **microseisms** are the subject of intensive research in many areas of the world and also because the phenomena probably have a potential application other than storm detection, it was considered that a symposium on the subject would provide a worthwhile opportunity for active investigators from this country and abroad to bring together the existing observations in this field, appraise their significance, and consider problems for further study. Such a symposium was organized by R. C. Gibbs of the National Academy of Sciences—National Research Council and was held at Arden House, Harriman, N.Y., 4–6 Sept. 1952, under the sponsorship of the Office of the Naval Research and the geophysical research division of the U.S. Air Force. It was attended by some 30 specialists in the field.

The program was organized and directed by Perry Byerly of the University of California at Berkeley. James T. Wilson of the University of Michigan and Frank Press of the Lamont Geological Observatory edited the publication, *Symposium on Microseisms,* which incorporates the eight papers presented during the conference as well as the formal discussions and comments from the floor. The book, which contains 132 pages, some 100 illustrations and tables, and lists of literature references, may be obtained for $1.00 from the Publications Office, National Academy of Sciences—National Research Council, 2101 Constitution Ave., Washington 25, D.C.

Many of FAO's member countries are interested in increasing their reforestation (replanting or reseeding of forests) and afforestation (establishing new forests) programs. To meet this interest, FAO has set up a **Seed Exchange Clearing House** for forest tree seeds.

So far more than 100 government and private agencies have approved of the service and have indicated over 1000 species which they could supply on an exchange or commercial basis.

Copies of the lists of species and suppliers have been sent to forestry agencies and departments throughout the world. Additional copies are available from the North American Regional Office of FAO, Room 1529, 1325 C St. SW, Washington 25, D.C.