

Agricultural experiment stations are the oldest and most clear-cut of the research components of educational institutions. There is a station affiliated with a land-grant college in each of the 48 states and in each of the outlying parts. Federal grants for the support of the stations are of the order of 12 million dollars annually. In addition, the experiment stations can and do contract with federal agencies other than the Department of Agriculture's Office of Experiment Stations for research and development. In total, federal funds account for one-quarter of the funds available to the stations.

The need for a distinct research division has not been limited to agriculture, if one is to judge by the recent upsurge in the number of research affiliates of large universities. These organizations are devoted primarily to the conduct of organized research and may be within the legal framework of the institution, or may be separate entities with an interlocking governing board connecting them with the university. They may be functioning research organizations with their own staffs, or may serve simply as a negotiating agency to supervise the administrative aspects of the contract, while the research is performed by regular faculty members using the facilities of the institution proper. In 1951-52, 18 such research affiliates received a total of 2.9 million dollars.

The last of these components are the regular instructional departments of the institutions, which received 136 million dollars in 1951-52. The demarcation between this component and the others previously discussed, namely, the research center, the experiment station, and the affiliated organization, is obviously neither distinct nor emphatic. The difference between the different components is likely to be more a matter of administrative convenience than of substance. Admitting this, however, there is nevertheless a trend

here which may portend significant consequences for the future, for it is fairly evident that there is a growing tendency toward a segregation in educational institutions of research activities from instructional activities. Although federal funds are by no means responsible for this development, they are very probably contributing to it.

Since this is only a factual report, it is not within its scope to discuss the policy implications of the data which have been presented. Obviously many questions are raised by the study. Is it desirable, for example, that such a large portion of funds for research and development at nonprofit institutions should be administered by agencies whose interests are primarily military? Is it desirable for educational institutions to operate research centers for the Government? Are there other techniques for handling this type of work? What are the consequences of concentration in a small number of institutions? To what extent should federal research and development funds be used to develop the research potential of smaller institutions? What are the long-run implications of the Government's emphasis on applied research and development in contrast to basic research? Does the difference between the amount of federal funds for work in the physical sciences and those in the biological and social sciences indicate a serious imbalance which should be corrected? What are the effects of the tendency toward formalization of research activities in educational institutions?

These and many similar questions are now receiving increasing attention and thought by individuals and by groups who are concerned with educational and research policies, both within and outside of Government. The National Science Foundation hopes that the factual study which has been summarized here and others of a similar character now projected will be helpful in solving such questions.



## News and Notes

### Scientists in the News

**Roger Adams**, Head of the Department of Chemistry, University of Illinois, spent last April in Madrid, attending the 50th Jubilee Anniversary meeting of the Spanish Chemical Society. In July he will receive the August von Hoffman Award of the German Chemical Society.

**L. Earle Arnow**, Director of Research, has been appointed a Vice President of the Sharp & Dohme Division of Merck & Co. Dr. Arnow came to Sharp and Dohme in 1942 from the University of Minnesota Medical School, and has been Director of Research since 1944. He is author or joint author with H. C. Reitz of two textbooks, *Introduction to Physiological*

*and Pathological Chemistry* and *Introduction to Organic and Biological Chemistry*, respectively.

**Robert L. Bennett** has been appointed Medical Director of the Georgia Warm Springs Foundation. He has been Assistant Medical Director for many years, and is also Professor of Physical Medicine at Emory University School of Medicine.

**H. O. Beyer** of the Anthropology Department of the University of the Philippines, Manila, has been elected an honorary member of the Chicago Natural History Museum, an honor accorded to only eight other persons in the history of the Museum. Dr. Beyer is an international authority on the ethnology and archaeology of the Philippines.

**Edward F. Degering**, Secretary of the Chemistry Section (C) of AAAS, has resigned as Research Manager of Buckman Laboratories, of Memphis, Tenn., to accept the assignment as Chief, Branch of Chemicals and Plastics, of the Quartermaster Corps. Dr. Degering will be located in Washington, D. C., for about six months, and will move to Natick, Mass., as soon as the new research and development laboratory of the Quartermaster Corps is completed. Correspondence relative to the meeting of the chemistry section and its Boston program in late December, should be directed to: Edward F. Degering, Secretary, Chemistry Section, AAAS, George Washington Inn, New Jersey and C Sts., S.E., Washington, D. C.

**Max Faucett** of the Electrical Engineering Department, University of Illinois, will join the Illinois Power Company as Vice President at the end of this academic year. He has done notable work in power engineering, and headed the group which constructed the complex power network analyzer on the University campus.

**C. C. Furnas**, Director of Cornell Aeronautical Laboratory, served with a mission on a visit to the Long Range Weapons Establishment at Salisbury and Woomera, South Australia, in April and May. The trip was designed to review progress of the Australian Guided Missile Program, and Dr. Furnas served as representative from the Research and Development Board. He is Chairman of the Guided Missile Committee of the RDB.

**Eddie M. Gordon** has been appointed Medical Officer in Charge of the U. S. Public Health Service Hospital (National Leprosarium), at Carville, La. Dr. Gordon, formerly of the Chicago USPHS Hospital, succeeds **Frederick A. Johansen**, who is retiring after 29 years of service at Carville, and who participated in the development of sulfone therapy in the treatment of leprosy.

**S. B. Hitchner** of the Department of Veterinary Science, University of Massachusetts, and discoverer of the B<sup>1</sup> strain of Newcastle disease virus, has joined the research staff of the American Scientific Laboratories, Madison, Wis. Dr. Hitchner (U. Pa., V.M.D. 1943) has developed a widely known intranasal vaccine against Newcastle virus, isolated the agent causing infectious sinusitis of turkeys, and developed the spray method of vaccination against Newcastle disease.

As a member of the six-man International Abstracting Board of the International Council of Scientific Unions, **Elmer Hutchisson**, Dean of the Case Institute of Technology, will attend a meeting of the Board in Strasbourg, France, on July 6-7, 1953. Dean Hutchisson represents the International Union of Pure and Applied Physics.

**Andrew C. Ivy**, on leave of absence as Vice President in charge of the Chicago Professional Colleges,

has been given the Leo XIII award for his contributions to medical science. The award was presented by Bishop Bernard J. Sheil of Chicago.

**John F. McMillan**, formerly chairman of the Department of Biology at the College of St. Thomas, St. Paul, Minn., has been appointed Professor and Chairman of the Department of Zoology at the University of Wichita.

**David Marine**, formerly Director of the Laboratory Division of Montefiore Hospital, New York, has received the 1953 Squibb Institute for Medical Research Award of the Endocrine Society, for his pioneering work in the physiology and chemistry of the thyroid gland. He was one of the first to demonstrate the correlation between endemic goiter and iodine deficiency in the diet. His experiments with iodine as a prophylactic agent made the control of endemic goiter possible throughout the world. Dr. Marine retired from the Hospital in 1945.

**Herbert F. Moore**, University of South Dakota Research Professor Emeritus in theoretical and applied mechanics, was honored April 25 by his alma mater, the University of New Hampshire. He received the New Hampshire Alumni citation for his achievements and for his contributions to society.

**Hugh C. Muldoon**, Dean of the College of Pharmacy, Duquesne University, will receive the Remington Honor Medal, pharmacy's highest award. It will be presented, probably in December, at a dinner meeting of the New York Branch of the American Pharmaceutical Association. This award was established by the New York Branch in 1918 and is given annually to the individual who has done most for American pharmacy in the previous year, or whose continuing contributions to the advancement of the profession have been outstanding. The jury of award called attention to Dr. Muldoon's service to the profession for several decades as an educator, author, and scientist and to his special contribution in the year just passed as Chairman of the Association's Committee on its Centennial Celebration in 1952. He is author of textbooks of organic chemistry and of pharmaceutical Latin, and editor of *The Science Counselor*.

**Edwin D. Murphy** and **Deane M. Chamberlain** have been appointed Research Associates at the Roscoe B. Jackson Memorial Laboratory at Bar Harbor. Dr. Murphy has been serving as a pathologist at the National Cancer Institute in Bethesda. His research will be in the field of tumor and general pathology, and he will be available to local physicians and hospitals for clinical work in blood and cancer pathology. Dr. Chamberlain, former Assistant Professor of Veterinary Pathology at the Ohio State University, will investigate diseases of animals in relation to heredity. He will also establish a local consultative practice in veterinary medicine. The total number of Research Associates, who are the senior scientists at the Labo-

ratory and hold a doctor's or equivalent degree, now stands at 33.

**Ralph E. Peck**, Professor of Chemical Engineering at Illinois Institute of Technology, has been appointed Director of the department effective September 1. Dr. Peck originally joined the staff in 1939 as an Instructor of Chemical Engineering. In 1951 he was one of a group of scientists who went to Costa Rica to do research designed to boost the production of Manila hemp and alleviate a possible shortage of that critical material.

**Harold W. Schultz**, head of two divisions for Swift and Company's research laboratories in Chicago, has been appointed head of the Food and Technology Department at Oregon State College effective July 1. He succeeds **E. H. Weigand**, founder of the department, who retired last July. Recently Dr. Schultz has received widespread recognition for his development of processed meats for babies.

**Gordon Taylor** has been appointed Assistant to the Director of the Connecticut Agricultural Experiment Station. He will be stationed in Windsor and will be in charge of the Station's Tobacco Laboratory. The Windsor Laboratory, heretofore set up as a separate Station Department, will now become a division of the Director's office. **Hendrik de Roo**, who receives his doctor's degree from the Agricultural University at Wageningen this June, has been appointed agronomist at the Tobacco Laboratory. He fills the vacancy left by the resignation of **T. R. Swanback**.

**Richard E. Warren** has joined Libbey-Owens-Ford Glass Company as engineer in charge of the Electrical Section of the Engineering Department. Mr. Warren will work closely with plant personnel in maintaining existing electrical power for glass-making equipment and in planning new installation projects.

**Virgil L. Weiser**, range conservationist at the Bismarck headquarters of the U. S. Soil Conservation Service at Dickinson, has been appointed soils agent in the North Dakota Agricultural College Extension Service, Fargo. He will assist in the development of expanded services in soils, fertilizers, and crops.

## Education

A unique group of graduate courses in geochronology and dendrochronology will be offered this summer at the **University of Arizona**, for students who are graduate majors in anthropology, botany, chemistry, or geology, and who have a background in statistics. Geochronology encompasses all scientific methods which can be applied to the dating of terrestrial events, and dendrochronology is concerned with the precise dating of events in years by means of tree-rings. Further information can be obtained from **David L. Patrick**, Dean of the Graduate College, or from **Téráh L. Smiley** at the Laboratory of Tree-Ring Research, University of Arizona.

The **Ohio State University** will offer for the first time a graduate course in aviation physiology, to be given during the second term of the University's summer quarter, July 27-Aug. 28. **H. E. Christensen** of Stockholm, Sweden, will serve as visiting professor and will give approximately half the lectures. It is planned that staff members from the School of Aviation Medicine at Randolph Field, the School of Naval Aviation Medicine, Pensacola, and the Aero Medical Laboratory at Wright Field will also participate.

The thirtieth annual **Plant Science Seminar** will be held in Salt Lake City, Utah, Aug. 10-15. Joint sessions of the Plant Science Seminar and the Teachers' Seminar on Pharmacognosy and Related Subjects will precede the conventions of the American Association of Colleges of Pharmacy and the American Pharmaceutical Association by a week, and participants may sign up for both seminar week and convention week at the same time. Information is available from **Dean L. David Hiner**, College of Pharmacy, University of Utah, Salt Lake City.

Faculty members of the **University of West Virginia** who are retiring include **Elizabeth M. Stalnaker**, Professor of Psychology, **William W. Downs**, Professor of Civil Engineering, and **George W. Grow**, Associate Professor of Drawing and Machine Design. Dr. Stalnaker has served the University 28 years, Mr. Downs 22 years, and Mr. Grow 41 years, and all are graduates of the University of West Virginia.

## Grants and Fellowships

**Emory University** has received a grant from **Eli Lilly and Company** in support of **Francis Binkley's** study of the chemistry and mode of action in insulin. Dr. Binkley is a professor in the Department of Biochemistry.

Three new **Guggenheim Fellows in Jet Propulsion** have been selected, and six previous fellowships have been renewed. The new fellows are **Robert J. Hartlieb, Jr.**, of the Cornell Graduate School of Aeronautical Engineering, **Saul Feldman**, graduate student at UCLA, and **David M. Benenson**, of California Institute of Technology. The three will carry programs of advanced study and pioneering research at Caltech's Daniel and Florence Guggenheim Jet Propulsion Center. Fellows currently studying at Caltech who have had their grants renewed are: **Odus R. Burggraf, Jr.**, **Donald A. Dooley**, **Martin Goldsmith**, **Denver C. Gore, Jr.**, **Frederick Harshbarger**, and **Charles A. Lindley**.

Postdoctoral Fellowships in the Natural Sciences have been conferred upon four scientists by the **Lilly Research Laboratories of Indianapolis** through the National Research Council. The fellowships are available in sciences fundamental to the understanding of biological phenomena, especially in borderline fields between chemistry, biology, and physics. Recipients

of the fellowships and institutions at which they will study are: Howard M. Dintzis, Yale; Duane T. Gish, Medical College, Cornell; Howard E. Zimmerman, Harvard, and David S. Hogness, Institut Pasteur, Paris.

The Yale School of Forestry has received three grants totaling \$210,000 to support research and fellowships for graduate study. The General Forestry Endowment Fund has received new contributions from nine companies. These gifts are part of a long-range campaign to raise \$5,730,000 for enlarging the teaching and research program at the School of Forestry.

## Meetings and Elections

The American Geophysical Union, at its recent annual meeting, unanimously passed the following resolution relative to science in government.

WHEREAS, It is of great importance to our country and to science that the work in its scientific agencies be carried on with both efficiency and integrity, be it

RESOLVED, That the American Geophysical Union believes that government scientific organizations should be staffed by high-caliber scientists, that these scientists should be permitted to conduct and report their investigations with scientific objectivity, and that the American Geophysical Union is opposed to all attempts to interfere with the work of scientific agencies for other than scientific motives.

Two events are scheduled for the near future by the American Oil Chemists' Society. The Fifth Annual Short Course, on the engineering aspects of oil seed processing, will be held at Texas A & M College, College Station, Tex., July 27-31. The 27th Annual Fall Meeting will be held in Chicago at the Sherman Hotel, Nov. 2-4. The Society's headquarters are at 35 E. Wacker Drive, Chicago.

The annual meetings of the American Society of Agronomy and the Soil Science Society of America will be held Nov. 16-20 at Dallas, Texas. An estimated 250 papers on developments in crops and soils will be presented, and the programs are open to anyone concerned with crop production and soil problems. H. E. Myers, Kansas Agricultural Experiment Station, Manhattan, is president of the A.S.A., and Eric Winters, Tennessee Valley Authority, Knoxville, is president of the S.S.S.A.

The Astrophysical Institute of the University of Liège is organizing, under the auspices of the Belgian Institut Interuniversitaire des Sciences Nucléaires, a fifth in the series of Colloques Internationaux d'Astrophysique. This symposium, "Nuclear Processes in Celestial Objects," will be held Sept. 10-12. Professor T. G. Cowling of the University of Leeds will preside. Papers will be grouped under three headings;

1, The Origin of the Elements, 2, The Internal Structure of Stars and Thermonuclear Reactions (hydrostatic models, evolution, questions of stability, etc.), and 3, The Cosmic Abundances of the Elements (observational data, isotope-ratios, radioactivity and age determinations, theoretical discussions). By way of introduction, each section will begin with a general review of the field. J. Podolanski and D. ter Haar, T. G. Cowling, and J. L. Greenstein have agreed to present reviews for sections 1, 2, and 3, respectively. Correspondence should be addressed to Dr. P. Ledoux, Institut d'Astrophysique, Cointe-Selessin, Belgium.

The Fifth Annual Oak Ridge Summer Symposium will be devoted to modern physics, and will be held from August 24-29. The symposium will consist of lectures within the general fields of meson and ultra-high-energy phenomena, and electromagnetic radiations. Speakers will include: Jesse W. DuMond, California Institute of Technology; Ralph Livingston, J. Rand McNally, and T. A. Welton of the Oak Ridge National Laboratory; M. Stanley Livingston, MIT; and J. Steinberger, Columbia University. This will be the second in the series of summer symposia to be devoted to modern physics. The proceedings of the fourth symposium, held August 25-30, 1952, have recently been issued by the Technical Information Service of the Atomic Energy Commission, under the title "The Role of Atomic Energy in Agricultural Research." Additional information is available from the University Relations Division of the Institute, P.O. Box 117, Oak Ridge, Tennessee.

A nuclear technology institute was held at the University of Wisconsin, May 12-14, designed to present to engineering, managerial, research, and technical personnel from Wisconsin's industries a summary of current developments in the use of atomic energy for constructive purposes. Participants heard Farrington Daniels, Chairman of the Chemistry Department, describe the essentials and possibilities of a nuclear power reactor, and summarize some of the plans now being worked on in the development of a nuclear power reactor.

## Miscellaneous

The new Baltimore and Ohio Transportation Museum will be formally opened at Baltimore on July 2, at the Mt. Clare Station, the oldest railroad station in the world. Eleven historic locomotives, wooden models of experimental locomotives constructed as early as the 18th century, a collection of road and trail vehicles beginning with a Mexican oxcart and including a Conestoga Wagon, and other items important in the development of transportation will be on display.

The Chicago Natural History Museum has opened a series of new exhibits on the Pomo Indians of central California. Most elaborate is a miniature diorama of a group of men and women collecting acorns, one of

the principal foods of the group. Games, jewelry, musical instruments, and digging sticks used in food gathering are on display. This exhibit completes the Hall of Plains, Intermountain, and California Indians at the Museum. George I. Quimby, Curator of Exhibits, was assisted in preparation of the hall by Alfred Lee Rowell, dioramist; Gustaf Dalstrom, artist; John Pletineckx, ceramic restorer, and Walter C. Reese, preparator.

Cuba and Ecuador have ratified the Convention of the **Inter-American Institute of Agricultural Sciences**. With these ratifications, Cuba becomes the thirteenth contracting country and Ecuador the fourteenth. The others are: Colombia, Costa Rico, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, the U.S., and Venezuela. The convention, which became effective in 1944, states that the purposes of the Institute are to encourage and advance the development of the agricultural sciences in the American Republics through research, teaching, and extension activities in the theory and practice of agriculture and related arts and sciences.

Three members of the **Lehigh University** faculty will retire on June 30. They are Merton O. Fuller, Associate Professor of Civil Engineering; Howard D. Gruber, Associate Professor of Electrical Engineering; and Lloyd L. Smail, Professor of Mathematics. Three other staff members were also honored by the University for 25 years of service; they were Charles W. Simmons, Professor of Chemical Engineering, Francis J. Trembley, Professor of Ecology, and Ralph N. Van Arnem, Assistant Professor of Mathematics and Astronomy.

The **National Association of Corrosion Engineers** has added a thirty-third and thirty-fourth section, in the region of the Pacific Northwest. The Association's Western Region Board of Trustees has approved formation of the Columbia River Basin Section and the newly organized NACE Canadian Region has approved formation of a British Columbia Section at Vancouver. Mark Adams of the State College of Washington will organize the Columbia River Basin Section.

The **National Science Foundation** has moved to a new location at 1520 H St., N.W., Washington 25, D. C. The new headquarters are in the old "Cosmos Club" building recently renovated by the General Services Administration. The new telephone number is Sterling 3-2140, and the mailing address will continue to be National Science Foundation, Washington 25, D. C.

Grants in the amount of \$5266 have been received by **New York University-Bellevue Medical Center** from the American Cancer Society for cancer studies and research to be conducted by the NYU College of Medicine and the NYU Post-Graduate Medical School.

The **University of Virginia** has received a grant from Eli Lilly and Company in support of the work of W.

Parker Anslow, Jr., on the mechanism of excretion of sulfur amino acids. Dr. Anslow is Chairman of the Physiological Laboratory, School of Medicine, University of Virginia.

An **Owen H. Wangensteen Surgical Education Foundation**, honoring the chief of the Department of Surgery, has been established at the University of Minnesota. The purpose of the Foundation is to promote advanced surgical education, and initial funds were donated by F. John Lewis, Richard L. Varco, and Charles E. Rea, of the faculty of the Department. Dr. Wangensteen will act as an adviser in administration of the funds.

## Recent Deaths

Simon Albert (57), x-ray specialist, Providence, R.I., May 3; Sister Mary Angela (?), professor of mathematics and economics, Cleveland, May 17; Sir Robert G. Archibald (73), tropical medicine specialist, London, May 5; Arthur C. Bachmeyer (66), of Cleveland, physician, Washington, D.C., May 23; James Baird (80), of New York, construction engineer, Tucson, Ariz., May 16; A. L. Baker (55), engineer and designer of gaseous diffusion works, Summit, N.J., May 4; Ira L. Baxley (63), engineer, Elizabeth, N.J., May 11; William C. Benson, Jr. (31), design engineer, East Orange, N.J., May 24; Charles E. Birch (90), physician, Katonah, N.Y., May 11; David J. Bonawit (60), engineer, Loudonville, N.Y., Apr. 22; Herman Braloff (?), of New York, construction engineer, Rockville Centre, L.I., Apr. 24; William L. Bray (87), retired Dean of the Graduate School, Syracuse University, Syracuse, N.Y., May 25; Josiah Bridge (62), paleontologist, Washington, D.C., Apr. 30; Arthur Bright, Jr. (34), research economist, Boston, May 14; Lucius M. Bristol (81), sociologist, Gainesville, Fla., May 9; Charles S. Brown (68), inventor, Syracuse, N.Y., Apr. 22; Spencer W. Butler (54), construction engineer, Cleveland, May 26; Harold G. Calhoun (67), of New Canaan, Conn., political scientist, Athens, Greece, May 1; John J. Carson (64), chemical engineer, New Milford, Conn., May 11; Montgomery B. Case (71), bridge designer, Englewood, N.J., May 4; Paul W. Chapman (62), agricultural educator, Athens, Ga., Apr. 28; H. R. Charlton (74), gynecologist, Bronxville, N.Y., May 14; LaVerne E. Cheyney (42), of Detroit, analytical chemist, St. Paul, Minn., May 21; Benjamin F. Cohen (82), Moscow University mathematician, Moscow, May 9; Edward H. L. Corwin (67), public health authority, New York, May 8; Henry Crew (93), physicist, Evanston, Ill., Feb. 7; Leo T. Cribben (59), mathematician, Oswego, N.Y., May 2; John F. Cunningham (76), agricultural educator, Columbus, Ohio, Apr. 28; N. N. Dalton (?), research consultant to Glycerine Producers Association, Kansas City, Mo., Apr. 26; G. W. Davies (73), physician, Verona, N.J., May 24; Francis S. Denneen (73), industrialist and engineer, Cleveland, Ohio, May 11; Alexander G.

Dewey (62), political scientist, Brooklyn, N.Y., May 7; Joseph S. Diamond (72), of New York, specialist in internal medicine, Paris, Apr. 29; Carl E. Dreher (49), electrical engineer, Montclair, N.J., May 6; Benjamin F. Dubbels (50), of Pleasantville, electrical engineer, Mount Kisco, N.Y., May 18; Nadine P. Dudukaloff (73), bacteriologist, Scarsdale, N.Y., Apr. 22; Henry C. Earnshaw (72), physician, Philadelphia, May 22; W. Thurber Fales (59), health statistician, Baltimore, Md., May 21; Karl Fernstrom (65), educator and business engineer, Manhasset, L.I., May 6; L. C. Fischer (81), physician, Atlanta, Georgia, Apr. 29; Helen S. Fish (?), psychiatric social worker, New York, May 20; Emerson D. Fite (79), political scientist, Poughkeepsie, N.Y., May 17; Reginald Fitz (68), physician and educator, Brookline, Mass., May 27; Severn O. Fladness (63), Bureau of Animal Industry, Washington, D.C., May 5; Elsbeth E. Freudenthal (50), economist and author, New York, May 13; R. S. Gamon, Sr., of Camden, N.J., physician, Atlantic City, May 19; George H. Gleason (?), chemical engineer and industrialist, Montclair, N.J., May 25; Isaac J. K. Golden (81), physician, Chicago, May 19; John Good (68), inventor, Garden City, L.I., Apr. 29; Harold I. Grice (52), diabetes specialist, Schenectady, N.Y., Apr. 24.

William Hassig (78), senior scientist, Institute of Inter-Scientific Research, Chicago, April 29; Courtenay Headland (52), x-ray specialist, Yonkers, N.Y., May 26; Carl F. Holden (58), communications expert, Queens, N. Y., May 19; Rudolph W. Holmes (80), obstetrician and gynecologist, Chicago, Apr. 25; Elijah Jordan (79), professor, philosopher, and author, Indianapolis, Ind., May 18; Henry L. Lantz, conservationist and author of the Malta plan, Great Falls, Mont., May 9; Armin O. Leuschner (85), astronomer and professor, Berkeley, Calif., Apr. 22; Charles Lindmueller (78), chemist and tin expert, Chicago, May 3; John Lindsay (99), industrialist, helped Alexander Graham Bell with preparations for first long-distance call from Brantford to Paris, Ont., in 1876, Brantford, Ont., Canada, May 17; Warfield T. Longeope (76), professor and physician, Baltimore, Md., Apr. 25; B. B. Vincent Lyon (73), of Philadelphia, professor and internist, Washington, D.C., May 20; William L. Machmer (70), of Amherst and Wellfleet, mathematician, Wellfleet, Mass., May 24; Raphael Maglioni (62), archaeologist and priest, Hong Kong, China, May 27; Evelyn Stuart McNally Mason (47), psychologist, West Orange, N.J., May 18; Charles K. Maytum (57), physician and professor, Rochester, Minn., Apr. 10; Clinton P. McCord (72), neuropsychiatrist and psychoanalyst, Albany, N.Y., May 10; John J. McGrath (86), surgeon, Belmar, N.J., May 18; James W. McLaughlin (62), industrialist, New Rochelle, N.Y., May 15; Edward E. Minor (76), engineer and industrialist, New Haven, Conn., May 14; Gertrude Moore (69), pathologist, Oakland, Calif., May 3; Roy S. Moore,

Sr. (68), of Syracuse, N.Y., physician, Fort Lauderdale, Fla., May 26; R. Andrew Nelson (48), physicist, Silver Spring, Md., May 10; William W. Nesbitt, of Seattle, Wash., medical officer of U.S. Public Health Service, Washington, D.C., May 7; F. Barnard O'Connor (61), civil engineer and industrialist, New York, May 26; Henry F. Offerman (86), minister and professor, Far Rockaway, Queens, L.I., May 21; Lee Ogden (65), chest specialist and professor, Greenwich, Conn., May 12; Carl Oman (63), electrical engineer, Cedar Grove, N.J., May 26.

Howard M. Parshley (68), zoologist, Northampton, Mass., May 19; Alfred H. Parsons (75), physician and surgeon, Sayville, L.I., May 3; Leo Pasvolsky (59), economist, Washington, D.C., May 5; Sydnor B. Penick (71), of Middletown and Montclair, N.J., drug executive, Montclair, May 24; Willett C. Pierson (77), chemical engineer, Yonkers, N.Y., May 13; Robert L. Praeger (87), naturalist and geologist, Belfast, Ireland, May 5; James B. Purcell (54), urologist and surgeon, Wilkes-Barre, Pa., May 13; Admiral Sir Robert Baikes (67), submarine specialist, Gloucester, England, May 23; John Reid, Jr. (66), of New York City, ophthalmologist, Central Valley, N.Y., May 20; Walter A. Rex (35), of Westfield, N.J., chemical engineer, Plainfield, N.J., May 21; Heaton R. Robertson (72), engineer, Branford, Conn., May 9; Meyer Rosensohn (71), obstetrician and gynecologist, Larchmont, N.Y., Apr. 25; Franz X. Schaffer (77), geologist, Vienna, Austria, Apr. 17; Morris I. Schamberg (78), oral surgeon, Great Neck, L.I., May 20; Kristian Schultz (65), research engineer, Chicago, Apr. 22; Robert V. Seliger (52), psychiatrist and author, Baltimore, Md., Apr. 24; Walter B. Simpson (72), educator, East Orange, N.J., May 4; Hugh M. Smallwood (49), of Nutley, N.J., analytical research specialist in chemistry and physics, Newark, N.J., Apr. 27; Oliver M. W. Sprague, economist, Boston, Mass., May 24; Charles A. Stanley (74), missionary and educator, Claremont, Calif., Apr. 29; Henry B. Stoddard (73), lawyer, Fairfield, Conn., May 20; Neil J. Sullivan (55), construction engineer, Northampton, Mass., May 20; John D. Sumner (49), professor and economic adviser, Buffalo, N.Y., May 3; Mervyn R. Taylor (75), professor and physician, Philadelphia, Pa., May 1; Eleanor Ross Thomas (78), teacher and dean emerita, Middlebury, Vt., Apr. 27; Theodore C. Tuck (74), engineer and industrialist, New Rochelle, N.Y., May 21; Spencer A. Wahl (58), of Cleveland, Ohio, pediatrician, Bethesda, Md., May 21; Charles P. Watson (91), inventor of the slow-motion picture camera, Ventnor, N.J., May 15; William L. Weed (82), dentist, Norwalk, Conn., Apr. 28; Perley S. Wilcox (78), mechanical engineer and industrialist, Rochester, N.Y., May 17; Sven Winqvist (76), industrialist and designer, Stockholm, Sweden, Apr. 17; Andrew Yeomans (45), of Norwich, Vt., physician and professor, Hanover, N.H., Apr. 17.