Table 1. Distribution of resident graduate students by field

Field	All graduate students	Percentage with assistantships or fellowships
All fields	152,067	24.7
Life sciences	11,930	65.7
Physical sciences .	19,009	58.8
Engineering	14,249	25.2
Psychology	5,444	31.6
Social sciences ..	15,405	24.1
Humanities and arts	9,289	32.2
Health professions	1,323	39.9
Education	51,053	3.6
Other professional fields	24,365	17.4

example, about two-thirds of the graduate students were receiving some type of support, whereas in mathematics only 42 percent of the graduate students were receiving financial assistance. Nearly 70 percent of the graduate students in chemistry and about 60 percent of those in physics held assistantships or fellowships.

The median dollar amount of the stipends received by graduate students holding teaching or research assistantships or fellowships showed important differences among academic fields. In general, the stipend levels for students in education and the humanities and arts tended to be relatively low, whereas stipends in the natural sciences, engineering, and the health professions were considerably above the averages for all fields.

Not only did the survey show variations in the amounts for stipends paid in different academic fields, but also it showed wide variation in median stipends for teaching and research assistants and for fellowship holders in the same field. For example, graduate students majoring in physics and holding teaching assistantships received a median stipend of $1260; those with research assistantships received $1550; institutional fellows (university funds) received $1093; and noninstitutional fellowship holders received $1580.

Limited numbers of copies of this bulletin are available to readers who are interested in more detailed information on findings for the major fields of study or on the scope of the survey. Requests should be addressed to National Science Foundation, Washington 25, D.C.

News Briefs

■ Nearly 150 scientists from 32 nations who had attended the Geneva conference on the peaceful uses of atomic energy flew to England on 24 Aug. to spend the day in Britain's atomic research establishment at Harwell. The Soviet Union, other East European countries, and Communist China were represented in the group, which was welcomed by John Cockcroft, director of Harwell.

The visitors were told of Harwell's work in the development of prototypes and designs of nuclear reactors, some of which will soon provide England with electricity. Eighteen exhibitions of workshops were thrown open to the group, with technical experts at hand to explain details.

The models at Harwell, built for research and to examine the possibilities of extracting power commercially from the atom, are also used to produce radioisotopes for industry and medicine. In another section of the center, scientists were shown how these isotopes are withdrawn from the heart of the atomic pile and shipped for processing to chemical laboratories elsewhere in the country for issue to hospitals and factories.

D. V. Skobeltzin, a Soviet delegate to the Geneva conference, has invited Cockcroft to visit nuclear power installations in the U.S.S.R. The trip is being arranged at a time that is mutually convenient. The exact locations of the Soviet nuclear plants were disclosed for the first time during the last session at Geneva: reactors at Moscow and Leningrad, cyclotrons at Kiev and Leningrad, a linear accelerator at Kharkov, and a synchrotron at Moscow.

■ Using rockets vertically launched from aircraft, personnel of the Office of Naval Research have demonstrated the feasibility of another method of upper atmosphere research. In recent tests at the Naval Air Station, Chincoteague, Va., rockets launched vertically from a Navy Banshee fighter plane at 30,000 feet reached an altitude of approximately 90,000 feet. It is hoped that the new rocket-aircraft method, called "rockair," will afford a practical and inexpensive tool for research observations at high altitudes.

Rockets launched from planes do not attain the altitudes reached by large rockets; however, it is felt that there are many possible applications of the new plane-rocket method. The system is expected to stimulate intensified research in the upper atmosphere by permitting reseach opportunities for synoptic measurements not heretofore feasible because of cost. The method will be used to obtain measurements of ambient air temperatures, air densities, ozone concentrations, and high-altitude winds. Its use to obtain synoptic measurements over a broad geographic area during the forthcoming Geophysical Year has been considered.

The Navy has been using balloons for high-atmosphere research since 1947, when its Skyhook program was developed. Another technique, "rockcoon," which utilizes the Skyhook balloon to carry Deacon meteorological rockets aloft, has been used for studies in the auroral regions. The feasibility of this low-cost method has been demonstrated in the annual summer expeditions in northern waters. The small Deacon rockets are fired from the balloon at an altitude of 70,000 feet, above the drag of the earth's atmosphere.

The chief advantage of the new plane-rocket method over the balloon-rocket technique is the controlled-directional launching possible from aircraft. The new rockets, smaller than the Deacon rockets, were provided by the Navy Bureau of Ordnance. The Bureau of Aeronautics, which sponsored the project, assisted ONR by supplying both technical aid and personnel. The vertically launched rockets are to be used in the immediate future for upper air wind research.

■ A group of Italian scientists intends to create within the next 2 or 3 years an artificial aurora borealis that will reproduce in temperate climates the phenomenon as it is observed in the arctic. The aurora will be created by radio waves transmitted into the ionosphere.

This artificial aurora borealis will be an Italian contribution to the International Geophysical Year. Announcement of the plan was made by the Italian delegation to the international congress on the ionosphere that took place recently in Venice, Italy.

■ A second nuclear research reactor for West Germany is to be built in Munich. It will be placed under the direction of Werner Heisenberg, director of the Max Planck-Institute for Physics, Göttingen.

■ Oceanographers have been reporting so many new peaks, ridges, basins, seamounts, and other underwater landmarks that naming them all has become a major problem. Therefore, the British National Committee on the Nomenclature of Ocean Bottom Features has issued a list of 15 rules to guide the deep-sea investigators in naming their finds in a systematic manner. John D. H. Wiseman and Cameron D. Ovey have described the committee's recommendations in a recent issue of the journal, *Deep-Sea Research.*

■ A map showing where the earth's 44,000 daily thunderstorms occur is being completed by the United Nations Meteorological Organization. A report on thunderstorms states that the average one releases 50 times the energy of the first atomic bomb. Also during an average thunderstorm 110,000 tons of water pour upon an area of 8 square miles;

however, only one in nine potential raindrops actually reaches the ground. The UN map will not include Antarctica, the only continent where there are no thunderstorms.

Scientists in the News

CHARLES E. KELLOGG, since 1934 head of the Soil Survey, U.S. Department of Agriculture Soil Conservation Service, was presented an award for distinguished service on 19 Aug. during the Michigan State University centennial celebration. The citation from his alma mater read: "Throughout your long and distinguished career as a soil scientist you have labored effectively to benefit mankind the world over by furthering the knowledge and use of the soil."

The State Department has announced that it will sponsor lectures in European and Near East countries by the members of the United States delegation to the Geneva atomic-energy conference. The scientists and the places where they will lecture are as follows.

CLIFFORD BECK, head of the physics department and specialist on nuclear reactors at North Carolina State College—Athens.

AUSTIN BRUES, director of biological and medical research at the Argonne National Laboratory—Brussels, Belgium, Copenhagen, Denmark, and London.

WINSTON MANNING, director of the chemical division at Argonne National Laboratory—Brussels.

FRANK SPEDDING, director of the Institute of Atomic Research and of Ames Laboratory of the Atomic Energy Commission—Stockholm, Sweden, Paris, and Copenhagen.

KARL MAYER, economic adviser on the staff of the general manager of the Atomic Energy Commission—Brussels.

LEE FAIR, director of the department of medical research at Brookhaven National Laboratory—Athens, Cairo, Copenhagen, and Ankara, Turkey.

JOHN SWARTHOUT, director of the chemical division in Oak Ridge National Laboratory—Germany.

WALTER ZINN, director of the Argonne National Laboratory—Britain and Italy.

ULYSSES M. STEEDLER, chief of the Civilian Reactors Branch of the Atomic Energy Commission—Cairo.

DONALD HUGHES, physicist at Brookhaven National Laboratory—Britain.

RALPH OVERMAN, director of the Oak Ridge Institute of Nuclear Studies—Cairo (for 1 month).

H. ARNOLD KARO was appointed by President Eisenhower as director of the Coast and Geodetic Survey, U.S. Department of Commerce, on 12 Aug.

The following appointments to assistant professor have been announced. University of Tennessee College of Medicine: EDWARD H. STORER, surgery. Northwestern University: LASZLO LORAND, biochemistry. In mathematics: Boston College, EVELYN M. BENDER; Purdue University, W. H. FLEMING; Washington University (St. Louis, Mo.), J. K. GOLDHABER; University of California (Santa Barbara College, Goleta, Calif.), R. T. GREGORY; University of Alabama, J. L. HOWELL; University of Kentucky, FRANK LEVIN; Georgetown University, ANNE E. SCHEERER; Montana State College, W. J. SWARTZ; Long Beach State College, F. R. YETT; University of Illinois, J. A. ZILBER.

The International Astronomical Union held its 9th general assembly at Dublin, Ireland, 2 Aug.–5 Sept. The United States Government was represented by the following delegation: J. J. NASSAU, director of the Warner and Swasey Observatory of Case Institute of Technology and chairman of the U.S. National Committee of the IAU; I. S. BOWEN, director of Mount Wilson and Palomar Mountain Observatories, Pasadena, Calif.; G. M. CLEMENCE, director of the Nautical Almanac Office, U.S. Naval Observatory, Washington, D.C.; G. P. KUIPER, professor of astronomy, Yerkes Observatory of the University of Chicago, Williams Bay, Wis.; ROBERT R. MCMATH, director of the McMath-Hulbert Observatory, University of Michigan; OTTO STRUVE, professor of astronomy, University of California, Berkeley, and president of the IAU; F. L. WHIPPLE, professor of astronomy, Harvard College Observatory, Cambridge, Mass.; and A. E. WHITFORD, director of the Washburn Observatory of the University of Wisconsin.

ALFRED J. STAMM, a specialist in wood chemistry at the U.S. Forest Products Laboratory, Madison, Wis., arrived in Australia on 22 Aug. He will spend 9 months working with the Commonwealth Scientific and Industrial Research Organization's Division of Forest Products as a senior Fulbright fellow.

He plans to study wood fibers, with particular reference to their use in paper making. Stamm has previously studied the bonding between fibers in paper by electric methods; while he is in Australia he expects to extend this work by means of optical techniques.

DOUGLAS H. K. LEE, professor of physiological climatology at Johns Hopkins University, was appointed chief of the research branch, Research and Development Division, Office of the Quartermaster General, Washington, D.C., on 1 Sept.

LEWIS ELDRED, former president of Elmira College, has been named manager of personnel and administration for the electron physics department at the General Electric Research Laboratory, Schenectady, N.Y. Eldred served as professor of mathematics at Elmira before he was named president in 1949.

HERMAN N. EISEN, associate professor of industrial medicine at New York University Post-Graduate Medical School, has been named head, effective 1 Oct., of the new dermatology division at Washington University School of Medicine, St. Louis, Mo. The division, which is the first of its kind in a privately endowed university, is being established with the aid of a $400,000 Rockefeller Foundation grant that was announced last December.

S. D. S. SPRAGG, professor of psychology at the University of Rochester, has received a Fulbright award that will permit him to spend the coming year at the Technische Universität, Berlin-Charlottenburg, Germany. He will lecture on experimental psychology and human engineering.

The following mathematicians have received new appointments.

C. M. ABLOW of the Boeing Airplane Co., Seattle, Wash., has accepted a position as senior research mathematician with the Standard Research Institute.

R. R. BERNARD of Yale University has been appointed associate professor at Davidson College, Davidson, N. C.

RENÉ DEHEUVELS of the Institute for Advanced Study, Princeton, N.J., has been appointed professor at the University of Lille, France.

D. O. ELLIS, professor at the University of Florida, has accepted a position as associate mathematician with the Rand Corp., Santa Monica, Calif.

S. T. HU of Tulane University has been appointed professor at the University of Georgia.

MARK KAC, professor of mathematics at Cornell University, will be on leave during the coming academic year. With the support of an Air Force contract he plans to conduct research in Geneva, Switzerland.

W. G. MADOW of the University of Illinois has been appointed visiting professor of statistics at Stanford University.

W. E. MILNE, professor at Oregon State College, retired on 1 July.

PAUL OLUM, associate professor at Cornell University, will be on leave to work at the Institute for Advanced Study.

HENRY PARKUS of Michigan State College has been appointed to a professorship at the University of Technology, Vienna, Austria.

J. F. RANDOLPH of the University of