Miscellany

"Nobelium"

Element 102, the most recent addition to the periodic table, was discovered in March of this year by a joint international research team in the course of experiments conducted at the Nobel Institute for Physics in Stockholm, Sweden. Announcement of the event was made simultaneously on July 9th in Sweden, Great Britain, and the United States. The group responsible for the success of the experiment included physicists and chemists from the Argonne National Laboratory, the Atomic Energy Research Establishment at Harwell, and the Nobel Institute.

The new element was produced by bombarding curium with carbon-13 ions accelerated in the cyclotron at the Nobel Institute. Argonne provided the needed amount of curium, which was shipped to Harwell where the targets were prepared; Harwell provided the rare carbon isotope used as the bombarding particle; and the Nobel Institute provided the cyclotron, some special equipment, and a staff of physicists, chemists, and technicians.

The target material was prepared in the form of a thin film of curium on an aluminum foil, placed in a specially fabricated probe in order that the recoils from the nuclear reactions could be caught on clean foils and identified rapidly. For the best results, thin organic foils were used as catchers for the recoil atoms. These foils were dissolved in a drop of acetone on a platinum plate, which was flamed to give a thin source for pulse analysis. The platinum plate was treated with hydrochloric acid to put the activity in solution which was then passed through a standardized ion exchange column. Alpha-hydroxyisobutyric acid was used to extract the new element from the column.

The following scientists took part in the experiment: (from Argonne) Paul R. Fields, a group leader in the Chemistry Division, and Arnold M. Friedman, who is working at Harwell for one year under an exchange of US and British nuclear scientists; (from Harwell) John Milsted, a chemist who last year did research work at Argonne under the US–UK exchange program and helped separate the curium used in the bombardments, and Alan Beadle, who is also a chemist; (from the Nobel Institute) Hugo Atterling and Bjorne Astrom, physicists, and Wilhelm Forsling and Lennart Holm, chemists.

The name "Nobelium", in honor of the Nobel Institute for Physics, was proposed for element 102 at the suggestion of the American and British scientists. The isotope synthesized in the experiment is thought to have an atomic mass number of 253. An emitter of alpha particles, it is described as having a half life of about 10 to 12 minutes.

Education

Physics majors enrolled full time as third- and fourth-year students in American colleges and universities totalled 7720 during the 1956–57 academic year according to the most recent results of the American Institute of Physics Register of Physicists, a continuing survey of the nation's physicist population conducted by the AIP for the National Science Foundation. An additional 1329 part-time physics majors were listed in the survey. 1956–57 graduate students in physics numbered 5775. The following results were reported for bachelor's, master's, and doctor's degrees granted in physics since 1952:

	BS	*MS*	*PhD*
1952–53	2295	751	459
1953–54	2240	759	512
1954–55	2207	742	501
1955–56	2623	747	496

Estimates for 1956–57 suggest that while the numbers of master's and doctor's degrees granted in physics seem likely to remain constant, the number of bachelor's degrees will show an increase of fifteen percent or so over the preceding year.

The AIP has also compiled revised lists of colleges and universities in the United States offering graduate instruction in physics and of institutions offering the undergraduate physics major. Of a total of 539 schools which list physics as a major subject, 182 offer graduate training leading at least to the master's degree, and of these, 90 offer graduate instruction leading to the doctorate in physics. The lists are available without charge to those interested and can be obtained by writing to the American Institute of Physics, 335 East 45th Street, New York 17, N. Y.

Western Electric Co., the manufacturing and supply unit of the Bell System, has inaugurated a program of graduate education for its engineers which is estimated by the company to be "equivalent in cost and administrative effort to establishment of a new engineering school of 1000 full-time students." The program is to be conducted in three specially equipped centers in New York City, Chicago, and Winston-Salem and on several college campuses as well. At present, six universities are cooperating with Western Electric in the education program: New York University, Northwestern, Cornell, Duke, North Carolina State, and the Illinois Institute of Technology. It is anticipated, according to Timothy E. Shea, the firm's vice president for engineering, that the list of cooperating institutions will be extended as the program develops. The first of the three training centers opened on June 17th in New York, where an entire floor of the newly constructed