Underground Test Error

On 6 March the Atomic Energy Commission issued a report on the underground nuclear shot exploded in Nevada on 19 September. The report contained inaccurate information about the distance at which the test had been detected [*Science* **126**, 200 (2 Aug. 1957)]. The release said "the off-site movement" was slight and the "maximum distance" at which the earth waves of the shock were recorded was about 250 air miles away. In contradiction to this statement, Harold Stassen had told a Senate Disarmament Subcommittee hearing on 28 February that the "very small nuclear shot that was put out underground in last year's test was recorded on every seismic instrument within 1000 miles."

Correction. According to a later explanation by the AEC, "a news correspondent on 7 March called" to check on the distance at which the shot was detected. The correspondent, I. F. Stone, describes in his *Weekly* (17 and 24 March issues) how he checked *New York Times* reports of last September that the test was recorded in Toronto and Rome. He called the Coast and Geodetic Survey and obtained a "list of 19 seismic stations in the U.S. and Canada . . . which are definitely known to have recorded the underground test," and asked the AEC for an explanation.

On 10 March the AEC issued a correction that said: "Seismological stations . . . as far away as College (near Fairbanks), Alaska, about 2320 miles from the shot mesa, recorded the earth waves." Sen. Hubert H. Humphrey, chairman of the Senate Disarmament Subcommittee, stressed the significance of the correction in a statement on 11 March and noted that his subcommittee and "other observers" had brought the error to the AEC's attention. He referred to what Stassen had said about the distance at which the test was detected and commented that the AEC's statements gave "the impression that scientific facts are being used by someone to prove a political point, a dangerous concept to perpetuate in our effort to work out effective arms control agreements."

In a special hearing on 15 March, AEC Commissioner Willard F. Libby explained to the Joint Committee on Atomic Energy that "the error was entirely inadvertent." He repeated this in a letter to Sen. Humphrey dated 12 March and went on to point out that it was not yet clear "whether a non-alerted station hundreds or thousands of miles distant could detect an earth disturbance and identify it as having been caused by a nuclear detonation." Libby explained in his letter that: "When we determined on 10 March that an error had been made, the AEC immediately issued a correction." However, Chairman Durham of the Joint Committee recalled at the 15 March hearing that AEC officials had told the Joint Committee in closed hearings in January that the shot had been recorded in Alaska. The AEC's explanation about how the error occurred in the 6 March release was summarized in the *New York Times* on 16 March.

FAS statement. The Federation of American Scientists' Executive Committee, in a public statement on 20 March, criticized the AEC for failure to provide "complete and frank reporting of the scientific facts which must form the basis for any well informed view on disarmament policy. Decisions on matters of national policy must ultimately rest in the hands of citizens, and it is the duty of responsible officials to ensure that all the relevant facts are made available to the public."

The FAS release noted that "the recent episode does not stand alone." It said the AEC has placed an "optimistic interpretation" on fallout data and that the information it has given to the public in this area has been "incomplete and, by emphasis or omission, misleading." In the case of fallout, as in "the tardy disclosure about the distance of the detection of last September's test explosion, the AEC has been willing to make complete data available only under the pressure of outside scrutiny by non-governmental experts." The committee pointed out that United States agreement to a nuclear test suspension "has undoubtedly been delayed by apprehension in many quarters, growing out of uncertainty regarding the detectability of nuclear weapons tests—even though non-governmental experts have repeatedly stated that a test ban could be adequately inspected with existing techniques.

"The Administration has in the past relied heavily for its advice upon a limited group of scientists in its own employ. . . . It is imperative that in the future the Administration draw upon a more broadly representative group of scientists for its advice, and that scientists not intimately associated with large-scale government programs be included."

AEC lack of candor. A 13-page report, charging that "the AEC's evaluation of the fallout hazard has not been based on the standards of objectivity and candor that are customary in scientific matters," was released on 19 March by the National Committee for a Sane Nuclear Policy. The report quotes extensively from AEC documents to support its contention, analyzing in each case the interpretation placed by the AEC on the scientific data known at the time. The analysis was compiled to demonstrate "that the AEC has . . . tended to foster the most optimistic interpretation (i.e., which most minimizes the expected hazard from fallout radiation) and that the AEC has altered this position only under the pressure of outside scrutiny and attack."

The National Committee for a Sane Nuclear Policy is co-chaired by *Saturday Review* editor Norman Cousins and by Clarence Pickett, long active with the American Friends Service Committee. Present FAS Vice-Chairman Wolfe and former Chairman Charles Price serve with Norman Thomas, Clark Eichelberger, and others on the 16-man Executive Committee. Copies of the report are available from Trevor Thomas, Executive Secretary, NCSNP, 202 E. 44 St., New York 17, N.Y.

Immigration of Professional Workers

Almost 60,000 immigrants classified as professional, technical, and kindred workers entered the United States for permanent residence during fiscal years 1953 through 1956 (July 1952 to June 1956), constituting slightly more than 6 percent of the 900,000 total immigration for those years. Some 12,600 of the professional workers were engineers or natural scientists. The number of the immigrants in the professional group increased annually from 13,000 in 1953 to 19,000 in 1956, although the rate of increase was not as great as that for all immigrants. Only a small proportion, about 7 percent, of all professional workers entered the country with a first-preference quota visa, which is authorized to persons of specialized skills whose services are urgently needed in this country. This information is contained in a report released last month by the National Science Foundation entitled *Immigration of Professional Workers to the United States—1953–1956.*

Engineers constituted the largest occupational segment of the 60,000 in the group of professional immigrants; nurses were second; and teachers of all kinds below college level, third. Physicians and surgeons were fourth, and natural scientists, fifth. The separate occupations of technicians, such as designers, draftsmen, and radio operators, each represented a small proportion of the total, but when counted together outnumbered the teachers.

More than 40 percent of the professional group came directly from Europe in the 4-year period, with the United Kingdom and Germany providing the largest numbers. Canada, however, outnumbered any European country as a source of immigrants in this group, although a large proportion of the Canadian emigrants were not natives of that country. Of the engineers, half came

from Europe, and a fourth from Canada. Among natural scientists, the proportion coming from both Europe and Canada was lower than among engineers. New York, California, and Illinois were the most popular choices of this group as destinations.

Antarctic Meteorological Report

Herfried Hoinkes, an Austrian meteorologist who has been conducting research in the Antarctic as part of the U.S. International Geophysical Year program, reports that although the South Pole receives more sun than any place on earth during December, its midsummer, most of this energy is reflected by the ice cover. Approximately 89 percent of solar energy received in the Antarctic is lost through such reflection. Absorption of radiant heat is slow because of the fine grain of the top layer of snow. This layer is so hard that quite often footprints do not show on it. When prints are left, they remain sharp for weeks, indicating the small amount of evaporation.

Hoinkes made 3664 temperature observations over a 5-month period at the IGY Little America Station. These indicated that under the most common wind conditions, southeasterlies of 19 knots, temperature difference between the surface and 50 feet above was only 1 to 3 degrees. The maximum temperature inversion occurred under clear skies and calm wind conditions because of the strong long-wave radiation from earth to sky. When a cloud cover moves in to block heat loss from the earth and at the same time emit the heat it has collected, a rapid warming of the surface takes place even in winter.

Minimum possible Antarctic temperatures of −108°F have been calculated from observed radiation loss by both Soviet and American meteorologists participating in the IGY program. Actual minimum observation at the U.S. South Pole station in 1957 was −102°F.

Other findings by Hoinkes included an estimate that Antarctic snow dunes move at a rate of 6½ feet an hour, and that moraines of rock and other fill deposited by glaciers are 10,000 years old, compared with hundreds of years for some European and North American moraines, indicating that only very long climatic cycles affect movement of Antarctic glaciers.

Hoinkes is chief glacial meteorologist for the Arctic Institute of North America, which is performing research sponsored by the IGY Committee of the National Academy of Sciences. The IGY Antarctic program in which Hoinkes participated receives logistic support from U.S. Navy Task Force 43, commanded by Admiral George Dufek.

Yale's Heavy Ion Accelerator

A new heavy ion linear accelerator has gone into operation at Yale University. It is accelerating beams of ions of oxygen (oxygen 16) to energies of 160 million electron volts. The first beam was detected on 15 March. Other ions, such as nitrogen, neon, and carbon, can be accelerated in the new facility to energies of 10 million electron volts per nucleon.

Only one other high-energy heavy ion accelerator exists in the United States. This is now in operation at the University of California Radiation Laboratory. These two accelerators were designed jointly by Yale and University of California scientists under the auspices of the Atomic Energy Commission. However, research emphases at the two institutions are different. While the Berkeley scientists are giving priority to chemical transmutation experiments, Yale's emphasis is on the study of nuclear structure.

Director of the Yale project is Edward R. Beringer, professor of physics. He headed a Yale team that began working with University of California scientists in February 1954 to design the two identical linear accelerators.

Tariffs on Instruments

The American Council on Education has endorsed HR 9349 and S 3155, which are intended to remove the tariff barriers on scientific equipment and apparatus for educational institutions. A Council statement reads:

"As a means of assisting American institutions to improve their scientific programs, the Commission on Education and International Affairs (of the A.C.E.) on February 21 gave strong endorsement to the following pending legislation which would permit tax-exempt institutions to import scientific and laboratory apparatus duty free: HR 9349—Congressman Antoni N. Saklak (now under consideration by the Committee on Ways and Means of the House of Representatives); and S 3155—Senator Ralph E. Flanders (now under consideration by the Committee on Finance of the Senate).

"The Commission expressed the conviction that in these critical times when the United States is taking unprecedented steps to further our scientific interests in order to protect our national security and maintain our world standing, every effort should be made to supplement and diversify existing sources of supply of scientific teaching apparatus. The proposed legislation would eliminate the present tariff, on scientific instruments and apparatus imported for educational purposes, of 40 per cent on the average and 50 per cent on optical goods. This tariff prevents many educational institutions from importing specific items which are not readily available domestically."

Scientists in the News

MARGARET MEAD, RAYMOND A. DART, and JAMES B. GRIFFIN have received the 1957 Viking Fund medals of the Wenner-Gren Foundation for Anthropological Research. Mead was selected as the medalist in general anthropology by the American Anthropological Association; Dart was elected by the American Association of Physical Anthropologists as medalist in physical anthropology; and Griffin was the candidate of the Society for American Archaeology for the archeology medal.

Mead, associate curator of ethnology at the American Museum of Natural History and a member of the AAAS board of directors, has done more than any other single individual to introduce anthropology to the American public. Among her most popular books are *Coming of Age in Samoa, Growing Up in New Guinea, Male and Female,* and *New Lives for Old.* Dart, dean of the faculty of medicine at the University of the Witwatersrand, Johannesburg, is recognized as the discoverer of the earliest known human being. Griffin, director of the Museum of Anthropology and professor of anthropology at the University of Michigan, was cited for his great influence in promoting the aims of scientific archeology, and for his knowledge of the form, range, and distribution of artifact styles in North America.

T. E. F. CARR, member of the Medical Research Council's Radiobiological Research Unit at the Atomic Energy Research Establishment, Harwell, England, is visiting the United States till about the end of July. He has been given a leave of absence to take up a temporary appointment with the United Nations for approximately 6 months. He will be in New York first, then he will go to Geneva, Switzerland, to act as biological secretary for the International Conference on the Peaceful Uses of Atomic Energy, 1–13 September.

WILLIAM H. STEWART has been appointed assistant program operations officer of the Public Health Service. He will serve as assistant to ARNOLD KURLANDER, who was recently appointed to the newly created post of Assistant Surgeon General for program operations. Stewart has been an assistant to the Surgeon General for the past 10 months.