

Weights and Measures

During its 52nd meeting last October in Paris, the International Committee of Weights and Measures made several decisions bearing upon international cooperation in the field of metrology. The group supervises the work of the International Bureau of Weights and Measures, an organization supported by 39 governments and providing the basis for assuring uniformity in physical measurement.

The Committee has rescheduled the next (12th) General Conference of Weights and Measures, which was originally scheduled for 1966, for October 1964. At the Conference, the participating governments will be requested to double the regular budget of the Bureau, from \$300 000 to \$600 000 per year, to allow for an expansion in its various programs. An additional \$300 000 will be asked for equipping a new laboratory now under construction in Sèvres, France. This facility is intended to provide a coordinating center of standards for measuring ionizing radiations.

The Committee also began procedures which may lead to the redefinition of the second in terms of an atomic constant at the next General Conference. A group of specialists are meeting in Paris as the Consultative Committee for the Definition of the Second, and they will try to reach agreement on a specific atomic frequency. Their recommendations will be considered by the International Committee, and if approved, presented to the General Conference. In addition, the Committee agreed to recommend to the General Conference that the old definition of the liter in terms of the volume occupied by a kilogram of water be abandoned and that the liter be recognized as a special name for the cubic decimeter. Standard values of a number of atomic energy transitions have been adopted by the Committee as secondary length standards. The meter is now defined in terms of the $2P_{10} 5d_5$ transition of krypton 86. Among the secondary standards approved were four additional transitions in krypton 86, four transitions in mercury 198, and four in cadmium 114. The Committee also agreed to recognize the curie, with the symbol Ci, as a special unit of activity

equal to 3.7×10^{10} disintegrations per second, and to recognize the roentgen, designated by the symbol R, as a special unit for radiation dose.

A special task force has been set up to study the need for a program in the field of precision measurements at very high radio frequencies. In addition, several programs were approved involving the international exchange of instruments and materials as a means of promoting uniformity of measurement. These include the distribution of electrical instruments, thermometers, light sources, radio nuclides, and ionization chambers.

The International Committee of Weights and Measures is made up of 18 members and is chaired by Richard Vieweg of Germany, with Leslie Howlett of Canada as its vice chairman and J. de Boer of the Netherlands as its secretary. The United States member of the Committee is Allen V. Astin, director of the National Bureau of Standards.

Antarctic Research

In 1965, the National Science Foundation will again provide opportunities for US scientists to participate in the Antarctic expeditions of foreign countries as exchange scientists from the US Antarctic Research Program. Other nations with active Antarctic scientific programs include Argentina, Australia, Belgium, Chile, France, New Zealand, the Union of South Africa, the United Kingdom, and the USSR.

Field research possibilities exist in atmospheric physics, meteorology, geology, glaciology, biology, and the marine sciences, with programs planned for the austral summer (four to six months) or for the Antarctic winter of 1965, which would involve a fourteen-month period. Departure from the United States would probably be late in 1964. Salary and expenses for travel, research equipment, etc., associated with the exchange would be included in a grant to the investigator's institution.

Interested scientists are requested to transmit an outline of their proposed field program with a specific foreign Antarctic expedition to the Office of Antarctic Programs, National Science Foundation, Washington, D.C. 20550.



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