

the National Institutes of Health. Commemorating the impact of Darwin's theory of evolution on scientific thought, the celebration will open on 24 November, the centenary of the publication of the *Origin of Species*, and continue through 28 November.

The meeting will bring together leading figures in the social and biological sciences to discuss the evolution of life, of man, and of the mind. Centering on common problems that cut across disciplinary lines, the discussions will comprise a series of five 3-hour public panels. These will be devoted to the origin and nature of life, the evolution of life, man as a biological organism, the origin and nature of mind, and social and cultural evolution. Each panel will trace the growth, over the past 100 years, in man's understanding of the processes of evolution; forecast trends of research and thought in the century to come; and appraise the significance of such trends for mankind.

The discussions will be presented by 50 specialists on biological and cultural evolution, who will assemble in five sections to form the panels. Anthropologists, biologists, and psychologists predominate among the participants, who represent the widely varied areas of thought most influenced by the theory of evolution. Thirty-six of the participants are American. The 14 foreign members of the group are: Francois Bordes, University of Bordeaux; MacDonald Critchley, National Hospital, London; Sir Charles Darwin, retired head of Britain's National Physical Laboratory; E. B. Ford, Oxford University; G. F. Gause, Academy of Medical Sciences, Moscow; Sir Julian Huxley, England; L. S. B. Leakey, Coryndon Memorial Museum, Nairobi, Kenya; A. J. Nicholson, Commonwealth Scientific and Industrial Research Organization, Canberra, Australia; Stuart Pigott, University of Edinburgh; Fred Polak, University of Rotterdam; N. Tinbergen, Oxford University; Alexander von Muralt, University of Berne; and C. H. Waddington, University of Edinburgh.

Supplementary Programs

In addition to the panel discussions which form its core, the celebration will include supplementary programs for special groups, as well as ceremonies and social events.

The University of Chicago's department of education has arranged a con-

ference for high-school science teachers. The improvement of biology and science courses at the high-school level and changes needed in the current science curriculum will be the major concerns of this group, which will explore the effects on traditional biology of findings from paleontology, psychology, and anthropology.

During the celebration the Federated Theological Faculty of the University will hold an Institute on Science and Theology. The institute will include lectures on the philosophical and theological implications of the theory of evolution, and a panel discussion to examine the relation of science and religion.

The centennial day will be celebrated with a dinner sponsored by the University of Chicago Citizens Board. After a welcome by Lawrence A. Kimpton, chancellor of the university, an introduction to the celebration will be given by Sol Tax, chairman of the committee, and Sir Charles Darwin, Darwin's grandson and a theoretical physicist and mathematician, will give an illustrated lecture about the voyage of the *Beagle*.

The program for Thanksgiving Day includes a special convocation at Rockefeller Memorial Chapel, with an address by Sir Julian Huxley, and the first performance of *Time Will Tell*, an original musical play based on Darwin's life.

International Atomic Agency Reports Year's Activities

This month the International Atomic Energy Agency submitted its annual report to the United Nations General Assembly. The report is the first to cover a full operational year for the IAEA. It reviews the period 1 July 1958 to 30 June 1959 and is brought up to date by a preface.

Technical Assistance Expanded

Developments cited in the annual report include these, among others:

Sixty-two requests for technical assistance covering a "wide range of activities" have been received so far, and as of 15 September the agency was in the process of carrying out 46 of them. The organization's experts are in the field, and equipment has been supplied in connection with several of the projects.

Preliminary assistance missions from the agency have visited, on request, a

number of countries in Southeast Asia, the Far East, and Latin America. Another team left for countries in the Mediterranean and the Near East on 12 October, and smaller missions have visited Greece, Morocco, Tunisia, and the United Arab Republic.

Regulatory Activities Progress

In the regulatory field, considerable progress was made last year, the annual report indicates. A manual on the safe handling of radioisotopes was approved and will be followed in 1960 by a manual on the safe operation of critical assemblies and small research reactors. The agency, together with Yugoslav authorities, is writing a report on an accident at Vinca in October 1958.

Two agency panels are working on problems connected with the transport of radioisotopes and large radiation sources, such as irradiated fuel elements. Another panel has almost completed its draft recommendation on the disposal of radioactive wastes in the sea, and the whole range of waste disposal problems is being discussed at a scientific conference organized by the agency in Monaco and being held this month in Monaco with the United Nations Education, Scientific, and Cultural Organization as cosponsor.

A draft convention on civil liability and state responsibility for nuclear hazards has been drafted by a group of international lawyers convened by the agency.

The guiding principles for a system of safeguards against diversion of nuclear materials to noncivilian ends have been provisionally approved by the Board of Governors. Detailed regulations will now be worked out on the basis of these principles.

Conferences and Publications Sponsored

A series of scientific conferences has been initiated by the agency. The first, held in Vienna in February 1959 and cosponsored by the World Health Organization, dealt with radioisotope-scanning techniques for medical purposes. Other conferences have dealt with the use of large radiation sources in industry (Warsaw, September 1959), the collection and analysis of small amounts of radioactive materials (Vienna, June 1959), training and education in nuclear energy (together with UNESCO, Saclay, France, July 1959), radioisotope teletherapy units (with the World Health Organization,

Vienna, August 1959), and the measurement of radioisotopes (Vienna, October 1959).

The agency's first scientific and technical publications appeared in 1959 and included world directories of power reactors and radioisotopes.

Research Programs Advance

The ground for the agency's functional laboratory near Vienna was broken during the third regular session of the conference in September. Work on the standardization of radioisotopes and radiochemical analysis of food samples (milk) from various countries continue in the provisional laboratory at headquarters.

As of 31 August, 22 research contracts had been awarded by the agency. They deal with health and safety, waste disposal, and safeguards problems, and also with the production and utilization of isotopes.

Soviet-U.S. Cooperation Pledged

The preface of the report also draws attention to the announcement, made in September, that the U.S.S.R. and the United States have agreed to use the agency as the means of making available to interested nations all useful information developed by the two countries on the peaceful uses of atomic energy.

In restating the agency's main objectives, the report drafted by the Board of Governors and approved by the General Conference states: "In the broadest terms, the production of radioisotopes and their use in industry, agriculture, medicine and research, and the eventual production of economic nuclear power, under safe and secure conditions, continue to be the main objectives of most of the Agency's work. For the attainment of these aims the Agency is now employing a variety of means, including technical assistance, the diffusion of information, the formulation of regulations and recommendations, the supply of nuclear fuels, the promotion of research reactor development, the elaboration of safeguards, the organization of training courses, the award of fellowships and of research contracts."

IAEA membership has risen to 70. The agency works in relationship with the United Nations under a special agreement, and it participates in the Expanded Program of Technical Assistance of the U.N. and related agencies

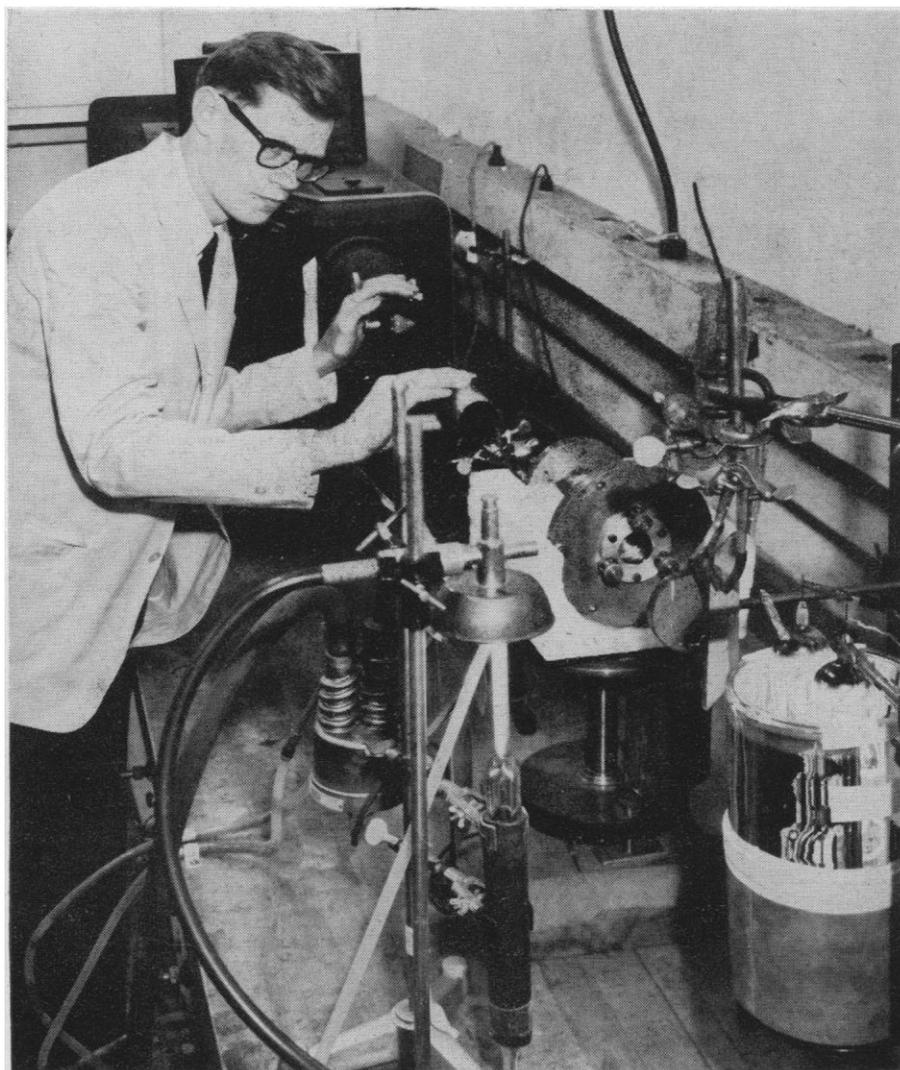
Confirmation of the Rydberg Constant

The accepted value for an important atomic constant, the Rydberg constant, has recently been substantiated by the National Bureau of Standards. This confirmation resulted from an examination of earlier work which gave a value in conflict with the Rydberg constant in use today. After re-evaluating the basis for this determination, W. C. Martin of the bureau staff recalculated the constant and obtained excellent agreement with the accepted value.

In the picture shown here, Martin is aligning the projecting lens of a system used in measurements to re-evaluate the Rydberg constant. The work involves measuring the wavelength of the 5016-A helium line against a mercury standard. Light from a liquid-nitrogen-cooled

helium lamp, immersed in Dewar (lower right), equipped with windows, passes through a partially transmitting mirror into the interferometer along with light from the mercury-198 lamp (lower center), which is reflected into the interferometer by the same mirror. The resulting fringes are then projected onto the slit of a large prism spectrograph (upper left). A comparison of the helium fringes thus obtained with the fringes due to mercury lines of known wavelength allows a very accurate determination of the wavelength of the particular helium line involved in calculating the Rydberg constant.

This evaluation was carried out as part of a broader program which seeks to obtain more accurate values for important physical constants, such as velocity of light, acceleration of gravity, and various atomic constants.



W. C. Martin of the National Bureau of Standards aligning the projecting lens of a system used in measurements to re-evaluate the Rydberg constant.