SCIENTIFIC EVENTS

THE ROYAL SOCIETY AND HEAVY HYDROGEN

THE *Times*, London, reports that the rooms of the Royal Society were crowded on December 14 for a discussion on heavy hydrogen. This discovery, which was characterized as one of the most important of the present century, is of interest not only for physics and chemistry, but for botany, physiology and medicine.

Lord Rutherford, who opened the discussion, suggested the name diplogen for heavy hydrogen and the name diplon for the nucleus of the atom of heavy hydrogen. Hitherto the name deuterium has been used for the former, and deuton, or deuteron, for the latter. Lord Rutherford acknowledged that the name given by a discoverer was generally adopted by the scientific world, but he regarded the question as of great scientific importance in the case of heavy hydrogen, and thought that deutons were liable to be confused with neutrons—especially if one had a cold. As neutrons were involved in any discussion of heavy hydrogen, the question of confusion was very pertinent.

The president of the society, Sir F. Gowland Hopkins, invited speakers to express their opinion on this point. Dr. N. V. Sidgwick gave strong support to Lord Rutherford's terminology. He said he was present at the Chicago meeting when the discovery was announced, and terminology caused great difficulty. When a missing element was recently discovered, it did not matter much how it was called—"Florentinium" or "Mussolinium"—because they would come across it so seldom, but heavy hydrogen was another matter.

Dr. F. W. Aston also supported Lord Rutherford's terminology. He thought, from his remembrance of the Chicago meeting, when the discussion tended to become acrimonious, that the Americans would not take kindly to it. While there he spoke to Professor Bohr, who thought that as the substance was hydrogen it ought to be called hydrogen. Dr. Aston admitted that a discoverer was allowed to give a name to what he had discovered, but denied that the scientific public were under any obligation to use it. He instanced Uranus, which was originally called Georgium Sidus by William Herschel, and said that the word isotope and his own mass-spectrograph had changed in meaning since they were first put forward.

In the discussion on the properties of heavy hydrogen, Lord Rutherford gave details of a new diffusion process by which it has been obtained in small quantities without any trace of ordinary hydrogen. He also referred to the structure of the diplon, and said the most obvious suggestion was that it consisted of two protons and an electron, but it might consist of a proton and a neutron. He had bombarded heavy hydrogen with alpha-particles from polonium, and the neutrons obtained were only one per cent. of those obtained when beryllium was similarly bombarded.

Dr. Hartek exhibited specimens of ordinary water and heavy water, and illustrated the difference in their freezing points.

Professor F. Soddy said he wanted to protest as forcibly as he could against the description of heavy hydrogen as an isotope. He had not seen any evidence that we were not dealing with something like the difference between oxygen and ozone. He thought, however, that the discovery was a fundamental one.

A NATION-WIDE SURVEY OF FIRST-YEAR COLLEGE PHYSICS

A NATION-WIDE survey of the courses in first-year college physics, which promises to be one of the most comprehensive and important cooperative ventures ever attempted by the colleges and universities of this country, has been announced by the Committee on Tests of the American Association of Physics Teachers. The proposed program has been formulated jointly by a committee of the association and by two committees of the American Council on Education. It calls for the testing of students in the first-year course twice during the college year 1933–1934. The test forms will be furnished to participating institutions at cost.

In an article which appears in the December issue of *The American Physics Teacher*, Dr. Karl T. Compton, president of The Massachusetts Institute of Technology and chairman of the American Institute of Physics, makes the following comments with regard to the proposed survey:

> The plan of uniform, nation-wide tests in the first-year college physics appears to avoid the dangers inherent in most educational standardizing schemes, while retaining their advantages. It is reasonable that this new venture is but the first of a series which will stimulate interest in and improve the quality of the teaching of college physics.
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> The plan seems to me to have distinct advantages, as follows:
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> It will give each teacher a means of evaluating his own efforts and product, with the resulting opportunity of guided improvement. Yet it does this gently, since it does not make public the results by name of school or individual.
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> Being unofficial and optional, it does not curtail the freedom of any school to set its own standards and give its own examinations in accordance with its own particular and local interests.
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> As a sporting proposition it is "heads I win, tails you lose"; for if your school makes a fine showing, you can proclaim the fact from the house-tops, but if your record is low you can bury your shame and make a more intelligent effort to do better next time.

Speaking for the American Institute of Physics, I am sure that this new move will be generally approved and its broader educational results watched with interest. Meanwhile we solicit the wholehearted support of all physics teachers to make this venture as successful and valuable as possible.

The personnel of the committee is as follows: C. J. Lapp, *chairman,* University of Iowa; H. W. Farwell, Columbia University; Frederic Palmer, Jr., Haverford College; John T. Tate, University of Minnesota, and A. G. Worthing, University of Pittsburgh. Departments of physics wishing to participate in the survey can obtain complete details of the plan from any member of the committee, or from Dr. F. S. Beers, University of Minnesota, the secretary of the Committee on Educational Testing of the American Council on Education.

THE HAYDEN PLANETARIUM OF THE AMERICAN MUSEUM OF NATURAL HISTORY

A GIFT of $150,000 by Charles Hayden, of Hayden, Stone and Company, has been made to the planetarium to be constructed by the American Museum of Natural History's Planetarium Authority.

F. Trubee Davison, president of the museum, made public a resolution, adopted by the executive committee of the Planetarium Authority, that "in recognition of the public-spirited and generous offer of Mr. Hayden, the planetarium building shall henceforth bear the official title and be referred to as the Hayden Planetarium."

Mr. Hayden's gift is for the purchase of the planetary projection instruments and a Copernican planetarium, the latter being a reproduction of our solar system in scale models. The cost of the construction of the building to house the artificial firmament of stars, planets and constellations will be defrayed by a $650,000 bond issue to be purchased by the Reconstruction Finance Corporation. It is expected that the planetarium will open in the spring of 1935.

Although detailed construction plans have not yet been completed, the general scheme calls for a two-story-and-basement structure of brick and steel. The façade will be supported by six Grecian columns. On the outer surface of the dome, which will rise above the building, will be traced various stellar constellations, done in metal on a background of midnight blue. The dome will be made visible at night by indirect flood-lighting.

It will have a diameter of 75 feet, while the height of the chamber in the center will be 37½ feet. The horizon at the base of the dome will represent the skyline of New York in silhouette. There will be seats for 750 people.

While it is hoped that the planetarium will eventually be free to the public, an admission charge will be made until the money borrowed from the Federal Government has been paid. It is stipulated, however, that public school children attending in classes are to be admitted free at special periods.

The installation of the scientific equipment will be supervised by Dr. Clyde Fisher, curator of astronomy and education in the museum, who will also be in charge of the planetarium. Plans for the building are being completed by Trowbridge and Livingston, the museum architects.

The Hayden Planetarium will be the third of its kind in the United States and the twentieth in the world. Chicago had the first in this country and Philadelphia the second. Germany has twelve, Italy two, and Austria, Russia and Sweden one each.

EMERGENCY CONSERVATION WORK

OFFICIALS of the Emergency Conservation Work organization recently completed arrangements for adding between 30,000 and 40,000 new men to the Civilian Conservation Corps during the first ten days of the New Year as replacements for members of the corps who have been discharged to accept other employment or for other reasons.

The selection of new men has been virtually completed by state welfare agencies designated by the Labor Department, the regional managers of the Veterans' Administration and the technical representatives at the camps of the National Park Service and the Forest Service. The War Department began enrolling the men at the forest camps on January 2 on a schedule which called for completing the enrolment on January 10.

The program, as approved by Robert Fechner, director of emergency conservation work, calls for the enrolment of sufficient men to bring the strength of each of the 1,466 C. C. C. units up to a strength of 200 men each. When the replacement program is completed there will be approximately 240,000 young men, 35,000 experienced woodsmen and 28,125 war veterans in the corps, an aggregate strength of slightly above 300,000. This enrolment will be exclusive of the 12,000 Indians now enrolled in the Indian conservation camps.

Since initiation of the Emergency Conservation Work program on April 5, approximately 450,000 men have been enrolled and given jobs in the corps. Of this number, 296,000 are still at work in the forest camps. The balance has been discharged at various times to accept outside employment or for other reasons. Most of the men who left the corps were discharged at the end of the first six-months' period when President Roosevelt authorized continuance of the