lastly, from a Guggenheim Fellowship. In 1941–42 he also taught geology at Wesleyan University. Demorest was a member of the Research Committee on Glaciers of the American Geophysical Union and likewise a member of the International Commission of Snow and Glaciers. He was at the time of his death a candidate for election as fellow in the Geological Society of America.

The glaciologic research in which he was so deeply interested was of a kind which no one on this side of the Atlantic had yet undertaken. By the methods of optical crystallography he sought to study the crystal fabric of glacier ice and the changes which it suffers by the differential stresses incidental to glacier motion. To do this he cut selected pieces of ice from the glaciers of Mount Rainier, shipped them, encased in "dry ice," to New Haven, and there, in a subfreezing laboratory, examined thin sections of them under a specially adapted polarizing microscope. He thus verified the results obtained by Gerald Seligman's party of British scientists who, in 1938, did the first research of this type, in a high-altitude laboratory hewn in the ice at the head of the Aletsch Glacier, in Switzerland. But Demorest went further than they, for he succeeded in recording on motion film the process of recrystallization as it goes on in the ice under differential pressure, and he thus produced the first ocular evidence of the molecular adjustments that take place in the individual crystals and permit them to yield by continuous deformation to the stresses imposed.

Demorest, however, did more than prove that glacier motion is primarily of the nature of plastic flowage. He also outlined deductively the mechanics of two distinct modes of glacier flow—direct gravity flow, such as is characterisic of valley glaciers descending steep gradients, and extrusion flow, such as is induced in ice caps by differential pressures, as an indirect result of gravity. Best of all, he explained why glacier ice, though capable of plastic deformation, nevertheless shears as a brittle substance under certain conditions—namely, wherever in glaciers or ice caps normal flowage is obstructed. And thus he provided the key to the solution of a baffling problem that has been the subject of controversies between opposing schools of thought for more than a hundred years—ever since the days of Agassiz, Tyndall and Forbes.

These fundamentals of the mechanics of glacier motion Demorest set forth in his part of the paper on "Glacier-thinning During Deglaciation" which he and Richard Foster Flint produced together. So eminently sound, however, did his exposition seem to the present writer, who had the privilege of reading the manuscript before it was published, that he immediately secured Demorest's consent to the incorporation of the basic principles in the chapter on "Glaciers" which was being prepared for the volume on "Hydrology," No. 9 of the Physics of the Earth series of the National Research Council. And as a result Demorest's conception of the laws of glacier motion was made known through two different publications in quick succession. It seems almost providential, now that Max is gone, that acceptance of the principles he laid down was thus announced without delay, while he was still living.

In the death of Max Demorest both glaciology and glacial geology have lost a master mind who, even before the age of thirty-two, brought clarity where there had been much confusion. He will be remembered by his colleagues as one who did not engage in disputation, who by his calm, convincing reasoning caused no rancor nor ever lost a friend.

FRANÇOIS E. MATTHES
U. S. GEOLOGICAL SURVEY

RECENT DEATHS

DR. HARRY H. LAUGHLIN, of Kirksville, Mo., geneticist, formerly associate director in charge of the Eugenics Record Office of the Department of Genetics of the Carnegie Institution of Washington at Cold Spring Harbor, Long Island, N. Y., died on January 26. He was in his sixty-third year.

DR. HOWARD M. RAYMOND, who retired ten years ago as president of the Armour Institute of Technology, Chicago, died on January 24. He was seventy years old.

Nature announces the death of Professor Rudolf Abel, the German bacteriologist, formerly professor of hygiene in the University of Jena, at the age of seventy-four years; of Sir Bryce Chudleigh Burt, director of animal feeding stuffs, Ministry of Food, India, from 1921 to 1928 secretary of the Indian Central Cotton Committee, on January 2, at the age of sixty-one years, and of F. W. Harbord, the metallurgist, on December 27, at the age of eighty-two years.

SCIENTIFIC EVENTS

THE INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES

THE special correspondent at St. José, Costa Rica, of *The New York Times* calls attention to the fact that the agricultural development of the Americas has begun to take tangible form in the Inter-American Institute of Agricultural Sciences now being developed at Turrialba, Costa Rica.

Vice-president Henry A. Wallace, formerly U. S. Secretary of Agriculture, brought the idea to the attention of the delegates to the American Scientific Congress at Washington in May, 1940. With the unanimous endorsement of that body, the project was placed in the hands of a committee of the Pan American Union, of which Dr. Héctor David Castro, Minister of El Salvador to the United States, was chairman.

This committee invited all interested governments to offer sites for the institute. Next the U. S. Department of Agriculture was requested to send a group of technical men to examine the sites and make recommendations. This resulted in the choice of a property offered in the highlands at Turrialba, some thirty-five miles from this city.

The general plan is to build on a tract of more than 1,000 acres, furnished by the Costa Rican Government, a research center to which graduate students from all the Americas may go for training and for specializing and attacking the major problems of tropical agriculture. Turrialba lies close to zones suitable for three important strategic crops upon which the present war has focused attention: rubber and Manila hemp, which grow only at low elevations in moist, tropical climates, and cinchona or quinine, which requires highly specialized conditions of soil and climate at moderate elevations.

Dr. Earl N. Bressman, scientific adviser to Mr. Wallace when the latter was Secretary of Agriculture, will be director of the institute. He recently visited Costa Rica, accompanied by Dr. Wilson Popenoe, director of the Pan-American Agricultural School of Tegucigalpa, Honduras, to complete arrangements with the Costa Rican Goverment and to plan the first buildings. José L. Colom, head of the Division of Agricultural Cooperation of the Pan American Union, will be secretary of the institute and liaison man between Washington and Turrialba.

DU PONT FELLOWSHIPS IN CHEMISTRY

THE E. I. du Pont de Nemours and Company announces the award of twenty-two postgraduate fellowships for research in the field of chemistry for the academic year 1943–44. Appointments to these fellowships, which carry $750 each, will be made later in the year by the heads of the departments of chemistry of the several colleges and universities to which grants have been made.

The institutions receiving postgraduate awards are the University of California, the University of Chicago, Columbia University, Cornell University, Harvard University, the University of Illinois, the Johns Hopkins University, the Massachusetts Institute of Technology (one in chemical engineering and one in chemistry), the University of Michigan, the University of Minnesota, the University of North Carolina, Northwestern University, the Ohio State University, the Pennsylvania State College, the University of Pennsylvania, Princeton University, Purdue University, Stanford University, the University of Virginia, the University of Wisconsin and Yale University.

Fellowships for advanced work in chemistry were established by the du Pont Company in 1918, when there was a scarcity of well-trained chemists. Through the fellowship plan the company sought to encourage promising students to follow a career in chemical research. Originally, only men were considered, but to increase the number of available candidates the du Pont Fellowship Committee now recommends that women be admitted to candidacy on the same basis as men. This action of the committee encourages them to prepare themselves adequately for positions in industrial research laboratories, where already a large number of women have been employed.

Du Pont fellowships, which with but one interruption have been maintained since 1918, differ from many industrial fellowships in that the selection of the beneficiary and the subject of research is left to the discretion of the university. Furthermore, there is no actual or implied obligation as to the future employment of the fellowship holder.

THE DETROIT MEETING OF THE AMERICAN CHEMICAL SOCIETY

THE American Chemical Society will meet in Detroit on April 12 under the presidency of Dr. Per K. Frolich, director of the chemical division of the Esso Laboratories of the Standard Oil Development Company.

The program, including technical sessions, conferences and group discussions, will be devoted to advances made by chemical science and industry in relation to the war effort. An attendance of 4,000 is expected. The board of directors has banned trips to industrial plants and social events. Attendance of those "who will not contribute to or gain from the discussion of technical problems" is discouraged by action of the board.

Fifteen of the professional divisions will meet. Achievements in wartime research and the application of new knowledge to the industries will be reported in hundreds of papers and addresses. Ten "war symposia" will deal with synthetic rubber, petroleum, malaria and other health problems, agriculture and food, industrial water supplies, civilian defense and other fields. Special symposia planned bear directly on the successful prosecution of the war. According to the official announcement,

> there will be a discussion on substitutes for agricultural and food commodities of which there are inadequate sup-