chairmen of the council and of its divisions, he was an indispensable strength. He knew what the scientific men of America could do.

An executive who shares responsibility for an organization is always looking ahead. There is little enough time in which to reflect leisurely upon or take satisfaction in accomplishment that meets with general approval. His day is lived mostly in to-morrow. One remembers the almost superhuman drive which Barrows put into the things that to-morrow had to put forth. This gave his work the relentless quality of time itself. Time, organization, men and officers, with Barrows added in, became one inexorable continuum. A force reached out from his desk to every part of the country and into every institution where creative work was done in science. He would repudiate my words if he could hear them. He thought of himself only as the agent of an idea—how organization and consultation could promote progress in scientific research. I remember how greatly Oscar Firkins's definition of an institution pleased him: "Whenever man finds a useful idea he creates an institution, systematically to remind himself of the idea."

He could scarcely be brought to talk about his family and he did so in a rare and shy way that was endearing. Only once did he seem to speak spontaneously on that theme—when mention was made of his son's part in the present war as a Lieutenant on a submarine in the Pacific. And what a part! To be told when the war becomes history. His enthusiasm reflected perhaps his own disappointment when our armed preparations began that it seemed best to remain at his post rather than resume active military work at fifty-nine, if indeed he were allowed to do so. For thirty years he had trained for it as a Lieutenant Colonel in the Infantry Reserve. (He had been Captain of a Machine Gun Battery in France, 1917–1919, and won the Croix de Guerre by dangerous reconnaissance at Audenarde in the final push in Flanders.) He loved the techniques of modern military tactics and the possibilities of their efficient use under the chain of unified military command.

He was a born organizer for defined purposes. The purpose was uppermost. He had an essential instinct for loftiness of purpose and was visibly inspired by it. He had an unquenchable public spirit. If paper work occasionally dragged him down, a turn on his motorcycle or a tour of duty in the reserve officers' corps or a new plan of action and new men and forces in the National Research Council would restore him quickly to his natural rate of putting organizational power back of an agreed plan or idea.

It was most fitting that the memorial services held on November 11, 1942, should have consisted largely of the reading of a few of his favorite poems. There was a passion in his work for the Council and in his spirit that only certain emotional forms of poetry could express. Many who knew only his professional drive and his formal manner missed an integrating and profoundly sustaining quality, his capacity for feeling and for the beautiful expression of it. Now that we can appraise the whole of his life we can choose our viaticum with a better sense of appropriateness in a few lines from Kipling's tribute to the devoted teachers of his school:

> For their work continueth,
> And their work continueth,
> Broad and deep continueth,
> Great beyond their knowing.

ISAIAH BOWMAN

RECENT DEATHS

DR. WILLIAM ALBERT SETCHELL, professor of botany, emeritus, of the University of California at Berkeley, died on April 5, 1943, in his seventy-ninth year.

DR. MARY JANE RATHBUN, honorary associate in zoology of the U. S. National Museum, died on April 4 at the age of eighty-two years.

DR. GARFIELD POWELL, assistant professor of chemistry at Columbia University and an assistant to the dean of Columbia College, has died. He was forty-nine years old.

THE death on March 30 is announced of William Oscar Walker, for the last twenty-five years professor of chemistry at McMaster University, Canada.

SCIENTIFIC EVENTS

TUFTS COLLEGE CHAPTER OF THE SOCIETY OF THE SIGMA XI

THE Tufts College Chapter of the Society of the Sigma Xi was formally installed by the national officers of the society on April 2. The day's activities began with an academic procession and convocation, attended by the Tufts College faculty and student body as well as by the national officers and delegates from chapters in many other institutions. At the convocation exercises Dr. Leonard Carmichael, president of the college and member of Sigma Xi, gave a brief history of scientific research at the college. Dr. George Baitsell, of Yale University, national secretary; Dr. Harlow Shapley, of Harvard University, national president, and Dr. Edward Ellery, of Union College, past national president, were introduced and presented interesting accounts of the growth and aims of the Society of the Sigma Xi. A luncheon for the

national officers, the visiting delegates and the college members of Sigma Xi followed.

Dr. Shapley and Dr. Baitsell officiated at the formal installation ceremonies, which took place at 3 P.M. in one of the small college chapels. The new charter was accepted in behalf of the Tufts Chapter by President Carmichael, while Dr. Ellery responded for the society. The newly installed chapter elected the following officers:

President, Dr. Basil G. Bibby, dean of the Tufts College Dental School; *Vice-president,* Dr. Katharine F. Billings, instructor in geology; *President-elect,* Dr. Paul Warren, professor of botany; *Treasurer,* Dr. Herman Sweet, assistant professor of biology; *Secretary,* Dr. Nils Y. Wessell, dean of men.

A tea and reception followed at the home of President and Mrs. Carmichael. In the evening a dinner in honor of the national officers was attended by delegates and Tufts Chapter members. A public lecture followed, with Dr. George David Birkhoff delivering an address on "The Mathematical Nature of Modern Physical Theories."

NILS Y. WESSELL,
Secretary

SUMMER SESSION IN APPLIED MATHEMATICS AT BROWN UNIVERSITY

FOR the third summer, Brown University in its program of advanced instruction and research in mechanics, offers instruction and research direction in a twelve-weeks session beginning on June 14. A dozen graduate courses of a variety of grades are offered. These are largely in subjects related to mechanics, such as elasticity, fluid dynamics, theory of flight and partial differential equations; but there is one comprehensive course in mathematics of ultra-high frequencies in radio, which is particularly designed for those who expect to engage in research in that field. The staff in residence consists of Stefan Bergman, Lipman Bers, L. N. Brillouin, Willy Feller, G. E. Hay, Witold Hurewicz, P. W. Ketchum, Willy Prager and J. D. Tamarkin. In addition a dozen lectures each are scheduled for K. O. Friedrichs, R. E. von Mises and S. P. Timoshenko.

This program is supported by the U. S. Government, the Carnegie Corporation and the Rockefeller Foundation; tuition fees are remitted. There is an overwhelming demand from government agencies and industries for men from this school to do research in the mathematics underlying engineering.

Inquiries may be directed to the Dean of the Graduate School, Brown University, Providence, R. I.

THE COLUMBUS MEETING OF THE AMERICAN PHYSICAL SOCIETY

THE two hundred and fifty-fourth meeting of the American Physical Society will be held at the Ohio State University on April 30 and May 1. The departure from the Eastern seaboard is due to the unavailability of Washington and Baltimore, to the fact that the last meeting was in New York and the next one will be in Pennsylvania, and to the courtesy of the Ohio State University in offering its hospitality for the second time in less than four years. The meeting will be held jointly with the Ohio Section of the society and Section F (Physics) of the Ohio Academy of Science. The first session will begin at 10:30 o'clock on Friday morning. The headquarters hotel will be the Deshler-Wallick.

A lecture by Dr. Peter Debye, chairman of the department of chemistry of Cornell University, on "The Magnetic Approach to the Absolute Zero of Temperature" will be given at 8 o'clock on Thursday evening before the Ohio Chapter of Sigma Xi. Contributed ten-minute papers will be given in two sessions—on Friday morning at 10:30 and on Saturday afternoon at 2:00. An invited paper by K. Lark-Horovitz, head of the department of physics at Purdue University, on "Semi-Conductors: Their Properties and Their Uses" will be given on Friday afternoon at 2:00.

A part of the symposium in honor of Galileo (who died in 1642) and Newton (born in 1642), which was arranged by the American Association for the Advancement of Science for its New York meeting of December last and which was abandoned when that meeting was called off, will be given at the Columbus meeting through the courtesy of Professors Henry Crew and Louis T. More, who have consented to make available papers that were originally to have been read at the New York meeting. These will be presented on Friday afternoon, beginning at 3:30. Dr. Crew will speak on "Galileo, the Pioneer Physicist" and Dr. More will discuss "Newton's Philosophy of Nature."

A symposium on applied infra-red spectroscopy will be held on Saturday morning at 10:00. The speakers and their topics are: R. Bowling Barnes, American Cyanamid Company, "Applied Infra-Red Spectroscopy"; J. R. Downing, du Pont Experimental Station, "Applications of Infra-Red Spectroscopy to Chemical Research"; H. H. Nielsen and Ely E. Bell, of the Ohio State University, "Automatic Recording Vacuum Infra-Red Grating Spectrometer."

The annual dinner will be held at the Deshler-Wallick Hotel at seven o'clock on Friday evening, when Dr. Charles F. Kettering, of the General Motors Corporation, will speak on "Looking Forward through Research." Members and guests are requested to make advance reservations by letter or card addressed to Dean Alpheus W. Smith at the Mendenhall Laboratory of Physics, the Ohio State University, Columbus.

The council of the society will meet on Friday morn-