Canada. These lectures, experimentally illustrated, dealt with such subjects as x-rays, polarized light, radium, visible sound, ether-drift and the history of the flute. At the Lowell Institute, in 1914, he gave the course of eight lectures on "The Science of Musical Sounds." He also gave lectures in Paris, Berlin, Cambridge (England), the Royal Institution in London and the Franklin Institute.

An indefatigable worker, in addition to his contributions to scientific journals, Dr. Miller found time to write the following books:

1. "Laboratory Physics" (1903), a college manual which has passed through twelve editions.
2. "The Science of Musical Sounds" (1916).
3. "Boehm on the Flute and Flute-playing" (1908 and 1922).
4. "The Ether-Drift Experiment and the Determination of the Absolute Motion of the Earth" (1933).
5. "Anecdotal History of the Science of Sound" (1935).
6. "Catalogue of Books and Literary Material Relating to the Flute" (1935).
7. "Sound Waves: Their Shape and Speed" (1937).
8. "Sparks, Lightning, Cosmic Rays" (1939).

Of the many learned societies of which Dr. Miller was a member or fellow we note "The National Academy of Sciences," "The American Philosophical Society," "The American Academy of Arts and Sciences" and "The American Physical Society." Besides holding important offices in a number of the societies he was honored in 1917 by the award of the Longstreth Medal and in 1926 of the Elliott Cresson Gold Medal of the Franklin Institute for his work in acoustics. In 1925 he was awarded the American Association for the Advancement of Science prize for his paper on "Ether-Drift." In 1928 the Cleveland Chamber of Commerce bestowed on him its Distinguished Service Medal. Honorary degrees came to him from Case School, Western Reserve University, Baldwin-Wallace College, Miami University and Dartmouth College.

Constantly at work but never too busy to receive his callers and if possible to aid them, gentle and modest in manner, Dr. Miller leaves behind a host of students and friends who mourn his passing but rejoice that they had the opportunity to receive from him that intangible something called inspiration which they will never forget.

Courageous to the last, loth to let his friends know of the approaching end, of which he was becoming aware, he continued to go to the laboratory until the day before his death, rarely missing the occasion of daily lunching with his comrades. He had so lived that when his summons came, "sustained and soothed by an unfaltering trust," he approached his end "like one who wraps the drapery of his couch about him and lies down to pleasant dreams."

> The Moving Finger writes; and having writ,
> Moves on: nor all your Piety nor Wit
> Shall lure it back to cancel half a Line,
> Nor all your Tears wash out a Word of it.
> —*Omar Khayyám*

H. W. MOUNTCASTLE
WESTERN RESERVE UNIVERSITY

SCIENTIFIC EVENTS

THE ONE HUNDREDTH ANNIVERSARY OF THE ESTABLISHMENT OF THE ALEXANDER DALLAS BACHE MAGNETIC OBSERVATORY

A MEETING in commemoration of the life and work of Alexander Dallas Bache was held in Philadelphia on February 14–15, as a fitting observance of the one hundredth anniversary of the establishment by him of the first magnetic observatory in America. The program of the meeting was in part historical and in part a symposium on geomagnetism. The sessions were held at the building of the American Philosophical Society and in the chapel of Girard College.

Alexander Dallas Bache was a man of abundant energy, which overflowed in many directions. Born in Philadelphia in 1806, a great-grandson of Benjamin Franklin, he was graduated from West Point in 1825 at the head of his class, although its youngest member. He served with the Army Engineers at Newport, R. I., and in 1828, at the age of twenty-two years, was elected professor of natural philosophy and chemistry in the University of Pennsylvania. In 1836 he became the first president of Girard College, where he established his magnetic observatory in 1840. He served also as president of the Central High School and superintendent of schools of Philadelphia. In 1834 he was appointed superintendent of the U. S. Coast Survey, which position he held until his death in 1867. He was president of the American Association for the Advancement of Science in 1850 and of the American Philosophical Society in 1855. From 1863 to 1867 he was president of the newly organized National Academy of Sciences, in whose establishment he played an influential part.

In the historical part of the program, on the morning of February 14, Bache's various scientific connections were described by Dr. E. G. Conklin, of the American Philosophical Society, Professor E. P. Cheyney, of the University of Pennsylvania, Secretary Henry Butler Allen, of the Franklin Institute, Rear Admiral L. O. Colbert, of the U. S. Coast and Geodetic Survey, and Dr. Frank B. Jewett, of the National

Academy of Sciences. All the speakers brought out the fact that Bache could not become a member of a society without taking an active part in its proceedings, and that he left the imprint of his administrative ability on all the organizations with which he was connected.

The symposium on geomagnetism was planned to give a general view of the progress that has been made in our knowledge of the subject during the hundred years since Bache founded his observatory. This "century of progress" witnessed the important discoveries of earth currents, of electric currents in the upper atmosphere, of the electronic bombardment of the earth by the sun and of the cosmic rays. The influence of these factors on the earth's magnetism and on radio transmission was described in twelve papers by John A. Fleming, O. H. Gish, A. G. McNish, H. Freeborn Johnston and L. V. Berkner, of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington; by N. H. Heck and H. E. McComb, of the U. S. Coast and Geodetic Survey; by E. A. Eckhardt, of the Gulf Research and Development Company; by Carl W. Gartlein, of the Department of Physics of Cornell University; by J. H. Dellinger, of the National Bureau of Standards; by H. E. Hallborg, of R. C. A. Communications, Inc., and by Thomas H. Johnson, of the Bartol Research Foundation.

The program for the afternoon of February 15, at Girard College, was of a more popular character, the audience including about a thousand students of the college. President Merle M. Odgers, of the college, described Bache's work as an educator, and Paul R. Heyl, of the National Bureau of Standards, spoke on "Magnetism and Its Uses," giving the historical development of the subject from the earliest times.

All the papers presented at the meeting will be published by the American Philosophical Society.

PAUL R. HEYL
NATIONAL BUREAU OF STANDARDS

PAN-AMERICAN UNION AGAINST CANCER

A PAN-AMERICAN UNION AGAINST CANCER was incorporated a few days ago by a prominent group of physicians, business men and lawyers who are interested in the problems of cancer research, therapy and education as coordinated aspects of an effort which it is hoped will some day lead to the control of a disease, which is becoming more and more effective as improved methods of treatment are being developed. The organization is an offspring of the International Union against Cancer, which was formed in Paris in 1934. The president of that Union was Senator Justin Godart, French Minister of Public Health during the World War. Since the occupation of France, the Union has obviously become inactive. In order to carry on the work in which this international organization assisted, it was suggested by Senator Godart a few months ago that a Pan-American organization be started to include the same groups as were a part of the older organization. The only officials in the United States were Boris Pregel, who was one time chairman of the Finance Committee of the International Union; L. W. Tomarkin, who was executive secretary, and the writer of this note, who was a vice-president. The new association just formed will follow in the footsteps of the International Union and hold a Cancer Congress in Buenos Aires in 1942. Representatives of Canada, the Philippines and most of the South American countries have renewed their allegiance to the new representative of the old International Union. The new organization will, as effectively as possible, aid in the various problems which come up in public education, concerning cancer, in the conduct of scientific meetings and, when funds become available, the publication of proceedings. Its activities will in no way conflict with those educational and research organizations already in existence in the various countries which have joined the league.

FRANCIS CARTER WOOD

THE NINETEENTH ANNUAL PLANT SCIENCE SEMINAR

THE nineteenth annual Plant Science Seminar will be held at the Cranbrook Institute of Science during the week of August 11–15. Cranbrook is an educational center occupying 300 acres of wooded land in Bloomfield Hills, Mich., about 20 miles north of Detroit. Its Institute of Science was established as an aid to the diffusion of scientific knowledge and as an instrument of research and discovery. The Institute of Science occupies a building opened in 1938, where are provided exhibition space and well-equipped laboratories, library and auditorium. Housed in the building is the largest natural history museum in greater Detroit. Local natural history is emphasized and the museum is rapidly becoming the mecca for students and scientists of southeastern Michigan.

The region about Bloomfield abounds in variable flora and many distinct plant communities are to be found. A number of botanical excursions through this typically glaciated country are planned. Visits will be made to the Medicinal Plants Farm at Parkedale and to the Oakview Seed Breeding Institute of the Ferry-Morse Company and a visit to the Todd Mint Farms near Kalamazoo is being tentatively arranged.

Some of the leading pharmaceutical botanists and pharmacognosists will appear as speakers on the program and their subjects will be announced in the near future.

J. Russell Anderson, 15851 Evanston Avenue, Detroit, Michigan, is the local secretary.