down he was forced to earn his living by other means; yet his courage never failed, even though very little observing could be done. He made surveys for the Little Miami Railroad, now a part of the Pennsylvania system; later he made surveys for the Ohio and Mississippi Railroad, now called the Baltimore and Ohio Southwestern.

He tried lecturing on astronomy and was remarkably successful; his audiences were large and enthusiastic. In the spread of astronomical knowledge, in drawing the attention of thinking people to the beauties of astronomy and inspiring them with enthusiasm he paved the way for the founding of other observatories, the endowment of other institutions, and attracted to the subject young men of ability whose later work was creditable to American astronomy.

Another venture of Mitchel's was the publication of a popular journal on astronomy called the *Siderial Messenger;* two complete volumes were published, but it expired after a few numbers of the third volume appeared.

Mitchel worked on the problem of applying the electric current to record observations; his disk chronograph worked but was not as good as the cylindrical one developed by the Bonds.

In 1859 Mitchel was appointed director of Dudley Observatory and went to Albany in the following spring. But already the war drums were beating and on the outbreak of war, he resigned and was appointed a brigadier general in the U. S. Army. He conducted a successful campaign in the west, going as far south as Huntsville, Ala. He was transferred to the Carolinas and succumbed to yellow fever at Beaufort, S. C., on October 30, 1862. Professor Holden, first director of the Lick Observatory, speaks thus of his work:

> His direct service to practical observing astronomy is small, but his lectures, the conduct of the Cincinnati Observatory and the publication of the *Siderial Messenger,* together with his popular books, excited an intense and wide-spread public interest in the science and indirectly led to the founding of many observatories. He was early concerned in the matter of utilizing the electric current for longitude determinations, and his apparatus was only displaced because of the superior excellence of the chronograph devised by the Bonds. His work was done under immense disadvantages, in a new community, but the endowment of astronomical research in America owes a large debt to his energy and efforts.

CLEVELAND ABBE
1838–1916

CLEVELAND ABBE, the third director of the Cincinnati Observatory, was born in New York in 1838. He graduated from the College of the City of New York in 1857, studied under Brünnow at Ann Arbor for two years and worked with Gould at Cambridge during the period 1860–64. Then he spent two years as student and assistant under Otto Struve at Poulkova. Returning home, he served in the United States Naval Observatory for a short time and was called to Cincinnati in 1868 to rehabilitate the Cincinnati Observatory.

Abbe's interest in meteorology was early developed and continued all his life. He said:

> The popular articles in the New York papers by Merriam, Espy, Joseph Henry and others—notably Redfield and Loomis—had by 1857 convinced me that man should and must overcome our ignorance of destructive winds and rains.

The opportunity to investigate weather conditions came to him in Cincinnati. Thus he described it:

> In my inaugural Cincinnati address of May 1, 1868, I stated that with a proper system of weather reports the public need of forecasts could be met and that astronomy could also be benefited.
>
> The suggestion was taken up by Mr. John A Gano, president of the local chamber of commerce: a committee met me, approved my plans, and promised the expenses of a first trial.

The Western Union Telegraph Company cooperated with Abbe and the Chamber of Commerce: observers in other places made the meteorological observations at a specified time and telegraphed them to Cincinnati. The Chamber of Commerce paid the expenses for the first three months; Abbe analyzed the data and made the predictions. He made a map on which were located the places sending the data, the temperature, direction of wind and weather. These were manifolded and sent to the various subscribers; and the predictions were also published in the daily papers. On September 1, 1869, the first *Cincinnati Weather Bulletin* appeared; at the end of three months, the Western Union assumed charge of the *Bulletins* and Abbe continued to make the predictions. He was nicknamed "Old Probs" by the employees of the Western Union, a name that clung to him, but has sometimes been applied to other weather men.

Abbe resigned in 1870 to accept a position as assistant in the office of the Chief Signal Officer. By a law, passed by Congress in 1870, the creation of a weather service was authorized and placed under the direction of the Signal Service of the Army.

Abbe organized the forecast work and began preparing the tri-daily synopses and probabilities of the weather. He also inaugurated the *Monthly Weather Review* and contributed a great many articles to this publication; he took a leading part in all the activities of the national weather service. In virtue of his having started a weather service here in Cincinnati and having published his "probabilities," we consider

his work here as a forerunner of the present national Weather Bureau.

In 1912, the Symons Memorial Gold Medal of the Royal Meteorological Society was bestowed upon him, and the president, Dr. H. N. Dickson, paid him this tribute: He "has contributed to instrumental, statistical and thermodynamical meteorology and forecasting" and "has, moreover, played throughout the part, not only of an active contributor, but also of a leader who drew others into the battle and pointed out the paths along which attacks might be successful."

It is highly appropriate that a tablet, with this inscription, is placed in the Abbe Meteorological Observatory in Cincinnati:

U. S. Department of Commerce
Weather Bureau
ABBE METEOROLOGICAL
OBSERVATORY
Established April 1, 1915
Named in Honor of
1838 CLEVELAND ABBE 1916
First official U. S. Weather Forecaster

EVERETT I. YOWELL

OBSERVATORY OF THE
UNIVERSITY OF CINCINNATI

OBITUARY

DEATHS AND MEMORIALS

DR. EPHRAIM PORTER FELT, entomologist, director of the Bartlett Tree Research Laboratories, from 1898 to 1928 New York State entomologist, died on December 14. He was seventy-five years old.

DR. JOHN HARVEY KELLOGG, surgeon, director of the Battle Creek Sanitarium and founder of the W. K. Kellogg Company, died on December 14 at the age of ninety-one years.

PROFESSOR CHARLES HENRY HAWES, anthropologist, a former associate director of the Museum of Fine Arts at Boston, died on December 13. He was seventy-six years old.

THE hundredth anniversary of the birth of Robert Koch occurred on December 11. *The New York Times* writes: "Forty years ago the death rate from that once dreaded disease was 200 per 100,000; today it is 40 per 100,000—a decline of 80 per cent. No longer is tuberculosis the leading cause of death; it now ranks eighth on the list of deadly diseases. This improvement can be explained only in terms of the remarkable discovery made by Robert Koch that tuberculosis is caused by a bacillus—a discovery that made it possible for physicians to consider tuberculosis as a scientific problem."

SCIENTIFIC EVENTS

THE POST-WAR FORESTRY POLICY OF GREAT BRITAIN

A POST-WAR forestry program, which aims at increasing the forest area of Great Britain to 5,000,000 acres in the course of five decades, is recommended in a report to the Government by the Forestry Commissioners which was recently presented to Parliament by the Chancellor of the Exchequer. It is described by the Parliamentary correspondent of *The Times*, London, who says that this White Paper on "Post-War Forest Policy" is an important contribution to wider schemes of planning, and aims at reconciling claims of amenity with economic utilization in the use of more land for the growing of trees. He continues:

For the second time in a generation British woodlands are being subjected to intensive exploitation to meet war needs. The total area of woodland felled or devastated during and immediately after the last war was about 450,000 acres. Depletion will certainly go much farther in this war than in the last, and the scale of reconstruction will have to be correspondingly larger. The forestry position is already much worse than it was in 1918, and a reorientation of thought is necessary.

We have had a national forest policy only since 1919, when the Forestry Commission was established. In spite of checks owing to "lack of stability of finance" a national forest estate aggregating 714,000 acres of plantable land has been acquired; and of this 434,000 acres were under woodlands by the end of 1939. The new State plantations are making a contribution, but the great bulk of home-produced timber now being felled is coming from private woodlands. To reduce imports and save shipping millions of tons annually of timber are being provided from home sources.

The report suggests that the nation should now make up its mind to devote 5,000,000 acres to afforestation. That area is required for national safety and will also provide a reasonable insurance against future stringency in world supplies. (It is estimated that the area proposed would ultimately produce about 35 per cent. of the normal consumption of timber.)

These 5,000,000 acres should be not merely planted with trees, but also systematically managed and developed. It is estimated that 5,000,000 acres of effective forest can be secured by the afforestation of 3,000,000 acres of bare ground and by selecting from existing woodlands 2,000,000 acres of those which are better suited for forestry than