University Professors, Botanical Society of America, Ecological Society, American Agricultural History Society, Pennsylvania Botanical Society, Pennsylvania Horticultural Society, Pennsylvania Forestry Association, Philadelphia Academy of Science, American Philosophical Society, Society of Naturalists, fellow American Association for the Advancement of Science; also a member of Phi Beta Kappa, Sigma Xi and Delta Upsilon. He was also on the Advisory Council of the Allegheny Forest Experiment Station.

Born in Greenfield, Wisconsin, in 1866, he was graduated from the University of Wisconsin in 1890 with the degree of B.S. He served in the department of botany as fellow and received the M.S. in 1892. Following the lead of so many other American botanists of that period, he went to Leipzig, where after two years' work with Dr. Pfeffer he received the Ph.D. degree in 1895. Having taught in the common schools of Wisconsin and been principal of the Wisconsin Academy at Madison from 1892 to 1893, he was appointed instructor in pharmacognosy in the University of Wisconsin from 1895 to 1896 and as assistant professor from 1896 to 1899. He then lectured in Radcliffe College and Harvard University from 1899 to 1901. At this time (1901) he was appointed plant physiologist in charge of plant physiological investigations in the Bureau of Plant Industry of the United States Department of Agriculture. This division also included drug plant, poisonous plant and fermentation investigations. This position was held until he resigned in 1920. Shortly after he was appointed professor of botany and director of the Botanical Garden at the University of Pennsylvania. This position he held until 1937 when he retired from the professorship but remained director of the Botanical Garden until his death on April 8, 1940.

His botanical publications began with a study of the flora of Madison, Wisconsin, and with studies of the mosses. Undoubtedly he was influenced by Professors Barnes and Kahlenberg in his earlier work. The physiological side was emphasized in such titles as effect of turgor and temperature on growth, electrolytic dissociation, algae and antiseptics, plasmolyzing agents and the poisonous effects of phenol. Drug plants came in at the very first in such titles as betel chewing, drugs of Ceylon and folk materia medica, and in 1904 the drug plant work seems to predominate with papers on cultivation in the United States of such drugs as ginsing, camphor and paprika. Along with these investigations were studies of curing and keeping qualities of lemons. The interest in mosses was still evident, and the swing to plant nutrition evinced very early became dominant about 1914 in such studies as toxicity and malnutrition, harmful effects of distilled water, exchange of ions in nutritive solutions, studies of lime and magnesia, of alkaloids, oxidases and latex and the absorption of calcium salts. Studies of normal and blighted spinach, of the ash of spinach as affected by concentrated solutions, and calcium in the nutrition of plants, of the effect of illuminating gas in soils on plants were gradually giving way to an interest in the history of botany and agriculture. As early as 1916 he published on Thomas Jefferson in relation to botany. Then Lewis and Clark, John Bradbury, Sachs, Michaux and Jefferson claimed his attention. A swing toward horticulture is evinced in later works on pecan, viburnum, Dutch elm and pine diseases and the work of the Morris Arboretum.

In many ways True was a pioneer, pushing into new worlds and reporting back with great enthusiasm, always looking for a new interest but holding to the old with undiminished enthusiasm. This enthusiasm, to a great degree, he could pass to his staff by his ability to lay out and plan experiments backed by an interest in the younger workers which stimulated them by his faith in their ability and evident satisfaction in their accomplishment. This led to a real affection for him by his subordinates. Informal gatherings in the laboratory or greenhouse for discussion of problems brought together men in related fields and did much to maintain a cooperative scientific atmosphere in the Bureau. One of his men, now a prominent botanist, says of him in a personal letter: "I've never known any one who was more generous in his appraisal of his employes or more good-hearted in his relations with them. He was a vigorous champion of research."

With such broad interests, with so much humanitarian interest, his greatest contribution was the opportunity he afforded to others to interest themselves in their own special problems. The list of men who profited by this atmosphere would include many leading American plant physiologists.

Science to True always meant a contribution to human welfare, and the welfare of the scientific worker was always important to him.

H. L. SHANTZ

HOWARD J. BANKER

HOWARD J. BANKER died in his home at Huntington, Long Island, on November 13. He was born in Schaghticoke, New York, on April 19, 1866, the son of Amos B. Banker and Frances Alcena Welling. He is survived by his wife, the former Mary Eugenia Wright, of Clifton Park, New York, and a nephew, Walter B. Banker, of Wilmington, Delaware.

He received his A.B. degree from Syracuse University in 1892 and his Ph.D. from Columbia in 1906. He was pastor of the Union Church in Proctor, Vermont, 1895–98; teacher of mathematics in Dickinson

Seminary, Williamsport, Pennsylvania, 1900–01; teacher of biology, Southwestern State Normal School, California, Pennsylvania, 1901–04; professor of biology, DePauw University, Greencastle, Indiana, 1904–14; investigator in the Eugenics Record Office of the Carnegie Institution of Washington, located at Cold Spring Harbor, New York, 1914–33. He was a member of Phi Beta Kappa and Sigma Xi.

His botanical interests, chiefly in the fungi, found expression in a monograph of the Hydnaceae of North America. He compiled a genealogy of the Bancker or Banker families. His interest thus shown in genealogy brought him to the Eugenics Record Office, where he compiled an extensive history of the Bowditch family of Boston as an example of heredity in an aristogenic family. He invented a method of measuring intelligence on the basis of teachers' marks, and this has been applied to the study of inheritance of mental traits in normal populations. His later contributions were in the field of aristogenic human heredity, and he promoted the introduction of personality traits into family histories in order to render genealogical studies of greater scientific and social value.

ALBERT F. BLAKESLEE

RECENT DEATHS

DR. FRANK M. ANDREWS, professor of botany at Indiana University, with which he had been connected for forty-six years, died on November 26 at the age of seventy years.

MARIUS ROBINSON CAMPBELL, who retired as principal geologist of the U. S. Geological Survey in 1932, died on December 7 at the age of eighty-two years.

DR. JOHN AUGUSTUS HARTWELL, surgeon, of New York City, president of the New York Academy of Medicine from 1930 to 1933 and from 1934 to 1939 director of the academy, died suddenly on November 30. He was seventy-one years old.

DR. PAUL FERDINAND SCHILDER, research professor of psychiatry at the College of Medicine of New York University and clinical director of the psychiatric division of Bellevue Hospital, died on December 8 as the result of an automobile accident. He was fifty-four years old.

DR. JOSEPH BEAL STEERE, from 1879 to 1893 professor of zoology at the University of Michigan, died on December 7 in his ninety-eighth year.

A CORRESPONDENT writes that Dr. James Harvey Ransom, since 1921 professor of chemistry and head of the department at the James Millikin University, died on May 30 at the age of seventy-nine years.

SIR HERBERT WRIGHT, treasurer of the Imperial College of Science and Technology, London, known for his work on tropical agriculture, died on October 28 at the age of sixty-six years.

THE death of Dr. Charles Hesterman Merz, the well-known consulting electrical engineer of Great Britain, and his son and daughter as a result of enemy action is announced in *Nature*. He was sixty-six years old. Dr. Merz was a fellow of the American Institute of Electrical Engineers.

SCIENTIFIC EVENTS

DAMAGE TO SCIENTIFIC INSTITUTIONS IN LONDON

A CORRESPONDENT writes: "A further bombing attack was made upon the British Museum (Natural History) during the night of October 15–16. The building was hit by high explosive and incendiary bombs. The damage was not very extensive and was almost entirely confined to the exhibition galleries, but water seepage was reported to have endangered the insect collections. The zoologists and botanists of every nation, including Germany, would view as a major calamity the destruction of the Natural History Museum and its enormous research collections."

The London *Times* reports that the Royal College of Surgeons, in Lincoln's Inn Fields, was comparatively little damaged when a bomb fell in the garden in the center of the square. Windows and their frames were destroyed, doors and partition walls blown down, and several ceilings damaged. The Hunterian Collection had been removed to a place of safety, but some damage was done to specimen jars, particularly in the army medical war collection.

THE CLASSIFICATION OF TOOL STEELS

THE American Standards Association has announced that it has been requested by the American Society of Tool Engineers to undertake a new project on the classification of tool steels by classes of usage. The purpose of this will be to eliminate the guesswork in selecting the proper steel for various uses, thus prolonging tool life, wearing qualities, etc. This project does not concern tool steels alone but also other materials used for cutting tools, such as cemented carbides and stellite.

According to the American Society of Tool Engineers, there are about 1,000 brands of tool steel on the market, of which many are identical or nearly so. Since there are no standards by which the qualities of these multitudinous brands can be judged and classified, the user is bound gradually to drift into a general use of a certain few varieties of tool steel from