

## SERENO WATSON.

For the fourth time in the new year death has invaded the ranks of the National Academy of Sciences, taking Meigs, Lovering, Hunt, and now Watson.

Sereno Watson was born in East Windsor Hill, Conn., on December 1, 1826. Of his early life we have no record, but he must have shown evidences of studiousness, for he entered Yale College and was graduated in 1847, a member of the largest class ever graduated from that institution prior to 1863.

After graduating his mind seems to have turned to medicine, but the way was not clear, and so, for five years, he taught in various places in New England, in Pennsylvania, and in New York. Meanwhile at intervals he studied medicine, both at home in East Windsor and in the medical department of the University of the City of New York. Then for a time he served as a tutor in Iowa College, in Grinnell, Iowa, but this place he soon relinquished, and spent the years 1853-1855 in Quincy, Ill., where he completed his medical studies under the direction of his brother, Louis Watson.

He practiced medicine for a short time only, and in January, 1856, accepted the appointment of secretary of the Planters' Insurance Company, in Greensboro, Ala. This place he held until April, 1861. The civil war had then begun, and he retired from this office to return to the North. Subsequently he engaged in literary labors and for several years he was associated with Dr. Henry Barnard in editorial work on the *Journal of Education*, published in Hartford, Conn.

While in Alabama he became interested in botany, devoting his leisure to the pursuit of that interesting science, but it was not till later that he was able to return to it. In 1867 he went to California by way of the Isthmus of Panama. About this time the United States Geological Exploration of the 40th parallel was organized by Clarence King, under whom Dr. Watson received an appointment as a volunteer aid to the service. In March, 1868, William W. Bailey resigned the office of botanist to the exploration and Mr. King promptly nominated Dr. Watson to fill the vacancy.

He continued in the field until 1869, and then settled in New Haven, where he began the examination of the material collected in the herbarium of Professor Daniel C. Eaton, in Yale College, but a year later he removed to Cambridge and there completed his work in the herbarium of Professor Asa Gray. His results were published as Volume V., on "Botany," in the series of "Reports of the Geological Exploration of the 40th Parallel" (Washington, 1871). With the publication of this large quarto work his connection with the exploration came to an end.

His ability as a botanist was established, and much of the botanical work of the "Geographical and Geological Explorations and Surveys West of the 100th Meridian" was assigned to him by Professor Ferdinand V. Hayden. His results are scattered through the official reports of the survey and are known to his fellow scientists through his specially reprinted monographs. Again in 1880 the government sought his services and he was intrusted with the procuring of certain botanical information for the forest department of the United States census of that year. For this purpose he made a special visit to the great Northwest, in order to secure the necessary results.

Meanwhile he continued to make his home in Cambridge, and in 1874, when the work of Dr. Asa Gray was divided among his assistants, the special charge of the herbarium was given to Dr. Watson. As curator he continued until his death. During 1881-1884 he also served Harvard as instructor of phytography. Subsequent to the death of Professor Gray, in 1888, the active prosecution of the systematic work at the herbarium was carried on by Dr. Watson. He took up the editing of the unfinished "Synoptical Flora of North America," and in association with Professor John M. Coulter, of Wabash College, Crawfordsville, Ind., he prepared a revised edition of Dr. Asa Gray's "Manual of the Botany of the Northern United States."

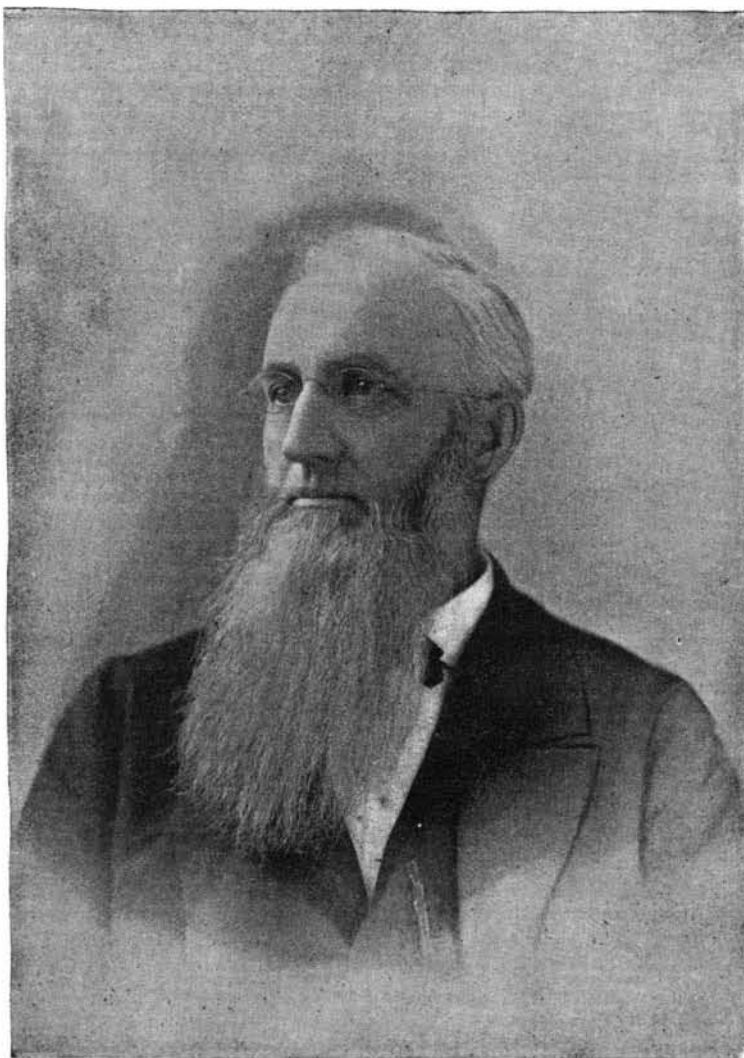
Of his own special work, the "Bibliographical Index to North American Botany," Part 1, Polypetalæ, was published in 1878 by the Smithsonian Institution, and in association with Professor William H. Brewer, of New Haven, and Professor Asa Gray, he prepared the "Botany of California," in two octavo volumes, issued in Cambridge in 1876 and 1880, as part of the series published under the auspices of the Geological Survey of California. The revising and editing of the "Manual of the Mosses of North America," originally prepared by Leo Lesquereux and Thomas P. James, was intrusted to him, and the volume was published in Boston in 1880.

Under the general title of "Contributions to Ameri-

can Botany," he published the results of special studies in his favorite science. These appeared for the most part in the "Proceedings of the American Academy of Arts and Sciences," and perhaps the most important were those devoted to the plants collected by Dr. Edward Palmer in Southwestern Texas and Northern Mexico. Besides these, he published occasional papers in the *American Naturalist* and other scientific periodicals. For a time he was one of the assistant editors of the "Century Dictionary," having special charge of the botanical subjects.

The great value of his work was appreciated by his scientific associates. In 1878 Iowa College, where as a young man he had been an instructor, conferred upon him the honorary degree of doctor of philosophy, and in 1889 he was chosen to the National Academy of Sciences, taking the place made vacant by the death of his older colleague, Dr. Asa Gray. He was one of the resident fellows of the American Academy of Arts and Sciences and in 1873 he became a member of the American Association for the Advancement of Science, at the Portland meeting. Two years later he was advanced to the grade of fellow. Dr. Watson was also a member of other scientific bodies, both in this country and abroad.

At the meeting of the National Academy of Sciences, held in New York during November, he was present, and apparently in good health, but, toward the close of



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the year, he became a victim to the prevalent epidemic form of the influenza, from which he failed to recover. A complication with dilation of the heart ensued, and, on March 9, he died at his home in Cambridge. His funeral services were held a few days later in Appleton Chapel.

At the time of his death, Dr. Watson was the fifth oldest active officer of Harvard University, but his retiring disposition prevented his being known personally to but few. He was absorbed in his particular duties at the herbarium, and seldom met others than those who were interested in his work. His familiar figure will no longer be seen in the college yard, but his contributions to American botany form a monument to his memory that will last forever. M. B.

## Chronic Arsenical Poisoning.

A good example of chronic arsenical poisoning on a large scale occurred in County Asylum, Berrywood, and a short account of it may be both interesting and instructive. In the endeavor to make the wards of an asylum bright and cheerful, and to do this at as little expense as possible, it is not improbable that the nature of the coloring materials used may be overlooked, and that some of the gastric and intestinal disorders which disturb the peace of mind of medical superintendents may be cases of arsenical poisoning. For a long period the nurses here were in poor health. First one and then another was laid down until, within a few months, nearly every nurse on the staff had

been, or was, under medical treatment. Headache, neuralgias, gastric derangements, loss of appetite, constipation or diarrhoea, irritation of eyelids, anæmia—these were the chief symptoms complained of. Drugs did not appear of much avail, but a holiday had a marked effect for good. At last one nurse had the eye symptoms in a more pronounced form, and suspicion was aroused. In each nurse's room was a green baize curtain, used as a covering for dresses, etc. A portion was taken and examined. It was found to be impregnated with arsenic to an astonishing extent. These curtains were removed; the rooms freely ventilated; medical treatment was stopped; the symptoms disappeared, and, though some months have elapsed, have not returned. The baize was similar to that used for covering doors, etc., and was obtained from two manufacturers.—W. Harding, M.B., in the *Lancet*.

## Plate Glass Manufacture in Belgium.

According to the latest published statistics (1888), there were in active operation in the kingdom of Belgium 64 factories and 153 furnaces manufacturing glass of all kinds, employing 17,240 workmen. The value of the yearly production was 35,655,000 francs.

In the consular district of Brussels there are eight plate glass manufactories, as follows: Societe Anonyme of Floreffe, at Floreffe; Societe Anonyme of Monstier, sur Sambre; Societe Anonyme of Anvelais, sur Sambre; Societe Anonyme of St. Roch, at Anvelais; Societe Anonyme of St. Marie d'Origines, at Tamines; Societe Anonyme of Hainaut, at Roux; Societe Anonyme of Charleroi, at Roux; Societe Anonyme of Courcelles, at Courcelles.

The average monthly production of each manufactory is 12,000 square meters. The average monthly production of the eight manufactories is 100,000 square meters, and per year 1,200,000 square meters, or 12,000,000 square feet, English measurement.

Crystal and mirror plate glass is not manufactured in this consular district, but is largely imported from Furth, Germany.

Ninety per cent of the crystal and mirror glass is made from blown window glass, which is first made into thick cylinders, which are smoothed and polished by machinery until the desired thickness is obtained, which varies from one-eighth to three-sixteenths of an inch.

The method employed in this district for grinding, smoothing, and polishing plate glass is as follows:

The glass, when taken from the furnace, is spread upon a cast iron table; the mass is then rolled into sheets of from 9 to 10 and from 14 to 16 millimeters in thickness. The former is designated as thin, and the latter as thick, plate glass. This operation constitutes what is known as rolling, and the glass thus produced is called rough glass. After the glass has been completely cooled, it is placed upon cast iron tables, upon which a bed of plaster of Paris has been prepared to receive and firmly hold the glass in place. Particular care is exercised in filling in the spaces between the glass and the table with the plaster, so as to securely seal the glass to the table. It then passes through a series of grinding and smoothing operations until the thickness is reduced to about one-fourth, and the face of the glass has been thoroughly polished. It is removed from the

table, turned, replaced, and polished in the same manner as above described.

The operation of smoothing and polishing costs 6.50 francs (\$1.25) per square meter. The cost of the rough glass is 7.50 francs (\$1.45) per square meter. The total cost of glass when finished to a marketable condition is 14 francs (\$2.70) per square meter (10¼ English feet).

JACKSON PARK will retain as one of its permanent attractions the building which Japan will erect for its headquarters at the Exposition. The building will be modeled after one of the most famous and architecturally unique of Japan's ancient temples, and with its surrounding garden will cost \$70,000. About 40,000 square feet will be occupied. The South Park commissioners have accepted the offer of S. Tegima, representative of the Mikado, to give the structure to Chicago on condition that it be kept permanent and in repair, and that one room in it be devoted to a public exhibit of Japanese works of art, which the Japanese government agrees to replenish from time to time.

## Sleeping Cars.

In one of the Pullman Company's suits for infringement, Mr. Jacob Shaffer testified that in 1837 he was employed in the car shops of the Cumberland Valley Railroad Company, and that sleeping cars, with hinged or folding beds, were then in use on that road. This defeats any broad claim to the use of such beds in cars.