

AN OUTDOOR EXHIBIT OF THE GILBOA FOSSIL TREES

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The New York State Museum through the cooperation of the New York City Board of Water Supply inaugurated in the spring of 1927 a new type of exhibit for this State—a roadside exhibit of specimens of fossil tree stumps near the spot where they were taken from the rocks at Gilboa in the Catskills (Scholarie county). In particular, the Museum owes this exhibit to the interest and efforts of three engineers connected with the New York City Board of Water Supply: Thaddeus Merriman, chief engineer; George G. Honness, department engineer; and Sidney K. Clapp, assistant engineer. Mr Clapp supervised the collection of the stumps from various places, the setting up of the group and the placing of the labels provided by the State Museum. To these three men the State Museum is under obligations for favors in the past, as well as the present. Provision has also been made to have the group watched by the police on duty so that it will not come to harm through vandals or over-enthusiastic souvenir collectors.

This exhibit of the Gilboa fossil trees is situated on New York City ground in lower Gilboa near the junction of the Lower Blenheim-Gilboa road with the road from Gilboa to Grand Gorge (figure 13). Near-by is the filled-in quarry, Riverside quarry, from which the greatest number of the fossil trees were obtained and where specimens are still available. The group is just within the fence bounding the city property and can be plainly seen from passing cars. A large-lettered label placed close to the fence can be easily read from a car standing in the road (figures 14, 15). The exhibit proper occupies a space roughly 20 feet by 4 feet and the stumps are set in a cement base thick enough to be unaffected by the action of frost. The stumps have been so arranged that the undersides of the bases are visible in some cases. Around the cement base is a narrow grass plot and in back of the group is a semicircle of evergreens which with a few years' growth will form a very effective background. Between the background of evergreens and the group, is a second detailed label for the benefit of those who are more interested (figure 16). This label was made by pasting on a beaver board background the pages of a popular article on the Gilboa fossil forests that appeared

in the Scientific Monthly, June 1927 (Winifred Goldring: "*The Oldest Known Petrified Forests*"). This article gives many illustrations of the details of these fossil trees and in addition has a picture of the restoration of the fossil forests which may be seen in the State Museum. The label was waterproofed and framed under glass. The large-lettered label is weatherproof, since it was lettered with black oil paint on a white background covered with three coats of oil paint.

For the benefit of anyone who might some time wish to make use of such outdoor labels, it might be well to explain how the printed label was waterproofed. A thick coating of waterproof cement was spread on the part of the frame against which the glass rested and the glass was pressed firmly down onto it. Any good waterproof cement will do. The cracks between the glass and the frame were also filled with cement. Next, the edges of the label and the face for about one-quarter of an inch in from the edges were thickly coated with the cement, and the label was pressed down upon the glass and thereby sealed to it. The cracks between the label and the frame were filled in with cement and the back of the label was shellacked two or three times. Finally, the frame was backed with a board the same thickness as the frame, the back being screwed on. If this back can not be made from one piece of board, the boards composing it should be fitted together with tongue and groove. Across the top a rooflike extension about four inches wide was attached to throw the water away from the glass in times of heavy rains and thus give additional protection. In spite of all precautions the changes in weather during the first winter caused the frame to spread at the corners. To protect the label, the cracks formed were filled in with a black elastic roofing cement which blended in with the black oil paint of the frame. This roofing cement was at this time also applied as a putty where the frame met the glass to prevent the slightest possibility of a leak. Any roofing cement will serve the purpose.

This outdoor exhibit has already attracted the attention of hundreds of visitors to the region. When the new state roads are completed and the spot is more accessible, the story told by the fossil tree stumps and the accompanying labels will reach many times that number every year.

The fossil forests of Gilboa are of Upper Devonian age, which means, as we now reckon time, that these trees are about 300,000,000 years old. In those ancient times the present Catskill mountains formed the low shore-line of a shallow sea with the con-

tinental land to the east and extending far into the present area of the Atlantic. These forests grew along this low swampy shore line and were three times submerged through changes in the sea level, which gave us the three horizons of fossil stumps found today in the rocks around Gilboa. The fossil stumps were found in coarse sandstone with their bases resting in a bed of shale, black or greenish-black in color and representing the original mud in which the trees grew. The coarse sandstone indicates a rapid destruction and burial of the trees along the shore. Later the forests crept down from the higher land again to the new shore to be destroyed a second and even a third time.

These Gilboa trees in general must have resembled the tree ferns of the tropics today, and also of the ancient Carboniferous and Upper Devonian times. They do not, however, belong to this group, but were higher types—seed ferns—standing in a position between tree ferns and higher seed plants. They probably reared themselves to heights of at least 25 to 40 feet and bore at their summits crowns of fernlike leaves at least six to nine feet in length, on the tips of some of which were borne the seeds. The bases were bulbous and buried in the mud for some distance; and they were provided with a system of radiating roots. The greatest interest in these forests is that they are the oldest known to science.



FIGURE 13 The roadside State Museum exhibit of fossil trees at Gilboa, N. Y.



FIGURE 14 Roadside exhibit of fossil trees at Gilboa, N. Y., showing arrangement of descriptive placards

OLDEST KNOWN FORESTS

These fossil trees were exposed by the operations of the New York City Board of Water Supply (1920-1926). Three separate forests were uncovered. They represent the most ancient of forests and the trees are the oldest known on earth. The trees, known as Eospermatopteris, were tree ferns bearing seeds, a type now extinct, and they grew in the shore muds of the late Devonian sea west of the present Catskill Mountains, a few hundred million years ago.

See restoration of this fossil forest in the State Museum at Albany. Consult the other label with illustrations.

This exhibit is made by the New York State Museum through the cooperation of the New York City Board of Water Supply.

FIGURE 15 Description of the Gilboa fossil trees, from the placard in foreground of roadside exhibit

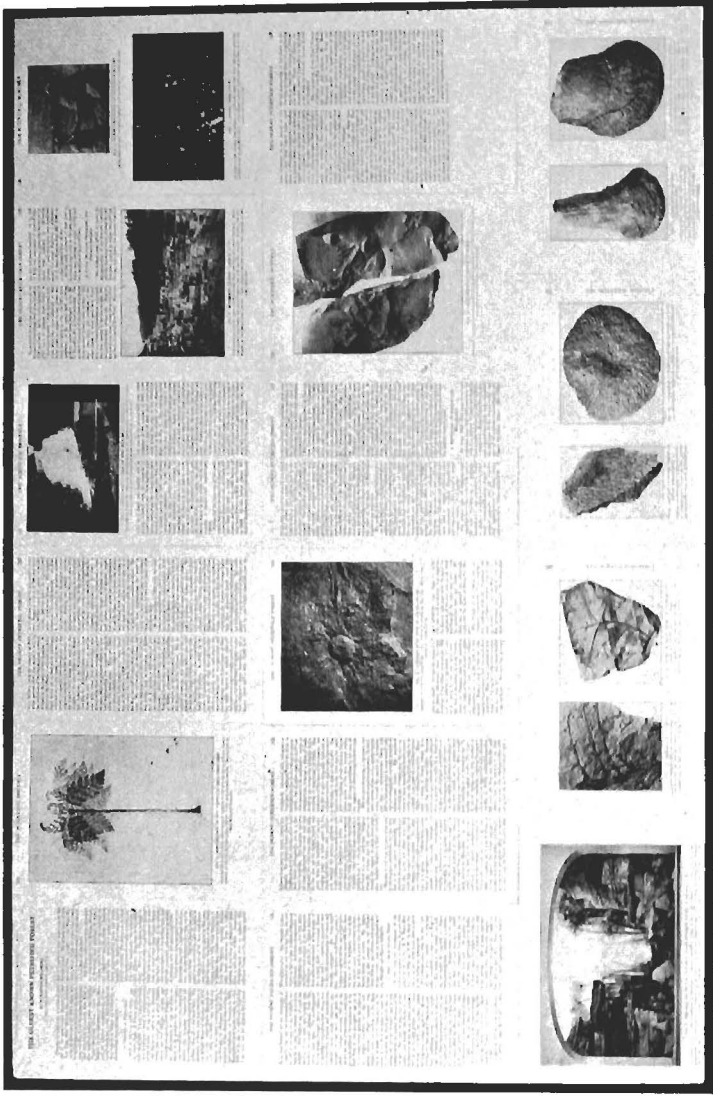


FIGURE 16 Detailed story of the Gilboa fossil forest as told by one of the placards at the roadside exhibit