

THE GINKGO PETRIFIED FOREST

VIVA D. MARTIN, Arsenal Technical Schools, Indianapolis

The Ginkgo Petrified Forest is among the recent discoveries of petrified wood. The area is now being considered for a national monument. Some eight years ago, students of the State Teachers' College at Ellenburg, Washington, working along the Columbia River in the vicinity of Vantage, discovered numerous loose fragments of petrified wood. These specimens attracted special attention because of the perfection of the preservation of the wood structure. Many slides were made from these loose specimens and carefully studied.

Not until three years later was any of the wood found in place. Then a log was discovered along a coulee, protruding from a solid lava flow. This discovery stimulated further search, and at the present time about 3,000 logs have been catalogued and about 121 partially excavated, so that they are open for public inspection. It is estimated that there are about 10,000 logs in the 11,000 acres which have been set aside for a national monument. Some 200 varieties of trees have been identified including the maple, elm, laurel, oak, bay, Douglas fir, hawthorn, and the rare Chinese Ginkgo tree, from which the area takes its name.¹

The logs of this area display several features of peculiar interest. The replacement has been especially perfect. The cellular structure of the wood is far more accurately preserved than in most of the logs of the Arizona Petrified Forest. This condition has made possible accurate identification of the species of trees preserved. The colors, however, are quite subdued, in many cases simulating so closely that of the original trees as to be almost deceiving. Some of the replacement is agate but not the major part. The logs lie in a porous lava flow some thirty feet in thickness. None of the logs are found rooted and few approach a vertical position. Observation showed a dip of the trunks of from 5° to 45° , with the largest number about 20° . The dip was uniformly to the north, some slightly northwest, some northeast. Few of the logs showed signs of decay and none of charring. Beneath the lava flow in which the trees are found are about twenty feet of lake silts which in turn lie on a lava flow. Fossils and leaf imprints are found in these lake silts.

The course of events suggested is as follows: The irregular surface of the cooled lava gave rise to small, scattered lake beds in which silt collected. Trees grew along the shores of these lakes and due to natural accidents, many eventually fell into the water by which they were preserved from rapid decay. Later, another lava flow from fissures to the north poured over the area pushing the logs in the lake in front of

¹ The identification of the species of trees was made by George S. F. Beck, of the State Teachers' College, Ellenburg, Washington.

the flow and finally engulfing them at the south end of the lake basin. The water-logged condition of the trees prevented charring by the hot lava. Erosion formed coulees, which, deepened by glacial waters, cut through the lava flows and exposed the logs which had experienced petrification in the interim. These lava flows and lake silts, in the relation indicated, are nicely exposed by a section along the coulee wall toward the west part of the area. Other areas of petrified wood have been discovered in the general vicinity, and in each case the same relation of lavas and lake silts exists².

[NOTE.—The spelling, Ginkgo, is the one given preference in Webster's Dictionary and generally used by botanists. Mrs. Martin reports, however, that the alternate spelling, Gingko, is employed in the official designation of the area.—Editor.]

² The author is indebted for the facts concerning structural relations to Mr. T. H. Fritchett, now in charge of the area.