

# Petrified Forest

*National Monument*  
Arizona

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## The Petrified Forest National Monument



**STOP-OVER** of one or two days at Adamana, on the Santa Fe lines in Arizona, will permit the traveler to view one of the few natural wonders that "comes up to its brag." As if laid bare for the delight of the tourist and the research of the scientist, there are huddled together in Apache county, Arizona, vast deposits of petrified wood, from the size of a marble to trees more than two hundred feet in length.

The Forest comprises many thousands of acres, in five separate tracts, all accessible from Adamana (altitude, 5,277 feet). From Adamana the following regular auto trips are made:

### **1. To the First and Second Forests and Natural Bridge**

Distance, 18 miles round trip. The time generally consumed is three to four hours, but the trip can be made in two hours.

The chief object of interest is the natural Log Bridge, which spans a chasm sixty feet wide—a trunk of jasper and agate overhanging a tree-fringed canyon.

The First Forest presents many curious rock formations, among which are the Eagle's Nest and the Snow Lady. The surrounding mesas, with their bands of different colors

and their slopes seamed by the erosion of countless ages, make a marvelous setting for this collection of Nature's jewels.

The Second Forest is two and one-half miles south of the first one. It comprises about two thousand acres. The trees mostly are intact and many of them highly colored. Here may be found a fine assortment of various sized chips, with the most delicate tints imaginable. This forest also contains an abundance of petrified logs with well preserved grain, as well as many with crystal hearts. The Twin Sisters are an interesting sight here.

### **2. To the Third or Rainbow Forest**

Distance, 26 miles round trip. Time required, four to five hours. The Third Forest covers a greater area than the others. It lies 13 miles southwest of Adamana and 18 miles southeast of Holbrook. There are several hundred whole trees, some of them more than two hundred feet long. The colors duplicate nearly every tint of the rainbow, and the local name of Rainbow Forest is very appropriate.

### **3. To the Blue Forest**

Distance, 12 miles round trip. Time required, about three hours.

This forest, smallest of the five, is one of the two districts discovered by John Muir. It has many logs of a blue tint; but its chief attraction is the oddly shaped and beautifully colored bad-lands and the fantastically carved rock formations.



The petrified logs are countless and lie in great profusion on knolls, buttes and spurs.

#### 4. *To the North Sigillaria Forest (Painted Desert)*

Distance, 18 miles round trip. Time required, about two hours.

This forest contains many finely preserved specimens of the carboniferous period—some of the stumps still standing where they grew. One fallen monarch is 147 feet long. The logs lie on the bottom and sides of a wide, shallow canyon, with buttes and mesas of differently colored clays and rocks.

Although deficient in colored petrifications, the North Forest is by no means lacking in interest. It is indeed well worth seeing. The visitor who has stood on the southern plateau and looked out over the wide canyon with its scattered wrecks of a giant forest, across to the horizontally banded red, gray, purple and

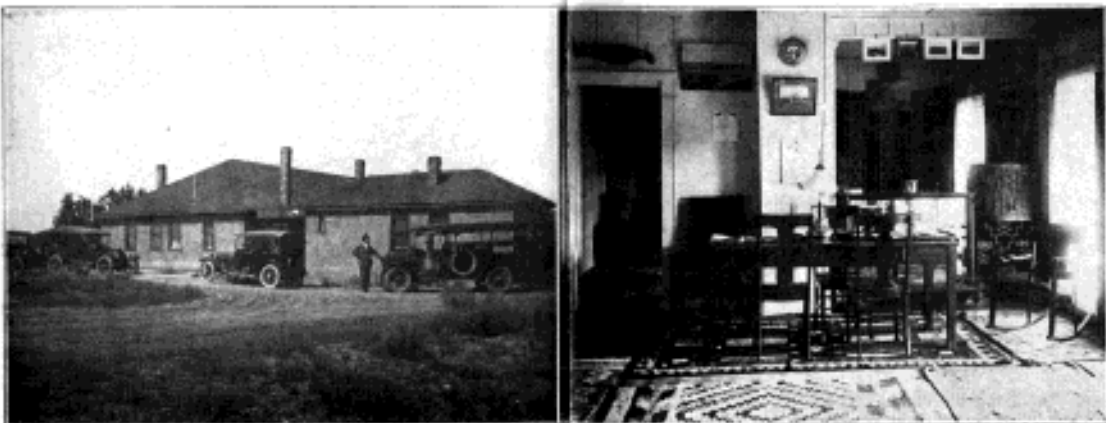
white sands and clays of the Painted Desert, will carry away a picture which even the greater glories of the Grand Canyon can not obliterate.

#### *Round Trip Fare*

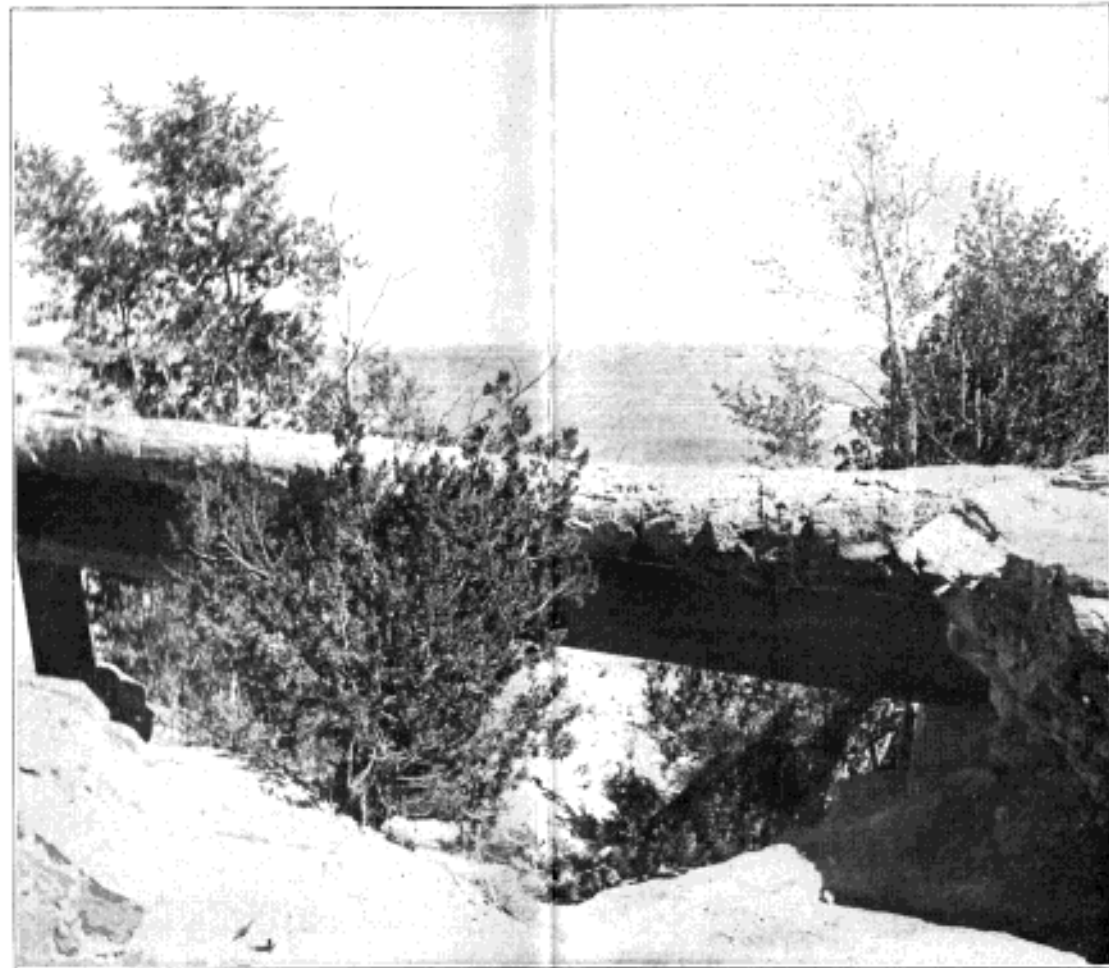
The round-trip fare for trips 1, 3 and 4 from Adamana is \$5.00 for one person, \$3.00 each for two persons, and \$2.50 each for parties of three or more.

Round-trip fare for trip 2 is \$10.00 for one person, \$6.00 each for two persons, \$5.00 each for three or more.

For a one-day stopover at Adamana, trips numbered 1 and 4 are most frequently taken as they give the visitor the greatest variety in sight-seeing. If one wishes to visit all five forests, a two days' stopover is required.



Forest Hotel and Lobby



A natural bridge of agatized wood.

The Rainbow Forest also is reached from Holbrook, a distance of 18 miles. Local Holbrook garage round-trip charges are \$10.00 for a party of two, three or four persons occupying one car. This outing may be extended to include the Painted Desert Forest by payment of an additional sum.

### Hotel Accommodations

Except the small hotel, railway station and store, there are few buildings at Adamana. Mr. and Mrs. James Donohoe have charge of the hotel and the auto livery. Board and lodging may be had at \$5.50 a day, American plan. Meals only, \$1.00 each. Thirty-five guests can be accommodated with room and meals.



The Petrified Forests may be visited any day in the year.

Notice in advance to Mr. James Donohoe, at Adamana, owner of livery, will insure handling of large excursion parties.

Stopovers are allowed at Adamana, not to exceed ten days, on all one-way railroad tickets, also on round-trip railroad tickets within their limits. To obtain stopovers on one-way railroad tickets, notify train conductor and deposit tickets with agent immediately after arrival; on round-trip tickets, notify train conductor. Both Adamana and Holbrook are contiguous to the Navajo Indian

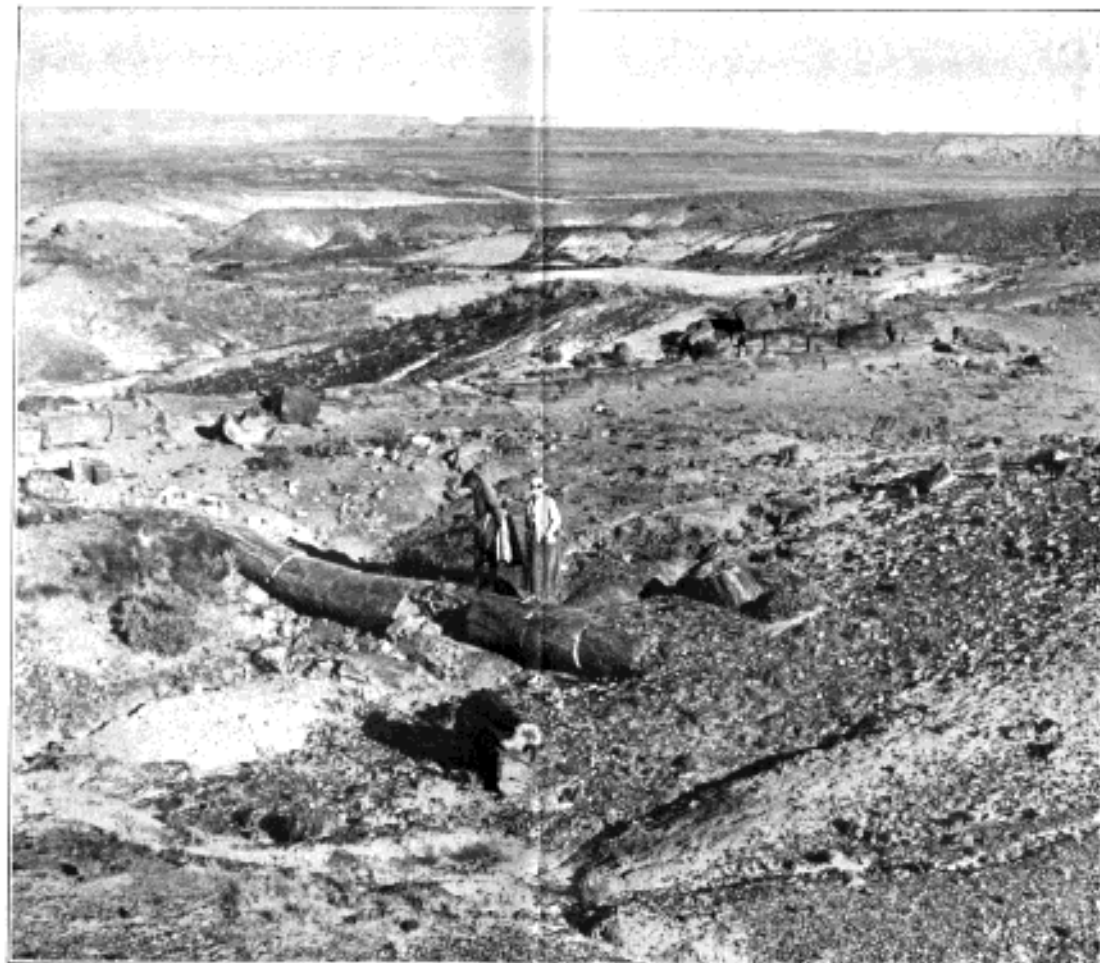
reservation. Holbrook, the county seat of Navajo County, is an outfitting point for the White Mountain Apache country, reached by branch train. The unique villages of the Hopi Indians are situated about 80 miles north. En route to Hopi-land you cross the Painted Desert, where live the Navajos.

Holbrook, the county seat, has satisfactory hotel accommodations at reasonable prices.

### Petrified Forest Described

This region consists of the ruins of a former plain having an altitude above the sea level of 5,700 feet. This plain has undergone extensive erosion to a maximum depth of nearly 700 feet, and is cut into innumerable ridges, buttes and small mesas, with valleys, gorges and gulches between. The strata consist of alternating beds of clays, sandstone shales and massive sandstones. The clays are purple, white and blue—the purple predominating—the white and blue forming bands of different thickness between the others, giving to the cliffs a pleasing effect. The sandstones are chiefly of a reddish color. The mesas are formed by the resistance of the massive sandstone layers.

The petrified logs lie in the greatest profusion on the knolls, buttes and spurs, while the ground seems everywhere to be studded with gems, consisting of broken fragments of all shapes and sizes. The petrified logs do not occur in the same abundance throughout. They are gathered in groups at certain points, while entirely absent at others.



Thousands of acres and millions of tons.

These petrified forests are much more ancient than those of Yellowstone National Park, of certain parts of Wyoming, and of the Calistoga deposits in California. The difference in their antiquity is many millions of years. There is no other petrified forest in which the wood assumes so many varied colors. Not only are chalcedony, opals and agates found among them, but many approach the condition of jasper and onyx.

Long ere the pithecanthropus exchanged his arboreal dwelling for a cave, or Noah and his family fled from a bankrupt world—even ere Adam was—forests were growing in Arizona. In the course of ages some cosmic catastrophe struck them down and over them swept an inland sea, whose sediments subsequently buried them a mile or more deep. During these long geological periods, the subtle alchemy of Nature perfected its transmutation. Riven and fractured, the ancient logs again were brought upward and after centuries of erosion they were once more "living" under the brilliant Arizona skies—not as they once lived, but in a glowing permanent form. They are there today, the most brilliant aggregation of jewels on the globe.

How few Americans ever have actually walked in this dead and buried forest that through the uncounted years has been giving up its dead! Wind and rain and whirling sand all have combined to lay bare this treasure house of the past—for such it really is.

What interest attaches to every foot of the ground! Even if no race of men knew the

living forest; even if no birds sang in its swaying boughs, and no huge mammals browsed beneath its protecting arms—there were reptiles galore, for their fossils frequently occur. What shock of earth brought low these monarchs, stately pine and giant oak? Were they petrified where they fell, or did they float out on the tide of a forgotten sea?

Truly, it is God's Acre; but lacking the shrouds—for these prehistoric trees live again in adamant and agate of every conceivable color. Approaching the deposits, you are quickly attracted by stray bits that glisten like jewels by the roadside. Soon you espy larger and larger blocks, then trunks of trees, then complete trees, tumbled about in confusion or lying just as they were bared by action of the elements. There seems to be no limit—literally thousands of acres and millions of tons.

Let no one expect to see trees standing upright. They are prone upon the ground, in a vast basin, once the bed of an old sea. Many of these stone trees retain their bark, sometimes even the heart, and the cross-sections plainly tell how old they are. Even so, the scene presents endless variety and charm, not the least of which is the setting of surrounding cliffs.

In modern times no less than four different Indian stocks have lived here—one probably related to the present Hopi, another to the Zuni, the other two unknown. Arrowheads of petrified wood are sometimes found in the forests.



"—the most imperishable of earthly things, and a fadeless beauty: a "Forest in Clarified Stone."

## A Forest Gone to Bed

Condensation of an article by MR. CHARLES F. LEMMON,  
published in *West Coast Magazine*, JANUARY, 1912.

Of all the Southwestern Wonderland—the most concentrated area on earth of earth's greatest natural marvels—the Petrified Forest is the most puzzling. One guess may be as good as another. The greatest geologists, the greatest botanists, have bumped their inclusive heads against it in vain. Even Muir, the very Brother of the Trees, has to pull in his horns. It is the Prime Mystery of geology—the hardest nut, and the hardest wood, in the world.

These vast logs are not huddled nor criss-crossed, as of a freshet or a jam, but fallen orderly as God gave them to grow. They are where they grew—but half a mile or so lower, with the under waste of the earth-tissues that gave them root.

Conceive a woodland beside which the tallest groves of Maine or Tennessee would be underbrush. Mostly conifers, but with some willows, cottonwoods or other equivalent deciduous trees.

This forest comes to prime—at least, we have trees of it which stood 240 feet in height, measured "for keeps" in eternal stone.

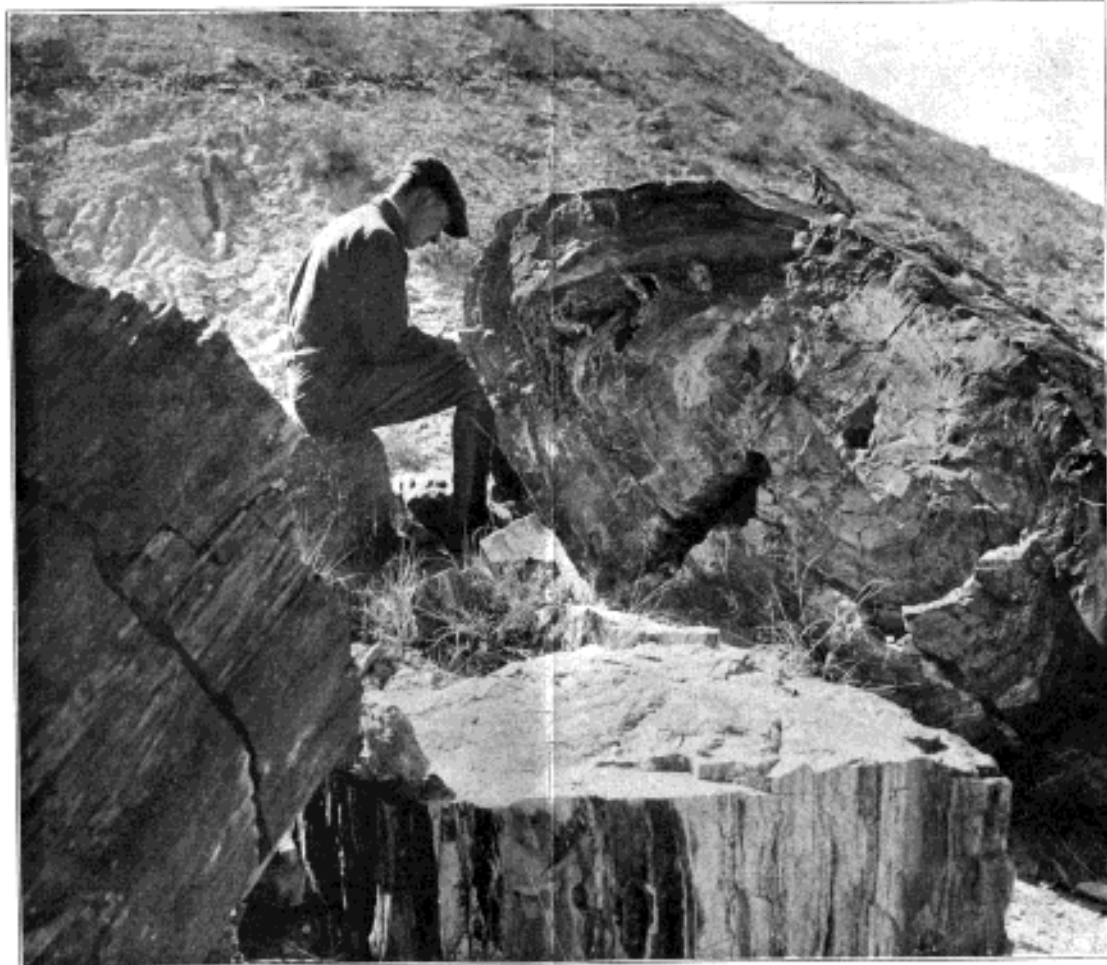
Something lays this forest low—"maybe a cyclone, maybe a freshet, maybe a submergence." We have no data beyond the fact of the recumbent giants. All that is sure is

that they fell fair where they stood—and are there a few million years later. They have not drifted or shifted. Then subsidence—either under the immemorial ocean, or at least under the inland sea whose shores are still marked on the peaks and rims of the Mogollon Plateau—a little lake about 300 by 200 miles. It was unquestionably a warm sea. The hundreds of volcanic cones, the mineral springs that still persist, show that here was a colossal pickling-plant.

Pressure is the first mechanics of preservation. The pneumatic force used to tuck creosote into every sap-cell of a bull-pine sleeper would be as a lover's pinch compared to the incalculable squeeze that translated these million cords of trunk from burnable firewood to an adamant which the patient combustion of Time can not even char.

Prostrated in full vigor by some resistless force—not a cyclone, or they would show the tangled windfall; not an avalanche of water, or they would be similarly huddled—these great trees laid them down orderly, their heads generally to the South. I can conceive of but one power that can have mowed them down so marshalled—an earthquake of the first dimensions, traveling from the Crest of the Continent southerly.

Anyhow, the trees went down. They were embalmed to perennial gems after they fell. They are cross-cut and dismembered by later shocks or frosts; then branches shorn and



Huge tree in North Forest.

comminuted to litter the ground with kaleidoscopic chips. Even when the full stature of the 200-foot tree is measurable upon the ground, it is rare to find twenty feet in a piece. The fracture is an almost perfect cross-section; but nothing in human knowledge is more obvious than that these breaks were subsequent to the utter fossilization of the trunks. Anything retaining the merest vestige of ligneous fibre could no more break thus than a live hen could be cracked over your knee to a perfect cross-section—including the very halves of the feathers. Equally the matched ends between fractures prove absolute continuity in the process of agatizing.

Somewhere during the stupendous subsidences of the Jurassic period this prone mesozoic forest sank to where the vast later sediments of the Cretaceon era could wash down upon it, mile-deep. In these deep bowels of the earth, the springs of sulphur, iron, copper, salt; the paste of chalcedony, the solutions of silica still rumbled; and the pressure that would break the ribs of a Dreadnought as an elephant might efface a gnat, injected these mineral waters into every fibre of the one-time wood. Of course, it went slowly—the pressure increasing only as the trunk hardened to resist. Else we should have nine-foot trees "pressed" in the geologic book as flat as we press a flower in the family Bible. The mineralization must have been contemporaneous with the first

coverlet of sediment—or ahead of it. No mere wooden tree could have withstood the impact of two miles of perpendicular stone to the square inch.

And then what we are pleased to call the Tertiary Age; and the vast emergence of sunken water-logged continents to God's forgotten sunlight—by an upheaval so judicious and so balanced that it did not ruffle the sedimentary blankets—nor the sheets nor other bedclothes—of a sleeping world. And the forgotten Forest came up to the top of the continent again, then cuddled under a mile or so of cretaceous counterpanes. Even now it is a mile above the sea.

And the erosions and corrosions of aeons, the moths of geology, began to eat the bedclothes; and blanket after blanket traveled away by grains of sand to fill the womb of the far Pacific with the embryo of continents yet unguessed. Strata by the thousand feet were devoured away by that slow, implacable tooth. And in the fullness of the ages the immortal Forest came back to the sunlight, where once its myriad leaves danced and breathed a mortal air—the same fierce Arizona sun under which it dazzles our eyes today.

Today this is all Yours. You sleep on a Santa Fe Pullman till time to get up. You transfer to a comfy hotel; and are shown these pages of the Past, with such commentary as the world's greatest geologists have



Petrified tree in the Painted Desert—North Forest.

been able to supply. And the documents are there—plainer than anything.

You can photograph yourself on "The Bridge" of a 150-foot fossil tree across an arroyo, or on the thicker trunks athwart the clay-mounds; or under the cannon-like sections mounted on carriages of crumbling shale.

But you can carry away—and without sagging your suitcase—a million tons of memories. You never saw such logs before, nor such chips, nor a footing so studded with iridescence; and you'll remember it as one of the greatest experiences of life, no matter how traveled. The Forest does n't need you or me. Its wonder-mosaics have flashed back to the Arizona skies since long before Man began to infest the planet and boggle over its

geologies. But *we* need the **Forest**. It ought to be made Compulsory!

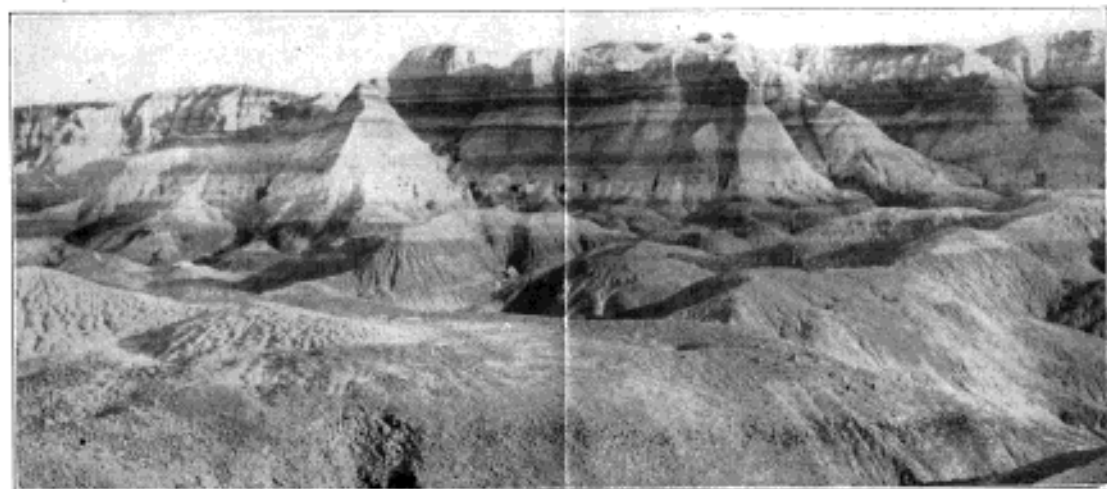
### Notice

The First, Second, and Third Forests, comprising an area of 25,920 acres, have been set aside by the Government as a National Monument and are under the supervision of a custodian at Adamana. Visitors are not allowed to take specimens from the forests within the National Monument.

Petrified Forest National Monument is under the jurisdiction of the Director, National Park Service, Department of the Interior, Washington, D. C.



Large tree in the Second Forest.



Colorful setting of the Blue Forest.

