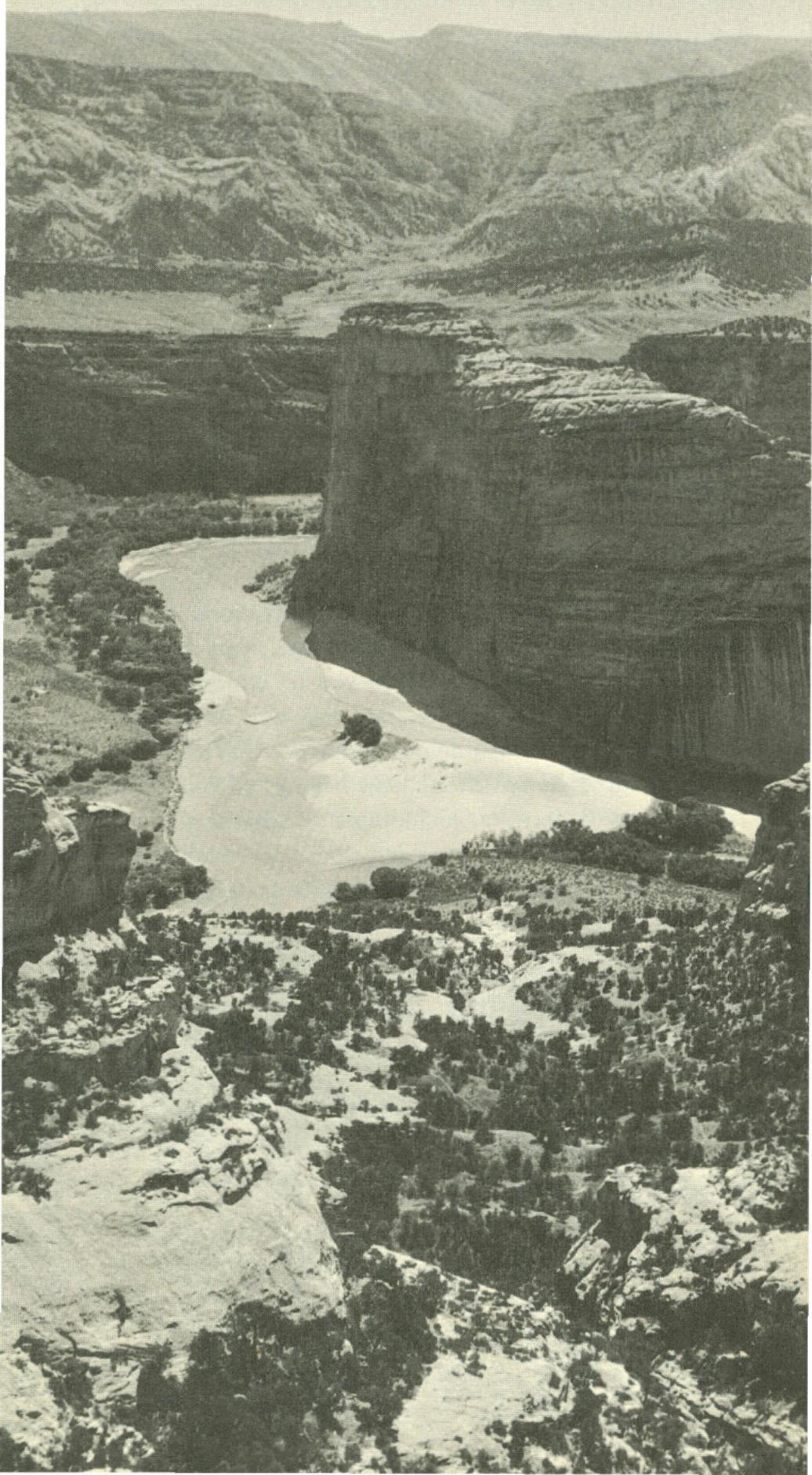


Dinosaur

NATIONAL MONUMENT

COLORADO AND UTAH



Dinosaur

NATIONAL MONUMENT

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We, the members of the staff of the National Park Service, which administers and protects the many areas of the National Park System, welcome you to Dinosaur National Monument. We hope that your visit will be a rewarding experience, and we will do our best to see that it is.

Dinosaur National Monument belongs to you and to all your fellow Americans, including the millions who are still unborn. Those who preceded you here established this monument and carefully preserved its features for you to see and enjoy. Would you do less for those who will come after you?

A BRIEF DESCRIPTION

Dinosaur National Monument, in northeastern Utah and northwestern Colorado, offers you exceptional scenery in an atmosphere of wilderness. Here, nature has provided man

The National Park System, of which this area is a unit, is dedicated to conserving the scenic, scientific, and historic heritage of the United States for the benefit and enjoyment of its people.

with a looking glass into the past. Here is the most remarkable dinosaur fossil deposit in the world. What amounts to an ancient burial ground has been exposed, bringing into view the fossilized skeletons of dinosaurs, crocodiles and turtles, and fossilized tropical plants.

Here, colorful folded and uptilted rock layers show the results of the tremendous forces of earth movement; weird and fascinating contours of the land tell the story of wind and rain erosion; and deep canyons of the Green and Yampa Rivers demonstrate the power of stream erosion.

In the area near the dinosaur quarry, as well as elsewhere in the monument, erosion has exposed a cross section of many beds of sedimentary rocks, where, spread like the pages of a book, they disclose a part of earth's history. These rock beds, lifted to form a plateau, have been carved into a wilderness of rugged canyons, benches, and ridges which are in themselves of such outstanding character as to warrant preservation and protection by the Federal Government. The plants and animals of this colorful region are typical of arid lands.

Here you will find many opportunities for learning of nature and for recreation and inspiration. Prehistoric Indians, who left their traces in these canyons, must also have learned and played here, and surely they, too, were inspired by what they saw and felt.

ABOUT YOUR VISIT

The name of the monument is somewhat misleading, because the fossil dinosaur bones occur in rocks which out-

crop only in the southwest corner of the monument. The original 80 acres of this area were set aside in 1915 to preserve these fossil bones. The boundaries were extended in 1938 to include the adjoining scenic canyon country, so that they now encompass about 327 square miles.

Your first stop should be at the visitor center, where you will find a series of exhibits explaining many of the interesting facts in the dinosaur story. If you desire further information, ask the ranger-naturalist at the information desk. He can also furnish you with free and sales informational literature about the monument which will help you to understand and appreciate what you will see.

Remember, National Park Service employees are able and willing to help make your visit a memorable one. Talk to them at any time you want assistance or information.

WHAT TO SEE

The Dinosaur Quarry

The highlight of any visit to the monument should be the Dinosaur Quarry Visitor Center. The interesting feature of this modern building is that the quarry face actually forms the north wall of the building. Here you can watch "in-place" relieving operations on the quarry face as workmen use jackhammer, chisel, and pick to cut away the barren rock and expose the fossil bones. You can look through a window into the preparation rooms to see how fossils are cleaned and put back together.

In the quarry, rock layers have been removed from the fossil-bearing Morrison formation, of Jurassic age, believed

Relieving operations at the Dinosaur Quarry.



to have been deposited some 140 million years ago. In 1953, the National Park Service began the project of outlining in high relief some of the huge dinosaur bones found in the quarry wall. Although several partial skeletons and many isolated bones of dinosaurs have been exposed, much work remains to be done.

Dinosaur bones were first discovered here in 1909 by Earl Douglass of the Carnegie Museum. Fossils were removed by parties from the museum from 1909 to 1922. Quarrying was renewed in 1923-24 by the National Museum, Washington, D.C., and the University of Utah. Twenty-six nearly complete skeletons and a great number of partial ones were represented. The longest skeleton, *Diplodocus*, was 84 feet; the shortest, *Laosaurus*, was 6 feet. Many of the bones have been assembled in complete skeletons which you may see at museums in Pittsburgh, Pa.; Washington, D.C.; Lincoln, Nebr.; Denver, Colo.; Salt Lake City, Utah; and Toronto, Ont.

Why are there so many dinosaur skeletons at this particular place? At the time the animals were alive, geologists explain, evidence indicates that this place was a sandbar in a streambed. And they believe that this is where the bodies accumulated, not necessarily where the animals died. The mixture of the remains of swamp-dwelling dinosaurs with the remains of dry-land types, together with other clues, suggests that some of the bodies might have floated and washed appreciable distances before becoming stranded on the sandbar. Today, the bodies of cattle and horses are often found lodged on sandbars in streams after heavy floods.

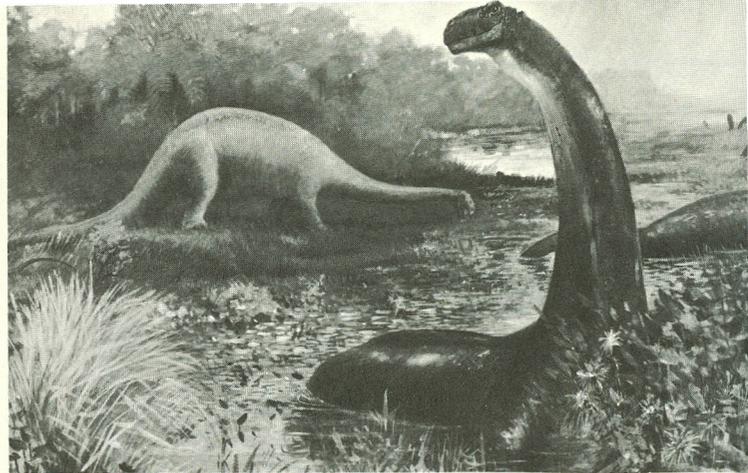
But how were the skeletons preserved? After the bones became buried by sediments, certain conditions existed which caused the organic minerals of the bones to be replaced by minerals of inorganic origin, such as silica. Geologists cannot explain why the process occurred; they can only see that it did occur. Eventually, thousands of feet of sediments were deposited above the sandbar and gradually compacted into rock.

Then forces within the earth's crust, powerful and extensive enough to form the Rocky Mountains, brought about an uplift of this area, so that it was no longer a place of deposition; thus, the area was exposed to the processes of erosion. The thousands of feet of sediments slowly eroded away, and again the sandbar and its now-fossilized bones, some 140 million years old, were brought to the light of day.

The Canyon Country

Through hundreds of centuries of erosive action, the Green and Yampa Rivers have been fashioning their spectacular canyons.

The Green has cut several deep gorges through the eastern flank of the Uinta Mountains. Rocks so exposed represent hundreds of millions of years of geologic time. The



The *Apatosaurus* (*Brontosaurus*), which attained a length of 70 feet. Courtesy, American Museum of Natural History.

Yampa has also been active in canyon carving. This river, rising in the high mountains of north-central Colorado, first flowed over and cut into relatively soft rock. After a long period of erosion, its course was established in a series of bends or meanders. Gradually, the soft rocks were worn away, and with uplift of the region the river entrenched its meanders into the underlying, more resistant strata. The resulting gorge, in a high plateau lying southeast of the Uinta Mountains, is not as deep as the canyons of the Green, but it is remarkably contorted and equally impressive.

Below its confluence with the Yampa, the Green River flows through Echo Park, a lonely valley where a hermit, Pat Lynch, lived for years. The stream swirls and plunges past the base of Harpers Corner, through Whirlpool Canyon, Island Park, and Split Mountain Gorge, and then slows to a more leisurely flow as it leaves the monument.

WHAT TO DO

Camping and picnicking. The monument offers a variety of campground and picnicking spots. They range from the Split Mountain Gorge Campground near the monument entrance, where you can "rough it" but still have modern conveniences near at hand, to a more primitive type like the Jones Hole Campground along the Green River, where travelers usually spend the last night of a river trip. Small picnic areas are located at Harpers Corner and Echo Park, and there are several small camping or picnicking places along the Yampa and Green Rivers.

You may use these campgrounds free of charge. The National Park Service asks that you leave your campsite clean, bury refuse or place it in the garbage can found on the site, and extinguish all fires before leaving. In wilder-

ness camps, you should flatten cans and pack them out for disposal. You should use only dead wood for campfires.

There are no places within the monument where you can buy supplies; hence, you should come equipped with food and other necessities, including extra gasoline.

Fishing. You may fish along the rivers and streams, but you must have a Utah or Colorado license, depending on the State in which you fish. In the rivers, the most popular angling is for catfish; in Jones Hole Creek, it is for rainbow trout.

River boating. The thrill of a river trip cannot be described. Boating has become a popular and adventurous way of enjoying the canyon wonders.

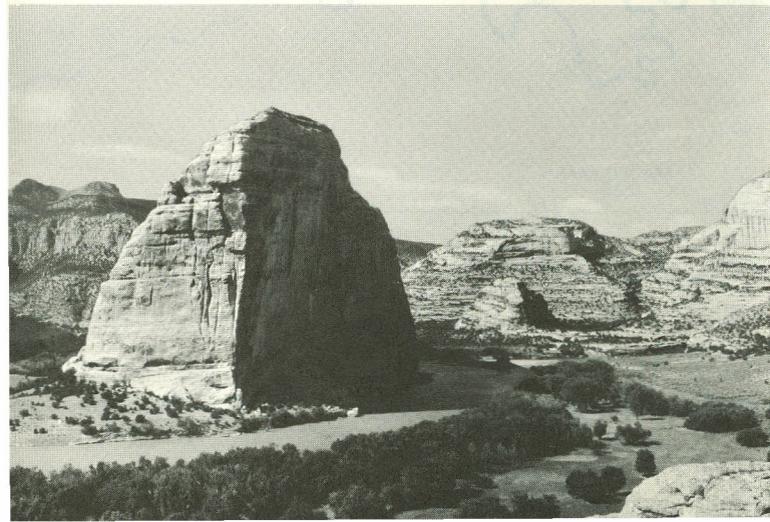
Don't plan a river trip "on your own" unless you are skilled in boat handling and unless you know the Green and Yampa Rivers very well. They can be rough and turbulent streams. You must have a permit from the monument superintendent or be accompanied by a competent guide who has such a permit. Regularly scheduled float trips are conducted by authorized guides. Ask for schedules at the superintendent's office.

For additional information about boating or for an application for a boating permit, inquire of the superintendent at his office in Vernal, Utah.

Self-guiding nature trails. Nature trails will provide you with a close-range view of some of the interesting scientific features found at Dinosaur National Monument.

The Red Rock Nature Trail traverses several of the Mesozoic rock strata east of the dinosaur quarry. Interpretive signs along the trail explain the more important features. This trail also permits you to become intimately acquainted with much of the local plantlife. From one of the high points, you can view a colorful valley known as "The Racetrack."

Steamboat Rock.



The Harpers Corner Trail affords spectacular views that are of geological interest and provides an opportunity for observing the plant and animal life of the monument.

Actually, only a small part of the monument is "developed" (roads, campgrounds, etc.). Thus, you need go only a short distance from the visitor center to feel completely detached from everything that is man made. You can reach the back country by dirt roads branching northward from U.S. 40. Before you take such a trip, however, check with park rangers at the visitor center. Cars should be equipped with spare tires, jack, ax, chains, shovel, extra water for the radiator, and a full tank of gasoline.

PLANTS AND ANIMALS

Dinosaur National Monument is a wildlife sanctuary, where all native species of plants and animals are protected so that visitors can see and enjoy them in their natural surroundings. Please help protect them.

Plants. The plateaus adjacent to the canyons are typical examples of semidesert country, with greasewood, pinyon, juniper, and sagebrush growing in profusion. Stands of aspen, Douglas-fir, ponderosa pine, and mountain-mahogany grow on protected slopes of the higher mountainsides. The more common varieties of wildflowers found here are the lupine, segolily, and the evening-primrose.

April, May, and early June provide the best flower display in the monument, as spring rains supplement the moisture from melted snow. By the first of July, however, little remains of this splendid show. Two plants, rabbitbrush and bee spiderflower, brighten the desert scene in August and September.

Animals. Deer, bobcats, and coyotes are found throughout the monument. A considerable number of smaller mammals also live here. The rodents are well represented and include beavers, muskrats, porcupines, marmots, prairie dogs, and chipmunks. Two members of the rabbit family, cottontails and white-tailed jackrabbits, are often seen. Other mammals of the monument include mountain sheep (big-horn), badgers, mountain lions, foxes, weasels, minks, skunks, and pack rats. Golden-mantled ground squirrels and whiptail lizards are numerous near the visitor center.

Driving to the quarry during the day, you will see only a few birds. You may notice a turkey vulture high above the Green River or a Say's phoebe perched on a fencepost. But as the sun sinks and the air cools, birds, which number more than 80 species in the monument, come forth. On a summer evening, you may see the small gray-brown rock wren, the robin, western flycatcher, Audubon's warbler, the red-shafted flicker, cliff swallow, violet-green swallow, and white-throated swift. A few birds live in the monument winter and summer. These include the golden and bald

eagles, red-tailed hawk, the little sparrow hawk, and horned owl. Perhaps the most handsome year-round resident is the magpie, a large, long-tailed bird in formal black and white.

A BIT OF HISTORY

Early Indians

Evidence that the canyons were inhabited by Indians long before Columbus sailed to America is found in the monument's caves. Pieces of charred wood from ancient campfires and fragments of pottery, mixed in the rubble and sands that cover the floors of the caves, excite our imagination about the people who left these signs.

It is from larger cliff shelters, such as Mantle's Cave in Castle Park, that we learn most about the lives of the Indians. Mantle's Cave probably was occupied by agricultural Indians between A.D. 400 and 800.

Marigold Cave, at the lower end of Castle Park, adds to the story. Indians who once occupied this cave did not farm but lived by hunting and gathering wild fruits and seeds. It is believed these people were here sometime around 1500 B.C.

Murals on the cliffs provide graphic evidence that Indians once lived here. Some of these designs were painted on the walls, but most were pecked into them. It is not known whether the pictures tell a story, represent religious symbols and clan markings, or are merely doodles. You can see these inscriptions at many locations along the rivers and in shallow caves. The National Park Service urges that the designs not be disfigured, for they are, of course, priceless and irreplaceable.

The White Man Comes

The first white men known to have entered this region came from Santa Fe. Led by Spanish priests, the party

Boating on the Green River at Echo Park.

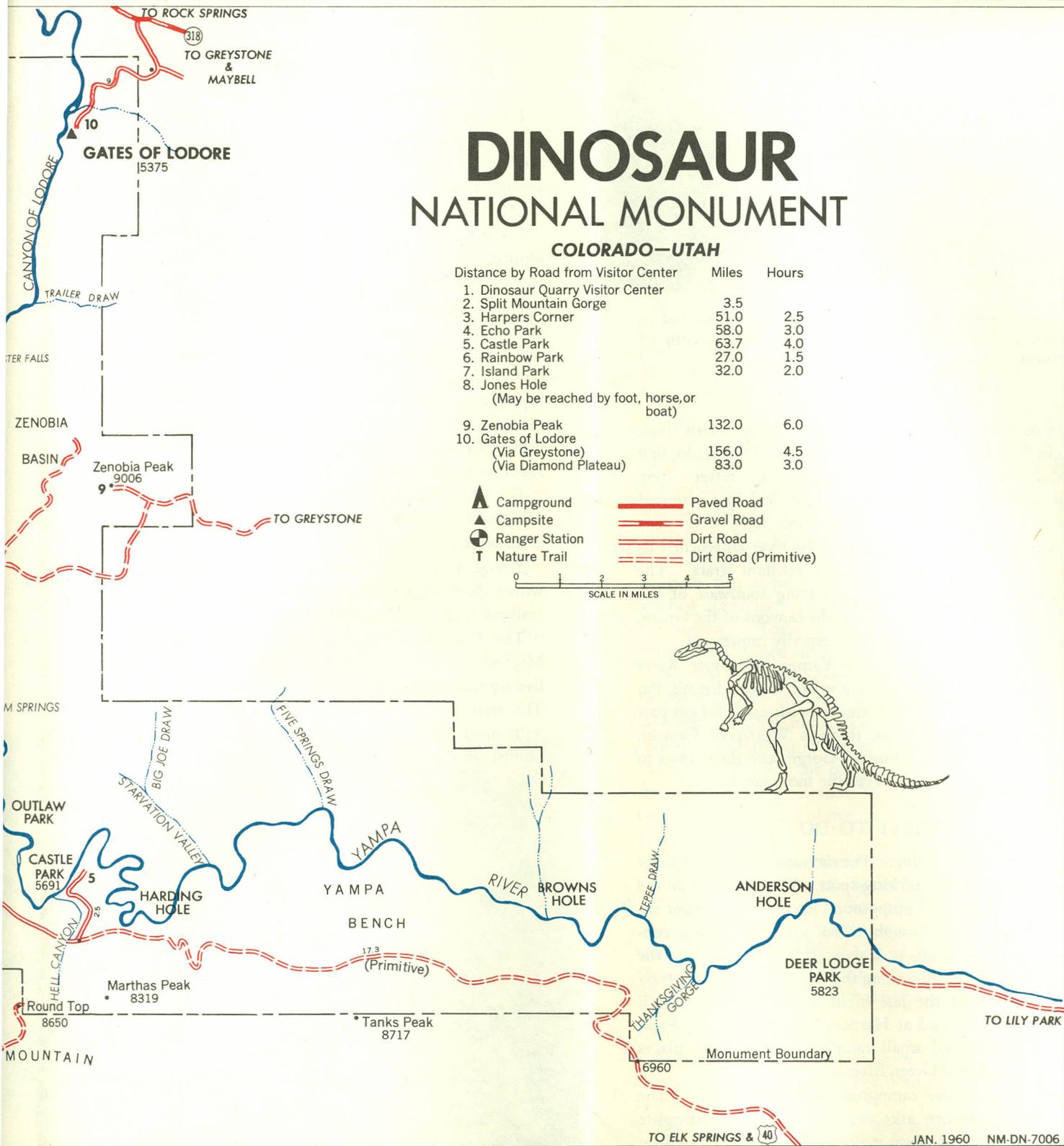
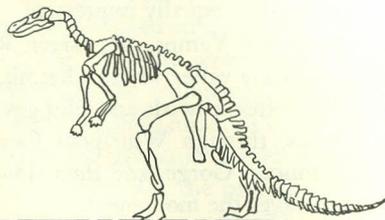
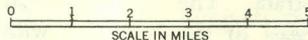


DINOSAUR NATIONAL MONUMENT

COLORADO—UTAH

Distance by Road from Visitor Center	Miles	Hours
1. Dinosaur Quarry Visitor Center	3.5	
2. Split Mountain Gorge	51.0	2.5
3. Harpers Corner	58.0	3.0
4. Echo Park	63.7	4.0
5. Castle Park	27.0	1.5
6. Rainbow Park	32.0	2.0
7. Island Park		
8. Jones Hole		
(May be reached by foot, horse, or boat)		
9. Zenobia Peak	132.0	6.0
10. Gates of Lodore		
(Via Greystone)	156.0	4.5
(Via Diamond Plateau)	83.0	3.0

-  Campground
-  Campsite
-  Ranger Station
-  Nature Trail
-  Paved Road
-  Gravel Road
-  Dirt Road
-  Dirt Road (Primitive)



had been sent to blaze a trail to the mission of Monterey in what is now California. They did not completely succeed, but we know that they got this far because Father Escalante, who kept the records, described their camp of September 14, 1776, on the bank of what is now called the Green River, close to the present boundary of the monument.

About 50 years later, in 1825, Gen. William H. Ashley and six trappers came down the Green River from Lodore Canyon to Split Mountain Gorge. During the next 15 years, trappers gathered beaver in the canyons of the Green and Yampa; sometimes they spent the winter there. Although we know little about them, a few ruined cabins record their presence.

Maj. John Wesley Powell was the last of the early explorers. In 1869 and 1871, he led expeditions down the Green and Colorado Rivers. He was a noted scientist who mapped much of the West. His studies made known to the world the canyons that are now preserved in Dinosaur National Monument.

Under the provisions of the American Antiquities Act, to safeguard and preserve objects and areas of significant scientific or historic interest, the dinosaur quarry and 80 acres of surrounding land were declared a National Monument on October 4, 1915. Less than a year later the area was included in the newly created National Park System.

SEASONS

The weather is usually cool and pleasant in May, early June, September, and October. On summer days, the temperature may rise above 100°, although the nights are usually cool. During the winter, temperatures may skid to 30° below zero or colder. The average annual precipitation is 8.09 inches, most of which falls in winter. However, heavy showers resulting in flash floods are not uncommon in summer.

OTHER PUBLICATIONS

Publications which provide more comprehensive information on the monument and on other units of the National Park System are for sale in the visitor center by the Dinosaur Nature Association, a nonprofit organization pledged to the advancement of the monument's interpretive program.

The National Park Service has issued a 46-page illustrated booklet entitled *The Dinosaur Quarry*, which gives a more detailed account of dinosaurs. This booklet may be purchased for 25 cents at the visitor center, and it may be ordered from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

HOW TO REACH THE MONUMENT

By automobile: Follow U.S. 40 to Jensen, Utah, and then State Route 149 to the Quarry Visitor Center and Split



Visitor center.

Mountain areas. This part of the monument is open all year, but roads to the scenic canyon country are generally closed by snow from October 15 to May 15.

By bus or airplane: Vernal, Utah, about 20 miles (by road) west of the monument, is served by Greyhound Bus Lines and Frontier Airlines. There is no regularly scheduled transportation from Vernal to the monument.

The monument cannot be reached by train.

ACCOMMODATIONS

No lodging is available in the monument, but it may be obtained in nearby communities. You will also find medical facilities, groceries, garages, and service stations in the larger of these towns.

TO HAVE A TROUBLE-FREE VISIT

While here, please remember that this is your monument, set aside for you to enjoy, yet to be kept unimpaired for the enjoyment of future generations. We are sure that you will obey the monument's regulations.

Hunting is not permitted in this wildlife sanctuary.

Monument features. Please do not pick wildflowers or damage any plants. Leave them for others to enjoy. The destruction, injury, removal, or disturbance of public property or natural or archeological features or materials is prohibited.

Camping and picnicking. These activities are permitted in designated areas. Build your fires in the fireplaces provided. Leave your area and table clean when you depart. Use refuse receptacles for all trash.

Fires. Use utmost care to prevent fires. Extinguish any fire you discover. If this is not possible, please report the

fire immediately to a park ranger. Be sure matches and cigarettes are entirely out before disposing of them.

Pets. You may take your pets into the monument, but you must keep them on leash or under other physical control at all times. You may not take them into the Quarry Visitor Center.

Prospecting. Mining and the use of explosives are illegal.

Boating. A boating permit is required and may be obtained from the superintendent.

Firearms. Firearms are permitted within the monument only if they are adequately sealed, cased, broken down, or otherwise packed to prevent their use.

ADMINISTRATION

A superintendent, representing the National Park Service of the U.S. Department of the Interior, is the official in charge of the monument. All comments and inquiries regarding the management and protection of this area should be addressed to him. His post office address is Box 621, Vernal, Utah.

Park rangers and naturalists are uniformed men who make up the protective and interpretive force of the monument. They enforce monument regulations and provide information about the monument to add to your understanding and appreciation of its beauty and its natural and human history. Call upon them if you have any questions or are in any difficulty.

MISSION 66 AT DINOSAUR

MISSION 66 is a 10-year development, improvement, and conservation program of the National Park Service. It was launched in 1956 to develop and staff the National Park System so as to permit its widest possible use; to provide necessary facilities for the millions of visitors; and to assure maximum preservation and protection of the scenic, scientific, wilderness, and historic resources that give the System its distinction.

At Dinosaur, MISSION 66 projects include the Quarry Visitor Center, a campfire circle and 30-site campground at Split Mountain Gorge, nature trails, employee residences, a utility building, roads and parking areas, and interpretive signs and markers. Future plans call for many other improvements at the monument under MISSION 66.

Cover: The junction of the Green and Yampa Rivers.

UNITED STATES DEPARTMENT OF THE INTERIOR

Fred A. Seaton, *Secretary*

NATIONAL PARK SERVICE
Conrad L. Wirth, *Director*

