

These have retired to the northern provinces of New Zealand, where certain "reservations" have been set apart as their exclusive property. Schools have been established which the Maori children attend regularly. It is said that such of them as continue into the higher branches of learning are worthy rivals of white students. Some of the Maoris have become large landed proprietors; they are

proud of their right to vote, and especially of the fact that their women were given this privilege at the same time that it was given to the white women of New Zealand, in 1893.

The preceding illustrations of the Maori of New Zealand were taken by Mr J. Martin, of Auckland, and were sent to this magazine by M. Maurice Loir, editor-in-chief of *Le Tour du Monde*, of Paris.

## THE GREAT NATURAL BRIDGES OF UTAH

**I**N the summer of 1904 the first public announcement was made in the *Century Magazine* and the NATIONAL GEOGRAPHIC MAGAZINE by Mr W. W. Dyar of the discovery in Utah of three great natural bridges, far surpassing in size the great Natural Bridge of Virginia and all other similar bridges known in the world. The article was illustrated from small photographs, and was based on a hurried view of the bridges. Last year a member of the National Geographic Society, Mr Edwin F. Holmes, equipped an expedition with surveyors and artists and sent it out to make a careful study of the bridges. Mr Holmes' report of the work done is printed below.

The three great natural bridges are located in an almost inaccessible portion of southeastern Utah, in San Juan County, lying south of the Colorado and Grande rivers.

The country is uninhabited and uninhabitable for the greater part, the only settlement of any account being the small town called Bluff, on the San Juan River, and the nearest railroad being Dolores, in Colorado, some 105 miles eastward, on a narrow-gauge branch of the Denver and Rio Grande and Rio Grande Southern, extending from Grand Junction to Durango, in the silver San Juan country. There is another small settlement, called Monticello, to the north of Bluff, with which it is connected by a wagon road,

and on to Moab on the Grand and to Thompson's Spring on the main line of the Denver and Rio Grande Railway.

The country of the natural bridges can be reached *via* Bluff by either of these routes, going by wagons to the latter place, then by horses with pack train, taking a northwesterly direction from Bluff for a distance of about 65 miles, going south of the Blue Mountains and Elk Ridge, crossing Cottonwood Creek, and going up Comb Wash.

There might be a way of reaching this section by crossing the Colorado at Dandy Crossing, near Hite, in Garfield County, striking the White River Canyon some 60 miles below the Caroline Bridge, which, with the Augusta, is situated on the main canyon of the White River, while the Edwin Bridge is situated on Armstrong Creek at its confluence with a small stream coming in from the north. Armstrong Creek itself discharges in White River a few miles lower down. All three bridges are within a radius of about 20 miles.

A few miles above the Edwin Bridge, on Armstrong Creek, are the remains of ancient ruins, and about here are hieroglyphics cut into the rocks. No person should think of going into this region without having thoroughly studied all the conditions. The few guides that have been there have a very limited knowledge of the country, and the main and side canyons so cut up the country

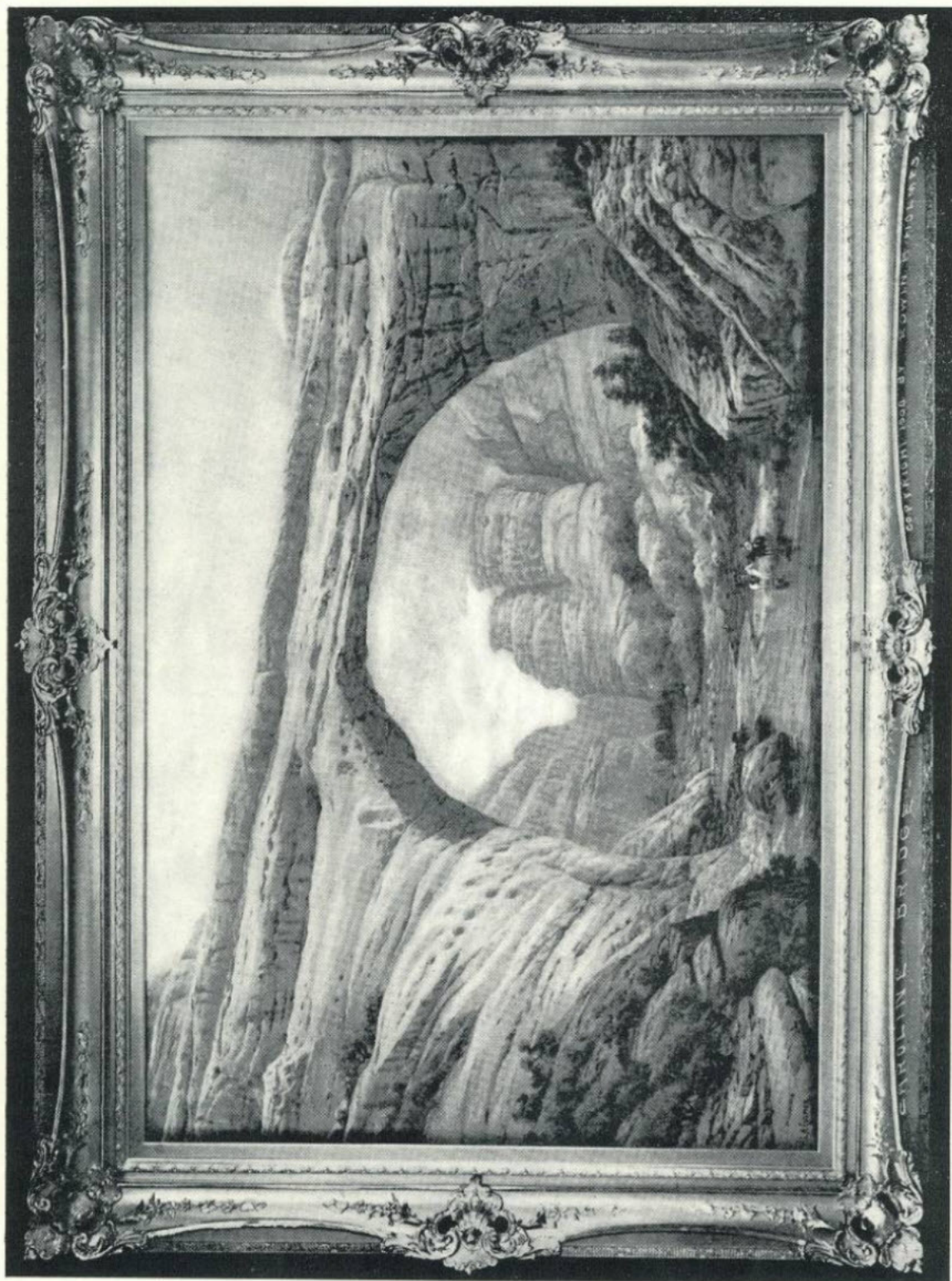




The Augusta Bridge

The greatest natural bridge in the world; height, 265 feet; span, 320 feet; width in narrowest part, 35 feet; thickness, 83 feet. This and succeeding illustrations are from paintings of the bridges based on careful measurements





Caroline Bridge

The longest natural span in the world—350 feet





The Edwin Bridge

Height, 111 feet; span, 205 feet; width, 30 feet; thickness, 10 feet



that a party may easily become lost. The absence of forage and at times of water make it necessary to undertake the trip as early in the spring as possible, ten or fifteen days being about the limit of time one can spend here because of the impracticability of packing a sufficient supply of forage and provisions. Of course, a more extended trip could be provided for by keeping pack animals on the road to and from the base of supplies at Bluff, the only or nearest place where a suitable outfit can be obtained.

The Augusta Bridge was so named in honor of the wife of Horace J. Long, who in 1903 visited the bridges in company with James Scorup. They made approximate measurements, but, not having accurate instruments, their work was necessarily faulty, and their pictures were taken with a small Kodak, much too small for the purpose. Mr Scorup, it appears, had visited these bridges previous to this time, and in showing Long the way to them stipulated that the second one should be named the Caroline, after his (Scorup's) mother.

So far as Scorup knew, the bridges were first discovered by Emery Knowles in 1895, and he himself visited them in company with two cowboys, Tom Hall and Jim Jones, in the fall of that year.

The next party to visit this section, so far as known, was that promoted by the Salt Lake City Commercial Club during the winter and spring of 1905. The members of the party were H. L. A. Culmer, artist; S. T. Whitaker, photographer; Carleton Woods Holmes, son of Col. Edwin F. Holmes, ex-president of the Salt Lake Commercial Club, who first suggested the trip, and Scorup, guide, together with two packers and a cook. The party was well equipped with scaling ladders and all the necessary paraphernalia.

The measurements taken of the Augusta Bridge were as follows: Height, 265 feet; span, 320 feet; width in narrowest part, 35 feet, and thickness, 83 feet.

The measurement of the Caroline Bridge the party found to be: Height, 182 feet; span, 350 feet; width, 60 feet, and thickness, 60 feet, while of the smaller bridge, named by the Culmer party as the Edwin Bridge, for Col. Edwin F. Holmes, of Salt Lake City, they found the measurements to be: Height, 111 feet; span, 205 feet; width, 30 feet, and thickness, 10 feet, this bridge being the much more graceful and slender of the three.

Oil paintings of the three bridges have now been completed by artist H. L. A. Culmer, from photographs, sketches, water colors, and measurements taken at the time of the visit, the measurements having been corroborated from the records kept by two different persons of the expedition. The painting of the Augusta is a canvas 60 x 90 inches and has the noonday or mid-afternoon tints, with storm-cloud approaching from the southeast—an incident that actually occurred at the time of their visit. Great buttes and the high canyon walls are seen underneath the arch and great cottonwood trees in the distance.

The two other bridges are on canvases 42 x 60 inches in size, the Caroline being in a rich sunset glow of color, with parts in shadow, very dark, somber, and heavy in tone; the sky without clouds, but luminous with light from the setting sun. Little but rock and sky appear in the picture, the little green foliage in the dim distance being so far away as to show but faintly.

Of the Edwin Bridge the dominant tone of rock color is a creamy gray, with a purplish tint in shadow and interesting perspective beneath the arch, showing trees of mountain pine and cedar in the distance and near foreground. The sky of blue is marked by cloudlets of indistinct outline, all in the sunshine of mid-day.

These bridges, composed as they are of light sandstone, might seem to be wearing away very rapidly. Such, however, is not the case, as is evidenced in the



caves beneath the Caroline abutments, especially that to the south or west, where was found what may have been a workshop of the ancients, for evidences of their pottery work were scattered around, and at one place a number of fiber sandals were found in a fair state of preservation.

A few miles above the Edwin Bridge a considerable settlement of Cliff-Dwellers once existed, and rude symbols are found on the rocks in the vicinity of the bridges.

#### A NATIONAL PARK SUGGESTED

From all that is learned of this wonderful country, it is believed that its preservation and care should be undertaken by the United States Government, as in the case of the Yellowstone National Park, so that roads may be opened and these greatest of the world's natural bridges can be made accessible for the tourists from our own country and from all over the world, who would flock thither were the road made easier. The difficulties of railroad building do not seem to be unsurmountable, and an extension from Dolores, on the main line, is possible, even to a continuation through to the Santa Fe System, embracing all of the upper part of the Grand Canyon of Arizona—a scenic route comparable to nothing else in the world.

More than a passing word should be said about the little town of Bluff, on the San Juan River, from which point an expedition can best be fitted out for the Bridge Country. This is a place of about fifty houses, and is a thrifty little town

with some excellent stone dwellings, some of them costing \$5,000 to \$10,000. The inhabitants of the town are generally well to do and kind in their treatment of strangers, and their prosperity is largely due to the cattle industry. They are on the northern border of the Navajo Indian reservation, having considerable barter trade with the Indians, who work for them cheaply and keep their dwellings for them. The people are mostly Mormons. Their young people are educated abroad and compare favorably with the young people anywhere.

Quite the opposite is the little town of Monticello, some 50 miles to the north and the county-seat of San Juan County, which is a town of about a dozen houses, some occupied and some not, built upon the apex or divide of a mountain range and formerly the headquarters for the cattle interest of this section. Its nearest point also is Dolores, which is south and east some hundred miles or so and connected by a wagon road little used.

There are mountains about here—Abajo, 11,445 feet, and Mount Linnæus, 11,000 feet—while farther north, toward Moab, are Mount Tukahnikivatz, 12,004 feet; Mount Tomaskia, 12,218 feet; Mount Wass, 12,586 feet, and Mount Peak, 13,089 feet. Much of this portion has been surveyed, though the townships have not been sub-divided, but nearly all of the western part of the country is still unsurveyed and no very accurate maps exist, excepting of the courses of the Green, the Grand, and the Colorado rivers.

