The Glen Canyon Country

A Personal Memoir

Don D. Fowler

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5.8. Kaibab Paiute round dance near Kanab, Utah, 1872. John Wesley Powell is standing at left. Photograph by Jack Hillers, no. 1623. Courtesy of the National Anthropological Archives, Bureau of American Ethnology Collection.

to people in the arid environment) and other features were often descriptive, for example Mu-tum-wa-va, "Dripping Spring"—Pipe Spring, southwest of Kanab; Pa'-ga, "Big River," the Colorado River; and Pa'-ga-we-wi-gum, "Cañon (Grand) of the Colorado." At-a-rin-ka has a nice ring to it, perhaps more so than the English "Table Mountain," the part of the Aquarius Plateau escarpment which forms the skyline north of Bryce Canyon.[56]

PHOTOGRAPHING THE NUMA

Jack Hillers took a number of photographs of the Indian people in the vicinity of Kanab in 1872 (fig. 5.8). He was with Powell and Ingalls for much of their 1873 trip, and with Powell in 1874 while he was doing geology studies in the Uinta Basin country. There Hillers took a number of photographs of Ute camps and leaders.[57]

In 1873 Powell invited a reporter for the *New York Times,* Justin E. Colburn, and the famed landscape artist Thomas Moran to visit his operation in Kanab and make trips to the Grand Canyon (fig. 5.9). Moran, Colburn, several of Powell's men, and a Paiute guide, Jim, went first to the Toroweap Valley. They descended to the brink of the inner gorge, where Moran made sketches. They then returned to Kanab to meet Powell, Ingalls, and Hillers, and then made a trip across the Kaibab Plateau to the rim of the Grand Canyon. Moran made

5.9. Thomas Moran (*center*) and Jason Colburn with a young Paiute boy near Kanab, Utah, August 1872. Photograph by Jack Hillers, no. 1592-a. Courtesy of the Bureau of American Ethnology Collection, National Anthropological Archives.

5.10. Posed group of Kaibab Paiutes near Kanab, Utah, August 1872. Beaded clothing is from the Northern Utes; the headdresses were manufactured under direction of Ellen Powell Thompson. Photograph by Jack Hillers, no. 1613-1-2. Courtesy of the Bureau of American Ethnology Collection, National Anthropological Archives.

more sketches, which he turned into his majestic painting *Chasm of the Colorado.* In 1871 Moran had accompanied the Hayden survey party to Yellowstone. His sketches and William Henry Jackson's photographs helped convince Congress to set aside Yellowstone as a national park. Moran then painted his famed *Grand Canyon of the Yellowstone* (1872), which measures 7 × 12 feet. Congress purchased the painting for $10,000 and subsequently purchased the *Chasms of the Colorado* for the same amount. Both hung for years in the U.S. Capitol, were later transferred to the Interior Department building, and are currently (2009) on loan to the National Gallery of Art.[58]

When Moran arrived back in Kanab from the Toroweap trip on August 13, 1873, he wrote to his wife, Mary Nimmo Moran, "Major Powell had arrived and he had all the Indians in camp and all the squaws making Indian toggery for him. He is going to get me an Indian suit made."[59] Hillers was instructed to make a series of photographs of the people to add to those from the previous year. Powell asked Moran to advise Hillers about posing the Indian people, and the photographs are indeed posed (fig. 5.10). Powell's sister, Ellen Thompson, was the one actually in charge of directing the making of the "Indian toggery," including fake headdresses. Powell had also collected clothing items from the Utes in 1868–69. He had some of those shipped out from Washington, D.C. The elaborate beading clothing in Figure 5.10 is Ute, not Southern Paiute. One photograph shows a woman wearing a buckskin dress with a museum accession number on the bodice.[60] Guided by Moran's aesthetic sense, Hillers posed several buxom Paiute women in Kanab and Las Vegas with their buckskin dresses

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LACCOLITHS AND GRAND STAIRCASES

The Work of C. E. Dutton and G. K. Gilbert

IN 1881, IN THE *SECOND ANNUAL REPORT OF the U.S. Geological Survey,* John Wesley Powell and his staff laid out a consensus scheme of geological eras and periods that (with modifications) became the basis for historical geological studies in North America for the next century (table 7.1). Subsequent work and the development of geological dating methods led to various modifications and extensions of Powell's scheme for different parts of North America. Table 7.2 represents a consensus scheme of the geological history of the Glen Canyon Country and adjacent regions as it was developed through numerous studies in the twentieth century up to the 1960s.

The two charts are presented here to remind us that while the Great Surveys and, later, the USGS topographers were triangulating their way across the West, Powell and others had begun systematic studies of the Colorado Plateau's stratigraphy and geological history. In the 1870s Powell set two individuals to work on those studies, Clarence Dutton and Grove Karl Gilbert. Both produced masterpieces of descriptive geology that remain classics in the field.

TABLE 7.1. USGS consensus scheme of North American historical geology, 1880s

ERA	PERIOD
Era of Man	Quaternary
	Pliocene
Cenozoic, or Tertiary	Miocene
	Eocene
	Cretaceous
Mesozoic	Jurassic
	Triassic
	Permian
	Carboniferous
Paleozoic	Devonian
	Silurian
	Cambrian

Source: Powell 1881: xlviii.

TABLE 7.2. Consensus scheme of the geological history of the Plateau Province, 1960s

ERA	PERIOD	EPOCH	DURATION
	Quaternary	Holocene	11K yrs
		Pleistocene	1.6M yrs
	Tertiary	Pliocene	3.7M yrs
		Miocene	18.4M yrs
		Oligocene	12.9M yrs
		Paleocene	8.6M yrs
MESOZOIC	Cretaceous		77.6M yrs
	Jurassic		64.0M yrs
	Triassic		37.0M yrs
PALEOZOIC	Permian		51.0M yrs
EARLIER PALEOZOIC & PROTEROZOIC	Formations seen in Grand Canyon		4.0B yrs

Sources: Hintze 1988: charts 99 and 100; Hunt 1956, 1969; Stokes 1986.

CLARENCE E. DUTTON

Clarence Edward Dutton (1841–1912) was born in Wallingford, Connecticut, the son of a shoemaker and postmaster (fig. 7.1). He entered Yale in 1856 at age fifteen, graduating in 1860 "without distinction," although he rowed crew, won the senior writing prize, and established credentials as a mathematician and raconteur. He later spent two weeks at Yale's theology school until, in his words, he "left before he was thrown out."[1] In 1862 he joined the Union Army and in 1864 received an appointment as second lieutenant in the regular army, serving in the ordnance corps until his retirement. He was promoted to captain in 1873.

Dutton's first postwar assignment was to the Waterliet Arsenal near Troy, New York. There he began studying geology on the side with James Hall and Robert P. Whitfield. Hall (1811–98), a chemist by training, had joined the New York State Geological Survey in 1836 and in 1842 was appointed state paleontologist. Hall's monumental thirteen quarto volume *Paleontology of New York,* published serially between 1847 and 1894, contains nearly a thousand plates, most of them by Whitfield.[2] Stimulated by the two men, Dutton plunged into self-education in geology.

In 1871 Dutton was transferred to Washington, D.C., and soon became part of the network of government scientists centering on the Great Surveys. In 1875 John Wesley Powell, with help from Joseph Henry, secretary of the Smithsonian Institution, got Dutton detailed to his Rocky Mountain survey. Dutton's "geological detail" arrangement lasted for fifteen years. Powell managed to have various other army officers detailed to his research organizations, or ordered to work with them, over the years. The army continued to pay their salaries, and sometimes travel expenses, but they basically became full-time researchers for Powell's organizations; he thought it a capital arrangement.[3]

Dutton moved to the U.S. Geological Survey in 1879 and remained there until 1890. His major interest was volcanoes, and he made significant contributions to vulcanology. In 1890 Dutton and Powell had a falling out, and a new head of

Service; Wallace Atwood, world traveler and author of two textbooks on North American physical geography;[119] John Collier, commissioner of the Bureau of Indian Affairs; Harold S. Colton, director of the Museum of Northern Arizona; geologist Herbert E. Gregory; A. L. Kroeber, the well-known anthropologist at the University of California, Berkeley; Jesse L. Nusbaum, chief archaeologist for the National Park Service; and Farquhar, Ryerson, and Sibley.

Hall's ad first appeared in the University of California alumni magazine in early spring 1933. But the project soon grew from ten explorers from California to seventy-three from across the country. Staff members' services were contributed by various universities and museums. Without the participants' financial contributions and contributed staff members' time, "it would have been impossible to have maintained such an extensive field program, especially during the lean years of the Depression."[121]

Mindful of the publicity the Dodge Brothers Motor Company had gained by providing vehicles for the famous American Museum of Natural History's Central Asiatic Expedition of the 1920s, led by the flamboyant cowboy-of-science Roy Chapman Andrews, Hall convinced the Ford Motor Company to provide a number of trucks and station wagons (the famed "woodys") for expedition use. Caravans of woodys wended their ways to Kayenta, Arizona, from New York, Chicago, and Berkeley—picking up participants as they went. There were seventy-three participants in 1933; in subsequent years, field parties ranged in size from fifty-four (1936) to twenty-five (1938).[122]

The "Information for Prospective Members of the Scientific Field Staff," issued in 1934, stated: "This is *not* a deluxe expedition. There will be a cook and packer, but each member of the party must expect to bear his share of camp duties, such as gathering fire wood, rounding up pack animals, helping in the commissary department, etc. There will be a few non-technical assignments for those who prefer to serve as 'wranglers' or with preliminary scouting parties."[123]

THE **1937** EXPEDITION FLIER

Field work will include preliminary geographic reconnaissance; base mapping by triangulation; detailed topographic mapping; archaeological survey and excavation; making of measured drawings of cliff dwellings; ethnological work among the Navajo; field research in geology; and collecting and field study in all the major biological sciences. Several projects will continue work of past field seasons; others will be pushed into new territory. It is planned to establish small roving base camps as outposts on Navajo Mountain, in the canyons and in Monument Valley, from which field explorations will radiate. A certain number of men will be chosen to make the 200 mile passage, by boat, through the canyons of the San Juan and the Colorado.[124]

Two women participated in the expedition. One was Grace E. Hoover, a photographer married to Charles Hoover, a professor participant in 1934. The second was Amy H. Andrews, a New York pilot who flew aerial reconnaissance and photo sessions for the expedition in 1937.[125]

Of the some 275 men involved with the expeditions, 10 of them went on to distinguished careers in anthropology or archaeology: Donald Collier (1911–95), Lyndon L. Hargrave (1896–1978), and Omer C. Stewart (1908–91) in 1933 and 1935; Edward T. Hall Jr. (1914–2009) and John B. Rinaldo (1912–80) in 1934; Watson Smith (1897–1993) in 1935, 1936, and 1937; Ralph L. Beals (1901–85) and George W. Brainerd (1909–56) in

13.7. Rainbow Bridge–Monument Valley field crew in 1937: Charles Bernheimer (*standing at right front*); (*front row seated, right to left*) Ansel Hall (next to Bernheimer), Watson Smith, John Wetherill. Richard S. MacNeish is seated on top of the truck cab on left. Others unidentified. Photograph by A. Applegate, MS-122-1971. Courtesy of the Museum of Northern Arizona.

1935, 1937 and 1938; Richard S. MacNeish (1918–2001) in 1937 and 1938; and John W. Bennett (1915–2004) in 1937.

Richard ("Scotty") MacNeish was born in New York City. Small of stature, but great of courage, mind and vision, Scotty was a bantamweight Golden Gloves champion in the same year (1936) he began learning to do archaeology in upstate New York. In 1937 and 1938 he worked for the RBMVE (fig. 13.7). He later wrote that everything he knew about field archaeology he learned from George Brainerd and Watson Smith during his time with the expedition: "Like a hungry puppy I devoured it all."[126] MacNeish had a distinguished, often controversial career (he loved the controversy), highlighted by defining the origins of maize agriculture in Mesoamerica.

Many others went on to distinguished careers in other fields, in public health, medicine, geology, and biology. For example, Theodore H. Eaton Jr., with the expedition in 1933, became a professor of zoology at the University of Kansas. In 1970 he published a well-known book on evolution.[127] Others went into the military. Floyd B. Wood (1908–56) flew aerial reconnaissance missions for the expedition in 1933, joined the U.S. Army Air Corps, and retired in 1954 as a major general. In 1944 Wood and two others flew a Douglas A-20 Havoc into the eye of a hurricane to collect scientific data, the first successful attempt to do so. Walter M. Enger (1914–2003) was with the expedition in 1933. In 1941 he joined the navy and retired in 1972 as a rear admiral in charge of the Naval Civil Engineers, including the Seabees. Suren H.

Sprang climbed to the rockshelter and described in detail the structures they found there. "Dick remarks that it appears that this is a virgin find. No sign of any visitors here since final abandonment."[6]

The party spent the rest of the day exploring to the head of the canyon, noting that both its upper forks boxed up a couple of miles upstream from the site. They camped in the canyon that night and explored and recorded the site in more detail the next day—the three people, the dog, and the cat. They decided to call it "Three Warriors Ruin." In 1959, when the University of Utah Glen Canyon Project rerecorded and then excavated the site, we called it "Defiance House" (chapter 17).

14.4. Mickey the cat at Anasazi Ruin, Glen Canyon, 1953. Sprang Collection, NAU 54657. Courtesy of Cline Library, Northern Arizona University.

14.5. Dudy Thomas, Pard, and Mickey hiking on slickrock, Glen Canyon, 1953. Sprang Collection, NAU 54824. Courtesy of Cline Library, Northern Arizona University.

They then turned back downcanyon, discovering as they went several additional sites that the Utah crew would record and excavate in 1959 (fig. 17.10). After their trip the trio submitted the name "Forgotten Canyon" to the USGS. It was accepted and was on the quad sheet I used when I surveyed the canyon in 1959 (chapter 17).

The three plus two continued on downriver, resupplied by two airdrops that Aleson had arranged. Sprang and Aleson explored Moki and Lake canyons by hiking from Lake Canyon across the slickrock back to Moki Canyon and then down one of its major falling sand dunes.[7] Aleson thought it was the dune Judd and Wetherill used in 1923 to get in and out of the canyon. Moving on downstream they explored gravel terraces and side canyons all the way to the confluence of the Colorado and the San Juan. Aleson stopped at the mouth of the Escalante River, where he kept a "private register" in a bottle under a ledge. He copied out all the entries, noting that the October-November 1952 trip was the forty-ninth time he had been there in ten years.[8] By the time they reached Music Temple, it was November 19 and getting quite cold. They made a few more brief stops and arrived at Lee's Ferry on November 22. The next day they headed home in a snowstorm.

In 1953 the three turned their attention to the San Juan River, including a trip from Mexican Hat to Lee's Ferry and explorations of Grand Gulch. They made their last Glen Canyon trip together in 1955. Pard the dog and Mickey the cat went along on all the trips, hiking across the slickrock and helping explore the ruins. In 1957 Dudy Thomas died during an operation to remove a brain tumor.

After Dudy died, Dick Sprang remarried, and he and wife Elizabeth made a five-week float trip through Glen Canyon in the fall of 1959. Years later Elizabeth Sprang published an eloquent memorial of the trip. In her October 13 entry at Smith Fork Bar she wrote, "Today we saw a great panel of petroglyphs that had been vandalized. For the purpose of taking impressions, blue latex paint had been sloshed and dribbled down over the figures, permanently spoiling their looks."[9] Mea culpa, Elizabeth. 'Twas I who sloshed and dribbled the blue rubber latex (not paint) to make the impressions the previous July (chapter 17).

Despite the trio's good intentions of producing reams of data to be used, updated, and augmented by future researchers, it all came to naught. They did record much, but it remained unpublished and primarily in Sprang's hands until his death in 2000. As Gary Topping points out, those of us surveying the ecology, archaeology, and history of Glen Canyon in the late 1950s had no knowledge of the data, or even of the Canyon Survey itself.[10] But the Sprang-Thomas-Aleson records did ultimately find their way into archives, and collectively they give us a detailed glimpse of five intrepid explorers (counting Pard and Mickey) exploring and learning about the wonders of the Glen Canyon Country.

WE THREE

The members of the second improbable trio were Frank Wright, Katie Lee, and Tad Nichols (fig. 14.6). John Franklin Wright (1903–2002) was born in Fruitland, Colorado, one of seven children.[11] The family moved to Grayson (later Blanding), Utah, in 1915. Except for a few years in the early 1930s living near Salt Lake City, where he met and married his wife, Dora, Frank lived in Blanding all of his life. A man of many talents, Frank farmed, taught music, was an accomplished photographer and ham radio operator, and for forty years was the official local weather observer. He was also a barber, an auto mechanic, and welder. He learned to fly a plane in 1947. But he is remembered best as a master boatman on the San Juan and Colorado rivers.

In 1948 Frank made a river trip with Norm Nevills from Bluff to Mexican Hat—his first river experience. A week later Nevills recruited him as a boatman for a commercial trip from Mexican