Book Reviews

John Wesley Powell

Powell of the Colorado. WILLIAM CULP DARRAH. Princeton University Press, Princeton, N.J., 1969. xx + 430 pp. + plates. Cloth, $10; paper, $2.95. Reprint of the 1951 edition.

The Man Who Rediscovered America. A Biography of John Wesley Powell. JOHN UPTON TERRELL. Weybright and Talley, New York, 1969. vi + 282 pp., illus. $6.95.

The Colorado River Region and John Wesley Powell. MARY C. RABBITT, EDWIN D. MCKEE, CHARLES B. HUNT, and LUNA B. LEOPOLD. U.S. Geological Survey, Washington, D.C., 1969 (available from the U.S. Government Printing Office, Washington). xi + 145 pp., illus. $4.25. USGS Professional Paper 669.

John Wesley Powell and the Anthropology of the Canyon Country. DON D. FOWLER, ROBERT C. EULER, and CATHERINE S. FOWLER. U.S. Geological Survey, Washington, D.C., 1969 (available from the U.S. Government Printing Office, Washington). v + 30 pp., illus. Paper, 50¢. USGS Professional Paper 670.

Down the Colorado. Diary of the First Trip through the Grand Canyon, 1869. JOHN WESLEY POWELL. Photographs and epilogue, 1969, by Eliot Porter. Foreword and notes by Don D. Fowler. Dutton, New York, 1969. 168 pp. Until 1 Jan. 1970, $25; thereafter, $30.

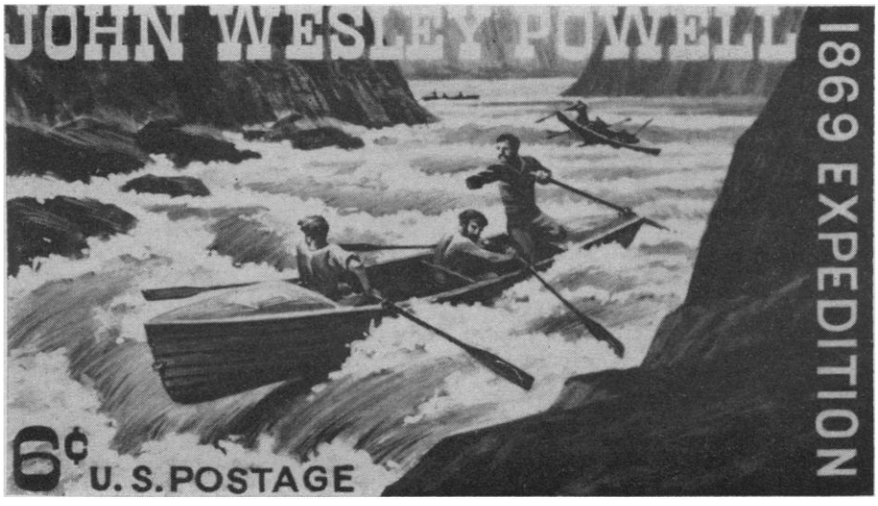
On 24 May 1869 John Wesley Powell and nine volunteers left Green River Station in the Wyoming Territory on a scientific expedition intended to run the Green and Colorado rivers through the Grand Canyon. Everybody admitted that this would be a perilous undertaking. Although the river course was uncharted, it was known from scattered observations that many stretches along the streams of the Canyon Country were white with rapids. The existence of impassable waterfalls, though affirmed only by rumor and superstition, could not then be denied by experience. Nevertheless, the expedition proceeded according to plan and, a little more than three months after the departure, ended at the mouth of the Virgin River below the end of Grand Canyon.

The price of success was high. Of the four men who quit the party along the way, three were killed before they could reach civilization. One of the four boats was wrecked and another had to be abandoned. Scientific instruments and camp supplies were lost. At the end of the ride the supply of food had shrunk to about 10 pounds of flour and 15 pounds of dried apples. The story of the expedition's successful completion, prominently featured by leading newspapers, made Powell a national hero.

In honor of the centennial of this feat Darrah's *Powell of the Colorado* has been reissued. After 18 years his is still the most complete biography of Powell. And without the massive documentation the author presents to support the story of Powell's life, one might almost suspect that the plot had been invented by Horatio Alger. Born in 1834, son of an itinerant Methodist preacher, manager of his father's farm at the age of 12, haphazardly trained in grade schools, Powell was three times a college drop-out by the age of 24, but at 26 had become superintendent of schools at Hennipen, Illinois. Enlisted in the Union Army as a private in 1861, he lost the lower half of his right arm at Shiloh, and was discharged with the rank of brevet lieutenant colonel in 1865. Between 1866 and 1869 he held professorships at Illinois Wesleyan and at Illinois State Normal University and functioned as curator of the Illinois State Natural History Society. Meanwhile he led two expeditions into the Rocky Mountains and into the plateaus beyond. Following the triumph of his expedition of 1869, he conducted a second and similar exploration of the canyon country in 1871 and 1872, after which he moved to Washington, D.C. Working under the administration of the Smithsonian Institution, as director of the Geological and Geographical Survey of the Colorado River of the West and Its Tributaries, he published his monumental work on the exploration of the Colorado in 1875 and his account of the geology of the Uinta Mountains in 1876. During the following two years he emerged as crusader for the conservation of the public lands and published his *Lands of the Arid Regions* and his less controversial *Introduction to the Study of Indian Languages.* In 1878, in the parlor of his home, the Cosmos Club was founded and Powell was named the first president. The following year Powell was named first director of the Bureau of Ethnology, and in 1881 he became the second director of the U.S. Geological Survey. By 1883, Powell was an acknowledged leader of American science, and in 1886 his accomplishments were rewarded by honorary degrees from Heidelberg and Harvard. In 1888 he was a prime mover in the founding of the National Geographical Society and the Geological Society of America. At that time Powell held the highest scientific position in the American government, but his unpopular efforts to effect an irrigation survey of the West set off a train of events which ultimately led to his resignation as director of the Geological Survey in 1894.

Terrell's book covers essentially the same ground as Darrah's, but not in comparable depth. The text is not annotated, and the only illustrations are a map showing the rainfall of the United States and a map of the Canyon Country, with graphic and mostly inaccurate representations of terrain. The style is informal, and the author does not hesitate to use strong language to make a point. Thus: "Sanctimonious and hypocritical as he was, President Hayes made high-level appointments that sent the rats General Grant had tolerated scurrying out of Washington recesses." On one page it is asserted that during the 1870's general ignorance of the American West was appalling, and on the next that settlers who took grazing homesteads under the Desert Land Act were "naive and stupid"—as though ignorance and stupidity were the same disease.

Professional Paper 669 consists of four essays related to Powell's career and principal geological interests. Mary C. Rabbitt sketches the life and accomplishments of Powell from the viewpoint of his unique role as pioneer statesman of federal science. She concludes her paper with an essay review of the major documents related to her subject. The aim of Edwin D. McKee's paper is to review the history of stratigraphic studies in the region of the Grand Canyon. In so doing he not only acknowledges Powell's discovery of the



two spectacular unconformities near the base of the exposed section but also reminds the reader of earlier contributions by Jules Marcou and J. S. Newberry. Charles B. Hunt traces the geologic history of the Colorado River. Among other matters he reexamines Powell's hypothesis that the canyon of the Green River through the Uinta Mountains is antecedent—that is to say, the stream was there before the mountains were. As the area of the Uintas was uplifted, the river cut its canyon much as a saw revolving on a fixed pivot would cut into a log thrust against it. Hunt concludes that although this and other canyons in the Colorado drainage may have been deepened in this fashion, most of the canyons seem better explained as erosional results of streams superposed from alluvial covers or from erosion surfaces developed upon shale formations. Luna B. Leopold raises the question why there are no waterfalls in the long course along the canyons followed by Powell. He finds that the river profile, except for the alternations of pools and rapids, is remarkably straight. Despite its impressive rapids, the Colorado River has the characteristics of a river in balance, concentrating its erosive energy on the bumps along the bottom and thereby tending to reduce them and to make the whole stream bed uniform.

Professional Paper 670 is concerned with Powell's studies of the archeology and of the historic Indian tribes of the Canyon Country. Robert C. Euler describes archeological sites discovered by Powell and fits these into the prehistoric chronicle of the region. The Fowlers sketch the ethnography and reproduce extracts of Powell's notes related to the means of subsistence, animal food, traditions of courtship and marriage, and mythology of the Indians. They emphasize the timeliness of Powell's systematic observations of the Indians of the Colorado Plateau and Great Basin, coming as these did when many of the Indian groups were first interacting with the cultures of the white settlers. The paper is well illustrated with maps and photographs, including many reproductions of J. K. Hillers's classic studies of Indians taken in 1873.

Down the Colorado reproduces Powell's diary of his first trip, which, as is well known, recounts many events that actually occurred during his second exploration of the river. History or not, this is a stirring story of high adventure. The narrative is in the present tense, so that the reader soon feels he is a member of the expedition. Thus, for example,

> . . . the walls suddenly close in, so that the canyon is narrower than we have ever known it. The water fills it from wall to wall, giving us no landing place at the foot of the cliff . . . I stand on deck, watching with intensive anxiety . . . but we glide along, with no obstruction, no falls, no rocks, and, in a mile and a half, emerge from the narrow gorge . . . Now that it is past, it seems a very simple thing indeed to run through such a place, but the fear of what might be ahead made a deep impression on us.

The book is illustrated with 44 superb four-color photographs by Eliot Porter. About half of these pictures feature scenes of canyons and tributaries; the others focus upon smaller beauty spots such as flowers, rills, pools, falls, and sculptured rocks. Numerous drawings and photographs made by Powell's contemporaries appear at appropriate places throughout the text. The work is edited by Don D. Fowler, whose introduction contains a useful summary of explorations in the canyon country prior to the Powell expedition. In an epilogue, Porter tells something of the geological history of Glen Canyon and Grand Canyon. Also, he bitterly laments the construction of Glen Canyon Dam and the impounding of Lake Powell, which he describes as "a sink for sediments and the trash carelessly scattered about by throngs of visitors . . . one of the greatest frauds ever perpetrated by responsible government upon an unsuspecting people."

In 1950, when Darrah was writing the preface to his biography, he marveled that time had so quickly dimmed the memory of Powell. With all that has been written about "the Major" during the past two decades, and especially during this centennial year of his ride down the Colorado, this lapse has been largely corrected. Although the character of Powell remains somewhat enigmatic, even to those who have studied him most carefully, there is no doubt now that his varied accomplishments as explorer, geologist, anthropologist, conservationist, and statesman of American science were even more significant than his contemporaries could possibly have known.

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Some Diverse Landforms

Coasts. E. C. F. BIRD, M.I.T. Press, Cambridge, Mass., 1969. xvi + 246 pp., illus. $7.50. An Introduction to Systematic Geomorphology, vol. 4.

Coasts is the first published volume in a series of at least seven by Australian authors, edited by J. N. Jennings, provisionally scheduled to appear before 1972. The intent of the series is to cover geomorphology at the college level for both students and laymen having some familiarity with geological terminology. Volumes in preparation include *Humid Landforms, Desert and Savanna Landforms, Landforms of Cold Climates, Structural Landforms, Volcanic Landforms*, and *Karst*.

Bird's *Coasts* is lucidly written and compresses a surprising amount of information into a modest number of pages. The coverage is somewhat less complete than in André Guilcher's ex-