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Review of Bartlett, *Great Surveys of the American West*, and Schubert, *Vanguard of Expansion: Army Engineers in the Trans-Mississippi West, 1819-1879*

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BARTLETT, RICHARD A., *Great Surveys of the American West* (Norman: University of Oklahoma Press, 1962. Third printing, 1980. Preface, illustrations, notes, bibliography, index, xxi, 410 pp., \$9.95, paper).

SCHUBERT, FRANK N., *Vanguard of Expansion: Army Engineers in the Trans-Mississippi West, 1819-1879* (Washington, D.C.: Government Printing Office, 1980. Stock number 008-022-00149-2. Introduction, illustrations, notes, index, xii, 160 pp., paper, \$4.50).

These two books outline the fascinating history of the exploration of the western United States by United States Army topographers and by civilian natural scientists from 1819 to 1879. These two groups, working either together under Army supervision or separately in military and civilian independent surveys, prepared topographic and geologic maps and natural history studies of most of the territory west of the Mississippi River. These maps and studies provided valuable information to settlers and to commercial and government groups involved in opening the west to development, and dispelled many myths concerning previously unexplored regions. They also helped lead to the establishment of Yellowstone and other western national parks and started discussions on water and other natural resource policies for the west that continue today.

Schubert's book describes the work of the United States Corps of Topographical Engineers from 1813 until 1863, when it was merged with the United States Army Corps of Engineers, and the establishment of topographical work within that corps as the Wheeler Survey from 1871 until its consolidation with competing civilian surveys in 1879. The work of these topographers involved exploration, surveying, specimen collection, and map preparation of the western lands acquired by the United States through war, purchase, and settlement. The push behind this work came from both government and citizen need to know what these lands contained, how to get to them, and how to make a living on them.

The Topographical Corps, at one time or another, included in its ranks Stephen H. Long, John C. Fremont, and Gouverneur K. Warren. Schubert not only describes their contributions to the opening of the west but also includes those of perhaps less well known, but equally interesting, men such as Joseph Nicolle, James H. Simpson, and Howard Stansbury.

Stansbury's observations and maps made while travelling through Nebraska to explore Utah were used by later travelers to Nebraska. Warren studied Stansbury's maps and narrative while preparing for duty as a leader of the guides and interpreters attached to Colonel William S. Harney's expedition against the Brule Sioux in the vicinity of Ash Hollow (now in Garden County), Nebraska, in August, 1855. In

1979 Stansbury's description of the geology of the area around Ash Hollow was "rediscovered." It proved to contain probably the earliest formal reports on the nature and relationship between the Ash Hollow Formation, as it is now called by geologists, and the underlying rocks exposed by stream erosion along the sides of the North Platte Valley, as well as the earliest report of fossil seeds found in the Ash Hollow strata.

Topographical engineers, working with the Office of Pacific Railroad Explorations and Surveys established by Secretary of War Jefferson Davis in the 1850s, prepared maps and reports on four possible routes for transcontinental railroads. Major rail lines were established after the Civil War either near or along all of the routes laid out in these reports.

Also after the Civil War, four competing surveys worked in the area primarily west of the 100th meridian. Three of them began in 1867. The United States Geological Exploration of the Fortieth Parallel was led by Clarence King under the supervision of the Engineer Department of the Army. Ferdinand V. Hayden, a civilian scientist formerly working with the Topographical Corps, also started the United States Geological and Geographical Survey of the Territories in Nebraska. In that same year Major John Wesley Powell began his initial exploration of Colorado using some supplies and equipment furnished by the US Government. In 1870 Powell received money from Congress to continue his explorations, which had by this time expanded to include the area drained by the Colorado River and its tributaries. In 1871 the Army Corps of Engineers established the United States Geographical Surveys West of the One Hundredth Meridian under the command of Lieutenant George M. Wheeler to make a topographical survey of the west.

While Schubert treats them briefly in his last chapter, Bartlett's work is the story of these surveys and of the men who headed them. As both Bartlett and Schubert point out, all four made great contributions to understanding the natural history and geography of the west. They published large quantities of information, many maps, and collected literally tons of natural history specimens. Their work and collections are still used today by natural scientists, and the accounts of their explorations still fascinate readers.

These authors also, perhaps unwittingly, make two other interesting points. First, even in the 19th century individuals and businesses could not alone accomplish the necessary work performed by the topographers and surveys. Government cooperation with citizens and industry was important then as it is now to achieve goals they could not reach by themselves. Secondly, in 1879, just as in 1979 and later, government reorganization and consolidation of agencies with overlapping duties was a continuing process.

Both of these books are worth reading to get an overview of this part

of western history before delving into some or all of its aspects more deeply. They supply good lists of references, and both are relatively free of factual errors and generally free of typographical errors. Schubert's reference to dinosaur bones at Agate Springs, Nebraska, (p. 126) and Bartlett's description of the badlands of South Dakota as deposits laid down in a great marsh (p. 6) are unfortunate. However, both books capture and hold one's attention.

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