
MERIDIAN



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From the editor . . .

Among the Library of Congress's many contributions to map libraries and their users was its creation two decades ago of the MARC (MACHine Readable Cataloging) format. This major achievement made it practical to use computers for map cataloging. Regrettably, however, LC has failed to take full advantage of the opportunities for increased productivity and cost savings spawned by its own invention. Other libraries throughout the world catalog maps and other materials efficiently and inexpensively by capturing and sharing MARC data created by LC and other libraries. While these institutions, even other federal ones, use OCLC or another bibliographic utility to do copy cataloging, LC continues to do original cataloging for large numbers of titles—even though catalog records for them are readily available in OCLC. LC does use records from its incipient National Coordinated Cataloging Project and the Government Printing Office, but these positive efforts are only a modest beginning when compared to the savings achieved by other libraries using OCLC.

The cost of copy cataloging in an online utility is but a fraction of the cost of original cataloging. Not only is there little work to be done if one finds a catalog record matching the map or book in hand, but most libraries use lower-cost paraprofessionals to do copy cataloging (original cataloging is generally reserved for librarians and high-level paraprofessionals). Even if a particular catalog record is not up to LC's high standards, it would almost always be less costly to edit existing copy than to begin from scratch. Even greater savings would result from LC's acceptance of copy without upgrading—it could merely add its own call number and ownership symbol to existing records. LC might wish to upgrade (where necessary) certain selected categories of records, for example, U.S. publications, for which it feels a particular obligation, or for other materials where its staff has special language or subject expertise. It would probably not wish to distribute any "non-LC" records through its tape distribution services.

LC has consistently claimed that its computer system cannot tapload records from a bibliographic utility. Surely this problem can be quickly fixed, since scores of other libraries have long since discovered how to manage this not-too-difficult feat. Current Gramm-Rudman-Hollings budget cuts, coupled with massive federal outlays for the damage caused by Hurricane Hugo and the northern California earthquake, would seem to make this an opportune time for LC to re-consider using OCLC. LC as well as those of us who cherish and depend on it would clearly benefit.

It will take more than the Loma Prieta Quake to do in northern California's cartographic community. Nearly a month after the event, several major libraries and their map collections remained closed with their buildings in questionable condition; but happily it appears that all personnel are fine, and that only two maps (replaceable U.S. Geological Survey quadrangles) were lost. Your expressions of concern were much appreciated.

Philip Hoehn

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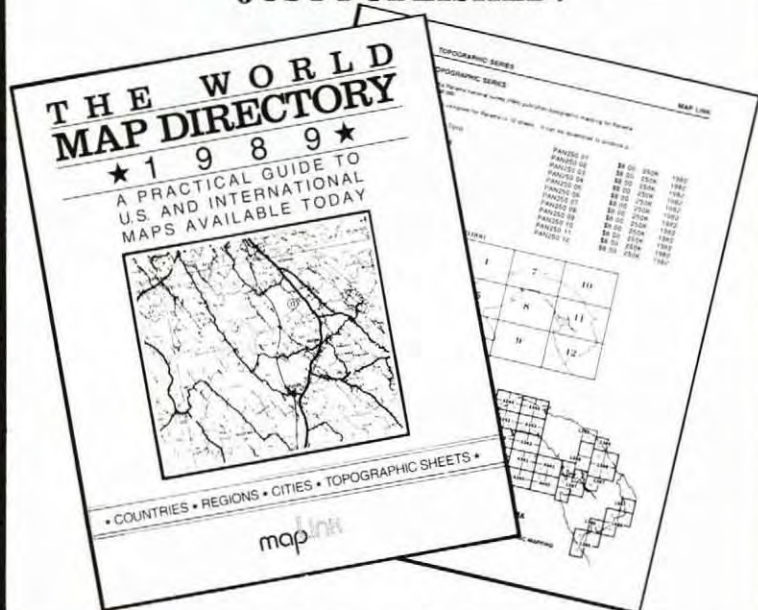
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The design of the cover for *Meridian* was developed by Donna P. Koepf, George F. McCleary, Jr., and Brian Yodler, of the University of Kansas. The type was prepared by Yodler (of the Department of Design) who modified Bodoni Book using MacDraw. The map is an interrupted flat polar quartic (equal-area) projection; it was constructed and compiled by McCleary using F. Webster McBryde and Paul D. Thomas, *Equal Area Projections for World Statistical Maps* (U.S. Coast and Geodetic Survey Special Publication 245, 1949).

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THE EXPLORATION AND MAPPING OF YELLOWSTONE NATIONAL PARK

by Jim Walsh

Lewis and Clark Expedition member John Colter explored the area now known as Yellowstone National Park in 1807-08. The expedition's first map was published in 1814. Subsequent maps from 1839-57 by Washington Hood, John C. Frémont, Pierre de Smet, and G.K. Warren included information of Yellowstone visitors Jim Bridger, Joseph Meek and William Sublette. The period 1859-72 saw expeditions by William C. Reynolds, Walter deLacy, David Folsom, Charles Cook, Henry Washburn, Gustavus Doane, Ferdinand V. Hayden, John W. Barlow, and David P. Heap. The park was established in 1872, and was further explored and mapped from 1872-78 by Hayden, William A. Jones, and William Ludlow. Increasingly detailed maps have been produced by the U.S. Geological Survey beginning in 1879.

"... though small in extent, I regard the valley of the upper Yellowstone as the most interesting unexplored district in our widely expanded country." (Reynolds 1868, 11).

"We saw many strange and wonderful phenomena, many things which would require volumes for adequate description, and which in future geography will be classed among the wonders of the earth." (Doane 1871, 37).

"We may say, in conclusion, that we have been able . . . to do little more than allude to a few of the wonderful physical phenomena of this marvelous valley." (Hayden 1872b, 396).

INTRODUCTION

Capt. William F. Reynolds's, Lt. Gustavus C. Doane's and Dr. Ferdinand V. Hayden's descriptions of the Yellowstone country were some of the most detailed and accurate of their day and are still considered to be among the best narratives of the region and its features. Their reports and accompanying maps, drawings and photographs were instrumental in obtaining Congressional approval for the establishment of Yellowstone National Park. President

Ulysses S. Grant signed the Yellowstone National Park Act on March 1, 1872 (*Statutes at Large* 17:32) and the world's first national park was established. The idea of setting aside a parcel of land in the Yellowstone country that would be preserved forever was first suggested by Thomas Meagher, the Acting Territorial Governor of Montana, in 1865 (Haines 1977, 1:103).

The amount of material written about Yellowstone National Park and its exploration is voluminous and it would be impossible to cover every aspect of every expedition that explored and mapped the park in a paper of this length.¹ Major expeditions and maps will be discussed and compared, while minor events will be mentioned or referenced. The time period of 1803 to the present will be covered, with the major portion of this paper concentrating on two time periods: 1859-71 and 1872-79. The expeditions, discoveries, narratives and reports during these 20 years were the impetus for establishing and preserving the park. They served to inform and educate the American people about the spectacular features which existed in what we now know as Yellowstone National Park.

EARLY YEARS, 1803-1859

The United States purchased the Louisiana Territory from France on April

John Colter . . . is acknowledged as being the first white man to enter and view the wonders of what is now Yellowstone National Park

11, 1803 and with it began the exploration of America's West. President Thomas Jefferson realized the importance of exploring and mapping the territory and authorized the Lewis and Clark Expedition (1804-06) to explore the newly acquired territory. Capts. Meriwether Lewis' and William Clark's party, known as the Corps of Discovery, left Saint Louis on May 14, 1804 and embarked on the first United States government-sponsored expedition (Viola 1987, 18-20; *Exploring the American West* 1982, 22-26). Although their discoveries were monumental they came close but they never entered the present day boundaries of Yellowstone National Park.

John Colter was a member of the Corps of Discovery but was granted permission to leave the expedition and in August 1806 he set out on his own and remained in the mountains. He spent the winter of 1807-08 in the Yellowstone country and is acknowledged as being the first white man to enter and view the wonders of what is now Yellowstone National Park (Chittenden 1905, 15-16; Clary 1972, 9; Cramton 1932, 5; Haines 1974, 3-4).

Colter returned to Saint Louis in May 1810 and provided information on what he saw to William Clark. Clark used this information on his 1806-11 manuscript map and Samuel Lewis included it on his engraving of Clark's map, printed in 1814 (Chittenden 1905, 26; Jackson 1940, 27-41; Haines 1974, 4-5; Haines 1977, 1:5).

These two maps were the first to include features of the Yellowstone country, albeit limited and incomplete. Eustis Lake (now Yellowstone Lake) and Lake Biddle, referred to as Lake Riddle on Samuel Lewis' map (and now called Jackson Lake), are notable features on the two maps. The relative size and location of the lakes are somewhat accurate on the 1806-11 map, but they are inaccurately portrayed as being nearly equal in size on Lewis' version. (Haines 1974, 185-86; Haines 1977, 1:34).

The exploration of the West continued and peaked between the 1830s and 1850s. These expeditions were con-

cerned with the exploration of the entire West and not just the microcosm of the Yellowstone country. None of these expeditions entered the present day boundaries of the park and, as a result, the information which appeared on their maps was lacking in detail and often inaccurate. Any information they received was provided by the trappers, hunters, prospectors and mountain men who had visited the region. Colter, Jim Bridger, Joseph Meek and William Sublette returned from their visits with stories of geysers, bubbling mud pots and petrified forests that everyone believed were the creation of their imaginations. Most people did not believe that such features or phenomena existed and may have been one reason why people did not attempt to settle in this area, thus leaving the region intact and pristine.

Some of their information did find its way onto some of the most important maps of the time. These included Washington Hood's map of 1839, John Frémont's map of 1848, Father Pierre De Smet's map of 1851 and G. K. Warren's map of 1857 (Goetzmann 1959, 25, 106; Haines 1974, 17, 21-23, 187-89; Viola 1987, 140-41; *Exploring the American West* 1982, 70-72). However, these maps consisted of large portions of "white area" (unexplored area) and added no new information to the mapping of the Yellowstone country.

THE GOLDEN AGE OF EXPLORATION, 1859-1872

The year was 1859 and it marked the beginning of a 13-year period of heightened interest, exploration and mapping of the Yellowstone country. The expeditions of this period and their subsequent reports, drawings, photographs and maps were the catalyst for the establishment of Yellowstone National Park.

Raynolds Expedition, 1859-1860

Capt. William F. Raynolds led a Corps of Topographical Engineers' expedition on the first organized expedition, whose orders included the exploration of the Yellowstone country (Haines 1977, 1:86). The exploring party, which included Jim Bridger as guide and Ferdi-

1859 . . . marked the beginning of a 13-year period of heightened interest, exploration and mapping of the Yellowstone country

nand Hayden as naturalist, left Saint Louis in May 1859 and camped that winter in Wyoming (Baldwin 1976, 5). In May 1860, at the junction of the Popo Agie and Wind Rivers, the expedition was divided into two parties. Lt. Henry E. Maynadier led one party around the eastern and northern boundaries of the park and Capt. Raynolds led the other party around the southern and western boundaries of the park (Haines 1977, 1:87; Baldwin 1976, 5). Together, both parties completely encircled the park but never crossed the present-day boundaries. The routes of Lt. Maynadier and Capt. Raynolds can be seen on figure 1.

Raynolds had planned to cross the Wind River Mountains, diagonally cross the park and meet Maynadier at Three Forks; becoming the first person to enter the Yellowstone and officially report on the wonders found there. He failed to cross the mountains due to the snow pack and he could not wait for the snows to melt because his orders also required him to be in the British Territory by July 18, 1860 to view a total eclipse. In his official report, which was not published until 1868 due to the outbreak of the Civil War, Raynolds wrote of his failure to enter Yellowstone:

"Had our attempts to enter this district been made a month later in the season, the snow would have mainly disappeared, and there would have been no insurmountable obstacles to overcome. I cannot doubt, therefore, that at no very distant day the mysteries of this region will be fully revealed . . ." (Raynolds 1868, 10-11)

Raynolds expedition was significant for many reasons, despite his failure to enter the present day boundaries of Yellowstone National Park. It was the first expedition, as mentioned previously, whose orders included the Yellowstone country as a goal. It was the last expedition organized under the auspices of the Corps of Topographical Engineers (Goetzmann 1959, 411) and it served as a transition from one generation of explorers (Frémont, Kearny and Warren) to another (Hayden, King and Powell). His report and accompanying map, which was published separately in

1864, provided, for the time, accurate and up-to-date information for an unknown part of the nation. It was said, "Raynolds' report was the first official recognition in any form of the probable existence of extensive volcanic phenomena in the region of the Upper Yellowstone." (Chittenden 1905, 60).

Figure 1 is a reprint of the Yellowstone country of Raynolds' map, *U.S. War Department Map of the Yellowstone and Missouri Rivers and Their Tributaries Explored by Capt. W.F. Raynolds Topl. Engrs* (Baldwin 1976, 7). Raynolds and Maynadier's routes are included and various features of the Upper Yellowstone Valley, as described by Jim Bridger to Capt. Raynolds, are depicted. Also, Sulphur Mt. is in the correct location of the Mammoth Hot Springs and Mt. Gallatin appears in the position of present day Mount Holmes (Haines 1974, 26). However, many of the features are shown too far north and west (e.g., part of Jackson Lake and all of the Tetons are located in present day Idaho, instead of Wyoming).

It is unfortunate that Raynolds' report was not published until 1868 which resulted in it being less timely and an . . . "account [that] was largely stale news." (Haines 1977, 1:89).

DeLacy Prospecting Trip, 1863

In 1863 Walter deLacy led a prospecting party which passed through the southwestern corner of present day Yellowstone National Park. This was the first organized expedition to enter the present day boundaries of Yellowstone National Park, although their primary purpose was prospecting not exploring the Yellowstone country. He failed to publish his discoveries and did not receive the credit which he rightly deserved (Haines 1974, 136-37).

In 1864, deLacy was commissioned by the Montana Territory Legislature to compile a map of the territory and in 1865, he published *Map of the Territory of Montana with Portions of the Adjoining Territories*. This map contained a few of the features of the Yellowstone country (Yellowstone Lake was similar in shape and location to Raynolds' Yellowstone Lake). The map was reprinted,

Raynolds . . . was the first expedition . . . whose orders included the Yellowstone country as a goal

In 1863 Walter deLacy led a prospecting party which . . . was the first organized expedition to enter the present day boundaries of Yellowstone National Park . . .



Figure 1. From Baldwin's *Enchanted Enclosure* (1976).

improved and corrected during the next 24 years (Haines 1974, 55-6, 139, 191-94; Haines 1977, 1:65). The 1870 edition of this map, hereinafter referred to as the deLacy Map of 1870, which deLacy compiled with David Folsom, was the first map that showed many of Yellowstone's features and showed them with a high degree of accuracy (Haines 1974, 55-6, 194). This map will be described in more detail when the Folsom-Cook Expedition is discussed.

Folsom-Cook Expedition, 1869

In 1867 and 1868 expeditions were planned to explore the Yellowstone country but sporadic Indian uprisings and the lack of adequate military escorts caused them to be cancelled. David Folsom, Charles Cook and William Peterson departed from Diamond City, Montana on September 6, 1869, in spite of these inconveniences and became the first organized expedition which set out to explore the Yellowstone country and accomplished its objective (Raftery 1909, 7; Cook 1870, 60-61).

They traveled up the Yellowstone River, through the Grand Canyon of the Yellowstone, observed and measured the Lower and Upper Falls, proceeded along the northwest shore of Yellowstone Lake, skirted the northernmost point of Shoshone Lake, traveled north through the Lower Geyser Basin and past the Great Fountain Geyser and exited the park following the Madison River. They returned to Helena, Montana on October 11, 1869. Folsom, Cook and Peterson spent 36 days in the wilderness and observed features and phenomena not seen previously by any white man (Cook 1870, 61-67; Jackson 1940, 127-37; Haines 1977, 1:93-103).

The Folsom-Cook Expedition was also the first expedition which entered the Yellowstone to have its discoveries published, although this was not an easy task. The manuscript was rejected by *Lippincott's Magazine* with the reply that they did not print fiction (Baldwin 1976, 1). *Harper's Magazine* also rejected the manuscript claiming that the statements were incredulous (Raftery 1909, 8). The manuscript was finally accepted and published by the *Western Monthly* (Cook

1870, 60-67), albeit abbreviated and altered, as the editor cut out portions of Folsom's and Cook's diary (Haines 1965, 45-46).

Following the expedition David Folsom worked for the surveyor general of Montana, Henry Washburn, and worked closely with Walter deLacy (Jackson 1940, 141-42; Haines 1977, 1:101-02). DeLacy took the information Folsom and Cook gathered and revised the 1869 *Map of the Territory of Montana with Portions of the Adjoining Territories* and published the deLacy Map of 1870. The deLacy Map of 1870 was the most accurate map published to date. The shape of Yellowstone Lake shows the West Thumb and an arm to the south (no distinction of the South or Southeast Arm is made). The location of the Upper and Lower Falls on the Yellowstone River is clearly noted and their heights 115 feet and 350 feet, respectively, are also listed. These were very close to the today's accepted measurements of 109 feet and 308 feet (Haines 1977, 1:98, 341). Folsom and Cook's route is also clearly identified (Haines 1974, 194). It was the deLacy Map of 1870 that Henry Washburn took with him when he explored the Yellowstone in 1870.

David Folsom's and Charles Cook's contributions to the discovery and exploration of the Yellowstone country are remarkable when you consider the size of their expedition: three men. They were the first to have their findings published; their information resulted in a much improved and accurate map; David Folsom was the second person to suggest that this area be set aside and preserved; and the success of their expedition was encouragement for the Washburn-Doane Expedition in 1870 (Haines 1974, 56).

Washburn-Doane Expedition, 1870

The success of the Folsom-Cook Expedition and the publication of their experiences in the *Western Monthly* increased interest in the exploration of the Yellowstone country. Henry Washburn was especially interested in exploring the Yellowstone.

Washburn began recruiting men in the spring of 1870 and by August his party

The Folsom-Cook Expedition was also the first expedition which entered the Yellowstone to have its discoveries published

The deLacy Map of 1870 was the most accurate map published to date

consisted of 19 men, many Montana celebrities. The party included: Washburn, surveyor general for the Montana Territory; Nathaniel P. Langford, collector of Internal Revenue for Montana and later the first superintendent of Yellowstone National Park; Samuel Hauser, civil engineer and president of the First National Bank of Helena; Cornelius Hedges, judge and the third person to suggest that Yellowstone National Park be established; Walter Trumbull, assistant assessor of Internal Revenue for Montana; and Truman Everts, the oldest member of the party, former assessor of Internal Revenue for Montana and, whose claim to fame, was his being lost 37 days during the expedition and surviving the experience (Langford 1905, xvi; Jackson 1940, 146-59; Montana 1960, 3-4).

Washburn learned by chance that Lt. Gustavus Doane was very interested in his planned expedition to the Yellowstone country. Hauser and Washburn sent a telegram to General Hancock in Saint Paul requesting that Lt. Doane accompany the party. A reply was received on August 14, 1870 from General Hancock with orders that Lt. Doane be the officer in charge of the military escort which would accompany the Washburn party (Jackson 1940, 166-70; Montana 1960; 5-6). This was the first military expedition to enter Yellowstone National Park.²

Washburn and his expedition departed Helena on August 17, 1870 and joined up with Lt. Doane and five soldiers on August 22 at Fort Ellis and the Washburn-Doane Expedition, often referred to as the Yellowstone Expedition, was complete (Langford 1905, 1, 4). They crossed the present day northern boundary of Yellowstone National Park on August 26 (Montana 1960; 8) and Langford's last entry in his diary was dated September 27, 1870 (Langford 1905, 120). The expedition was gone 42 days and during that time saw more than any previous expedition and added a considerable amount to the knowledge of the Yellowstone country. Its members published a diary, an official report, and a number of magazine articles.

The Yellowstone Expedition, like Folsom and Cook, traveled up the

Yellowstone River to Yellowstone Lake. At this point the party proceeded south along the eastern shore of the lake and passed the South and Southeast Arms and West Thumb of the lake. They were the first to explore and map this area of Yellowstone Lake. The expedition then entered the Upper Geyser Basin, followed the Firehole River to the Madison River, exited the park on the west side and proceeded north on their return to Helena (Bonney 1970, 199).

Lt. Doane not only led the first military expedition into the park but his report was also the first, official government report written about what we know as Yellowstone National Park. Doane's report is excellent. It is readable, accurate and concise. The introductory material to Bonney's *Battle Drums and Geyser*, volume 2, includes the following quotes by Hiram Chittenden and Ferdinand Hayden about Doane's report:

"Doane's part in the expedition of 1870 is second to none. He made the first official report upon the wonders of Yellowstone and his fine descriptions have never been surpassed by any subsequent reports." H.M. Chittenden.

"Doane's journal has not been surpassed by any official report made to our government since the times of Lewis and Clark." F.V. Hayden (Bonney 1970, vii).

Henry Washburn and Lt. Gustavus Doane each compiled a map of the route of the expedition—Doane's map is shown as figure 2. However, neither map was published with their respective reports but both appear in Bonney's book (Bonney 1970, 199, 295). Both maps show the route of the expedition, and present a more accurate Yellowstone Lake. The inaccuracies which appeared on the deLacy Map of 1870 appear on Washburn's and Doane's maps: Yellowstone Lake is too far south and east; Jackson Lake is too far west; two lakes are shown between Yellowstone Lake and the Firehole basin where only one exists (Bonney 1970, 399-403; Haines 1974, 92-93, 195-96).

The Yellowstone Expedition discovered and named many of the geysers

The Washburn-Doane Expedition, often referred to as the Yellowstone Expedition . . . saw more than any previous expedition . . .

The Yellowstone Expedition discovered and named many of the geysers in the Upper Geyser Basin, including Old Faithful

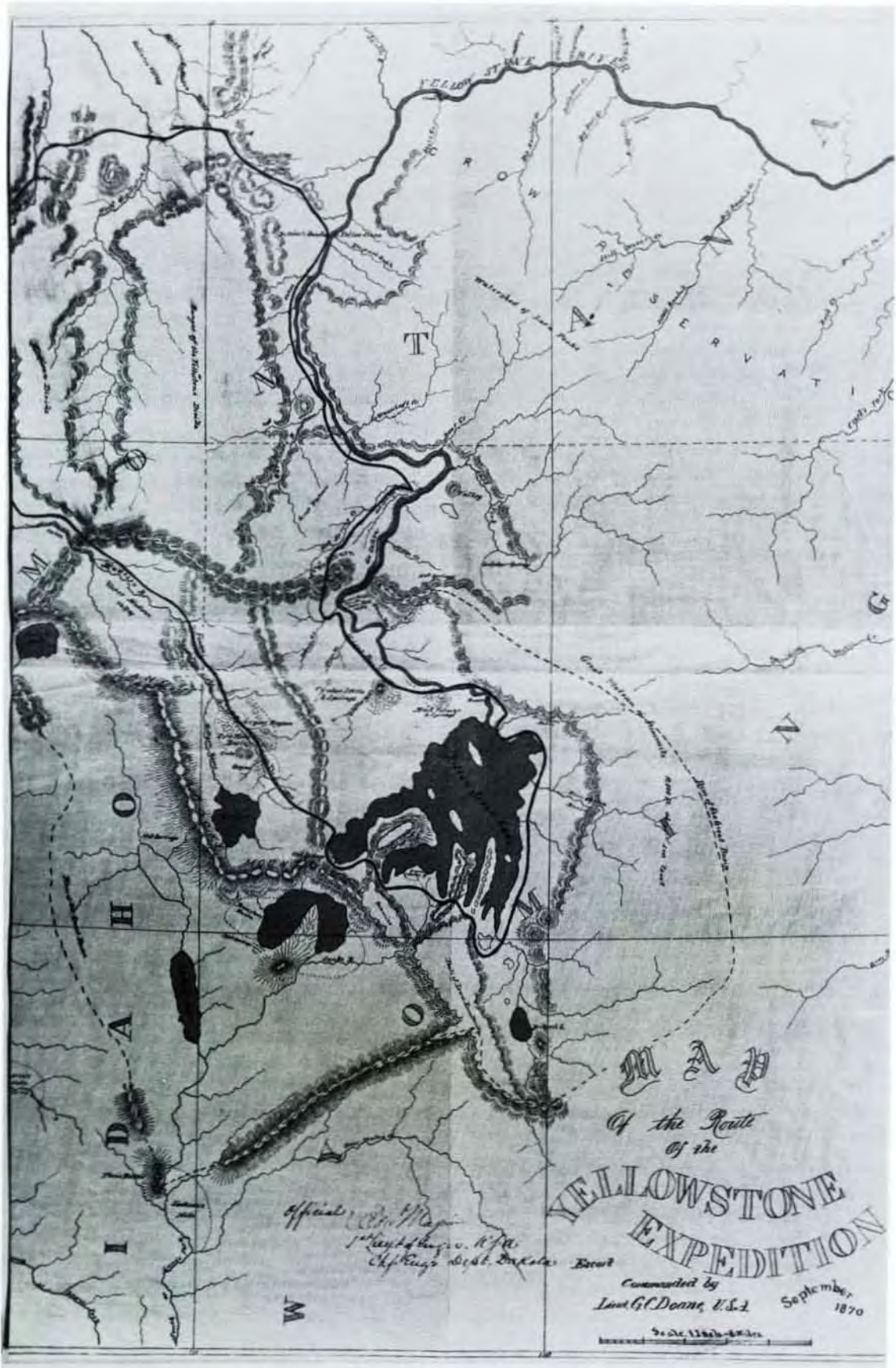


Figure 2. Doane's manuscript map in the U.S. National Archives and Records Administration.

in the Upper Geyser Basin, including Old Faithful (Langford 1905, 106-12; Doane 1871, 28-32). They were the first to encircle Yellowstone Lake and, as a result, produced a more accurate map of the lake's shoreline. Their diaries, journals, reports and articles were very detailed and vivid in the description of what they saw and where they saw it. Their overall contribution to the exploration of the Yellowstone country was significant and instrumental in the establishment of Yellowstone National Park.

The next expedition to enter the park area was the 1871 combined expedition of Ferdinand V. Hayden and Capts. John Barlow and David Heap. This was the last expedition to explore the wonders of Yellowstone before the establishment of Yellowstone National Park in 1872.

Hayden and Barlow-Heap Expedition, 1871

Ferdinand V. Hayden was not unfamiliar with the Yellowstone country when he led his 1871 expedition (Haines 1977, 2:438). Previously he had been part of the expedition to the Lower Yellowstone led by G.K. Warren in 1856 and the Reynolds' Expedition of 1859-60 (Hayden 1872a, 7; *Ferdinand Vandiveer Hayden* 1973, 5). These near successes of entrance to the Yellowstone country and the reports and maps recently published by Folsom, Cook, Washburn, Doane and deLacy were encouragement for Hayden to achieve his goal of entering this geologic wonderland.

Hayden was in charge of the newly created United States Geological Survey of the Territories, which was later merged with the King and Powell surveys to form the United States Geological Survey (USGS) in 1879 (Haines 1977, 2:438). The 1871 expedition was the first of three that Hayden would lead into the Yellowstone (Haines 1974, 143). It was also the first government sponsored expedition to successfully explore the area, the first to successfully photograph the area and, when the official report was published in 1872, the first to publish a map of the newly established Yellowstone National Park (Haines 1974, 100; Haines 1977;

Haines 1977, 1:141; Hayden 1872c, 294).

Hayden's expedition was accompanied by a simultaneous expedition of the U.S. Corps of Engineers led by Capt. John W. Barlow, assisted by Capt. David P. Heap (Baldwin 1976, 15). The two parties explored separately and together during the several weeks in the region. The two expeditions consisted of over 70 men. Hayden's party totaled 34 men, including: Thomas Moran, artist; William H. Jackson, photographer; Anton Schoenborn, topographer; and Albert C. Peale, mineralogist (*Ferdinand Vandiveer Hayden* 1873, 8; Haines 1977, 1:141-42). The Barlow-Heap party, a smaller expedition of 11 men, included: Thomas Hine, photographer; H.G. Prout, assistant topographer; and W.H. Wood, draughtsman (Barlow 1872, 3, 5). Hayden and Barlow shared a military escort which was later replaced by Lieut. Gustavus Doane, no stranger to the region (Hayden 1872a, 6). In addition, Barlow was assigned a separate military escort of six men which was under his direct command (Haines 1977, 1:144).

Both expeditions originated at Fort Ellis, Montana; Hayden departed on July 15, 1871 and Barlow and Heap departed the next day. Their routes were somewhat similar to Washburn and Doane's route. However, due to the larger size and length of time of the expeditions, each party covered more territory, discovered and named more features and returned with more specimens, photographs and astronomical observations than any previous expedition. They made a complete loop of Yellowstone Lake and explored far south of the lake (actually exiting what is the park's southern boundary). Hayden's party returned to Fort Ellis on August 30, 1871 and Barlow's party reached the Fort on September 1, 1871 (Haines 1977, 1:145, 190).³

The expedition completed, Hayden returned to Washington, Barlow to Chicago and Heap to Saint Paul and the men began to compile the data and write their reports. However, misfortune struck. Hayden's topographer, Anton Schoenborn, committed suicide on the trip back

The 1871 expedition was the first of three that Hayden would lead into the Yellowstone

Barlow had been in Chicago only a few days when the great fire . . . destroyed almost all of his material from the expedition

to Washington and U.S. Coast Survey personnel compiled the maps for Hayden's report from Schoenborn's field notes. Barlow had been in Chicago only a few days when the great fire of October 8-11, 1871 destroyed almost all of his material from the expedition: notes, biological specimens, meteorological records and all but 16 of Hine's photographic plates. Fortunately, Heap's astronomical records were in Saint Paul (Haines 1977, 1:153).

Despite these losses, Hayden's and Barlow's reports and maps were thorough, detailed and accurate. Their maps were exquisite. Hayden's map, *Yellowstone National Park, From Surveys Made under the Direction of F.V. Hayden* (fig. 3) accompanied his report (Hayden 1872a) and was later published in an article he wrote for the *American Journal of Science and Arts* (Hayden 1872c). This is the first map that shows the boundaries of Yellowstone National Park. The shape of Yellowstone Lake is very accurate. The location, size and shape of Madison Lake (present day Shoshone Lake) and Heart Lake are relatively accurate. However, present day Lewis Lake, located between Madison and Heart Lakes is omitted and the non-existent De Lacy's Lake still appears on Hayden's map (SW corner of map, just outside the park's boundaries) (see fig. 3).

Barlow's map, *Sketch of the Yellowstone Lake and the Valley of the Upper Yellowstone River* (Barlow 1872; Baldwin 1976, 17) was the first map drawn of the area using triangulation, making it the first map to show features and details in their proper relationship to longitude and latitude (Haines 1977, 1:153). The Barlow-Heap map shows an even more accurately drawn Yellowstone Lake. Madison Lake (present day Shoshone Lake) is properly positioned and shows it draining into an unnamed lake (present day Lewis Lake). Heart Lake appears in its proper location but an unnamed, non-existent lake appears between Heart and the unnamed lake (Lewis Lake). Barlow's non-existent lake is similar in size and shape to Hayden's De Lacy's Lake but is in a completely different location.

This error is a result of previous expeditions and inaccurate observations. Hayden corrected this on an 1876 map of the park published in *The Yellowstone National Park, and the Mountain Regions of Idaho, Nevada, Colorado and Utah* (Wheat 1957-1963, 351-52, 433) and on the 1878 *Map of Yellowstone National Park, Showing Distribution of Hot Springs* (fig. 4).

The results of these two expeditions are extensive and unprecedented. Their reports and related publications (Hayden 1872; Hayden 1872a; Hayden 1872b; Hayden 1872c; Barlow 1872) provided the nation with a comprehensive written narrative of the Yellowstone wonderland. Hayden's and Barlow's maps were the most accurate and detailed to date. Jackson's photographs and Moran's drawings provided a visual picture of the region for the first time. All of these factors, coupled with previous expeditions, reports and maps, were the final impetus leading to the Yellowstone Act of 1871 and the establishment of Yellowstone National Park, the world's first national park.

THE ESTABLISHMENT OF YELLOWSTONE NATIONAL PARK

The literature published on the establishment of Yellowstone National Park is extensive and no attempt will be made to unnecessarily duplicate this work.⁴ Instead, a brief overview will be presented.

Although Yellowstone National Park was the nation's first national park, the idea of setting aside land as a national preserve was not new. The Hot Springs Reservation in Arkansas was established in 1832 and the Federal government ceded land to the state of California in 1864 and the Yosemite Valley and Mariposa Big Tree Grove was established (*National Parks* 1985a, 10). Hot Springs and Yosemite were later established as national parks, 1921 and 1890, respectively (*National Parks* 1985, 24, 28).

Senator Clarke Pomeroy of Kansas introduced Senate bill 392 on December

Barlow's map, Sketch of the Yellowstone Lake and the Valley of the Upper Yellowstone River was . . . the first map to show features and details in their proper relationship to longitude and latitude

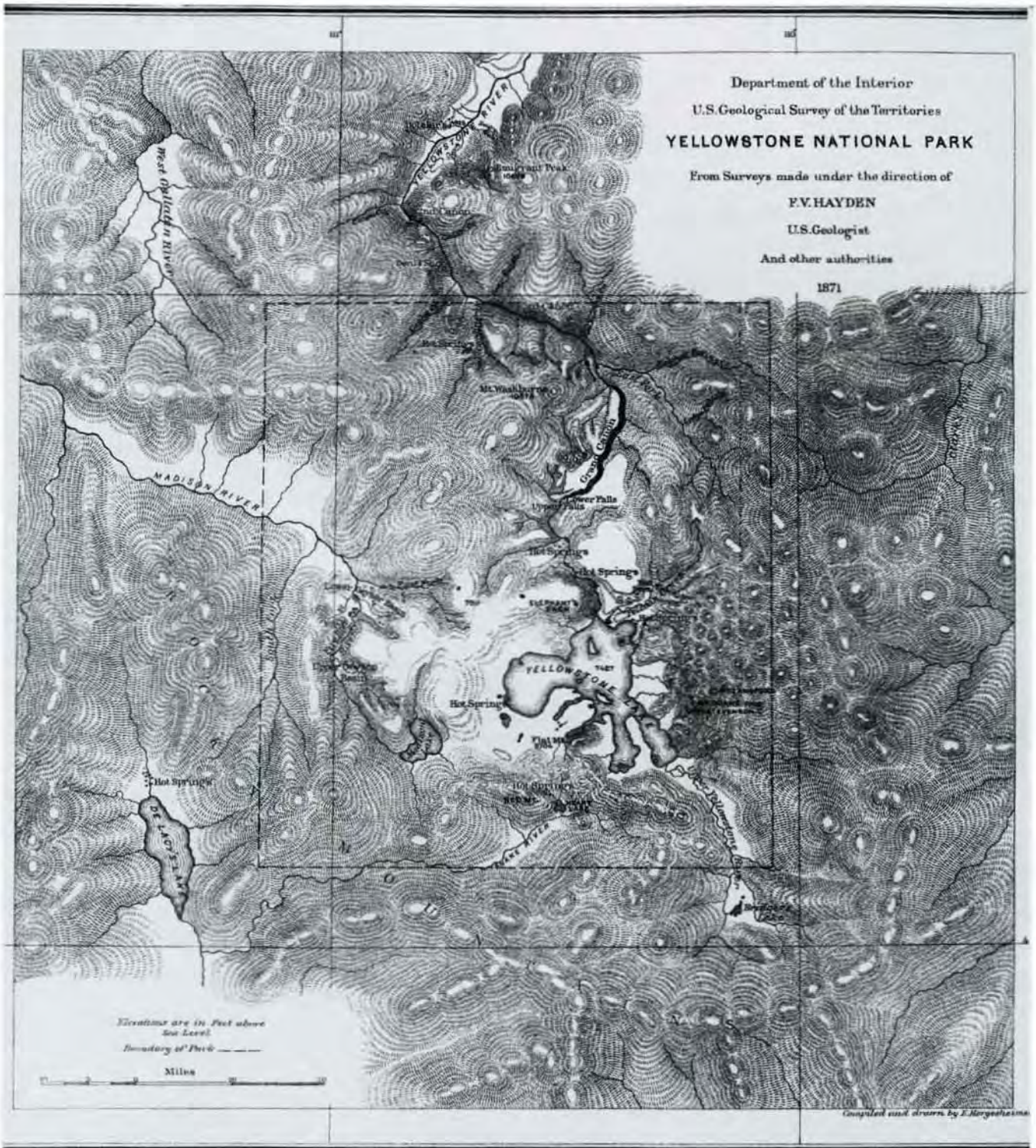


Figure 3. From Hayden's Preliminary Report (1872).
 Courtesy Tufts University.



18, 1871, and William Clagett of Montana introduced corresponding House bill, number 764, on the same date. It was the Senate bill, with revisions, that President Grant signed on March 1, 1872, and the establishment of Yellowstone National Park was completed (Cramton 1932, 24-28).

It is safe to say that no one individual can be credited with the discovery of the region or the passage of the act. The establishment of Yellowstone National Park was truly a joint effort, albeit unintentional. It was unfortunate that many individuals, Langford and Hayden included, claimed to be the discoverer of the park and the main reason for its establishment (Cramton 1932, 28-35). Each and every man associated with the exploration, mapping and legislation of Yellowstone National Park, from John Colter to President Grant, is responsible for the establishment of the first national park.

Nathaniel Langford was appointed as the park's first superintendent on May 10, 1872, a position he held for nearly five years. It was a time when the park received no appropriated monies and was not developed or protected (Haines 1977, 2:449). During the early years of Yellowstone National Park it was "... a 'public park or pleasuring ground' only in the wording of the statute." (Baldwin 1976, 85).

Exploration continued after the park was established and the next eight years saw five more expeditions enter the park and add to the existing literature and refine and correct earlier maps.

POST-PARK EXPEDITIONS, 1872-1879

Hayden Expedition, 1872

In 1872, Ferdinand V. Hayden completed his second exploration of Yellowstone National Park and his sixth as director of the U. S. Geological Survey of the Territories (Hayden 1873). This was the largest expedition to date. Hayden divided his expedition into a Northern and Southern Division which resulted in covering more ground than ever before. The Southern Division

explored the southern shores of Shoshone Lake and the northern and eastern shores of yet to be named Leigh Lake. (Haines 1977, 1:190, 2:440).

Hayden's report contained five maps, none of which was a map of the entire park (Hayden 1873, xi). Included were detailed maps of the Shoshone Geysers and the sources of the Snake River (Hayden 1873, 244, 255). These large scale maps provided detailed coverage of these areas.

Hayden did not explore Yellowstone National Park again until 1878. Between 1872 and 1878 two major military expeditions, each led by different individuals, explored the park.

Jones Expedition, 1873

Capt. William A. Jones led a Corps of Engineers' expedition to Yellowstone National Park, which was part of a larger exploration of Northwestern Wyoming for military defenses (Baldwin 1976, 45). Included in Jones' party were Charles Parry, botanist and Theodore Comstock, geologist. Comstock's two part article on the scientific value of the park and its improvement set standards for future exploration and scientific reporting (Comstock 1874).

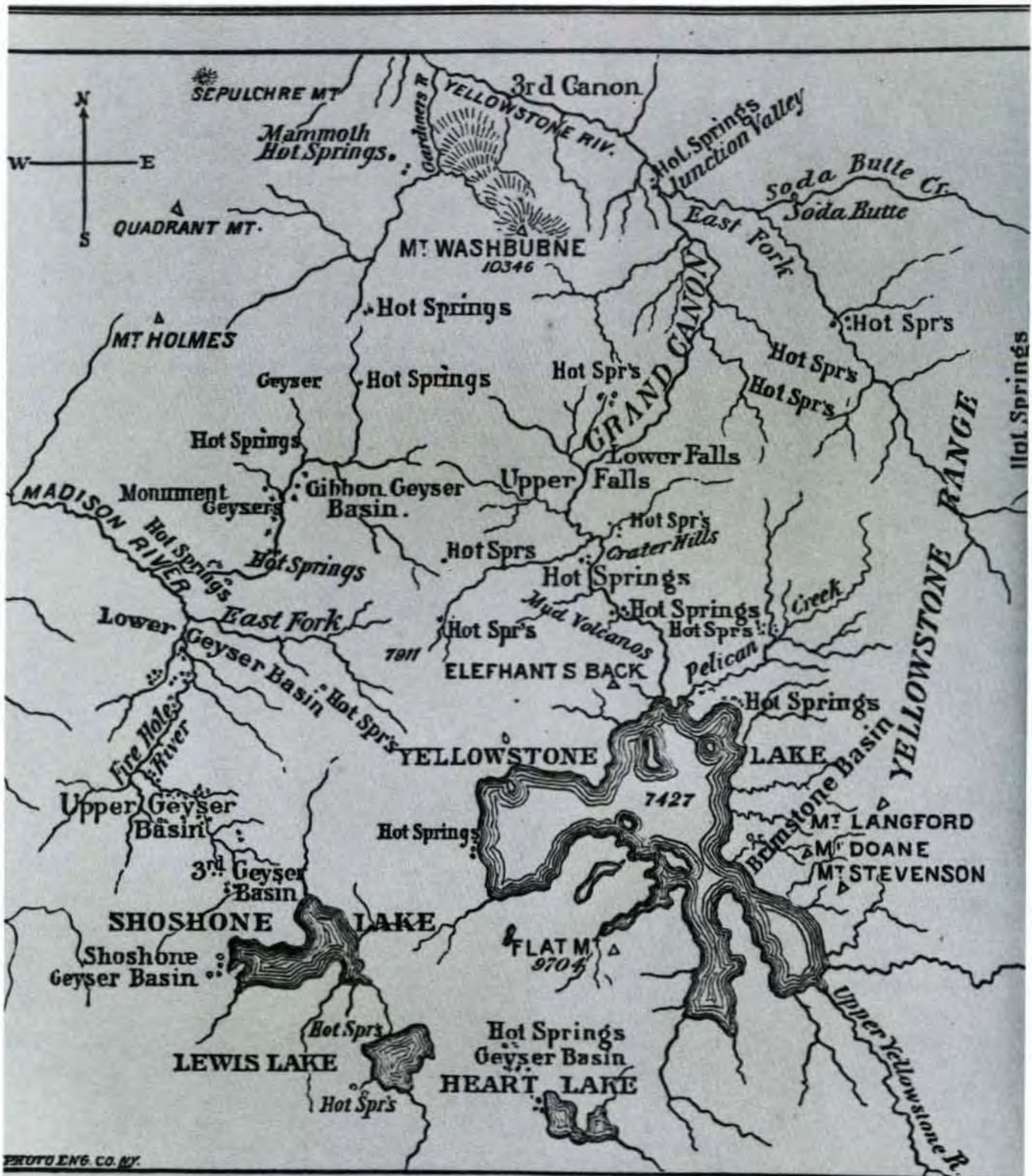
Jones' approach to the park was different than previous expeditions. Jones was the first to successfully enter the park from the east when he discovered and named Jones Pass. He also left the park through the south and discovered Togwotee Pass, which crossed the Continental Divide (Haines 1977, 1:201; Baldwin 1976, 45). This was the pass Reynolds was unable to find in his 1859-60 expedition. One other discovery of significance was the verification of Two Ocean Water, where the water drains into the Pacific and Atlantic watersheds simultaneously. Jim Bridger had insisted for years that this existed (Baldwin 1976, 45-46).

The maps which accompanied his report were numerous. A map of Western Wyoming was published; 49 detailed trail-maps were published; and one of the first colored, geological maps of a portion of Wyoming was also published (Jones 1874, v).

The establishment of Yellowstone National Park was truly a joint effort

Exploration continued after the park was established and the next eight years saw five more expeditions . . .

Jones was the first to successfully enter the park from the east when he discovered and named Jones Pass.



Map of Yellowstone National Park, showing distribution of Hot Springs.

Figure 4. The map of 1878. From Hayden's 1883 report. Courtesy Tufts University.

Ludlow Reconnaissance, 1875

Capt. William Ludlow began his Yellowstone reconnaissance on June 30, 1875 when he left the Corps of Engineers headquarters in Saint Paul, Minnesota. It was 45 days later on August 14, 1875 when Ludlow and his party of 12 men entered Yellowstone National Park (Ludlow 1985, vii, ix). The Ludlow reconnaissance was small and spent only 13 days in the park (Haines 1977, 1:203) but his findings and observations were significant.

He returned with the most accurate measurement of the Upper and Lower Falls of the Yellowstone, although the Upper Falls was measured at 110', one foot too high, and the Lower falls at 310', two feet too high (Ludlow 1876, 21-22; Ludlow 1985, ix, 21-22; Haines 1977, 1:357n). His report included a map of the entire reconnaissance area, a map of Judith Basin in Montana and a very detailed map of the Upper Geyser Basin in Yellowstone National Park. This last map was drawn to a scale of 1:6,000. It showed the course of the Firehole River and accurately locates and names the prominent geysers in the basin (Old Faithful, Giantess, Bee Hive, Castle, Grand, Giant, Grotto, Pyramid and Punch Bowl) (Ludlow 1985, 26; Ludlow 1876, 26).

What was most significant about Ludlow's expedition and report was his appreciation of the fragile environment of Yellowstone National Park and he realized that it was slowly being destroyed. Ludlow outlined a plan of conservation and protection in his report which would save the park from future destruction (Baldwin 1976, 67-68; Ludlow 1876, 35-37; Ludlow 1876, 35-37). His proposals were eventually instituted in the mid-1880s when the Corps of Engineers began road construction and the Cavalry patrolled the park (Baldwin 1976, 68).

Hayden Expedition, 1878

Hayden led his last expedition to Yellowstone National Park in 1878. It was also the twelfth and last exploration under the auspices of Hayden's U.S. Geological and Geographical Survey of the Territories (Hasse 1899, 81;

Schmeckebier 1903, 19-20). The following year would see the consolidation of the Hayden, Wheeler, King and Powell surveys and the creation of the USGS⁵ (Rabbitt 1989, 8, 10). This twelfth report was published in 1883, four years after the Survey was established.

This expedition included many of the men from the 1871 expedition: William Henry Jackson, Albert C. Peale and James Stevenson (Haines 1977, 2:440-41). Unlike the 1871 expedition, which was primarily an exploration of the Yellowstone country, the 1878 expedition explored large areas in Wyoming and Idaho, in addition to Yellowstone National Park. It was by far the most voluminous of all of Hayden's reports: two printed volumes, nearly 1,400 pages in length, over 300 plates and 23 maps, 10 of which were published in a separate case (Hasse 1899, 81; Hayden 1883; v-xvi; Schmeckebier 1904, 19-20).

Eleven of the maps pertain to Yellowstone National Park and its features, primarily the hot springs and geyser basins. Individual maps of the springs at Crater Hills, Mud Volcanoes and Witch Creek, Mammoth Hot Springs, Egeria Springs, Gibbon Geyser Basin, Lower Geyser Basin, Upper Geyser Basin, Shoshone Geyser Basin and the Rustic Geyser Group are included (Hayden 1883, part 2, 84, 94, 106, 132, 178, 186, 240, 278, 290, 300).

The last map in Hayden's report to be discussed is the *Map of Yellowstone National Park, Showing Distribution of Hot Springs* (fig. 4) (Hayden 1883, 66). Many of the inaccuracies of earlier maps, including Hayden's 1871 map (fig. 3), have been corrected. De Lacy's Lake, the non-existent lake on the 1871 map, has been deleted. Madison Lake is now named Shoshone Lake, Leigh and Heart Lakes are in their proper locations and their shape and size are correct. Improvements on the shape and size of Yellowstone Lake are also apparent. More named features and accurate elevations also appear on the 1878 map.

This expedition marked an end to an era of exploration in Yellowstone National Park (Lieut. Gen. Philip Sheridan led an expedition in 1881 to the park but his

Ludlow outlined a plan of conservation and protection in his report which would save the park from future destruction

Hayden led his last expedition to Yellowstone National Park in 1878

report added nothing significant to the existing record) (Cramton 1909, 36-37; Hasse 1899, 72). The major exploration of Yellowstone National Park was completed. The park was established. People throughout the country were aware of the beauty and natural phenomena that existed in the park. This was a direct result of the official reports, magazine articles, photographs and maps which had been published since the Lewis and Clark Expedition.

Now, the mapping, field work and continued exploration and study of the United States, including Yellowstone National Park, would be under the control of the newly created USGS.

UNITED STATES GEOLOGICAL SURVEY, 1879-1989

On March 3, 1879, President Rutherford B. Hayes signed House Bill 6471 and the USGS was established (Statutes at Large 20:229-230, 394-395). Clarence King, who had been in charge of the War Department's U.S. Geological Exploration of the Fortieth Parallel, was confirmed as the Survey's first director on April 3, 1879 by the U.S. Senate (Rabbitt 1979, 1:287-88; Bartlett 1962, xiv).

This marked a new era in mapping the country: an organized and systematic mapping program. This would have a positive effect on the mapping of Yellowstone National Park, an effect seen in the first topographic map of the park published by the USGS.

The *Topographic Map of Yellowstone National Park* was published in 1885 at a scale of 1:125,000. It was printed on a single sheet and was the largest scale, single sheet map of the entire park ever published. It included more detail and place names and provided the user with topography of the entire area. This particular map has been revised many times since 1885, the latest revision being 1961. A shaded relief edition of the map is also available. It too was last revised in 1961.

The next major map published by the USGS was the *Yellowstone National Park, Wyoming Folio* in 1896 (Hague et al. 1896). This was folio number 30 of

the *Geologic Atlas of the United States*.⁶ The folio consisted of six pages of text, three leaves of photographs and eight maps (four topographic and four geologic). The colored geologic maps used the topographic maps as a base.

The sheet names, beginning with the northwest sheet and going clockwise, are: Gallatin, Canyon, Lake, and Shoshone. The four sheets covered the entire park and were published at a scale of 1:125,000. These four sheets, in essence, were the 1885 *Topographic Map of Yellowstone National Park* with minor revisions, cut into four sectional maps. The margins of the Yellowstone folio maps indicate that the area was surveyed in 1883-85 and that these maps are the "Edition of April 1896." These maps were the only such maps available until the 15-minute series maps of Yellowstone National Park were published between 1940-59.

The USGS published Arnold Hague's *Geology of the Yellowstone National Park* and accompanying atlas in 1904 (Hague et al. 1904; Hague et al. 1904a). The atlas was folio size and contained 27 sheets, of which, four topographic and four geologic maps were from the 1896 *Yellowstone National Park, Wyoming Folio*. However, these eight sheets had a 1904 publication date.

Hague's monograph did include many large scale geological maps. Some of these were: Mammoth Hot Springs (1:14,000); Norris Geyser Basin (ca 1:3,600); Firehole Geyser Basin (ca 1:9,250); Excelsior Geyser Basin (ca 1:2,400); Upper Geyser Basin (1:6,000); Shoshone Geyser Basin (ca 1:1,700); and the shores of Yellowstone Lake (ca 1:85,000).

The last USGS mapping of Yellowstone National Park to be discussed covers the 1:24,000 scale map series (7.5-minute maps); 1:62,500 scale map series (15-minute maps); 1:100,000 scale map series (metric maps); and 1:250,000 scale map series (1 x 2 degree maps). The discussion will begin with 1:250,000 scale map series.

The 1:250,000 scale map series, previously published by the Army Map Service, are now published and revised by the USGS. Four sheets provide

The Topographic Map of Yellowstone National Park was published in 1885 . . . was the largest scale, single sheet map of the entire park ever published

The USGS published Arnold Hague's *Geology of the Yellowstone National Park* and accompanying atlas in 1904

complete coverage of Yellowstone National Park at this scale. The sheet names and the date of the last revision are: Bozeman (1972), Billings (1979), Cody (1980), and Ashton (1972).

The 1:100,000 scale map series is the newest of the four series and is the first and only series to provide coverage of Yellowstone National Park at metric scale. Two sheets, Yellowstone National Park North (1983) and Yellowstone National Park South (1982), provide complete coverage.

The 30-minute topographic maps from the *Yellowstone National Park, Wyoming Folio* and *Absaroka, Wyoming Folio* were the only sheet maps available for Yellowstone National Park until 1940 when the first of 26, 15-minute topographic maps was published. It would take 20 years to complete the mapping and coverage of Yellowstone National Park at this 1:62,500 scale.

It was not until 1986 when the first 7.5-minute topographic map was published that Yellowstone National Park had any mapping coverage at the scale of 1:24,000. The mapping at this scale is complete for the park and all of 77 topographic maps are USGS provisional edition maps. It took approximately 180 years—from when John Colter first entered the Yellowstone country in 1807 to 1986 when the publication of the first large scale maps of Yellowstone National Park was completed—to achieve the detail, accuracy and continuity that each and every explorer had as his goal.

Over the years the USGS has published *Professional Papers*, *Circulars*, *Bulletins*, *Water-Supply Papers*, miscellaneous publications and maps, charts and atlases which studied and mapped Yellowstone National Park and specific areas within the park. These publications will not be covered in this paper.⁷ There are as many, if not more, non-USGS publications and maps on Yellowstone National Park. Aerial photography, infrared and satellite imagery and digitized mapping data also exists for Yellowstone National Park. It is unfortunate that every significant publication and map cannot be covered in a paper of this length.

CONCLUSION

Over 185 years of exploration and mapping of Yellowstone National Park has been covered in this paper. It has attempted to select and present the events, publications and maps that have had an influential role and played an integral part in the exploration, mapping and establishment of Yellowstone National Park, America's and the world's first national park.

This paper will conclude with a mention of one last map. It is the *Yellowstone and Grand Teton* map published by the National Geographic Society (*Yellowstone* 1989). The map is of the highest quality; something everyone associates with National Geographic Society maps. The roads and trails shown on this map are very similar to routes of Folsom, Cook, Washburn, Doane, Hayden, Barlow, Jones and Ludlow. Their legacy lives on.

This map is the first in a new National Geographic Society map series called, "Special Places of the World Map Series," and it is appropriate and fitting that the first "Special Place" to be mapped in this series is Yellowstone National Park!

Jim Walsh is Head of Government Documents and Microforms, O'Neill Library, Boston College (Chestnut Hill, Massachusetts 02167). The paper is based on a presentation given at the MAGERT annual conference in July 1988, and is dedicated to the memory of Edward Jenner Johnson. The MS submitted August 1989.

NOTES

1. Numerous books have been written on the exploration and history of Yellowstone National Park, each providing a detailed and accurate account. Individuals wishing more information about Yellowstone National Park should read: Baldwin (1976); Chittenden (1905) or previous or subsequent editions; *Ferdinand Vandiveer Hayden* (1973); Haines (1974; 1977); Clary (1972); Raftery (1909); Cramton (1932); or Jackson (1940). Many of the maps discussed in this paper can be found in the accompanying reports or reprints. Many of the maps also appear in Wheat (1957-1963).

2. Published reports, journals and magazine articles include: Langford (1871; 1873; 1905; 1923; 1972); Trumbull (1871); Everts (1871); Hedges (1904); Doane (1871).
3. Excellent narratives on the Hayden and Barlow-Heap Expedition can be found in Baldwin (1976, 14-43); Bartlett (1962, 35-73); *Ferdinand Vandiveer Hayden* (1973); Haines (1974; 1977), in addition to the official reports, Hayden (1872a) and Barlow (1872).
4. For detailed coverage on the creation and legislative process of the Yellowstone Act of 1872 please consult: Chittenden (1905); Clary (1972); Cramton (1932); Haines (1977); Montana (1960) and Raftery (1909).
5. Two excellent books have been written on the creation and history of the USGS by Mary C. Rabbitt (1979; 1989).
6. Folio 52, *Absaroka, Wyoming* (Hague 1899), contained the Crandall and Ishawooa sheets which completed the topographic coverage of Yellowstone National Park at the scale of 1:125,000.
7. Those wishing to locate other USGS publications which deal with the study, exploration and mapping of Yellowstone National Park should consult the *List of Geological Survey Geologic and Water-Supply Reports and Maps for Wyoming*. 1979 Reston, VA: USGS; *Publications of the Geological Survey, 1980-present*. Reston, VA: USGS; and *New Publications of the Geological Survey*. monthly. Reston, VA: USGS.

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The above work by Jim Walsh will be featured in the MAGERT forthcoming Occasional Paper on the history of the mapping the the U.S. National Parks.

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GEORGE ELDRIDGE

THE CHATHAM CHARTMAKER

By Patrick McGlamery

George Eldridge (d. 1900) of Chatham, Massachusetts began conducting hydrographic surveys in 1851. In 1853 he inaugurated a series of pilot guides and nautical charts, which eventually covered the eastern coast of the United States and Canada. The charts served fishermen and coasting schooner captains, who needed larger scale and more frequently updated charts than those published by the United States Coast Survey (later the Coast and Geodetic Survey). Eldridge's small but successful firm, later under the direction of his son George Washington Eldridge, issued nautical charts until 1914, and continues to publish an annual Tide and Pilot Book.

The years following the Civil War saw a flourishing of scientific exploration of the North American continent. The Coast Survey, created by Congress in 1807, continued charting the coast of the United States while the Geological Survey, founded in 1879, out of varied military and civil topographical organizations, began mapping the land. The private sector could hardly compete with federal government publications, but when it did entrepreneurs took advantage of fundamental bureaucratic pitfalls. One such pitfall was the inability to adapt its format to meet regional needs. George Eldridge of Chatham, Massachusetts built a small successful chart publishing business serving the Yankee fishermen and coasting schooner captains by conducting his own surveys and utilizing the public domain of Coast Survey charts, remaking them to suit his market. His first chart of the coastal waters of Massachusetts, published in 1851 and already possessing most of the earmarks of an Eldridge chart, answered the specific needs of the native seamen so well it ultimately effected substantial changes in the basic format of the Coast Survey charts.

Unfortunately, the story of the "Chatham Chartmaker" is not well-documented. Eldridge was not a writer, and left few letters and no journal. The local newspaper, normally a useful information source, closed long ago and back issues of the newspaper were consumed by fire. Barnstable County Court House also suffered a fire, which destroyed all records. As a result, for much research one must rely on the charts, coastal pilots and sailing directions which were published in the later half of the nineteenth century. Miss Sydna White of Vineyard Haven, Massachusetts, great granddaughter and past editor of the Eldridge Tide and Pilot Book tells the basic story in the 100th edition of the Tide Book (White 1974, 1a-8a).

Eldridge was the son of a fisherman, and spent his early years earning his living on the fishing grounds off Georges Bank, eventually captaining his own vessel. He must have developed an excellent understanding of what a good chart should provide the seaman during those years in the foggy North Atlantic. Miss White tells us that he was employed by the Coast Survey in the early 1850s when they were operating in Vineyard Sound, probably in the capacity of local resource person, since his name does not appear on the payroll of regular employees. He undoubtedly gained valuable hydrographic skills from this experience. One need only compare subsequent Survey and Eldridge charts, however, to see how different and opposed they are in their scope.

Captain Eldridge was home the winter of 1851, convalescing from an accident on board his ship which left him stooped for life and neither able nor inclined to continue a life at sea. A violent spring storm that year off the coast of Chatham evidently encouraged him to begin his hydrographic survey. This first published

His first chart . . . ultimately effected substantial changes in the basic format of the Coast Survey charts.

A violent spring storm . . . off the coast of Chatham evidently encouraged him to begin his hydrographic survey.

ELDRIDGE'S CHART
 No. 10.
BUZZARD'S BAY,
FROM THE UNITED STATES COAST
 AND
 GEORGE ELDRIDGE'S SURVEYS.

Published by THAXTER & SON,
125 State Street,
BOSTON,
 1874.

Fig. 2 Detail of Chart no. 10, Buzzard's Bay, 1874. Courtesy Geography and Map Division, Library of Congress.

Frequent reviews and updates of Eldridge charts made them timely and accurate.

chart shows only those shoals created in the storm; within three years, however, he had continued his survey to include all of Vineyard Sound. His Coast Pilot No. 1, published in 1853, describes the hazards to be found on that part of the coast: "In April, 1851, an inlet was opened by the furious storm waves through Nauset Beach, about 1½ miles northeasterly from Chatham Lighthouse. The current of Ebb, by its great strength and velocity, has carried seaward into deep water, a large quantity of sand, forming dangerous shoals called Chatham New Harbor Bar, which lie in direct by way of Vineyard Sound. . . . The above facts, together with my own experience and observations, show these bars to be the most dangerous spot on the coast of the United States" (Eldridge 1853, i).

These waters are indeed dangerous. They carried the bulk of our nation's trade, both foreign and domestic: the whale industry flourished and fishing, then as now, was a productive occupation on the Yankee coast. Safe thoroughfare was important, not only to safeguard lives but also to keep goods coming and going into the burgeoning industrial Northeast. Charts of the area

were few, inaccurate and outdated. The Blunt family, a printing firm in New York, was the largest hydrographic publishing house in America. They compiled charts adapted from those issued by the French, British and United States governments and published charts and sailing directions for all the coasts of the world. The Blunt publications served basic navigational needs, but errors were many and revisions and corrections few.

Safety at sea was a concern of Eldridge's throughout his long life. The rocky coast of New England had claimed many wrecks and almost every family knew the personal grief of a father or son lost at sea. Of his few narrative writings which survive is a ballad, entitled, *The Loss of the Steamer Portland*, copyrighted in 1899, the year before he died. The "Portland," bound for Portland from Boston, was caught in a hurricane one night in November, 1898 and lost her steering. Five hundred people perished. A piece of wreckage and life-preserver picked up on a Cape Cod beach revealed the tragedy the next morning. Although maritime disaster occurred frequently off Cape Cod, George Eldridge always felt the horror and spent his life trying to help vessels steer a safe course.

Frequent reviews and updates of Eldridge charts made them timely and accurate. Eldridge published at least four editions, with a revision every two years, of the Vineyard Sound area. His Charts of the area were generally on a large scale, from 1:50,000 to 1:65,000. The Coast Survey published charts of various character according to the objectives they were designed to serve. Sailing Charts, on a scale of 1:1,200,000 showed the approaches to a large area of the coast. General Charts on scales of 1:400,000 and 1:200,000 were intended for coastwise navigation. Coast Charts on a scale of 1:80,000 most closely approximate Eldridge charts. Finally, Harbor Charts on large scales met the demands of local navigators.

The Coast Survey used an electrotyping printing process. Aesthetically beautiful, this method demanded a high degree of craftsmanship and produced a



Fig. 1 Chart of Vineyard Sound, from Chatham Lights to Gay Head, 1854. Courtesy the Bancroft Library.

Eldridge's lithograph process . . . was faster, cheaper, and did not require a highly skilled copper engraver.

long run of accurate copies. Eldridge's lithograph process, on the other hand, was faster, cheaper, and did not require a highly skilled copper engraver. Fine line engraving was not necessary on the large scale Eldridge charts; in fact he utilized a coarse coast line with heavy hachures to delineate the shore line. His charts consistently lacked the topography which the Coast Survey specialized in. He was constantly experimenting with new ways to make his charts easier

to read, knowing the difficult conditions in which charts were used at sea.

The differences between the Coast Survey and Eldridge charts came to the public attention in 1880. An International Fisheries Exposition held in Berlin had hydrographic entries from the Survey, U.S. Hydrographic Office and Eldridge. S. Thaxter and Son, Eldridge's publisher and major distributor, was requested to submit examples by the Fish Commissioner who knew how popular the

Eldridge charts were with New England fisherman (Thaxter 1880). Eldridge charts were awarded the silver medal by exposition judges, beating the entries of the other American entrants.

In 1886 a congressional fact-finding commission studied waste and duplication in federal scientific agencies. Commander Bartlett, U.S. Navy, testified: "To prove still further that the real purpose of this organization has either been ignored or misunderstood by its directors, the charts that have been published have not satisfied the maritime community. Had this been the case how could it have been possible for a private individual like Eldridge to adapt these charts to the needs of seamen, and sell the reproductions at much higher prices than the originals" (U.S. Congress 1886, 895).

Apparently Eldridge tapped the word-of-mouth communication system that has traditionally existed between maritime captains. A peer to the other captains, and not tainted by any association with the federal government, he was in constant contact with seamen who informed him about changes in the hydrography of the area. The changes he could not investigate personally, he referred to the Coast Survey. The Superintendent's File of the Survey contains several letters from Eldridge citing such errors on charts and coast pilots.

Lieutenant Bradford, the Survey's man in charge of the New England area seemed to be remarkably defensive in his responses to Eldridge. In one series of correspondence, Eldridge warned that "The Hedge Fence," a shoal in Vineyard Sound, was developing a spur. The report was forwarded to Bradford who compared it to the "Joe Flogger," a similar shoal in Delaware Bay, which was the subject of a paper written by Bradford. In a letter written to Survey Superintendent Hilgard, Bradford writes, "Witness the case of George Eldridge who proclaimed the extension of 'The Hedge Fence' an exactly similar shoal to the 'Joe Flogger' . . . It was soon discovered that, in transferring the Coast Survey's surveys to his own charts, he made an error in distance, which he sought to repair by asserting that the

shoals had increased" (Bradford 1882).

Investigation by this researcher indicates that the meridian used by the Survey is different on two editions of the Vineyard Sound chart. The 1860 Chart #112 shows 70° 30' north latitude to be right off the Edgartown light where the 1882 edition of the sheet puts the latitude about two or three miles east. Someone, presumably at the Survey made a mistake. Considering the extent of the Survey's charting venture it is not hard to imagine a mistake. The shoal may have developed a spur; Eldridge may have made a mistake copying the Survey's chart; but current bathymetric charts show it larger than it was drawn in 1860 and one would have expected that Eldridge, who used the Sound as a road from his home on his daily surveying trips, was sensitive to any changes.

The turn of the century saw fundamental changes in the Survey's format. As charts were revised they were lithographed and the type was reset to produce a more readable product. Scales grew larger and topography was left off altogether. Notices to Mariners and Small Corrections kept the charts up-to-date. In short, the Coast Survey charts came to resemble the Eldridge charts and the market niche that Eldridge had occupied for over forty years was closed. The bureaucracy inevitably caught up with itself, and in this instance benefitted the seamen but put Eldridge out of the chart business.

George Eldridge died in his home in 1900 leaving his business in the hands of his son George Washington Eldridge. George W. continued publishing charts until 1914. The *Pilots*, *Sailing Directions*, and *Tide Books* continued to serve the nautical community. The *Eldridge Tide and Pilot Book* continues to be published annually in Boston by Robert Eldridge White, great grand son of the Chatham Chartmaker.

Patrick McGlamery is Map Librarian at the Homer Babbidge Library, University of Connecticut (Storrs, CT 06268). The MS submitted July, 1989.

He was in constant contact with seamen who informed him about changes in the hydrography of the area.

Coast Survey charts came to resemble the Eldridge charts and the market niche that Eldridge had occupied . . . was closed.

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BIBLIOGRAPHY OF ELDRIDGE CHARTS

Note: These are not the publications of "The Captain's" son, Geo. Washington Eldridge, which begin as an initialled series at the end of the nineteenth century.

Symbols of Holding Institutions

LC = Library of Congress, Geography and Map Division.
GWBW = George Washington Blunt White Library, Mystic, CT
NOAA = National Oceanic and Atmospheric Administration.
WH = Wood's Hole Oceanographic Institute

Chart 1(a). Chart of Vineyard Sound from Chatham Lights to Gay Head. Scale 1:50,000. 98 × 208 cm., 1854: LC.

Chart 1(b). Chart of the Vineyard Sound and Nantucket Shoals. Scale 1:90,000. 102 × 157 cm., 1859: NOAA; 1864: LC; 1866: LC; 1869: WH; 1875: NOAA; 1885: LC; 1889: NOAA; 1890: GWBW; 1891: LC.

Chart 1(c). Chart of Vineyard Sound and Nantucket Shoals. Scale 1:94,160. 58 × 123 cm., 1894: LC; 1896: LC; 1897: NOAA; 1898: WH; 1899: NOAA.

Chart 1(d) Vineyard Sound (Sheet 1.); From Chatham New Harbor to West Chop Light Scale 1:85,833. 66 × 102 cm., 1893: LC. Vineyard Sound (Sheet 2.); From West Chop to Point Judith. Scale 1:69,166. 66 × 102 cm., 1893: LC; 1895: GWBW; 1898: NOAA.

Chart 2. Coast of North America, from Cape Henry to Cape Sable, including Chesapeake and Delaware Bays. Scale 1:710,000. 11 × 115 cm., 1878: GWBW; 1893: LC; 1894: LC; 1899: LC.

Chart 3. Cape Cod to Belle Isle. Scale 1:1,340,000. 99 × 162 cm., 1875: GWBW; 1894: LC; 1899: NOAA.

Chart 4. Boston Harbor, (State 1.) Scale 1:65,000. 38 × 64 cm., 1865: LC; 1883: LC. Boston Harbor, (State 2.) Scale 1:56,666. 44 × 64 cm., 1894: LC; 1897: NOAA; 1898: NOAA.

Chart 5. Long Island Sound, from Newport to New York. Scale 1:84,166. 66 × 270 cm., 1866: LC;

1870: GWBW; 1874: GWBW; 1877: GWBW; 1886: NOAA; 1894: LC; 1897: NOAA; 1899: NOAA.

Chart 6. Lynn to Halibut Point with the harbors of Salem, Beverly, Marblehead, Manchester, Gloucester, and Rockport. (State 1.) Scale 1:64,500. 46 × 55 cm., 1867: LC; 1879 (80): LC. Lynn to Halibut Point with the harbors of Salem, Beverly, Marblehead, Manchester, Gloucester and Rockport. (State 2.) Scale 1:52,500. 56 × 68 cm., 1895: LC; 1899: NOAA.

Chart 7. Chesapeake Bay with James, York, Rappahannock and Potomac Rivers. Scale 1:200,000. 145 × 83 cm., 1894: LC; 1897: NOAA; 1898: LC, NOAA.

Chart 8. Montauk Point to St. Augustine with New York Bay and harbor. Scale 1:1,100,000. 125 × 89 cm., 1860: LC; 1869: GWBW; 1876: LC; 1899: NOAA.

Chart 9. St. Augustine to New Orleans with Florida Reefs and entrance to Pensacola and Mobile Bays. Scale 1:1,200,000. 90 × 151 cm., 1870: LC; 1880: LC.

Chart 10. Buzzard's Bay. Scale 1:53,000., 1874: LC; 1877: LC; 1889: NOAA; 1891: LC; 1893: LC; 1895: LC; 1897: LC.

Chart 11. Delaware Bay and River. Scale 1:125,000. 120 × 76 cm., 1880: LC; 1889: NOAA; 1895: LC; 1899: NOAA.

Chart 12. Monomoy Shoals and Hyannis Harbor. Scale not given. 60 × 95 cm., 1885: LC.



Overlooking China

a Perspective from Several Dozen Atlases

Since Marco Polo introduced the "mysteries" of China to the Western world seven centuries ago, there have been dramatic changes in both the oriental and the occidental worlds. Western businessmen and missionaries pursued entrees into Chinese society for centuries, and facets of oriental literature and arts have been adopted and integrated into all western cultures. On the other hand, hardly touched by western art, science and technology until recently, China has remained largely an enigma to the western world.

Within the last several decades, major scientific as well as political changes have occurred within China. Under a program known as "Four Modernizations," the Chinese have vigorously pursued western science and technology adopting, for example, computer- and satellite-supported mapping and geographical analysis systems. Thus, recently there have emerged an extraordinary number of maps, charts and atlases. It has become clear that maps are now an obvious part of the operational fabric of Chinese society. The combination of traditional Chinese values and styles of graphic representation with the cartographic processes and designs of the west are yielding an increased quantity of knowledge about China (compare the present with the paucity of resources which existed only a decade ago); further, this merger of oriental traditions (with the emphasis on navigation) with modern western media has yielded maps which are different not only in content, but also in style.

There is much to learn from these volumes, not only about the works themselves and the system which produced them, but also about China, its people, and their behavior.

The sample of atlases reviewed here will be examined in broad categories.

First, there are those which have been created for the mass market, for the general user. These include primarily atlases for travel and tourism. Second, there are those which have been compiled and published for professional users, for general reference as well as for scientific and operational purposes. These can be subdivided into three broad categories: general reference, cultural, and physical (or natural science). The kinds of information which can be found in these atlases reflect two things: First, the wide availability of data, for there have been many different types of information included. Second, these atlases have been created for different uses, and they reflect the fact that China today is not much different in its cartographic needs than the United States (or, for that matter, many other countries around the world).

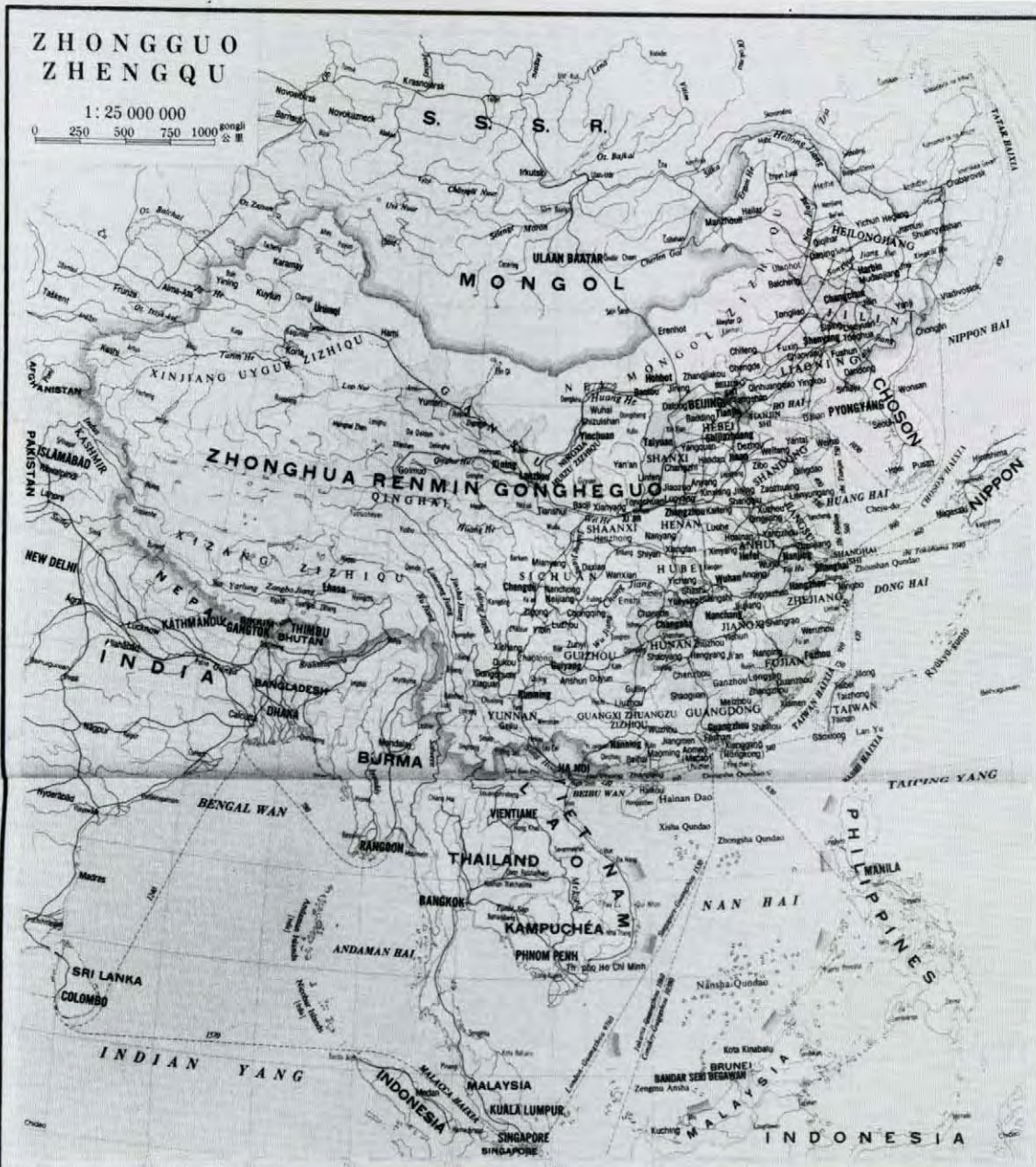
Atlases of Physical Geography and the Natural Landscape

There are, no doubt, as many atlases describing and cataloging the physical environment as there are topics to be described and cataloged. Here we shall examine seven of these, sampling insights and innovations in their content or graphic structure. Paleogeography, hydrogeology, landforms, and soils provide excellent examples of the high quality of research and cartographic production.

Zhongguo Gudili Tuji: Atlas of the Paleogeography of China. 1985. Compiled by the Institute of Geology, Chinese Academy of Geological Sciences and Wuhan College of Geology. Beijing: Cartographic Publishing House. 308 pp. CBN: 12014-1350. 54 Yuan, \$69.95.

Zhonghua Renmin Gongheguo Shuiwen Dizhi Tuji [Hydrogeologic Atlas of China] 1979. By the Institute of Hydrogeology and Engineering Geology, State Bureau of Geology. Beijing: Cartographic Pub-

There is much to learn from these volumes . . . about China, its peoples, and their behavior.



SHENG, ZIZHIQU, HUIXIAOSHI MINGCHENG DUIZHAOBIAN
省、自治区、直辖市名称对照表

QUANCHENG 全称	JIANCHENG 简称		SUOXIE 缩写	QUANCHENG 全称	JIANCHENG 简称		SUOXIE 缩写	QUANCHENG 全称	JIANCHENG 简称		SUOXIE 缩写
	1	2			1	2			1	2	
Anhui Sheng 安徽省	Anhui 安	皖	AH	Heilongjiang Sheng 黑龙江省	Heilongjiang 黑	龙	HL	Shandong Sheng 山东省	Shandong 鲁	东	SD
Beijing Shi 北京市	Beijing 京		BJ	Hunan Sheng 湖南省	Hunan 湘	南	HN	Shanghai Shi 上海市	Shanghai 沪		SH
Fujian Sheng 福建省	Fujian 闽		FJ	Jilin Sheng 吉林省	Jilin 吉	林	JL	Shaanxi Sheng 陕西省	Shaanxi 陕	西	SN
Guangdong Sheng 广东省	Guangdong 粤		GD	Jiangsu Sheng 江苏省	Jiangsu 苏	南	JS	Shanxi Sheng 山西省	Shanxi 晋		SX
Gansu Sheng 甘肃省	Gansu 甘		GS	Jiangxi Sheng 江西省	Jiangxi 赣		JX	Tianjin Shi 天津市	Tianjin 津		TJ
Guangxi Zhuangzu Zizhiqu 广西壮族自治区	Guangxi 桂		GX	Liaoning Sheng 辽宁省	Liaoning 辽		LN	Taiwan Sheng 台湾省	Taiwan 台		TW
Guizhou Sheng 贵州省	Guizhou 贵		GZ	Nei Mongol Zizhiqu 内蒙古自治区	Nei Mongol 内	蒙	NM	Xinjiang Uygur Zizhiqu 新疆维吾尔自治区	Xinjiang 新	疆	XJ
Hubei Sheng 湖北省	Hubei 鄂		HB	Ningxia Huizu Zizhiqu 宁夏回族自治区	Ningxia 宁		NX	Xizang Zizhiqu 西藏自治区	Xizang 藏		XZ
Hebei Sheng 河北省	Hebei 冀		HEB	Qinghai Sheng 青海省	Qinghai 青		QH	Yunnan Sheng 云南省	Yunnan 云	南	YN
Henan Sheng 河南省	Henan 豫		HEN	Sichuan Sheng 四川省	Sichuan 川		SC	Zhejiang Sheng 浙江省	Zhejiang 浙		ZJ

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图例

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- Zhushidi
直辖市
- Shi
市
- Yiban chengzhen
一般城镇
- Waijin shoudu huo shoufu
外国首都或首府

lishing House. (vii), 68 plates. CBN: 12014-914. 65 Yuan, \$69.95.

Zhongguo Dimao Tuji: Atlas of Landforms of China. 1985. By the Atlas of Landforms of China Editing Group. Beijing: The Publishing House of Surveying and Mapping. (vi), 210 pp. 319 Yuan, \$99.95.

The Soil Atlas of China. 1986. Compiled by the Institute of Soil Science, Academia Sinica. Beijing: Cartographic Publishing House. (168 pages.) CBN: 12014-1511. 130 Yuan.

Both Chinese and English are used in these atlases; while the hydrogeologic and landforms atlases have only some titles and captions in English, the others have English translations of the maps and the explanatory material. Coverage of these topics is handled in great depth, with extensive arrays of maps, accompanied by profiles and cross-sections and other diagrams, as well as photographs.

The hydrogeologic atlas makes particularly effective use of profiles and block diagrams (physiographic drawings), while the three-color maps in the landform atlas are accompanied by stereophotographs, and other color and black-and-white photographs, both from the ground and low oblique perspective. The landforms are categorized systematically and the volume provides examples of features throughout China. The organization of the maps, text and photographs for each landform type provides an integrated communication of the land features described. Since contours alone do not often portray the features of a landscape appropriately, these have been supplemented effectively by a variety of other symbols.

These four volumes contrast well with the *Atlas of Historical Earthquakes*, the atlas of loess landforms and a more general—but very thorough—physical atlas.

Zhongguo Lishi Dizheng Tuji; Ming Shiqi: Atlas of the Historical Earthquakes in China; The Ming Dynasty Period. 1986. Compiled by the Institute of Geophysics, State Seismological Bureau and Institute of Chinese Historical Geography, Fudan University. Beijing: Car-

tographic Publishing House. (xxix), 196 pp. CBN: 12014-1382. 26 Yuan.

Zhongguo Huangtu Gaoyuan Dimao Tuji: Landforms Atlas of the Loess Plateau in China. 1987. By the Investigation, Planning and Design Institute, Yellow River Water Conservancy Commission. Beijing: Water Conservancy and Power Publishing House. (vi), 102 pp. CBN: 0001-3280. 7.50 Yuan, \$12.95.

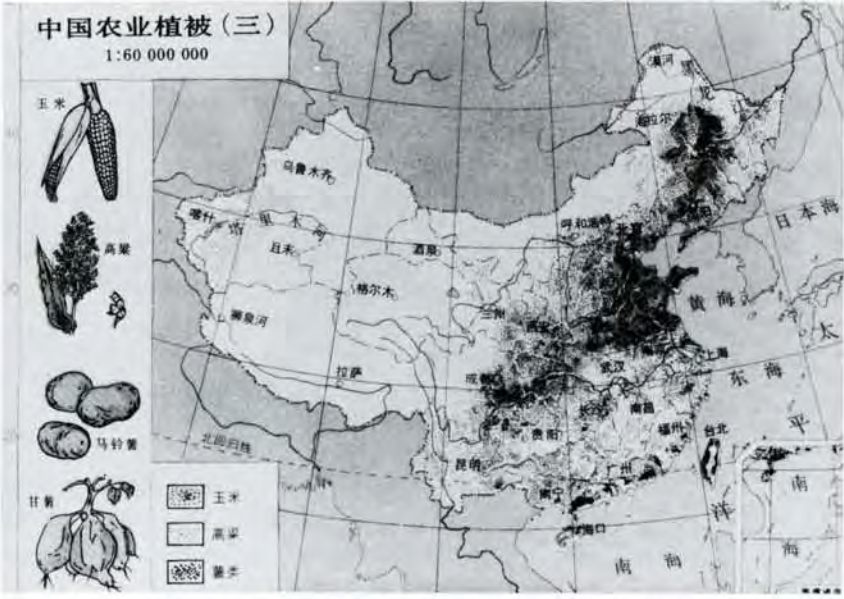
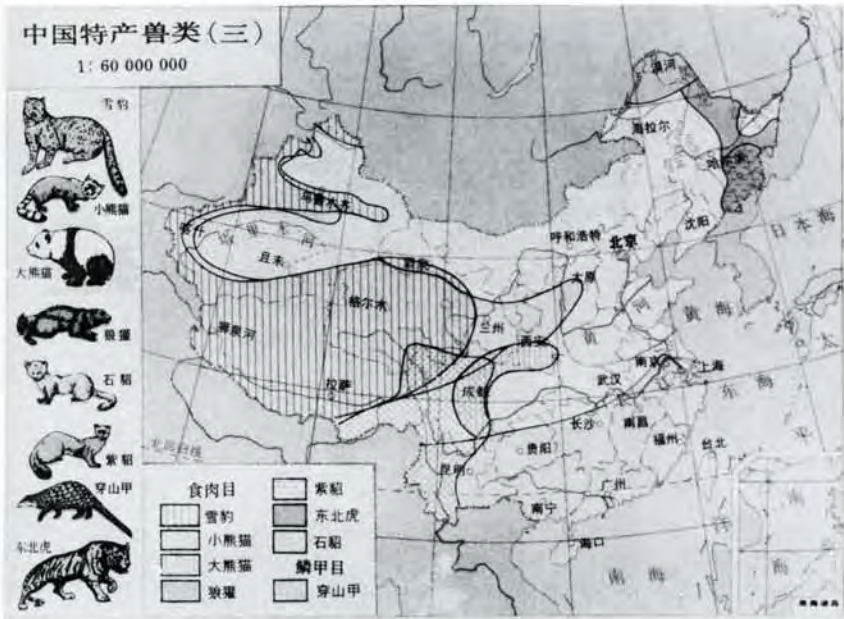
Zhongguo Ziran Dili Tuji [Atlas of the Physical Geography of China] 1984. Edited by the Department of Geography, Northwestern Teacher's College. Beijing: Cartographic Publishing House. (ix), 200 pp. CBN: 12014-1160. 8.40 Yuan.

Designed to accompany a geomorphological map of the loess plateau in Shanxi Province, the loess atlas mixes effectively topographic maps, stereograms, and aerial and ground photography; there are some profiles and other explanatory maps. The earthquake atlas maps the 216 earthquakes which occurred between 1368 and 1644. These are shown on maps of varying detail, with the epicenters and intensity distributions shown on base maps containing both historical and contemporary features.

The 210-page physical geography atlas begins with a world map (showing both physiography and climatic regions) and the "standard" Chinese administrative region map. Little is omitted in the hundreds of maps, diagrams and tables which follow. When appropriate, small drawings illustrate plant and animal species, as well as land cover types. Profiles and block diagrams elaborate the cartographic exposition of landform structure and evolution for the various regions of the country. The volume concludes with a number of data tables (and the description of a dozen different map projections). The end papers provide a series of both ground photographs and satellite images of different landscape types. This atlas should be no less useful to scholars than to younger Sinophiles, for each topic is covered by drawings and pictures as well as by maps; though many of the maps are at very small scales, it is the collection of these and their integration into the page

three-color maps in the landform atlas are accompanied by stereophotographs

each topic is covered by drawings and pictures as well as by maps



Small drawings illustrate plant and animal species, as well as land cover types.

structure which promotes the functionality of the work. The extensive topical treatment is followed by a regional analysis; here maps at significantly larger scales provide detailed information about selected features.

This portion of our survey has covered seven physical atlases, all published within the last five years. The quality is high and the coverage of each topic provided is extensive. One has to be impressed by the extensive nature of this effort (and there is a great deal

more available from both Chinese and western sales agencies).

In addition to these physical atlases, note should be made of three atlases which were developed using and applying LANDSAT data and imagery.

Ludi Weixing Xiangpian Taiyuanfu Nungyie Ziran Tiaojian Mushi Jieyi Xilie Tu: Serial Maps for the Visual Interpretation of Agricultural Natural Conditions on Tai Yuan sheet of LANDSAT Imagery. 1981. By the Remote Sensing Experiment Group, Shanxi Province Agricultural Regionalization Commission and the College and University Remote Sensing Cooperation Group in Shaanxi, Ministry of Education. Beijing: Science Press. (vi), 62 pp. CBN: 13031-1850. 30.00 Yuan.

Atlas of Airborn Remote Sensing in the Tengchong Study Area, South-West China. 1981. By the Experiment Unit of Remote Sensing in Tengchong Area, Academia Sinica. Beijing: Science Press. (xvi), 135 pp. CBN: 13031-1849. 55.00 Yuan.

Atlas of Geo-Science Analyses of LANDSAT Imagery in China. 1986. Produced by the National Remote Sensing Center, China Institute of Geography, Chinese Academy of Sciences and the Institute of Remote Sensing Application, Chinese Academy of Sciences; Chen Shu Peng, editor in chief. Beijing: Science Press. vi, 228 pp. Science Press BN: 5436-90. \$124.95.

An advertisement for the Geo-Science Analyses volume is not unrealistic: "This superb English-language atlas is a must for any library or Sinophile. The atlas contains 200 color images of landforms in China. Each image is accompanied by a geologic map covering the imaged area and a one-page text on the regional geology." There is actually more, for the atlas has been developed in four topical sections (land cover and land use, hydrologic features, landforms, and geological structure); it concludes with a set of twelve reference maps for the country as a whole (each with a verbal synopsis). The more than five dozen LANDSAT images are accompanied by explanatory text as well as a

variety of illustrations (other satellite imagery, detailed maps, block diagrams, cross sections, and ground and aerial photographs have all been employed efficiently).

The other two volumes are equally effective; both have some English captions and explanation, but they provide an excellent exposition in the graphic displays (images, maps and diagrams) alone. It is often clear from the graphic displays themselves what is being portrayed and how it has been interpreted; nevertheless, one would obviously improve his or her understanding with a mastery of Chinese.

LANDSAT imagery has become an increasingly important resource for the Chinese; many institutions and agencies are actively engaged in the implementation of this resource, as well as in the development of geographical information systems and computer-assisted mapping programs.

Atlases of Human and Cultural Geography

Zhongguo Jindai Shigao Dituji [Atlas of Modern China's History] 1984. By Zhang Hai-Peng. Beijing: Cartographic Publishing House. (vii), 177 pp. CBN: 12014-1346. 8.40 Yuan.

Zhongguo Renmin Geming Zhanzheng Dituxuan, 1927-1949 [Atlas of the People's Revolutionary War in China, 1927-1949] 1981. By the Military Museum of the Chinese People's Revolution. Beijing: Cartographic Publishing House. (iii), 78 pp. CBN: 12014-1084. 4.75 Yuan.

These two historical atlases cover the period from 1840 to 1918 and 1927 to 1949. Narrative in format, they cover a variety of topics, but particularly the meetings and confrontations with expeditions from the western world, wars and rebellions, the growth and evolution of the settlement pattern, the emergence of the nation-state, and more. It is a fascinating exercise to compare the maps of these periods with those created by western map publishers.

The Chinese work is, in many respects familiar, for the structure of these works and their design are very much

like their western counterparts. These atlases, as well as the historical volumes noted above, are apparently only a few of a larger number which have already been published or which are scheduled in the future.

Atlas of Cancer Mortality in the People's Republic of China. 1979. Edited by the Editorial Committee for the Atlas of Cancer Mortality in the People's Republic of China. Shanghai: China Map Press. 215 pp. CBN: 12178-029. 12 Yuan.

Zhonghua Renmin Gongheguo Laonian Renkou Dituji [Elderly Population Atlas of the People's Republic of China] 1986. Edited by He Hui-de. Beijing: Cartographic Publishing House. 224 pages (46 map plates). CBN: 12014-1462. 20.30 Yuan.

Zhongguo Renkou Dituji [China Population Atlas] 1986. By the State Council Population Census Office and the Institute of Geography, Chinese Academy of Sciences. Hong Kong: China Statistics Press. (x), 223 pp. ISBN: 7-5037-0001-7.

In these three atlases are explored a number of aspects of the Chinese population. The cancer atlas, which is entirely in English, maps by city and county the incidence of the many varieties of cancer. Here, as in the two population atlases, the cartographers have been careful in separating and representing those areas where data are not available as well as those large regions, particularly in the western part of the country, where there is no settlement; this use of the dasymetric method is rare, for simple choropleth maps are more easily produced, but it is an effective procedure.

The large population atlas is almost to the map identical and equally as formidable as its western counterpart (produced by Oxford University Press); in both size and breadth of coverage it reveals a great deal about the Chinese peoples. Its smaller companion reveals the situation in a different way for, while the population atlas covers the nation as a whole on each map, the aged atlas deals with the information on a province-by-province basis.

... a fascinating exercise to compare the maps ... with those created by western map publishers.

... it reveals a great deal about the Chinese peoples ...

Of its 135 maps, 55 are choropleth maps using the city-county administrative divisions; another 47 use provincial choropleth maps as a base for presenting data using other forms of symbols. Dissecting population distribution and change, ethnicity, sex and age, as well as family, marriage and fertility, educational level and employment, there is remarkable variety here. The wide variety of techniques are instructive and, as a small point, the histogram which accompanies most maps is very helpful in understanding the data and its portrayal.

Zhonghua Renmin Gongheguo Fen Sheng Dituji [Atlas of the Peoples's Republic of China, by Provinces] 1974. Edited by the Cartographic Publishing House. Beijing: Cartographic Publishing House. (v), 251 pp. CBN: 12014-788. 6.30 Yuan.

Zhonghua Renmin Gongheguo Dituji [Atlas of the People's Republic of China] 1979. By the Cartographic Publishing House. Beijing: Cartographic Publishing House. (x), 277 pp. (75 plates). CBN: 12014-1015. 78 Yuan.

The Administrative Divisions of the People's Republic of China. 1980. Beijing: Cartographic Publishing House. (xi), 168 pp. CBN: 12014-1080.

Zhonghua Renmin Gongheguo Fen Sheng Dituji (Hanyu Pinyinban) [Atlas of the People's Republic of China, by Provinces (Chinese Pinyin Edition)] 1983. Edited by the Cartographic Publishing House. Beijing: Cartographic Publishing House. 336 pp. (51 plates). CBN: 12014-827. 8.95 Yuan.

Zhonghua Renmin Gongheguo Dituji [Atlas of the People's Republic of China] By the Cartographic Publishing House. 1984. Beijing: Cartographic Publishing House. (viii), 277 pp. (75 plates). CBN: 12014-1362. 17.00 Yuan.

Zhonghua Renmin Gongheguo Fen Sheng Dituji [Atlas of the People's Republic of China, by Provinces] 1987. By the China Cartographic Publishing House. Beijing: Cartographic Publishing House. (v), 252 pp. ISBN: 7-5031-0102-1. 12.50 Yuan.

Zhongguo Ditu [Atlas of China] 1988. By the China Cartographic Pub-

lishing House. Beijing: Cartographic Publishing House. 140 pp. ISBN: 7-5031-0241-1. 2.90 Yuan.

Gansu Sheng Ditu [Atlas of Gansu Province] N. d. By the Gansu Province Survey and Mapping Bureau. [Lanzhou]: Gansu Province Survey and Mapping Bureau. 278 pp. (63 plates). (For internal use only.)

Of these atlases, all but the last deal with the political—administrative—geography of China as a whole. In each, the various provinces are mapped and described in one way or another; in some cases, it is a simple map with a table of supporting information. In others, the cartographic exposition is accompanied by text which describes the province. In most cases, the primary city in the province is shown as an inset to the map. These are but a sample of such atlases; they vary in size and scope of coverage, as well as in cost.

They seem typical of a long tradition of standard and standardized works—in other words, they are not very imaginative!

If one compares the 1974 atlas with that of the same title produced in 1987, one will find the same format. However, there are many boundaries which have changed; statistical information is different, and there are changes in place names. The index in the earlier volume is categorized by the number of strokes in the Chinese characters, while the newer edition is organized using Pinyin. The 1979 and 1984 atlases are different in size; further, there are revisions in administrative boundaries (at the county level and above).

The last atlas in this group covers only Gansu province; on the title page it is noted as for internal use only. It is one of a whole array of individual province atlases which can be obtained locally but not mailed from China.

All of these atlases are important, for the boundary situation in China is a fluid one and the national map seems, sometime, to change on a weekly basis. Claims and counterclaims, mappings and their revisions, all of these describe the continuously changing characteristics of the Chinese political landscape. Claims—

... all of these describe the continuously changing characteristics of the Chinese political landscape.

湖南 广东铁路示意图



An excellent set of maps showing, schematically, every station on the regional rail systems

Their information value lies in two areas: In the data provided, and as a mirror on the culture.

... an excellent set of maps showing, schematically, every station on the regional rail systems.

as well as massive or nationwide boundary changes occur frequently and quickly. In a single year several dozen boundaries may be altered or contested, and these atlases mirror the variability in this geography.

Atlases of Travel and Tourism

There are a number of different types of travel atlases; in the United States we are accustomed to the road atlas. There is no real, multi-modal travel atlas, and amidst the variety of tourist maps and atlases which can be found, none matches directly the variety of travel atlases available today for China. These atlases are "new" for China. Copying in many ways Western models, there are nevertheless characteristics here which are uniquely Chinese. Their information value lies in two areas: In the data provided, and as a mirror on the culture.

Zhongguo Jiaotong Tu [Concise Atlas of China's Transportation] 1979. By the China Cartographic Publishing House. Beijing: Cartographic Publishing House. (iii), 136 pp. ISBN 7-5031-0026-5. 2.00 Yuan. [Another copy, 1987]

A pocket atlas, this small-format atlas contains national maps of major highways, navigable water routes, airlines,

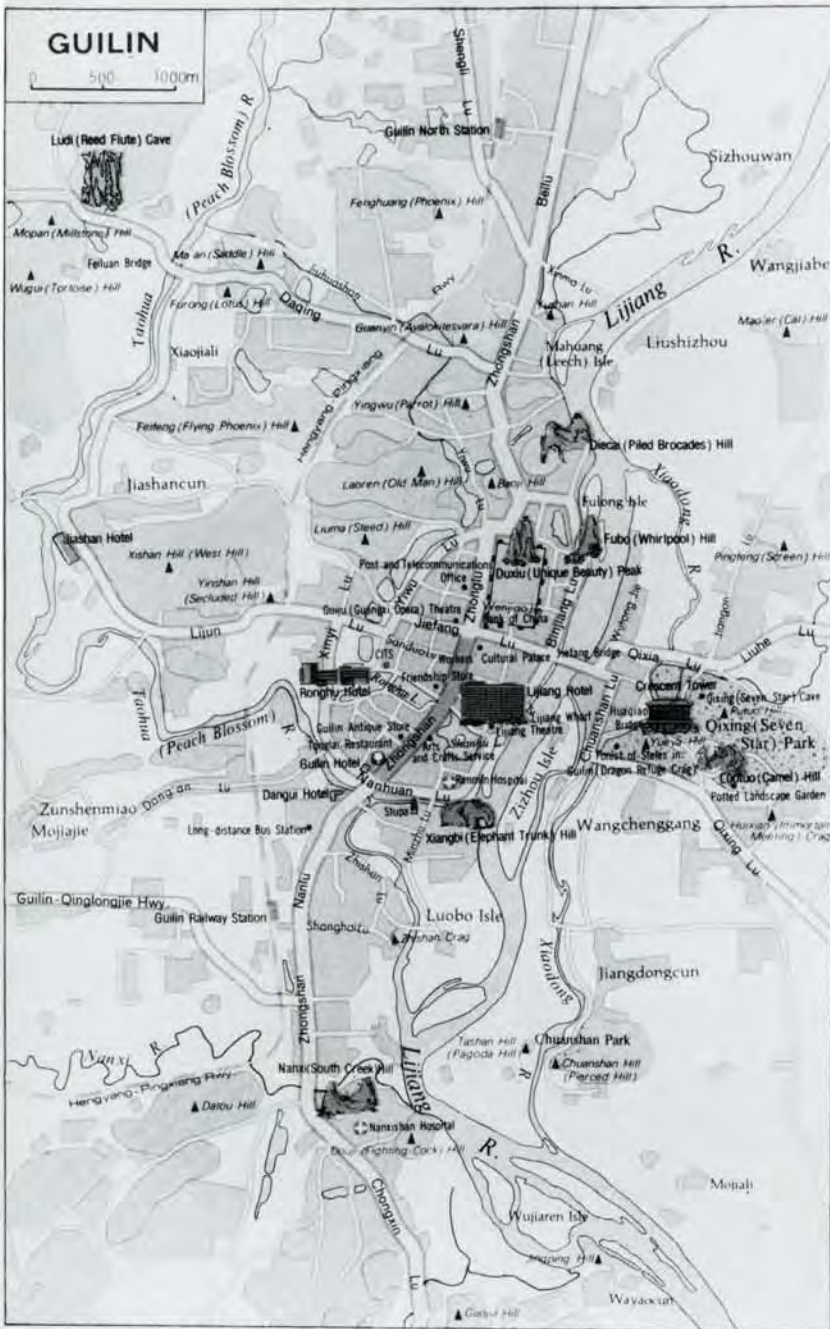
and the railroad network; these and the national map showing provinces (and major cities) precedes detailed maps for each province and a full-page map of each regional capital (on these maps, important landmarks are shown in horizontal perspective, and travel service agency locations are mapped). There is an excellent set of maps showing, schematically, every station on the regional rail systems. This is truly a user's atlas: Sized for a pocket, it lacks the wide array of descriptive material which is generally found in a tourist atlas; there is, however, a section with hints for travelers. This is clearly an atlas for the domestic market, and all of the information is presented in Chinese—there is no transliterated data at all.

Zhongguo Jiaotong Luyou Tu [Concise Atlas of Transportation for Tourists] 1989. By the Cartographic Publishing House. Shanghai: Cartographic Publishing House. (x), 100 pp. ISBN 7-5031-0345-0. 4.50 Yuan.

Unique among these travel and tourist atlases, this one contains a map dividing the country into touring regions. The detailed maps for the country (18 of them) are sectional, not provincial. It includes tables with climatic data for each province and a list of tourist sites. There are 22 detailed maps of the most important tourist sites and 55 detailed city maps. Here scale and orientation of each map is clearly indicated; landmarks and travel services are indicated using a variety of pictorial and symbolic forms. Produced for the domestic market, only the title of the volume is transliterated.

The next two atlases can be contrasted with the American road atlas. In these, as the titles indicate, the focus is on the highway system. In both the emphasis, graphically, is on the primary road network. Organized by provinces, these atlases are essentially the same. The larger, 1988, edition was no doubt created for the office or corporate environment; the smaller, pocket-sized edition is less expensive and would meet the requirements of the traveler.

All of these atlases contain some maps of cities, and as the scale allows (and the importance of the city dictates) these



The Chinese have in these atlases combined the vertical with the oblique, portraying landmarks in a perspective most useful for the traveler.

city maps include the locations of key offices (work units). This makes it possible for the traveler (Chinese business person) to find his or her way to a specific locale. There is really no counterpart for this in the United States, for here the city map will be devoted only to street locations or, on the other hand, it will be a “cartoon”—graphically interesting in its perspective view, but impossible to use for navigation. The Chinese have in these atlases (and in many sheet maps of their cities) combined the vertical with the oblique, portraying landmarks in a perspective most useful for the traveler.

Zhongguo Fen Sheng Gonglu Jiaotong Dituce [Road Atlas of China, by Provinces] 1986. Beijing: Cartographic Publishing House. 276 pp. (33 plates). CBN: 12014-1447. 2.30 Yuan.

Zhongguo Fen Sheng Gonglu Jiaotong Dituji [Highway Atlas of China, by Provinces] 1988. By the Cartographic Publishing House. Beijing: Cartographic Publishing House. 282 pp. 934 plates). ISBN 7-5031-0052-4. 8.00 Yuan.

Both atlases provide a list of the mileages between the cities within the provinces. Although there has been



some minor modification in the graphic design between the two atlases, this is less significant than the differences between these atlases and their American counterparts. Here there is a greater variety of climatic data provided, including maps of the amount of sunshine and rainy days. Each of the 31 provincial maps is accompanied by a detailed map of the principal city. There is also a table showing the distance between cities within the province and the names of the cities which will be found along the route.

Zhongguo Luyou Ditu [Atlas for Tourists] 1987. By the Harbin Cartographic Publishing House. Harbin: Cartographic Publishing House. 288 pp. (32 plates). CBN: 12459-0014. 2.80 Yuan.

Somewhat "less exciting" than those previously described, this small traveler's atlas contains more generalized maps for each province (with a small map of the principal city inset on each); each map is accompanied by a two-page discussion. These maps are preceded by the "standard" map showing provinces and one portraying airline and water routes. Perhaps, its most unique feature lies on the contents page where the eleven different scales used on the provincial maps are displayed together graphically.

Shenzhou Dadi Chuchai Luyou Ditu [Popular Atlas of China for Businessmen and Tourists] 1988. Edited by Yu Cang, Liu de Long and Li Zheng. Beijing: Huawen Press. (iv), 155 pp. ISBN 7-5075-0030-6. 3.60 Yuan.

Graphically—in terms of its design—this is the most modern-looking of this group. Maps have a "softer" and less formal appearance and many are somewhat schematic in appearance. After the introductory national maps (showing tourist site locations, waterways, major roads, airlines and rail lines for the entire country), the atlas focuses principally on urban centers, with detailed maps of the principal tourist attractions along with maps of subway and bus routes (for both the central city and the surrounding region). In more remote regions, detailed maps of tourist-oriented areas are preceded by a small-scale

regional map. While the city maps focus on transportation routes and services, the tourist site maps combine pictorial and abstract graphic symbols to convey the features of the environment.

In the seven tourist and travel atlases examined above, the focus is on the domestic market. The final atlas in this category is very different.

Tourist Atlas of China (English Edition). 1985. Shanghai: Cartographic Publishing House. (xv), 99 pp. CBN: 12014-1304.

A single national "Sketch Tourist Map of China" (showing airlines, railways, canals, and cities or towns open to foreign tourists) precedes more than 70 city and tourist site maps. Relief shading is used to enhance some city and site maps; all combine pictorial and abstract symbols to describe the available tourist attractions. The maps are interwoven with textual descriptions. The *Tourist Atlas* is printed on glossy paper and has a section of ten pages of color photographs.

There are several immediate comparisons which can be made. First, the Chinese concept of a travel atlas is much different than the American road atlas. Second, there is more variety in the Chinese format than in the American. Third, it is clear that there is a considerable domestic market—travel by Chinese throughout the country is obviously a major industry. It seems clear that domestic travel is widespread and has been encouraged by the elimination of the need for travel permits. Finally, there are a number of mapping procedures which could well be copied. Most significant among these is the willingness to present detail in smaller symbol and type size than is common in the United States. This and the combination of pictorial and abstract symbols on city maps (in particular) make available to the map user a level of navigational information generally lacking in American maps.

Conclusion

It is clear that China today has a map and atlas publication program which is diverse and extensive, as well as prolific. All of the modern technologies for data

... its most unique feature lies ... where the eleven different scales ... are displayed together graphically.

... the Chinese concept of a travel atlas is much different than the American road atlas.

gathering and organization are represented. For the cultural anthropologist (or historian or cartobibliophile) this is an excellent time to develop a benchmark for understanding the innovations which are underway. For the cartographic designer (and all others who are concerned with the look of maps) there are a number of distinctive and unique features of these atlases which indicate clearly the degree of combination of western "habits" and ideas with Chinese tradition and character. There are a number of unique—indeed, exciting—characteristics here, and the map creator should take note of these ideas.

It appears that *now* is an opportune time for centers of Chinese studies, as well as map libraries, to collect atlases never before available. These and the wide array of sheet maps which have become available in the past several years are not ubiquitous—and there is no clear indication as to how long this open flow of such information will continue.

NOTE

This review was developed in close collaboration with Robert W. McColl, whose ideas and support made a seemingly insurmountable task for a non-Sinophile both exciting and rewarding. The atlases reviewed here are from the China Maps and Images Repository at the University of Kansas. Over the past five years, McColl has worked to obtain Chinese maps and atlases to complement his existing collection. The process was neither highly focused nor intensive—it was opportunistic. This may have been the only way to collect such materials in China, for he was able to purchase from stocks of atlases which had just been released (some atlases, only now available, were printed nearly ten years ago), and he garnered copies of new volumes which had been produced in limited numbers. His efforts to be more systematic had met with frustration.

Jian Fan, of Lanzhou and Kansas Universities, prepared the transliterations and translations; he also helped clarify a number of issues in both content and context.

George F. McCleary, Jr.
Department of Geography
University of Kansas
Lawrence, KS



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Civil War Maps: An Annotated List of Maps and Atlases in the Library of Congress.

By Richard W. Stephenson
Washington, D.C.: Library of Congress.
2nd ed. 1989. 410 pages.
ISBN: 0-8444-0598-1. \$46 (includes postage and handling).

In 1961, demand for Civil War maps mounted as Federal agencies, local governments, and cultural institutions of all kinds planned occasions observing the centennial of the great conflict. In order to cope with this increasing demand, the Library of Congress published a list of Civil War maps in its collection. Compiled by Richard W. Stephenson, issued in a small 138-page paperback, containing entries for 700 maps, that list has remained a basic tool for map librarians and scholars. Now at last, a long-awaited second edition has appeared.

The new edition is a handsome production, hard bound in a large 8½ × 11 inch format, with text set in two columns in a pleasant type face. It contains entries for some 2,240 maps and charts and 76 atlases from the collections of the Library of Congress. The maps listed and described include not only those produced between 1861 and 1865, but also maps made at a later date to illustrate or explain specific events of the war. Included are not only maps from the Geography and Map Division, but also some important maps from the Manuscript Division, and some atlases from the general book collections. Some of the most important maps are those found in two separate collections: the Hotchkiss Map Collection, which includes the manuscript maps and sketchbooks assembled by Stonewall Jackson's topographer, Major Jedediah Hotchkiss; and the Sherman Collection, which includes a significant number of maps used by General William Tecumseh

Sherman during the march on Atlanta in 1864.

The bibliography is arranged by geographic scope of the maps, beginning with general maps of the United States, listed in chronological order. This section includes not only maps of the United States, but also regional maps showing more than two states, and maps of the Mississippi River. Maps for each state follow, with maps for specific battle sites, cities and towns, and natural features listed alphabetically under each state. The Hotchkiss and Sherman Collections are listed separately. As in the first edition, each item in the bibliography is assigned a specific entry number; for consistency, the numbers from the first edition have been retained, with new entries receiving a decimal notation in order to place them in the proper alphabetical or chronological sequence. Two indexes, one listing short titles, the other listing battles, places, and personal names of the cartographers, surveyors, engravers, lithographers, publishers, and printers provide enhanced access to the bibliography.

Individual entries include the author's name (in bold type), the full title, the imprint, an indication of color, the natural scale, and the size of the map image in centimeters. Most of the entries include a description of the contents of the map, often quite detailed and informative. When appropriate, cross references to other lists of maps and atlases are also provided.

This work would be a valuable and useful tool if it were merely a list of Civil War maps. It is much more than that, however. The compiler has added a literate and readable introduction which provides extensive background information about every aspect of Civil War maps and map making. He assesses the state of pre-war cartographic knowledge about the region that would see much of the fighting (abysmal); the mapping undertaken by the Union forces early in the war (extensive); and, the obstacles

... introduction ... provides extensive background information about every aspect of Civil War maps and map making.

faced by the Confederacy in compiling reliable maps of its own territory (formidable). The introduction also covers such diverse and important topics as the impact of the advent of lithography and photographic processes on field mapping; the role of the commercial publishers in disseminating the growing geographic knowledge which the war fostered; and, the importance of maps in the propaganda activities of both sides. The introduction is accompanied by ten full-color plates and several black and white reproductions of some of the important maps discussed.

Maps played an extremely important role in the course of the war. At times their influence was even decisive. Jackson's 1862 campaign in the Valley of Virginia, for example, was in large measure made possible by the large and detailed map compiled for him by Jedediah Hotchkiss (no. H89). As Stephenson points out, without the aid of superior maps, Jackson's diversionary efforts may not have succeeded, making it possible for McClellan to take Richmond and bring the war to an early close. Just as Hotchkiss provided the data needed to support Jackson's strategy, Stephenson elucidates the cartographic resources to support the historiographic campaigns of today's researchers. This is an important addition to the reference shelf; it would be a bargain at twice the price.

Robert S. Martin
LSU Libraries
Louisiana State University
Baton Rouge, Louisiana

Historical Atlas of the American West.

By Warren A. Beck and Ynez D. Haase
Norman: University of Oklahoma Press.
1989. 198 pages.
ISBN: 0-8061-2193-9. \$29.95.

The University of Oklahoma Press is responsible for a great number of titles of interest to historians of the American

West. Normally this reviewer takes their imprint as guarantee of quality of the product. The *Historical Atlas of the American West*, while good in some respects, is somewhat of a disappointment, perhaps because one's expectations were so high in the first place.

The basic premise and structure of the book is sound enough. The west, defined as everything west of the 100th meridian (the eastern border of the Dakotas, south down the Missouri, to the eastern border of Texas) is described physically, the various flora and fauna are inventoried, and native American areas are noted. Then a long sequence, more or less in chronological order, starts with the Spanish explorations of the 16th century and ends with a map of World War II POW camps. The maps hit all the high points, in addition to having some coverage of both the Spanish and native American portions of the western population.

The main problem is that the work only employs two basic map scales for all data being presented, whether that scale is appropriate. The larger maps are full page (8½ × 11 inches), that appear to be somewhere between 1:10,000,000 and 1:15,000,000 in scale. The smaller maps have four images of the same area on the same size page, making for a very small scale. There are a few exceptions to this but the vast majority of maps are of these two varieties.

The result is that there is a great deal of wasted space on some maps, with a great deal of data crowded into a small area on others. Plate 19, *Explorations, 1772-1799*, for instance, tries to show the tracks of 6-8 Spanish exploring expeditions in the area between Tucson, Arizona, and Deming, New Mexico, in the space of just about one inch. It is nearly impossible to differentiate the tracks, or indeed to figure out how many go through the area. In the meantime, the entire northwest corner to the map is totally devoid of information. A similar situation arises on one of the small scale maps on plate 70. One of the four small maps shows the occurrence of hurricanes. The hurricanes in question have all affected Texas, and a tiny portion of

Maps played an extremely important role in the course of the war.

Normally this reviewer takes their imprint as a guarantee of quality . . .

Oklahoma. The rest of the map is a complete blank.

There are instances in the atlas where I cannot determine if a lack of data is due to the small scale being employed, or poor data collection on the part of the authors, or the lack of an established time frame. People driving between Tucson and Phoenix are used to looking at large areas devoted to pecan groves. The map on page 66 shows no pecans in Arizona—scale, information, or time frame? We simply don't know. To look at the map on plate 43, one would think that there was no European presence in Arizona until after 1850. In this case the scale is probably too small to show the settlements at Tubac and Tucson, which indicates that the scale selected was simply inappropriate for the data being presented.

One suspects that economics dictated the selection of two standard scales. In that case, the authors and the University of Oklahoma Press should have elected to spend the money and charge a higher price. The maps in the *Atlas of American History* (Jackson 1978) are drawn specifically for each item being pictured. The information presented is far more clear than that in the *Historical Atlas of the American West*. At \$29.95, a lot of people will probably buy the *Historical Atlas* . . . ; there is some good information and the maps will photocopy well. It is, however, a disappointment to this reviewer.

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Charles A. Seavey
Graduate Library School
University of Arizona
Tucson, Arizona



Maps With the News: The Development of American Journalistic Cartography.

By Mark Monmonier

Chicago and London: The University of
Chicago Press, 1989. 331 pages.
ISBN 0-226-53411-1. \$24.95.

One of American news journalism's fundamental charges is to provide its audience with the "five Ws and an H" inherent in any story, including its who? when? what? where? why? and how? But how journalistic practitioners throughout the history of American journalism have chosen to use these six elements of the news in their stories has changed over time. In his recent book, *Maps With the News*, geographer Mark Monmonier asks how American journalism has addressed the question "where?" by focusing on how print and electronic media journalists have historically and more recently used journalistic cartography to accompany their printed and broadcast news stories. In doing so he has provided both geographers and mass communications scholars with much food for thought. And considering the fact that little research and writing has been done on this topic, Monmonier's contribution is long overdue.

Monmonier covers a great deal of territory in his book, beginning in chapter one where he introduces the various roles news maps have had as well as justifying the news map as a distinct and important cartographic genre worthy of study by both geographer and journalist alike. In the second chapter, he raises one of his most fundamental assertions: that the development of various printing and electronic technologies have played a crucial role in the development of journalistic cartography. He provides detailed descriptions of some of the various technological catalysts of journalistic change, including various forms of engraving, the development of photocomposition, offset lithography, and color graphics. In the attempt to illustrate this change he selected five elite newspapers to explore

. . . various printing and electronic technologies have played a crucial role in the development of journalistic cartography.



the rise of journalistic cartography from 1870 to 1985. He further applied the same analysis to six weekly news magazines from 1930 to 1985. He concludes that the use of news maps is not only a function of technology but is also affected by political and economic events of a broadening scope as well as concerns for the organization and appearance of news publications.

In chapter three, Monmonier addresses the role of the rise of wire services, news syndicates, and the development of electronic technology that enabled the rapid and wide distribution of news maps and other graphics to smaller newspapers with limited resources to produce their own material. He studied twelve dailies in Central New York to illustrate the influence these factors have had in the use of cartographic art in the news. He further concludes that size alone is not the sole determining factor in the use of news maps by these dailies, which leads to chapter four where he addresses a number of institutional issues such as attitudes towards graphics by editors, artists and art departments and journalists themselves. All have had a varying effect on the use of maps in the news and he bases his conclusions on unstructured interviews with 25 large and small news organizations and their staffs.

In chapter four he also discusses the rising acceptance of computer graphics work stations which ease the creation of news maps from databases as well as the ease with which they can be modified to fit a newspaper's individual needs.

In chapter five Monmonier looks at maps in the electronic media. In chronological form he discusses the facsimile newspapers sent over radio in the 1930s and 1940s with its relatively small use of cartography to the rise of television news with its increased use of maps in their presentation of current events despite the constraints inherent in that medium. He stresses the use of weather graphics in TV news which has taken cartography to its heart and made the weather map both static and dynamic; an important and indispensable tool in providing current weather news as well as

short and long term forecasts. Finally, he discusses videotex, a text-oriented electronic medium for use with television receivers, and its potential for providing a broad array of services including that of cartographic information.

In chapter six, Monmonier speculates on the niche news maps may have in the future print and electronic media. He looks at both the effects of future technologies and that of future institutional change on the use of news maps. The work is amply documented, with 476 footnotes, has an extensive 25-page bibliography, and is indexed.

Despite his geographic credentials, Monmonier doesn't play favorites, since his introduction takes both geographers and journalists to task for their failings. Geographers, he complains, have too long ignored an important area of geographic education in part from a "professional disdain for overly simple, seemingly trivial maps." Journalistic maps, he asserts are unique among the various cartographic types because of the vast number of people who see them. He convincingly argues that maps undoubtedly "play a fundamental role in adult geographic continuing education," and urges geographers to take a keener interest in their creation and use.

Monmonier likewise finds plenty of reasons to complain about the attitudes and performance of journalists in relation to journalistic cartography. News publishers, editors, and reporters, he claims, have varied widely in their appreciation of the value of maps. As a result, despite the rise of technologies which have made graphics like maps possible, and the modern world's proliferation of economic and political events which have contributed to journalists' need to explain the "where" aspect of stories, maps have not been used in any consistent way from one media institution to another.

Monmonier also criticizes the tendency of news officials to ask their cartographically untrained artists and graphic designers to create journalistic maps, and what has too often resulted is sloppy inaccurate cartographic work. For example, in one of the book's numerous

... he bases his conclusions on unstructured interviews with 25 large and small news organizations and their staffs.

... speculates on the niche news maps may have in the future print and electronic media.

illustrations is shown an Associated Press map which portrays with straight lines a near-polar transcontinental airline route which more accurately would be illustrated as a gentle curve.

As already noted, in describing how maps have been used by journalists, Monmonier covers a long span of history, starting in chapter two in sixth century China with the development of block printing, and ending in chapter five with a discussion of contemporary electronic videotex technologies. Considering the brevity of the book (it is just a little over three hundred pages long including notes and bibliography), this breadth of coverage leads to one of its shortcomings, the perhaps unavoidable overly general treatment of a great deal of the history.

Monmonier's choice of content analysis as one of his methodologies will win the hearts of mass communications scholars, since this is an avenue commonly chosen by the members of that field. His decision to sample three kinds of media—5 elite newspapers, 6 major news magazines, and 12 regional newspapers—is indeed ambitious. But because all the newspapers are centered in the eastern United States, Canada, and Great Britain, it's doubtful whether the data are generalizable to all American journalism. Perhaps future work could sample newspapers and magazines from a broader geographical area. Additionally, it is risky to generalize from the data on map themes, at least as presented in the table provided. To discern a clear relationship between map usage and political or economic events, a more detailed analysis is required than simply comparing the relative frequency of certain themes during certain years.

But the book should not be severely criticized for such problems. Like other pioneering works which for the first time delve into virgin territory, such work often lays the crucial foundation for other scholars, who now can for the first time enter previously uncharted terrain, and test further some of the hypotheses. Indeed, mass communications historians have barely touched the topic of photojournalism, let alone topics such as the use of maps and other graphics.

Likewise, cartographic historians have not dealt with maps in the mass media. As noted in this introductory chapter, the prodigious *Bibliography of Cartography*, covering the period 1875 through 1979, only includes one article that deals with maps in the media. It is hoped that Monmonier's work will encourage other cartographic historians to delve into mass society's most influential geographic educator.

Jon L. Walstrom
Map Curator
Minnesota Historical Society
St. Paul, Minnesota

Patricia L. Dooley
School of Journalism and Mass
Communications
University of Minnesota
Minneapolis, Minnesota

The Historical Atlas of Political Parties in the United States Congress, 1789-1989.

By Kenneth C. Martis
New York: Macmillan. 1989. 518 pages.
ISBN: 0-02-920170-5. \$190.00.

Kenneth Martis should be very proud of this, his second, congressional history atlas, an important, unique contribution to the reference shelves of every library that is serious about providing its readers with the best sources on American politics, past and present. Not a perfect work, it nonetheless delivers more than its title promises and even at \$190 returns good value for the money.

On first encounter the reader cannot ignore the atlas's imposing physical presence. Unopened, it stands over a foot (13.5 inches) tall, one and a half feet (18 inches) wide, and an inch and a half thick; it weighs ten pounds. The paper is heavy and reflects no annoying glare, and the covers and binding seem suitably strong and durable for a book that should get years of heavy use. Each page can hold approximately as many words as six

... cartographic historians have not dealt with maps in the mass media.

Not a perfect work, it nonetheless delivers more than its title promises . . .

pages in a conventional book, which makes the atlas's fifty pages of text and notes roughly equivalent in volume to a 300 page monograph. The atlas also offers two indexes, 127 tables, and 101 full-page maps, all but one in color.

The dimensions are the same as Martis's earlier work, *The Historical Atlas of United States Congressional Districts: 1789-1983* (Martis 1982), which won the American Historical Association's 1986 Waldo G. Leland Prize as the best reference work in all fields of history published during the preceding five years. This atlas builds on that earlier work by utilizing its congressional district maps as bases to map the party affiliations of the members of the House of Representatives. Both volumes share a common source: a huge project to compile a multi-volume atlas of all congressional roll call votes, which was started in the late 1930s and prematurely cancelled in 1942 when the United States turned its full attention to national mobilization for World War II. Martis worked in the archives of that ambitious undertaking while studying for his doctorate in geography at the University of Michigan, and he resolved to see it completed. With publication of both the historical atlas of congressional districts and this one on the political parties of congressional representatives and senators, Ken Martis is two-thirds of the way to his goal; he is already at work on an atlas of historically important congressional votes.

The maps are, as Martis says, the "centerpiece" (pp. x, 23) of the atlas. Every one is extremely attractive, strong, clear, and effective, thanks to the outstanding design by cartographer Ruth Anderson Rowles. There is a pair of maps for each congress: a large one for members of the House on which all the districts are outlined and colored in and a small inset that shows only the states to depict the party representation in the Senate. A reference map, black and white, and an extensive legend precede the color plates, and there is an exceptionally lucid explanation of the methods and criteria used to design the maps.

Fifty different political parties are symbolized by unique hues, and, al-

though more than three or four seldom appear at one time, it is remarkable that not one map hits the reader with the sort of vibrating color "jump" that comes from putting colors like orange and blue side by side. The darkness of some colors prevent these maps from reproducing well on photocopiers, but they should make great slides for the classroom.

Each House district is colored according to the party of its representative. The resulting choropleth maps could visually mislead readers because areas of different sizes imply different quantities, while the areas of congressional districts are related neither to the number of representatives nor to the number of people represented (each district presumably has roughly the same number of people and single member of Congress representing them): areas of districts vary inversely with the density of their population. Rowles not only warns readers about this potential problem (p. 60) but has added to each map a visual corrective in the form of a pie chart on which a party's portion of the disk is directly proportional to its percentage of House membership.

Next to each map is a list of all the members of that Congress. The list is broken into two parts, one for the House and the other for the Senate. Within each part the list is organized by states in alphabetical order. In the House list, the representatives are listed in order of their numbered districts, and an alphabetical listing by name appears only when two or more individuals were elected from a single district or at large. Following each individual's name is a designation of political party.

Despite the superb cartography, a possibly greater contribution of this volume is achieving a new level of accuracy in identifying the political affiliation of each man and woman who has served in Congress. This is the unadvertised extra mentioned at the beginning of this review. The task must have been daunting in magnitude: 11,175 men and women have served in Congress over its two centuries; 31,302 initial elections have been held just to fill the seats in the House. Every one of those elections

... a huge project to compile a multi-volume atlas of all congressional roll call votes.

... a new level of accuracy in identifying the political affiliation of each man and woman who has served in Congress.

and individuals is accounted for in this atlas.

In addition to the party designations next to each representative's and senator's name in the lists by the maps, there is a series of large, annotated tables, two (House and Senate) for each congress, in which the sources for those designations are listed. For the members of the first through the twenty-fourth congresses, Martis details the party label for every individual. For the members of later congresses, the tables include only those whose party is not the same in all sources; when all authorities agree on the affiliation, the member is named only in the list accompanying the maps for that congress.

The text is a rich mine for the thorough reader. Martis takes pains to review carefully the current state of the history of American political parties and to describe his methodology and his conclusions on the nature of the data. Some of that may merit separate publication. He admits that for the first two dozen congresses (1789-1837), before political parties of a modern style emerged, the party labels assigned in the atlas are products of current scholarly interpretation.

Martis and his research team surveyed an impressively large amount of primary source material, in addition to plumbing apparently every cranny of scholarship on the subject. The bibliography runs over 760 items and includes not only the standard references, so called, but also nineteenth-century newspapers and almanacs, twentieth-century books, articles, and doctoral dissertations, and numerous instances of "personal correspondence" with the leading scholars in the field. With this exhaustive research and comparative analysis of data from so many sources, Martis has corrected thousands of previously published erroneous designations—some obviously accidents (e.g., calling Barry Goldwater a Democrat), some products of a compiler's imagination or wishful thinking, and still others simply matters of difficult interpretation because the individual was a maverick or changed parties or received support from more than one party. These newly revised

party designations will be used in a new, bicentennial directory of members of Congress to be published by Congress itself, a development in which Martis justifiably takes great pride.

Common sense says no work of this size and complexity can be free of errors, and on the back of the title page an errata list points out tiny coloring mistakes on three maps. Numerous spot checks of the maps, tables, and text uncovered no other mistakes. The apparently irrepressible human imperative to revise and improve the work of earlier generations will see to it that these maps, text, and tables of data on party affiliation are not the last word on the subject—particularly for the early congresses—but they are as close to that ideal as anyone is likely to get for a very long time.

Mechanical errors and issues of interpretation aside, there are weaknesses in the organization and in some of the mechanisms provided to help the reader find information, such as the table of contents and the indexes. The table of contents is unbalanced: the first two-thirds of it serves as a sort of topical outline for the text, almost masking the entries for the maps, tables of party affiliation, and other features. There is no list or other guide to the first thirty-five tables (those not concerned with individual party affiliations), even though some are extremely valuable and important, such as Table 4, "Political Divisions in the United States Congress, 1789-1989," which Martis hopes "will become the standard reference for party statistics in Congress" (p. 23). Access to those tables via the topical index to the text is, at its best, poor.

The index of individual names is split into separate lists for House and Senate, and looking up someone who served in both houses, like John Quincy Adams, entails consulting both lists. For representatives, the index gives only the number of the congress(es) in which they served, and for senators, the only reference is the years they sat in the Senate. Without knowing the home states, looking up people in the index and then finding them on the map lists is both inconvenient and uncertain because

With this exhaustive research . . . Martis has corrected thousands of previously published erroneous designations . . .

it is necessary to scan the non-alphabetical state rosters.

Some parts of the atlas might arguably be better positioned, particularly the bibliography. It is found at the end of the text, just in front of the section of maps, where it separates the explanation of cartographic design and the reference map from the section of maps, including the master legend. Putting the bibliography in its conventional location near the back with the indexes would make it easier to find and use and would reunite the maps with their introduction and supplementary material.

It is fair to say that, despite the weaknesses in organization and finding aids, this is an outstanding reference work, offering data so thoroughly refined as to render the information almost new and providing maps so well conceived and executed they too raise the standard. If Ken Martis wins another prize with this atlas, no one should be surprised.

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Martis, Kenneth C. 1982. *The Historical Atlas of United States Congressional Districts: 1789-1983*. New York: Free Press.

John Long
Project Director, *Atlas of Historical County Boundaries*
The Newberry Library
Chicago, Illinois

Maps Contained in the Publications of the American Bibliography, 1639-1819: An Index and Checklist.

By Jim Walsh
Metuchen, N.J., and London: The Scarecrow Press, Inc. 1988. 367 pages.
ISBN: 0-8108-2193-1. \$37.50.

This checklist pulls together in a single volume the maps scattered throughout the classic 14 volume bibliography entitled *American Bibliography: A Chronological Dictionary of All Books, Pamphlets and Periodical Publications*

Printed in the United States of America from the Genesis of Printing in 1639 down to and Including the Year 1800 (Evans 1903-1959), as well as the maps found in *American Bibliography: A Preliminary Checklist for 1801 [to] 1819* (Shaw and Shoemaker 1959-1963).

The checklist is divided into three parts. Part I lists the maps described by Evans; part II cites the maps in Shaw and Shoemaker's bibliography; and part III contains six indexes arranged by date of publication, place of publication, personal name, book title, map title, and geographic location. Entries are arranged in parts I and II by the citation numbers found in Evans, and Shaw and Shoemaker's bibliographies. Descriptions of individual maps include the map title, cartographer, and imprint. Maps published in books, atlases, and periodicals, however, are described under the name of the work in which it was published.

Persons who on occasion refer to Evans for maps published in America before 1800 will find this publication useful. Because of the strange and sometimes misleading references found in the *American Bibliography*, however, the citations must be used with caution. Writing in the preface to *Supplement to Charles Evans' American Bibliography* (Bristol 1970), the late rare book librarian Frederick R. Goff noted that "Evans also had the bad habit of relying all too often on newspaper advertisements and other secondary sources for many of his entries. As a result he produced a fair share of bibliographical ghosts, or nonexistent books. Many of his entries, for other reasons, are inaccurate as to author, title, imprint, or collation and require revision or correction."

A far better source for accurate information about pre-1800 maps published in this country is *Maps and Charts Published in America before 1800: A Bibliography* (Wheat and Brun 1969). This important bibliography includes citations to 915 maps, 95 of which are also referenced in Evans' *American Bibliography*. Wheat and Brun's work not only includes full and accurate citations, but also the location of known copies of these hard to find rare or scarce maps.

... for maps published
in America before 1800
... this publication
[will be] useful.

Unfortunately, the checklist under review does not mention the shortcomings of *American Bibliography* or the value of Wheat and Burn's cartobibliography in the study of early American map imprints.

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Richard W. Stephenson
Specialist in American Cartographic History
Geography and Map Division
Library of Congress
Washington, D.C.

Explorations in the History of Canadian Mapping: A Collection of Essays.

Edited by Barbara Farrell and Aileen Desbarats. (Ottawa, Ontario): Association of Canadian Map Libraries and Archives. 1988. x, 274 pages, ill., maps.

ISBN 0-9690682-5-5 (bound) \$35.00
Cdn. ISBN 0-9690682-6-3 (pbk)
\$25.00 Cdn.

Available from: ACMLA c/o MAPS,
National Archives of Canada, Ottawa,
CANADA K1A 0N3. Tel: (613)
995-1079.

Explorations in the History of Canadian Mapping was inspired by the late

Norman Nicholson, Professor of Geography at the University of Western Ontario and Serge Sauer, curator of that institution's map collection. The intent was simple, to bring together under one cover a number of articles dealing with cartography and the history of cartography in Canada that had appeared in the *Bulletin of the Association of Canadian Map Libraries* and the earlier *Proceedings*. Because of Professor Nicholson's illness and Serge Sauer's inability to carry the project alone, the current editors, Barbara Farrell and Aileen Desbarats, continued the project of editing the articles to a common standard, selecting additional illustrations and seeing to its publication. The final product is a neatly packaged anthology in an 8" x 10" format of twenty articles in 274 pages with 109 black and white illustrations. In organizing the articles, the editors settled into a grouping of four sections: Research Background, Exploring the Coasts, Routes and Patterns of Settlement, and Survey and Resources. The range in quality of the articles is varied, some are highly scholarly while others are less so. This is a reflection of the various backgrounds of the authors which includes professors of historical geography and historical cartography, archivists, librarians, students and amateurs. Accordingly, some articles are well documented with ample citations and notes while others have but a few. Of particular surprise in the first section is a welcome 199 entry "Bibliography on the History of Cartography and Historical Cartography of Canada" in the article "The Next Step Forward: a Further Review of Research on the History of Cartography and Historical Cartography in Canada," by Richard I. Ruggles. The section Exploring the Coasts is equally divided East and West and ranges in time from Cabot's landfall to twentieth century hydrographic surveys. The section Routes and Patterns of Settlement is geographically restricted by the scope of the source journal but that does not diminish the value of the individual articles selected. Finally, the section on Survey and Resources highlights the roles of various individuals and institutions in the surveying of Canada

... a neatly packaged
anthology ... of
twenty articles ...

from those as early as David Thompson in the late eighteenth century to a World War II project of surveying and constructing pipe lines in the Mackenzie Mountains.

I must admit that I have always been partial to this type of book. The bringing together of related journal articles in one volume often seems redundant to some scholars but to others it is a welcome service to bring to researcher's and the broader public's view articles which might not have been easily found and read. This book is not meant to be comprehensive but rather a pulling together of articles from one source journal for the benefit of a hopefully wider audience. This goal was definitely attained. *Explorations in the History of Canadian Mapping* should lead some to a greater interest and possibly more research on the cartography of Canada.

A major complaint I have is the editors lack of citations for each article. We know, of course, where they were published but there is no indication when they appeared. It leaves one suspended in time and therefore not clearly grounded in the intellectual history of the study of cartography in Canada. Also, the book lacks an index, not an uncommon feature of works of this nature. These two defects do not at all detract from the usefulness of the book and it is recommended for any individual or institution interested in the cartography of North America.

Jon L. Walstrom
Map Curator
Minnesota Historical Society
St. Paul, Minnesota

Columbus kept a journal of his voyage of 1492, but this has not survived.

The Diario of Christopher Columbus's First Voyage to America, 1492-1493.

By Bartolome de Las Casas
Transcribed and Translated into English
with Notes and a Concordance of the
Spanish, by Oliver Dunn and James E.
Kelley, Jr.
Norman and London: University of Oklahoma Press. 1989. 10 491 pages.
ISBN: 0-8061-2101-7 (hardbound).
\$60.00.

The authors of this book indicate that their intention was to provide an "easily available, accurate and complete transcription" of the Las Casas manuscript account of the first voyage to the New World made by Christopher Columbus. They are modest. The book includes as well a fine translation, accompanying notes and introductory material, a concordance to the Spanish text, and an index. Among the Quincentenary publications completed to this date, their book stands out as a superb addition to the Columbus literature. The book is appealing and appropriate in appearance and rich in content. When the measure is finally taken of the books published in this time of the Columbus celebration, the Dunn-Kelley volume will rank among the best.

Why the transcription? Columbus kept a journal of his voyage of 1492, but this has not survived. A copy of it was made at the request of Queen Isabella, but this also has not survived. In the 1530s Father Las Casas had the journal (or



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Diario) and prepared a version of it that was part quotation, part abstract, part a free summary of text by Columbus. This version of the Columbus journal was not discovered until 1790, and unless some miracle occurs to reveal a copy of the original journal, the version by Las Casas is the only account of the events of the voyage that scholars can study. Thus the importance of an accurate transcription.

The problems in transcriptions were apparent in 1981 when the Society for the History of Discoveries tackled the question of the location of the first landfall in the New World. (This is a question still debated, as it seems that the evidence in the journal, from re-enactments of the voyage, etc., is not conclusive). Oliver Dunn, a librarian from Purdue University, was the one who worked out the transcription of the portion of the text relating to the landfall. Jim Kelley, mathematician and computer expert, joined Oliver and added the dimension that the technology offered. The combination of their talents is a fortunate one. The members of the Society for the History of Discoveries have been hearing reports on the progress of the transcription of the text for many years. Preliminary versions of it in solid black binders have been passed around at the Society's annual meetings. The book has been a long time in the making, and the results show it to be a labor of both love and great care.

In addition to the complete transcription, Dunn and Kelley have provided a new English translation of the text. English translations have been done before, but presenting a translation with the transcription is new. The scholar can compare the two texts easily. The specialist has the original evidence at close hand; the non-specialist can also follow the Spanish text with interest. The general picture that emerges is one of annoyance at times with Las Casas, who summarizes the text when it would be better to have the Admiral speak for himself. When the text is given in the original, first person form, it is more exciting! The reader gets the sense of firsthand participation that makes any

original document fascinating. The text leading up to the first landfall is very straightforward, almost dull. The descriptions of the islands are almost poetic. Other themes are always present as well—the search for gold and the plans to take possession of the islands. For example, "And may you believe that this island and all the others are as much yours as Castile; for nothing is lacking except settlement and ordering the Indians to do whatever Your Highnesses may wish." He continues that the Indians "are fit to be ordered about and made to plant, and do everything else that may be needed, and build towns and be taught our customs, and go about clothed." There is rising tension in the portion of the text describing the difficult homeward voyage. The journal is a "good read." Dunn and Kelley have not loaded it with footnotes and commentary, but let the text speak for itself.

In addition to the transcription and the translation, the authors have provided a complete concordance to the Spanish text of Las Casas—a real help to the scholar. The bibliography lists works relating to the first voyage of Columbus; a fine index to the book is included.

Some readers might have preferred the book to be something that it is not. For example, there is no map showing the route of the voyage of Columbus, something that the landfall scholars most certainly would have welcomed. The notes relate primarily to the text and not to explanations of terms mentioned in it. But the book does exactly what it sets out to do—it provides a transcription of a very difficult Spanish manuscript (two pages of the original manuscript are shown in the text), together with a very readable English translation and enough notes to make the text understandable. The result is a very good book. The Dunn/Kelley book is a welcome addition to the literature on the first voyage of Columbus.

Carol Urness
President, Society for the History
of Discoveries

The book has been a long time in the making, and the results show it to be a labor of both love and great care.

ELECTRONIC MEDIA REVIEW

PC USA.

Tempe, Arizona: PC Globe, Inc., 1989.

Three 5 1/4-inch diskettes and User's Guide, 32 pages. \$69.95.

Available from: PC Globe, Inc., 4435 South Rural Road, Building 5, Suite 333, Tempe, Arizona 85282. (602) 894-6866.

PC USA is a diskette-based electronic atlas running on an IBM PC/XT/AT/PS2 or compatible with minimum 512K RAM memory, one or two floppy drives (5 1/4" or 3 1/2") or one floppy and a hard disk and DOS 2.0 or later. It needs an IBM color graphics adaptor (CGA, EGA or VGA) or a monochrome graphics adaptor, MCGA adaptor or compatibles. It configures with several leading printers.

The program contains base maps for each state, U.S. regions (as defined by the U.S. Bureau of the Census), the whole United States, Puerto Rico, and Washington, D.C. State maps can show elevations, cities, or features. Regional and USA maps can compare user-selected data for the whole U.S. or desired states with automatically produced colors and legends. Information on many topics from over a dozen databases is available for output in chart or table format, as well as map format. Topics available include population and age distribution; health statistics; educational data; crime statistics; economic, commodity and trade data; taxes and state government revenues; highway statistics; political leaders and voting statistics; state history; tourist attractions; state trivia; climate trends and more.

Other features are point to point distances for cities on the list. If your city or point is not on the list, latitude and longitude may be entered and a map will be displayed showing and naming the points as well as the compass bearing from the source point. Zip codes, area codes, and time zones may be called up and will appear on the USA map. A point and shoot feature allows the user to arrow (or mouse) over to the selected

state which then begins the mapping and/or data selection process for that state. For the more print-oriented among us, lists of options from pull-down menus make the whole program just as quickly accessible. The 52 colors are easily changeable at any time. PC USA statistical files may be exported to ASCII or Lotus files and maps may be exported to some desktop publishing programs, including WordPerfect 5.0 and PC Paintbrush. Data are kept current with annual updates which cost \$20.

PC USA is a remarkably powerful program, and for the price, it's astonishing. Within minutes of the installation of the review copy, even before anyone had picked up the manual, maps and charts were shooting off the printer and being whisked away for show-and-tell. The program is more than user friendly; it's downright user affectionate! The manual is another pleasant surprise. It is understandable even if read during lunch (a good time to read the manual since doing so takes less than an hour) because it corresponds precisely to the program for which it was written.

Demonstrations to library staff were greeted with enthusiasm as reference people from various departments could see the applications of PC USA to their patrons' needs in geography, business, sociology, education, political science, and economics to name a few. Output is perfectly sized to accompany a report or a research project. Besides the obvious utility of the program, it is fun!

The company's next offerings will be for a "professional" version of their best selling PC GLOBE and the newer PC USA. Due out by early 1990, the professional versions will have enhanced importing and exporting capabilities for business statistics files. The young and energetic company has ideas to warm a map librarian's heart. I'm going to watch them closely.

Heather Rex
MAGIC/Centennial Library
University of New Mexico
Albuquerque, New Mexico

Information on many topics from over a dozen databases is available . . .

The program is more than user friendly; it's downright user affectionate!

SELECTED PUBLICATIONS OF NOTE

- Auto-Carto 9: Ninth International Symposium on Computer-Assisted Cartography, Baltimore, Maryland, April 2-7* sponsored by American Society for Photogrammetry and Remote Sensing [and] American Congress on Surveying and Mapping. 1989. Falls Church, Va.: The Society: The Congress. ISBN: 0944426557. \$46.60.
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- Rand McNally *Photographic World Atlas*. 1989. Chicago: Rand McNally. ISBN: 0528833634. \$34.95.
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Forthcoming Conference notice

MAPPING AMERICA

The theme of the eighth annual International Symposium of the International Map Collectors Society (IMCOS) will be *Mapping America*. Sponsored by the Washington Map Society, the Symposium will be held October 1-4, 1990 at the Library of Congress in Washington, D.C. Highlights include

presentations of professional papers by eminent speakers, tours of major map depositories in the nation's capital, a Map Fair (October 1 & 2), a Map Auction (October 3), receptions, and a banquet.

The Library of Congress will be the site of the presentations of professional papers, a reception on October 2, and of tours of its Geography and Map Division and of its conservation facilities. The program includes papers on the dealer, collector, and institutional curator aspects of the antiquarian map trade by Donald Cresswell, Seymour Schwartz, and Ed Dahl, respectively; *Charting the Great Lakes*, by John A. Wolter; *Designing a Capital City: L'Enfant and the Planning of Washington*, by Richard W. Stephenson; *The Bodleian Copperplate Maps of the Americas*, by Helen Wallis and Pearce Grove; *Des Barres and the Atlantic Neptune*, by Christopher Terrell; and *The Maps of Columbus and the Great Discoveries*, by Kenneth Nebenzahl. Professor John Brian Harley, coeditor of the History of Cartography project at the University of Wisconsin, will be the banquet speaker; his topic will be *Reading between the Lines of a Map*.

There will also be visits to the National Archives, the National Geographic Society, and to George Washington University.

Until May 1, 1990, the registration fee for the Symposium is \$95 (\$75 for accompanying persons) and covers all Symposium events. After May 1, the fee is \$115 (\$95 for accompanying persons). Early registration is advised.

A special conference rate (\$95 per room, single or double, plus 9.5% tax) has been arranged at the Westpark Hotel in the Rosslyn section of Arlington, Virginia. The hotel will be the site of the Map Fair, the Map Auction, and of a get-acquainted reception on the opening night of the Symposium. Located just across the Potomac River from historic Georgetown, the hotel features three restaurants; parking and local phone calls are free as is the use of the hotel's swimming pool, sauna, and exercise room. Symposium participants should reserve their rooms early. Convenient transportation between the hotel and the Library of Congress is provided by direct Metrorail (underground) connection.

For additional information contact Eric W. Wolf, 6300 Waterway Drive, Falls Church, VA 22044 or Malcolm R. Young, Whyr Farm, Winterbourne Bassett, Swindon, Wilshire SN4 9QE.



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George Kish, a geographer with an international reputation in the history of cartography, died on July 11, 1989, after a brief illness. A long-time member of the geography faculty at the University of Michigan, he was visiting professor at other universities and also lectured widely in this country and abroad. Kish was born in Budapest, Hungary in 1914. His early education in Budapest was followed by university studies in Paris where he earned a bachelor's degree in Political Science (1935) and an M.A. in History and Geography (1937). Returning to the University of Budapest he earned an M.A. in Economics (1938) and a DSc. in Geography (1939).

In 1940 Kish came to the United States and began an association with the University of Michigan which was to last until his retirement in 1985. He first served as a Teaching Fellow and Instructor in Geography (with an interlude in History) while working for his Ph.D. in Geography, awarded in 1945. There followed the usual progression to Professor in 1956 with the added distinction of designation as the William Herbert Hobbs Professor of Geography in 1981.

His European origin, education and language competence allowed Kish to function as easily on the Continent as in the British Isles. (He published in French, Hungarian, German and Italian). He received

Fullbright grants for research in Italy (1951-52) and as a Lecturer (1964) at the universities in Rome, Florence, Naples, and Bari. A National Science Foundation Grant (1964-65) supported a year's research in Swedish archives which resulted in the only biography in English (1973) of A.E. Nordenskiöld the Arctic explorer and first to navigate the Northeast Passage from the North Sea to the Pacific. This experience doubtless contributed to Kish's biography of Sven Hedin (1984), the famous Swedish explorer of Central Asia. It is not surprising that Kish was honored by medals from the Swedish Academy of Science and the Swedish Geographical Society, in addition to other organizations here and abroad. In addition were visiting professorships and invitations to lecture at societies and universities.

His interest in the history of cartography is reflected in his service on the editorial and managing boards of *Terra Incognita*, the journal of the Society for the History of Discoveries (1976-1980) and *Imago Mundi*, the international journal for the history of cartography (1956-1988). In the latter he published a number of papers on such topics as "missionary cartography in Japan," "The Mural Atlas of the Capiolo Palace," "codiform maps of the XVI century," and "early thematic mapping." His final publication in this field was a well-illustrated, semi-popular survey—"La Carte, Image des Civilizations," Paris, 1980.

At the time of his death, John Kolars, for many years his colleague in the Department at Michigan, paid him a generous tribute: "When I think of George, graciousness comes to mind. He was an extremely articulate lecturer who was always friendly and gracious to students and new faculty . . . He had a very distinguished career and was respected the world over. He brought an old-world scholarship approach to the University. Although he was old-world, he recognized modern changes. He is going to be missed by many people."

Thomas R. Smith
University of Kansas
December 1989



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Meridian is published semi-annually by the American Library Association's Map and Geography Round Table. It contains articles which (1) advance the organization and dissemination of cartographic, geographic, and remote sensing collections and information; and (2) describe and document the major trends and issues in the professional development of cartographic and geographic librarianship in North America.

ALA members and other persons interested in the objectives of the Map and Geography Round Table are invited to submit manuscripts to the Editorial Board for consideration. Full-length manuscripts (generally not exceeding 7,500 words) as well as shorter commentaries, research notes and letters should be addressed to: Philip Hoehn, Library Map Room, University of California, Berkeley, California 94720.

Format. Manuscripts should be submitted either on a 5.25 inch floppy disk with one paper printout, or in three paper copies. Papers should be typewritten or computer-printed, double-spaced on one side only of white 28 x 22 cm. (8.5 x 11 inch) paper with 3 cm. (1 inch) or larger margins on all sides. They should be in the English language. Disks will be returned to the author.

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Jones, Samuel. 1987. *Maps for Everyone*. Smithville, Calif.: Cartographic Publishing Works.

Jones, Samuel and Constance Williams. 1979. *Mapping for Everyone*. Smithville, Calif.: Cartographic Publishing Works.

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