much evidence of the white man's short-sightedness and stupidity. He vacillates between extreme pessimism and cautious optimism, and offers only a faint ray of hope for the future.

On the credit side, as Caucasian farmers increase their individual holdings and their numbers become fewer, there has been an increase in elk, bears, ravens, and eagles.

We learn about many people, including: the explorers, David Thompson, John Palliser, Henry Youle Hind; the poet, Pauline Johnson; early naturalists, John Macoun and R.D. Symons; the lifetime chronicler of valley bird life, Manley Callin; and Professor Zenon Pohorecky, who tried to preserve Mistaseni, the giant 400-ton buffalo rock, sacred to the Cree. We are also told about the short-lived Hamona colony, which failed because not everyone contributed equally to the farm labours and because the promised railroad failed to materialize; breadroot, wild onions, wild turnips, seneca root, the sources of natural food and medicine; the two species of towhee and two species of wood pewee, whose ranges meet in the valley; the

endangered Burrowing Owls and Piping Plovers, the declining Upland Sandpiper; Swainson's Hawks and Richardson's Ground Squirrels. Recurring themes include the Bank and Barn Swallows and Say's Phoebe.

A review such as this can only hint at the superior quality of writing, especially Herriot's ability to meld and synthesize a wide range of topics. This gifted wordsmith will provide many unexpected pleasures and provoke thought for any reader. A best-seller, appealing to a wide audience, it made the short list for the Governor-General's award for non-fiction. Reprinting was necessary less than three months after its release, in spite of a substantial first printing run. This book is the perfect gift for any naturalist and for anyone who wishes to learn more about Saskatchewan.

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MISCELLANEOUS

Yellowstone and the Great West: Journals, Letters, and Images from the 1871 Hayden Expedition

Edited by Marlene Deahl Merrill. 2000. University of Nebraska Press: 315 pp. U.S. \$29.95, £19.95.

The US government's surveys of the American West rank among the great scientific endeavours of the nineteenth century. In assessing the American frontier's potential for commercial development, these surveys were a form of applied science with a government subsidy. Their achievements in geology, palaeontology, cartography, and other fields put them among the most influential scientific institutions of the period.

Of all these scientific forays to the West, the 1871 expedition by geologist Ferdinand Hayden to the Yellowstone country has left perhaps the most visible legacy. Hayden's reports of this and later expeditions were mass-produced and widely read, and did much to bring Yellowstone scenery into middle-class drawing-rooms. Hayden was accompanied by a large retinue, which included William Henry Jackson, the photographer who first captured much of the Yellowstone country on plates, and Thomas Moran, the artist whose paintings of Yellowstone's wondrous nature transfixed the public. Together, the geologist, photographer, and artist did much to convince U.S. legislators that Yellowstone should be made a national park - the first in the United States and, subsequently, to persuade Americans to visit it.

Yet, for all the importance of Hayden's first expe-

dition, we know little about how it operated, or what the party actually did from day to day. Oddly, neither Hayden, Jackson nor Moran kept a diary that survived. It is as if the early nineteenth-century explorers Meriwether Lewis and William Clark had ventured on their mission along the Missouri River to the Pacific and then lost their notes. Marlene Deahl Merrill's edited version of the journals of two other members of the team, geologist George Allen and mineralogist Albert Peale, thus fills an important gap, and constitutes the first daily account of the historic 1871 Yellowstone Survey. These journals are, in fact, the only diaries of the expedition known to exist. Integrated here with selections from Allen's field notebook and letters that Peale wrote to newspapers during the expedition, they form a valuable addition to our knowledge of the survey.

This is a good thing, for previous accounts (most of them written by Hayden and Jackson years later) contain substantial errors. Jackson, for example, recalls in his autobiography that the Hayden party in 1871 was the first group of white men to visit Mammoth Hot Springs, one of the park's central features. How striking, then, to read here that when the party arrived they were met by two white settlers who had claimed the springs and were bent on turning them into a resort for health-seekers - such as the syphilitics who were also there to greet the expedition.

Hayden himself, for a host of reasons, discounted Indian claims to the Yellowstone region, and contributed to the myth of Yellowstone as an "uninhabited wilderness". In his journal, Peale reports sightings of Indians, and writes of the precautions the party took against Indian attack. (The worry about Indian attack was probably needless, but an idea of what the Indians in question might have looked like is given by a photograph of a family of Bannock Indians taken by Jackson shortly after he left Yellowstone.)

Here, too, are glimpses of the scientific expedition's little-known support staff, people who are invisible in the official reports, including guides, horse wranglers, a driver nicknamed "Dummy" and a Mexican-American hunter known only as "Jos".

This is more than a compilation of journals, however. Interspersed between Allen's sentimental maundering and Peal's scientific enthusiasm are a number of letters from Hayden to Spencer Baird, the assistant secretary of the Smithsonian Institution, reporting on the expedition's progress. Pen-and-ink panoramas of the Yellowstone country, executed by the highly skilled (and self-taught) expedition topographer Henry Elliott grace the headings of each of

the 10 chapters, and the work throughout is illustrated with well-chosen photographs by Jackson.

Merrill's editing is superb. In 47 pages of endnotes, she integrates the journals with historical and scientific scholarship about Yellowstone and the American West. The achievements of the expedition become as salient as its curious errors, which include the mismeasuring of various peaks and geological features. The glossary of scientific terms is most helpful to the novice, and the four appendices (which include capsule biographies of expedition members) help flesh out the piece. Those wanting to know about Yellowstone at the time it became a national park have long relied on Hayden's official reports. Now that body of work has an important supplement. Nobody who seeks a deeper understanding of Yellowstone's natural systems as they were in 1871, or how nineteenth-century science was yoked to westward expansion, should miss this remarkable piece of editing and scholarly reconstruction.

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