Proven and Possible Reserves

By Eleanor Swent
Past President of the
Mining History Association

The Mining History Association, now eighteen years old, has reached maturity, so it is appropriate to look at our own organizational history. Using a mining analogy, we can assess our reserves, define our ore body, and plan for further development. Our annual conferences have been a fine accomplishment, with increasing attendance each year, and the presentations and field trips have contributed to our knowledge of mining history. Along with the annual *Mining History Journal*, they are our "proven reserves," and to that end, let us examine the journal as an ore body.

The journal for 2001 included an article by Duane Smith on the founding of MHA, entitled "A Leap of Faith." Three of the "founders," Clark Spence, Duane Smith, and Ron Brown, have served as president of MHA, and a fourth, Bob Spude, as its secretary for more than a decade. Today we salute them, that leap, and that faith.

The association published thirteen journals from 1994 to 2006, containing a total of 118 articles, written by nearly that many authors. [For an index of the first fifteen issues of the journal see pp. 100-5.–Ed.] Now we can consider what topics have been dealt with, and what veins have been left untapped. Seventy-one of the articles, slightly over half, deal mostly or entirely with the nineteenth century. At least forty articles were concerned with the twentieth century. The list of contributors to the journal has included history teachers, employees of mining companies and government agencies, writers and editors, students, and retirees. These men and women typify the great variety in the general membership of the MHA. What all of us in the MHA have in common is that we are, in the root sense of the word, amateurs—that is, lovers of mining history.

The first issue of the journal, in 1994, set the pattern. The very first article, by Chris Huggard, dealt with probably the most significant issue in recent mining history, environmental protection, and traced environmental impacts in New Mexico before 1910. Other articles documented the career of a Nevada mining engineer; Western coal mining; an Idaho mining company; Wyoming mineral resources; the practice of medicine in nineteenth-century gold camps in California and Colorado; the architectural heritage of a Texas coal-mining town; health and safety reform in Arizona; Chinese hydraulic miners; Potosi, Bolivia, 1545 to the present; Oklahoma coal; the development of mechanized drills; Alaska gold dredging; and a contemporary California gold mine. These inaugural articles ranged geographically from Alaska to Bolivia, and included eight western states. Four of the fourteen papers treated material more recent than 1950. This commendable variety has marked every issue since.

Two quotations from that first issue are worth noting for their prescience. James Whiteside, in his paper on western coal-mining history: "To the traditional approaches of business, labor, and political history must be added the newer methods of social, cultural, and environmental history." Steven Sewell, in his paper on coal mining in Oklahoma: "Slowly over the years new technology, improved training, and government regulation all reduced accidents."

The second journal, in 1995, included photos, as well as a photo on the cover; this feature has continued. In addition to articles on the California and Nevada gold rushes, there were articles on mining in the Black Hills of South Dakota, in Appalachia, and in New Mexico; ancient Egyptian metallurgy; and a calcite-crystal mining project during World War Two. Thus the journal's scope expanded both chronologically and geographically.

The third annual journal, in 1996, continued some of the same general themes: the Chinese in the California gold rush, the decline of the Comstock, immigrant labor, mining claim disputes in the early 20th century, mining in ancient Greece, and "welfare capitalism" and company towns. Historic photos from 1907 to 1927 were reproduced. Biographical papers appeared on the Janin brothers, mining financiers; and on John Muir, an early environmentalist who also appreciated mining. One paper studied the Phelps Dodge strike of 1983–84, and another author reviewed five new books.

The fourth journal, in 1997, widened its scope to China, Canada, and Nigeria, as well as extending it east to Illinois, and forward to present. An article related the Cherry Mine disaster of 1909 in Illinois to the inception of the U.S. Bureau of Mines. The issue featured other articles on aerial tramways; a mining engineer in China; Chinatown in Rossland, British Columbia; and tin restriction in Nigeria. The issue of historic preservation was introduced in an analysis of gambling at three historic mining towns in Colorado.

The fifth issue, in 1998, introduced the topic of gender through Sally Zanjani's article on women prospectors; Duane Smith's discourse on the opera, "The Ballad of Baby Doe;" and Richard Francaviglia's piece on gender in mining myths and folklore. Australia appeared for the first time in a comparison of the enforcement of legislation in Australia and Canada. Other articles covered preservation of the Mariscal quicksilver mine in Texas, company houses in Michigan, a lawsuit in the 1850s, a geologist in Alaska, and included two papers on the Cripple Creek District.

The sixth journal, in 1999, was a special "Southwest" issue. Of the eleven articles, two addressed subjects up to the present, while the others dealt with the eighteenth, nineteenth, and early-twentieth centuries.

The millennial issue of 2000 opened with Donald Hardesty's presidential address in which he said:

> We encounter mining's past . . . along three quite separate roads . . . along a pa-

> per trail, through written accounts, photographs, maps, and other documents . . . stories and memories of old-timers . . . and landscapes, buildings, structures, artifacts, and other physical remains. . . . Preservation is a moral obligation.

Sally Zanjani, in an article entitled "The Best and the Worst: Mining Historians Look Back at the Millennium," queried scholars Roger Burt, Stanley Dempsey, Gene Gressley, Don Hardesty, Carlos Schwantes, Duane Smith, and Robert Spude. They listed as the most important mining events the California gold rush, the Spanish discoveries of the Inca and Aztec empires, and South African gold and diamonds; and as the most important inventions solvent extraction–electrowinning; electrification; nitric acid and cyanide heap leaching, the steam engine, and explosives. Alternate choices as the most important invention included the power drill, flotation, cyanidation, pyrite smelting, the telegraph, ventilation systems, the Diedesheimer square-set stope, and block caving. They agreed that the worst developments included environmental problems, safety negligence, the encomienda system, and market manipulation.

Other articles in that issue dealt with gold dredging, tunnel building, hydraulic mining, flotation, and labor unions. One discerning paper reviewed the history of nearly a century at the smelter at Ruston, Washington, referring to it as an "environmental battlefield" and a "collision of theory and reality."

In 2001, in the eighth issue, Richard Graeme urged readers to pay more attention to "the human side of mining." Other papers discussed Nevada mining, Idaho tailings disposal, mining maps, and Muriel Sibell Wolle's drawings of western ghost towns, while a pictorial dealt with the mining exhibits at the Columbian Exhibition in Chicago in 1893. This issue included Duane Smith's article on the founding of MHA in October, 1988, in Wichita, Kansas, referred to earlier, and it also introduced Lysa Wegman-French's annual bibliography of recent publications on mining history.

The 2002 issue saw the first article on Cornish miners and the first on mining in Oregon. Other articles discussed mining in Colorado, Idaho, and the Great Basin, and one called attention to the manuscript archives at the Huntington Library in Pasadena, California.

A special issue in 2003 honored Clark Spence. He reviewed fifty years of mining history, noting the change from "a propensity to emphasize the gaudy and the sensational . . . [to a] broader and multifaceted . . . focus . . . on the mineral industry, with all its complexities and implications—legal, financial, technical, environmental, and international—and the reaction—cultural, social, political, and economic—of workers and communities." Appreciative students of Spence discussed nineteenth-century Canadian mine finance, gold dredges, Victorian town life, irrigation projects in Utah, and the personality of Daniel Jackling. Two articles dealt with twentieth-century topics: western mining films, and an Arizona tungsten mine.

In 2004, the journal, as always, included many attractive photos and a variety of authors who discussed nineteenth century mining in Alaska, Missouri, and Appalachia, and a gold mine in Montana. Three papers were about people: a Cornish miner (1842–1899), Herbert Hoover, and Henry Schoolcraft and his important book about the Missouri lead mines, written in 1819. One paper discussed the World War Two magnesium project at Gabbs, Nevada, and another told of contemporary environmental protection at a California gold mine. The bibliography of recent publications ran to eight pages, and four books were reviewed.

The 2005 issue looked at Comstock disasters, Colorado litigation, architectural preservation in Arizona, flotation patent disputes, and ethnicity in Michigan from 1870 to1920. A biographical paper concerned geologist Julian Feiss, born in 1904. The mining bibliography increased to elev-

en pages and the issue contained seventeen book reviews.

The journal for 2006 broke new ground with Bob Weldin's article on mining history through art, from Georgius Agricola to our own late great artist, Cherry Hunter. For the first time, a paper dealt with mining in South Africa. Attention was paid to the twentieth century in the Sunshine Mine fire of 1972, cyanidation at the Bald Mountain Mine in South Dakota, and the crucial importance of water to mining in California, Nevada, and Arizona from 1852 to the 1950s. Retired mining engineer Michael Kaas traced the history of the Bureau of Mines (1910–1996), and lamented its demise: "It is ironic that the decision to close the Bureau came just five years after the National Research Council had warned the nation that 'the "technology pipeline" for the domestic [minerals and metals] industry has all but dried up.' Only time will tell whether it was wise for a nation with only 5 percent of the world's population, but with an appetite for 25 percent of the world's annual mineral production, to terminate much of its capability to develop the technologies needed to meet future mineral needs."

These thirteen journals, with 118 articles, are a respectable body of literature on mining history. They range in time thousands of years from ancient Greece and Egypt to the present, and in space from North America to China, Australia, South Africa, Europe, and South America. Returning to the suggestions made by historians in the journal issue of 2000: we have published articles about the California gold rush, Spanish discoveries in America, and South African mining. Another stimulus for mining history research has been our biennial Spence Award for books on mining history. In 2007 fifteen books were submitted for consideration. All of these are our "proven reserves."

Our "possible reserves," as historians turn their attention to the more recent past and use more oral history, will no doubt be in documenting modern mining and metallurgical developments. World War Two is coming into focus for historians, who might chart the effects of the War Production Board's order L-208. When and why did we begin to speak of "strategic minerals" and "industrial minerals"? Today's appetite for minerals is varied, and the search for sand and aggregate, crystals, rare earths, ceramics, and radioactive minerals offer new opportunities for historians as well as geologists.

Mining education is another subject for study. What has happened to the schools of mines and the departments of mining engineering? When and why did the professor of metallurgy become the professor of materials science and the department of geology become the department of earth sciences, or, more recently, of earth and planetary science?

Environmental awareness and technical innovation have profoundly influenced mining. Recent issues of *Mining Week* have recorded new uses for old mines: "Midwest Geological Sequestration Consortium [hopes to] demonstrate that geologic sequestration is a safe and permanent method to mitigate greenhouse gas emissions;" and noted new uses for minerals: "The Environmental Protection Agency said it would classify Samsung's SilverCare line of washing machines as a pesticide because the machines ionize silver atoms and add them to the wash to kill bacteria and viruses." A recent USGS Bulletin announced that "interest in deep-sea mining has increased. The year 2009 may see the first commercial mining of deep-sea polymetallic sulfides in Papua-New Guinea waters."

The history of women's organizations related to mining could be examined; WAAIME (Women's Auxiliary to the AIME) scholarships have benefitted many careers. A new organization, Women in Mining, is becoming influential. A social historian might notice that in the oral history project I directed, Western Mining in the Twentieth Century, there are a total of eighty-one marriages; only seven have been divorced, and six of those remarried long and happily. This in spite

of—or maybe because of—their stories of living in difficult and out-of-the-way places. In the future we might also read good historical fiction about modern mining.

We can be proud of our ongoing role in documenting mining's important history. It is still true of everything we use that "if it can't be grown, it has to be mined."

Eleanor "Lee" Swent, former MHA president and council member, was born and raised in Lead, South Dakota, where her father was chief metallurgist for the Homestake Mining Company. Her mother was a high school geology teacher, and her late husband, Langan Swent, and father-in-law, James Swent, were both mining engineers. She holds a B.A. from Wellesley College, an M.A. from the University of Denver, and an honorary Doctor of Laws from South Dakota School of Mines and Technology. She has lived at the San Luis silver mine in Tayoltita, Durango, Mexico, and in the Ambrosia Lake uranium mining district, Grants, New Mexico, and visited mines in Australia, New Zealand, India, and North and South America. From 1985 to 2005 she directed the Western Mining Series at the Regional Oral History Office, University of California, Berkeley, completing more than sixty volumes of in-depth interviews with significant figures in contemporary mining, available online through the Bancroft Library. She lives in a retirement community on the Stanford campus in Palo Alto, California.