UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SELECTED BIBLIOGRAPHY OF EPITHERMAL
PRECIOUS METAL MINERALIZATION FOR THE
IUGS/UNESCO DEPOSIT MODELING
WORKSHOP HYDROTHERMAL SYSTEMS
IN VOLCANIC CENTERS

by

Charles G. Cunningham, U. S. Geological Survey, 959 National Center,
Reston, Virginia 22092, U.S.A.

Dianne L. Seay, U. S. Geological Survey, 913 National Center, Reston,
Virginia 22092, U.S.A.

George E. Ericksen, U. S. Geological Survey, 954 National Center, Reston,
Virginia 22092, U.S.A.

Open-File Report 87-577
1987

This report is preliminary and has not been reviewed for conformity with
This selected bibliography of epithermal precious metal mineralization was prepared for an International Union of Geological Sciences (IUGS)/United Nations Educational, Scientific and Cultural Organization (UNESCO) Mineral Deposit Modeling Program workshop Hydrothermal Systems in Volcanic Centers held November 9-18, 1987, in Santiago, Chile. The bibliography compiles many of the recent references on epithermal mineralization and includes many diverse published studies. We have taken a liberal view of the term "epithermal mineralization" and have selected studies that focused on understanding processes in epithermal systems. We have included related experimental, isotopic, fluid inclusion, and petrological studies and have excluded massive-sulfide and remote-sensing investigations. Studies of geothermal systems are included because of their analogy to epithermal systems. Most of the references are in English and are from the last ten years of world literature. Some classic descriptions of epithermal ore deposit districts are included also with a brief description of the districts' significance.


Averitt, Paul, 1945, Quicksilver deposits of the Knoxville district, Napa, Yolo, and Lake Counties, California: California Journal of Mines and Geology, Quarterly Chapter of State Mineralogist's Report 41, p. 65-89. (Good general description of the setting of the McLaughlin gold deposit—discovered much later.)


Becker, G. F., 1882, Geology of the Comstock lode and the Washoe district: U.S. Geological Survey Monograph 3, 422 p. (Historically one of the most significant USGS reports about the earliest detailed description of a western mining district; also much detail on epithermal Ag-Au ores and their geologic setting, from first hand observation in a world-class precious metal district.)


Bonham, H. F., Jr., 1980, Silver producing districts of Nevada, 2nd ed.: Nevada Bureau of Mines Geologic Map 33, scale 1:1,000,000.

Bonham, H. F., Jr., 1981, Bulk-minable precious-metal deposits and prospects in Nevada, Map at 1:1,000,000 scale: Nevada Bureau of Mines and Geology, Open-File Map 81-1.


Bonham, H. F., Jr., 1987, Models for volcanic-hosted epithermal previous metal deposits: A review [abs.]: Bulk Mineable Precious Metal Deposits of the Western United States, April 6-8, 1987, Program with abstracts, p. 44.


Browne, P. R. L., 1971, Mineralization in the Broadlands Geothermal Field, Taupo Volcanic Zone, New Zealand: Society of Mining Geology of Japan Special Issue 2, p. 64-75.


Clark, A. H., 1970, An occurrence of the assemblage native sulphur-covellite \( \text{Cu}_{5.5x} \text{Fe}_{x} \text{S}_{6.5x} \), Aucanquilcha, Bhi: American Mineralogist, v. 55, p. 913-918.


Dreier, J. E., 1982, Distribution of wallrock alteration and trace elements in the Pachuca-Real Del Monte District, Hidalgo, Mexico: Mining Engineering, v. 34, no. 6, p. 699-704.


Foley, N. K., Bethke, P. M., and Rye, R. O., 1982, A reinterpretation of D\textsubscript{2}H\textsubscript{2}O values of inclusion fluids in quartz from shallow ore bodies [abs.]: Geological Society of America Abstracts with Programs, v. 14, no. 7, p. 489.


Gianella, V. P., 1936, Geology of the Silver City district and the Southern portion of the Comstock lode, Nevada: Nevada University Bulletin, v. 30, no. 9, 105 p. (More details on the Comstock, particularly the south part.)


Hardee, H. C., 1982, Permeable convection above magma bodies: Tectonophysics, v. 84, no. 2-4, p. 179.


Heald-Wetlaufer, P., and Plumlee, G. S., 1984, Significance of mineral variations in time and space along the Bulldog Mountain vein system with respect to the district-wide hydrology, Creede district, Colorado [abs.]: Geological Society of America Abstracts with Programs, v. 16, no. 6, p. 535.


Joralemon, Peter, 1951, The occurrence of gold at the Getchell mine, Nevada: Economic Geology, v. 46, p. 267-310. (Good geologic detail indicating Tertiary age of gold mineralization.)


Keith, J. D., 1979, Miocene volcanism hosting porphyry-molybdenum and epithermal vein mineralization, southwestern Utah and Nevada [abs.]: Geological Society of America, Abstracts with Programs, v. 11, p. 455.


Lang, B., 1979, Base metals-gold hydrothermal ore deposits of Baia-Mar, Romania: Economic Geology, v. 74, p. 1336.


Lawrence, E. F., 1963, Antimony deposits of Nevada: Nevada Bureau of Mines Bulletin 61, 248 p. (Valuable background information on several gold-bearing epithermal Sb mines and districts. Data led Freeport and FMC into Independence Mountains where they discovered Jerrett Canyon gold deposits.)


Lehrman, N. J., 1987, Geology and geochemistry of the McLaughlin hot-spring precious-metal deposit, California Coast Ranges: Bulk Mineable Precious Metal Deposits of the Western United States, April 6-8, 1987, Program with abstracts, p. 44.


Lodder, W., 1966, Gold-alunite deposits and zonal wallrock alteration near Rodalquilar, southeast Spain: University of Amsterdam, Geological Institute of Mededeel, no. 318, 95 p.


Mann, A. W., 1984, Mobility of gold and silver in lateritic weathering profiles: Some observations from western Australia: Economic Geology, v. 79, p. 38-49.


Nelson, C. E., 1987, Gold deposits in the hot-springs environment: Bulk Mineable Precious Metal Deposits of the Western United States, April 6-8, 1987, Program with abstracts, p. 44.


Nolan, T. B., 1935, The underground geology of the Tonopah mining district, Nevada: Nevada University Bulletin 29, 49 p. (The two Nolan publications provide good detailed descriptions of the ores and their setting based on first-hand observation.)


Sillitoe, R. H., 1985, Ore-related breccias in volcano-plutonic arcs: Economic Geology, v. 80, no. 6, p. 1465-1466.

Sillitoe, R. H., 1987, Gold and silver deposits in porphyry systems [abs.]: Bulk Mineable Precious Metal Deposits of the Western United States; April 6-8, 1987, Program with abstracts, p. 39.


Wang, Y., 1972, Wall rock alteration of late Cenozoic mineral deposits of Taiwan: Mineralogical and physiochemical aspects: Acta Geologica Taiwanica, no. 16, p. 1-29.


Warnaars, F. W., Holmgren D., Carmen, and Barassi F., Sergio, 1985, Porphyry copper and tourmaline breccias at Los Bronces-Rio Blanco, Chile: Economic Geology, v. 80, no. 6, p. 1544-1565.


