Bibliography of the Geology and Mineral Resources of Oregon
(SECOND SUPPLEMENT)

January 1, 1946, to December 31, 1950

Compiled By
Margaret L. Steere
Geologist

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Second Supplement
1946-1950

Compiled By
Margaret L. Steere

Introduction

Bulletin 44 is the second supplement to "Bibliography of the Geology and Mineral Resources of Oregon" compiled in 1936 by Ray C. Treasher and Edwin T. Hodge. The first supplement, compiled by John E. Allen and others, carried the bibliography on through the year 1945, and the present supplement covers the material that was published during the 5-year period from January 1, 1946, through December 31, 1950.

Publications consulted in the compilation of this second supplement are listed herein. Like the other volumes, this one includes also unpublished theses and reports that are available for public inspection.

The format of the subject index has been changed in the hope that a new arrangement would facilitate the finding of the desired items. Rather than dividing the subjects into various categories of geological science, as was done in the first supplement, the subjects have been merely listed in alphabetical order and cross indexed as completely as possible.

Gratitude is extended to all who helped with the preparation of this supplement. It is extended especially to Miss Katherine Hughes and Miss Hazel Quasdorf, of the Oregon State College Library, for source material and many references; to Miss Elizabeth Findly, Mr. Alan Roecker, and Mr. Theodore Affleck, of the University of Oregon Library, for their contributions; and to Mrs. Lillian Owen and Mrs. Loris Killian of this Department for help with editing and typing.

Users of the bibliography are urged to notify the Department of any omissions or errors that come to their attention so that these may be corrected and incorporated accurately in the next supplement.
SOURCE CONSULTED

Agriculture Bulletin
American Antiquity
American Geophysical Union Transactions
American Association of Petroleum Geologists Bulletin
American Ceramic Society Bulletin; Journal
American Geological Institute Reports
American Institute of Mining and Metallurgical Engineers Technical Publications; Transactions
American Journal of Botany
American Journal of Science
American Mineralogist
American Museum of Natural History Bulletin; Novitates
American Philosophical Society Proceedings; Transactions
Annotated Bibliography of Economic Geology
Association of American Geographers Annals
Bibliography of North American Geology
California Academy of Sciences Proceedings
California University Department of Geological Sciences Bulletins; Theses in Geology
California Division of Mines Bulletins; Journal of Mines and Geology; Miscellaneous Publications; Special Reports
Carnegie Institution of Washington Publications; Yearbook
Chemical and Engineering News
Chemical Engineering
Condor
Earth Science Digest
Ecology
Economic Geography
Economic Geology
Engineering and Mining Journal
Engineering Index
Evolution
Gems and Gemology
Geographical Review
Geological Society of America Bulletin; Memoirs; Proceedings; Special Papers
Geological Society of the Oregon Country News Letter
Idaho Bureau of Mines and Geology Mineral Resources Reports; Pamphlets
Industrial Arts Index
International Index to Periodicals
Journal of Geology
Journal of Paleontology
Kazama
Meteoritical Society Contributions
Michigan Academy of Science Papers
Mineralogist
Mines Magazine
Mining and Metallurgical Society of America Bulletin
Mining and Metallurgy
Mining Congress Journal
Mining Engineering
Mining Technology
Mining World
Mining Yearbook
National Academy of Sciences Proceedings
National Geographic Magazine
Natural History
Northwest Science
Oil and Gas Journal
Oregon Academy of Science Proceedings
Oregon Business Review
Oregon Department of Geology and Mineral Industries Bulletins; Maps; Miscellaneous Publications; Ore.-Bin; Short Papers
Oregon Historical Society Quarterly
Oregon State College Engineering Experiment Station Bulletins; Circulars
Oregon State College Studies in Geology; Theses in Geology and Mining
Oregon State System of Higher Education Gondon Lecture Series
Oregon University Theses in Geology
Oregon Voter
Pacific Northwest Industry
Popular Astronomy
Raw Materials Survey Information Circulars; Market Surveys; Resource Reports
Rock Products
San Diego Society of Natural History Transactions
Science, N.S.
Scientific American
Scientific Monthly
Seismological Society of America Bulletin
Sierra Club Bulletin
Soil Science
Stanford University Abstracts of Dissertations
State Geologists' Journal
Trend
U.S. Bureau of Mines Bulletins; Information Circulars; Minerals Yearbooks;
Reports of Investigations; Technical Papers
U.S. Bureau of Reclamation Engineering Monographs; Petrographic Laboratory Reports
U.S. Coast and Geodetic Survey MSA; Serials
U.S. Geological Survey Bulletins; Circulars; Oil and Gas Investigations; Professional Papers; Topographic Quadrangle Sheets; Water Supply Papers; Unpublished Reports
U.S. Geological Survey Conservation Division Reports
U.S. Government Publications Monthly List
U.S. National Museum Bulletin; Proceedings
U.S. Soil Conservation Service Circulars; Technical Publications
Utah University Bulletins
Washington Academy of Science Journal
Washington Division of Mines and Geology Bulletins; Information Circulars;
Reports of Investigations
Washington State College Theses in Geology and Mining
Washington University Engineering Experiment Station Bulletins; Reports;
Technical Notes
Washington University Theses in Geology and Mining
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AGEY, W. W. See: WELLS, R. R., 1.

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BIBLIOGRAPHY

BLOOM, IVAN

BOARDMAN, LEOMA

BOLANDER, LOUIS P., JR.

BRANDS, M. D.

BRISTOL, PAYETTE I.
We can produce high-grade chrome ore: Ore.-Bin, vol. 12, no. 7, p. 44-45, July 1950.

BROGAN, PHIL P.

BROWN, ANNABEL See: BOARDMAN, LEOMA, 2.

BROWN, ROBERT D.

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KELLY, JAMES V.


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KÜCHLER, A. W.


LADOO, RAYMOND B.

BIBLIOGRAPHY

LAWRENCE, DONALD B.

1. The technique of dating recent prehistoric glacial fluctuations from tree data: 

2. Mt. Hood's latest eruption and glacier advances: Mazama, vol. 30, no. 13, p. 22-29, 
   Illus., Dec. 1948.

LAWSON, HERBERT W.

Central Oregon localities, the Bear Creek deposits: Mineralogist, vol. 17, no. 5, 

LEVORSSEN, ARVILLE I. See: HOWELL, JESSE V.

LEWIS, FRANK E.

Horse Heaven mercury mine and district, Horse Heaven Oregon: Mines Mag., vol. 36, 

LEWIS, RICHARD Q.

The geology of the southern Coburg Hills including the Springfield-Goshen area: Oreg. 

LIBBEY, FAY W. See also: DOLE, HOLLIS W., J.


2. (and Lowry, Wallace D., and Mason, Ralph S.) Ferruginous bauxite deposits in north-
   western Oregon: Econ. Geology, vol. 41, no. 3, p. 246-265, Illus. incl. index 
   map, May 1946.


4. (and Lowry, Wallace D., and Mason, Ralph S.) Nickel-bearing laterite, Red Flat, 


   p. 151-152, 1950.

8. Chemical resources of the western states; Oregon: Chem. and Eng. News, vol. 27, 

9. Developments in mining in the Pacific Northwest during the past century (abstract): 


-19-
BIBLIOGRAPHY

LIBBET, PAY W. - Continued


LI, K. C.


LORAIN, S. H.


LOWMAN, S. W. See: ROLSHAUSEN, F. W.

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BIBLIOGRAPHY

OKESON, CLIFFORD J. See: MIELENZ, R. C., 4.

OREGON HISTORICAL SOCIETY


OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES


12. Two Multnomah County brick works: Ore.-Bin, vol. 10, no. 11, p. 79-81, Nov. 1948.


BIBLIOGRAPHY

OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES - Continued


PACKARD, EARL L. See also: HANSEN, HENRY P., 7.


PANGBORN, MARK W., JR.


PASK, JOSEPH A.


PEGORA, WILLIAM T.


PHILLIPS, KENNETH M.


PIPER, ARTHUR M.

BIBLIOGRAPHY

PIPER, ARTHUR M. - Continued


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RAU, WELDON W.


RAVITZ, SOL F.


REED, GLENN C.


REED, M. F.


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RICHARDSON, HIBBARD E.


ROBERTS, ALBERT E.

BIBLIOGRAPHY

ROBINSON, JOHN W.

ROLSHAUSEN, P. W.

RUFF, LLOYD L.

SAMBORN, ETHEL I.

SARGENT, S. E.

SCHACK, C. H.

SCHMIDT, VERNON E. See also: ALLEN, VICTOR T., 1.

SCHWINK, H. BRUCE

SCHOFF, JAMES W.

SEARS, PAUL N.
BIBLIOGRAPHY

SELLARDS, ELIAS H.

Early man in America; index to localities and selected bibliography, 1940-1945:

SHOTWELL, J. ARNOLD See also: SARGENT, S. E.

New locality of Desmostylus hesperus Marsh, from the Astoria Miocene (abstract):

SCHROCK, ROBERT R.


SCHULTZ, C. BERTRAND

(and Falkenbach, Charles H.) Promerycohoerinae, a subfamily of oreodonts:

SIMON, LEO F.


SKINNER, KENNETH O. See also: WILSON, NEWITT


SMITH, HAMPTON


SMITH, WARREN D.


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NAVELEY, PARKE D., JR. See also: VOKES, H. E., 1, 2.

SPEIL, SIDNEY

STALEY, WILLIAM W.

STAPLES, LLOYD W.
BIBLIOGRAPHY

STEWART, KATHERINE C. See: CUSHMAN, JOSEPH A., 1; STEWART, RUSCOE E., 2.

STEWART, RUSCOE E. See also: CUSHMAN, JOSEPH A., 1.


STEWART, T. D.


STOCK, CHESTER


SUMMER, DONALD See: CALDWELL, WILLIAM E.

TABER, JOHN W.


TAUSBECK, WILLIAM H.


TAYLOR, C. W. See: WILFLY, R. D.

THAYER, THOMAS P.


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BIBLIOGRAPHY

THOM, EMMA M.


THOMAS, C. E.


THOMPSON, THOMAS F.


TOENIES, ALBERT L.


TORGERSON, E. F.


TRAUGER, FREDERICK D.


TWENHOFEL, WILLIAM H.


ULRICH, FRANKLIN P.

BIBLIOGRAPHY

UPSON, JOSEPH E.


U.S. BUREAU OF MINES


U.S. BUREAU OF RECLAMATION


U.S. COAST AND GEODETIC SURVEY


U.S. GEOLOGICAL SURVEY

   Abbott Butte 1947
   Dutchman Butte 1948
   Eagle Rock 1948
   Eugene (revised) 1949
   Galice 1948
   Ochoe Reservoir 1950
   Tiller 1946
   Toledo 1946
   Yaquina (1942 reprint) 1946


VANCE, ALBERT D.

BIBLIOGRAPHY

VANCE, ALBERT D. - Continued


VOKEZ, HAROLD E. See also: SNAVELY, PARKE D., JR., 3.


WAGNER, NORMAN S.


WAGNER, WARREN A.


WALLACE, ROBERT E.


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BIBLIOGRAPHY

WARREN, WALTER C.

WATERS, AARON C.

WELLER, J. MARVIN

WELLS, FRANCIS G.

WELLS, R. R.,

WHITE, DAVID J.

WILFLEET, R. D.

WILKINSON, WILLIAM D.

WILLIAMS, HOWEL
BIBLIOGRAPHY

WILSON, HEWITT


WOLFE, HAROLD D. See: WHITE, D. J., 2.

WRAY, CHARLES F.

The geology of the northwest quarter of the Ironside Mountain quadrangle, Grant and Baker counties, Oregon: Univ. of Rochester Master's Thesis, 39 p., illus. incl. index and geol. maps, 1946.

YOUNG, WILLIAM H.


YOUNGBERG, ELTON A.


ZAPPPE, CARL


ANONYMOUS

1. Annual reviews of Oregon mining: Mining World, vol. 8, no. 4, p. 60-61, April 1946; vol. 9, no. 7, p. 85, June 1947; vol. 10, no. 4, p. 75-76, April 1948; vol. 11, no. 5, p. 91, 93, April 1949; vol. 12, no. 6, p. 61-62, April 1950.

2. Cloud agates found at Lincoln County, Oregon, beaches: Mineralogist, vol. 14, no. 4, p. 194, Apr. 1946.


4. $1,000 agate found: Mineralogist, vol. 14, no. 11, p. 569, Nov. 1946.


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Oil and gas; Stewart, R. E., 3
Oregon geology: Allen, J. E., 7; Oreg. Hist. Soc.; Pangborn; Thom 1, 2
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