THE ORE.-BIN

Vol. XI

1949

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January 1949 Portland, Oregon

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
Head Office: 702 Woodlark Building, Portland 5, Oregon

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Regards
Fay W. Libbey

TEN YEARS OF THE ORE.-BIN

The first issue of the Ore.-Bin was dated January 10, 1939, a year and a half after the Department had been established. The purpose of the new publication was "to advise the public of the work of the Department, and of new and interesting developments in mining, metallurgy, and geology." The Ore.-Bin evolved from the press bulletins which had been issued monthly from November 1937 to December 1938. It is believed that Mr. R.C.Treasher, formerly department geologist, was mainly responsible for the name and cover design.

An article on the sink and float process, the perfection of which had just been announced, a graph and table showing Oregon's mineral production, and a short story on fissure eruptions near Bend were contained in the eight pages of vol.1, no.1.

At first copies were distributed free of charge. A rapidly growing circulation list necessitated a change in policy and after July 1940 a charge of 25¢ a year was made to help cover publication costs.

After ten years of uninterrupted publication, the growing circle of Ore.-Bin subscribers now includes those living in forty-two of the states, Hawaii, Alaska, Canada, South America, England, Netherlands, Japan, Africa, France, and Australia. Proof that the Ore.-Bin is read widely lies in the fact that many of its articles have been reprinted in technical magazines throughout the country. A mining company once requested extra copies of an issue containing an article on sampling to send to its exploration crew in New Caledonia. A quotation from the Ore.-Bin is contained in a book recently published and having wide circulation among people who see the need of maintaining a strong mineral industry in the United States.

Demand for back numbers of the Ore.-Bin is heavy. Despite the fact that seventy-five extra copies are printed each month, many of the issues are out of print. Circulation is now 807 copies.

All of the printing of the Ore.-Bin is done on a small multigraph machine in the Department except a few half-tone illustrations and photographs. These are sent out to be run by commercial printers. Illustrations are prepared for printing in several ways. Line drawings and maps are usually photographed and printed on zinc plates. Some line drawings are made directly on an aluminum plate with special pencils or ink, or traced with the aid of lithographic carbon paper.

In general the material appearing in the pages of the Ore.-Bin is written by the Department staff. A few articles are abstracted from other publications and some are written by persons outside of the Department who are well known in mining, geological, or metallurgical fields.

Probably there are few publications, even those of a similar nature, that are prepared under the same handicaps as the Ore.-Bin. There is rarely any surplus material to fall back upon. Usually the material which appears is prepared under pressure, as the Ore.-Bin is a side line of the principal activities of the Department. However, the editor believes that even if the Ore.-Bin is a bit rough at times, it serves its principal purpose.

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DEPARTMENT CHRONOLOGY
1937-1948

The Ore.-Bin is ten years old and at this milestone it seems appropriate for us to review the work of the Department since it was established in 1937. Much has been accomplished. The Department's early studies of Oregon's strategic minerals were especially timely and provided a shortcut for many of the Government's war-mineral investigations. The Department's discovery and exploration of high-iron bauxite is an accomplishment important to the State and to the Nation. Besides strictly economic studies, the Department has done a great deal of basic geology which has been freely used by geologists, engineers, and other investigators. But above all, the Department is especially glad that it has been able to give material assistance to prospectors, small mine operators, and many other persons who really needed council and advice and could obtain help nowhere else. Incidentally, during the ten-year interval, value of Oregon's mineral production has doubled in spite of the depressed condition of gold mining since World War II. The following chronology contains important events in the Department's life since its creation.

Editor

1937

The State Department of Geology and Mineral Industries was created by the 1937 Legislature in an act "defining its objectives, powers and duties; authorizing cooperation with Federal or other agencies; authorizing the governor to appoint a governing board and defining its powers and duties; authorizing the appointment of a director and defining his powers and duties and fixing his compensation; granting department authority to make grubstake loans to prospectors; granting department authority to accept funds from the Federal government; providing for the disposition of money received by such department; repealing chapter I, title LIII, Oregon Code 1935 Supplement, relating to state mining board; providing a savings clause; making an appropriation, and declaring an emergency."

The first Governing Board was composed of Senator W. H. Strayer, E. B. MacNaughton, and Albert Burch. They held organizational meetings after the act was signed, and elected Senator Strayer as Chairman of the Board. On June 8, Earl K. Nixon was selected as Director. Offices of the Department were opened in the Lewis Building at the corner of Fourth and Oak streets, Portland.

A great deal of the early administrative work of the Department was concerned with grubstake loans which had been provided for in the law establishing the Department. Loans were for $50.00 each to qualified prospectors. This grubstake section of the law became inoperative in 1939 when no appropriation for loans was made by the Legislature.

Because of the controversy between miners and fishermen over alleged detrimental effects of mining mud on fish life in the Rogue River, Dr. Henry B. Ward, prominent biologist of Chicago, was engaged and began to make a study of the subject.

Field offices including assay laboratories were established at Baker and Grants Pass.

Reconnaissance studies of mining operations in the Coos Bay coal field and manganese deposits in Jackson and Josephine counties were made.

A survey of refractory clay deposits by Ray C. Treasher and Hewitt Wilson in western Oregon was authorized and started.

Mining regulations of the State were assembled and issued as Bulletin No. 1.

1938

Dr. Ward's report on effects of mining mud on fish and fish life was published. It included a study of the effects of muddy water on young trout and fingerling salmon made by Dr. L. E. Griffin of Reed College. The report by Dr. Ward proved that mining mud was no different in its effect on fish and fish life than muddy water caused by floods, and that the inescapable fact is that the deterioration of fishing in the Rogue River is caused by the inroads of population and industry.

Bulletins on quicksilver in Oregon by C. N. Schuette and on refractory clay deposits by Hewitt Wilson and Ray C. Treasher were issued. These two bulletins became the basis for field studies by many investigators and were of great assistance in subsequent strategic-mineral studies.

Initial geological studies as a part of the State geological survey were made in the Wallowa Mountains by Department geologists and student assistants under the supervision of Dr. Warren D. Smith of the University of Oregon. Especial attention was directed at occurrence of strategic minerals, especially tungsten and molybdenum. This study was the basis of a bulletin and geologic map issued in 1941.

A bulletin on "Chromite Deposits in Oregon" by John Eliot Allen which contained chapters on chromite mining by H. F. Byram and on geophysics applied to chromite prospecting by F. W. Lee of the U.S. Bureau of Mines was published. This bulletin was used widely in studies of chromite by private and Government engineers during World War II.

A study of the oil and gas possibilities of the Clarno Basin was made and a short report issued as Bulletin No. 5.

A field canvass of Oregon nonmetallics producers was made by the Department to obtain value of production and to establish a list of producers.

1939

Oregon coal deposits were sampled by H. F. Yancey and M. R. Geer, of the Seattle station of the U.S. Bureau of Mines, and J. E. Morrison, Department mining engineer, under a cooperative arrangement. Results were published in 1940 as Department Bulletin No. 20.

The State geological survey under W. D. Wilkinson mapped the Round Mountain quadrangle in the Ochoco area. The geologic quadrangle map was issued in 1940.

At the request of Governor Sprague a study of the economic effects of dredging of farmland was made and a bulletin on the subject was published.

1940

The Department established a mining school during February at Burns and Bend in cooperation with the State Board of Vocational Education. J. E. Allen and L. L. Motz of the Baker office conducted the classes.

The Portland office was moved from the Lewis Building to the Woodlark Building.

Exploration work was begun by the Department on the chromite sands which occur in ancient elevated terraces of the southern Oregon coast, mainly between Bandon and Coos Bay. This project was carried out in cooperation with the U.S. Geological Survey and Oregon State College. A part of the funds was provided under a WPA grant negotiated by the Department. Sampling was done both with a standard drill and with an Empire core drill. This work formed the basis of subsequent exploration by several private companies who, after war was declared, were urged by Government agencies to set up plants for the production of chromite from these sands as a war measure. Planning by the Department under Earl K. Nixon in early chromite investigations was forward-looking and provided a great deal of valuable basic information needed by war agencies.

Because of war conditions in Europe, Oregon's mercury production more than trebled compared to 1939. Production in 1940 was 9,043 flasks valued at $1,599,436.

Value of nonmetallic mineral production was $5,750,000 according to a canvass made for the Department by C. P. Holdredge, consulting geologist

1941

A bill was passed by the Legislature authorizing the Department to purchase a spectrograph and establish a spectrographic laboratory.

A magnetometer survey was made in the Round Mountain area of the Ochoco Mountains by E. L. Stephenson of the U.S. Geological Survey in cooperation with the Department. This survey outlined certain fault structures favorable for occurrence of quicksilver ore bodies.

An exhaustive investigation of the reported occurrence of tin in the Juniper Ridge area west of Burns was made by the Department under the general charge of Dr. H. C. Harrison, Department spectroscopist. The evidence was conclusive that only microscopic amounts of tin occurred in this area.

In December the Governing Board acted to place activities of the Department on a war basis and gave directions that one hundred percent of these activities would be devoted to war-mineral work. State geological survey mapping was suspended.

A survey of zinc resources of the State was made designed to encourage establishment of an electrolytic zinc smelter in the lower Columbia River area.

1942

Mr. Earl K. Nixon was appointed Technical Consultant of the War Production Board. He was also appointed by Governor Sprague as Oregon Emergency Coordinator of Mines. A hearing on methods to encourage chrome production was held by the War Production Board at Grants Pass, and Mr. Nixon advocated establishing ore purchasing depots for the purchase by the Government of small lots of strategic minerals. These depots were established at Coquille, Grants Pass, and Seneca and were of great assistance in encouraging production of chromite.

The geologic map of the Portland area, together with a short paper containing the text on the geology of the area, both prepared by Ray C. Treasher, was published by the Department. This report has been in wide demand ever since.

Magnetometer work by E. L. Stephenson of the U.S. Geological Survey in cooperation with the Department was done on the chromite sand deposits in Coos and Curry counties.

A cooperative agreement among U. S. Department of Agriculture, Oregon Agricultural Experiment Station, and the Department initiated a project study of filbert soils. The Department's activities in this study consisted of spectrographic analyses of soil samples.

The Department gave assistance to Freeport Sulphur Company in starting an extensive exploration project on the nickel deposit located on Nickel Mountain, Douglas County.

Field laboratories at Baker and Grants Pass were closed and equipment moved to a central laboratory in the Portland office of the Department. This measure was taken by the Board because of shortage of assayers caused by the war.

Department geologists made a study of a vanadium-bearing black sand deposit at Horse Sign Butte, Curry County. The deposit was later explored by the U.S. Bureau of Mines.

All Oregon gold mining operations were closed down in October by the Government's ill-advised War Production Board Order L-208.

1943

The Department started an investigation of the geology and coal deposits of the Coos Bay coal field in cooperation with Coos County. This study lasted a year and resulted in Department Bulletin No. 27, "Geology and Coal Resources of the Coos Bay Quadrangle, Oregon" by John Eliot Allen and Ewart M. Baldwin, published in 1944.

Geologists of the Department made a study of nitrate occurrences in the Owyhee area and of optical calcite deposits, both in Malheur County. Results were negative. Although some clear calcite was found, it was hardly clear enough for optical purposes.

The first technical article to appear in print describing the Humphreys Spiral which was used for concentrating chromite from chromite sands located at the Lagoons north of Bandon was published in the October Ore.-Bin.

The Department began a study of the silica sand deposits located at Eugene. The study included a geological reconnaissance, sampling of the sands, behavior of the sands under working conditions in a Portland steel foundry, and securing experimental results under working conditions from the Naval Research Laboratory in Washington, D.C. Assistance was given the owners of the deposit in obtaining Government help in building a washing plant and in publicizing the qualities of the sand which were proved to be superior to those of other available sands for steel foundry use.

An economic study of availability and marketing of coal in the Portland area was made by the Department to assist the Government defense housing projects which at times had difficulty in obtaining fuel.

1944

The Department discovered extensive ferruginous bauxite deposits first in Washington County, later in Columbia County and in some other counties of northwestern Oregon. Auger-hole drilling was done in Washington County to explore some of the deposits, and reconnaissance work was done in the other counties. A report of the work in the form of a short paper was published. Alcoa Mining Company immediately showed an interest and started a geological study of the areas.

Earl K. Nixon resigned as director to accept a position as manager of western exploration for Freeport Sulphur Company effective May 1.

F. W. Libbey was appointed Director of the Department in July.

A long-range project designed to obtain information on the economic geology of the saline lake deposits of Lake County was started. Playas of Summer and Alkali lakes were sampled.

1945

A bulletin on ferruginous bauxite deposits of northwestern Oregon describing sampling results and studies of reconnaissance geology of the deposits was published by the Department. Alcoa Mining Company started an extensive program of exploration. Seven churn drills were put to work and a laboratory was established at Hillsboro.

A few Oregon gold dredges resumed operations when the Government's ban on gold mining was lifted on July 1. No lode mines reopened, mainly because of the high cost of repair work caused by the shut-down.

1946

The Department made a brief study of lightweight aggregates used in making building blocks, and published a short paper on the subject.

A study of nickel-bearing laterites of southwestern Oregon was started by a geological reconnaissance and auger-hole drilling at Red Flat in Curry County. Other laterite areas were to be studied in subsequent field seasons.

Sampling and study of the brines of Summer, Abert, and Alkali lakes were continued by Dr. I. S. Allison of Oregon State College and R. S. Mason of the Department. Results of the study were published as a short paper in 1947.

Senator W. H. Strayer, Chairman of the Board, died October 18, mourned by his associates in the Legislature and a host of other friends. Former member E. B. MacNaughton was appointed to the vacancy on the board.

Mapping of the St. Helens quadrangle, begun before World War II, was completed and a bulletin together with geologic map was published. Authors were W. D. Wilkinson of Oregon State College and W. D. Lowry and E. M. Baldwin of the Department staff.

1947

Field work on nickel-bearing laterites of southwestern Oregon was continued. Studies were made at Red Flat in Curry County, Nickel Mountain in Douglas County, and Woodcock Mountain in Josephine County.

In conjunction with meetings of the Legislative Interim Committee, the Oregon Mining Association, and the Oregon Section of the American Institute of Mining and Metallurgical Engineers, the Governing Board held a meeting on May 23 at Grants Pass. The Legislative Interim Committee held a hearing to gather evidence on alleged damage to farmland in southern Oregon by gold dredging. Both Mr. Niel Allen and Mr. H. E. Hendryx, as members of the Department Governing Board, spoke at this committee hearing.

A short paper on perlite in Oregon was published. This report gave results of a field study by John Eliot Allen, and has been widely used because of the great interest in this new building material.

As a result of a canvass by the Department staff, value of Oregon's nonmetallic mineral production in 1946 was estimated to be $11,700,000. This compares with $7,550,000 in 1941, the highest prewar year, and $15,300,000 in 1947.

The first volume of Bulletin No. 36 was published. This bulletin, which is designed in this and succeeding volumes to assist in setting up an authentic geologic column for the State, contains descriptions of foraminifera from certain type sections of western Oregon and Washington. Co-authors are J. A. Cushman of the U.S. Geological Survey, R. E. Stewart of the Department, and K. C. Stewart.

The Department cooperated in hearings of the Legislative Mining Interim Committee held in Baker and Sumpter at which evidence was gathered by the committee on dredging conditions in eastern Oregon.

A Department field party drilled auger holes in an area north of Vale, Malheur County, and sampled sodium chloride brine encountered in these holes. Results of the sampling were published in the Ore.-Bin for September.

A geological reconnaissance of a strip area extending from the Almeda mine near Galice, Josephine County, northeast to the Silver Peak mine, Douglas County, was made by H. M. Dole and E. M. Baldwin of the Department staff. A description of the reconnaissance with a geologic map was given in the December Ore.-Bin.

The Department lost three geologists because of higher salaries paid at colleges and in private industry.

1948

A ground-water reconnaissance was made by the Department in Umatilla and Morrow counties at the request of the county court of Umatilla County. This study resulted in a bulletin containing more than 200 water-well logs; the report will be published early in 1949.

The first technical article to appear in print describing the new throw-away rock bit, developed and patented by the Throwaway Bit Corporation, Portland, Oregon, was published in the April issue of the Ore.-Bin.

The Department entered into a cooperative arrangement with the Oregon Ceramic Studio under which arrangement a competent ceramist was employed half time beginning July 1.

Investigation of nickel-bearing laterite was continued by mapping, drilling, and sampling of the deposit on Woodcock Mountain in Josephine County.

High-silica bauxite was found in Clackamas County, and the Department did a small amount of drilling and sampling of an area near Springwater.

The department cooperated with the Oregon Section of the American Institute of Mining and Metallurgical Engineers and the Raw Materials Survey in promoting an industrial minerals conference which was held at Portland on May 8.

A reconnaissance of the Dutchman Butte quadrangle in Douglas County was made by Department geologists preparatory to mapping in 1949.

Legislation, sponsored by Congressman Ellsworth and Senator Cordon, designed to reopen Oregon and California Railroad revested lands and Coos Bay Wagon Road reconveyed lands to mineral entry and location under the United States mining laws was passed by Congress. This legislation contains a provision requiring registration of location and assessment papers with the District U.S. Land Office which provision is something entirely new in the general mining laws, and appears to be another obstacle to the encouragement of prospecting.

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LIME FIRM LAND SOLD

The Horsehead Lime Company properties at Williams were sold at sheriff's execution sale Friday to W. H. Leverette, former president, who last month obtained judgment against the company for sums totaling over $230,000. A bid of $95,000 was placed by G. W. Kellington of Medford, attorney for Leverette.

The properties, including some of the best quality limestone and marble in Southern Oregon, were operated by another company until the formation of the Horsehead Lime company by Leverette and his associates, Vernon Vaughn, W. H. Holloway and W. E. Coleman. During the period between 1933 and 1943, the operation employed up to 50 men full time.

Development of the plant by the Horsehead company included a substantial building program which would allow employment of nearly 100 men but the plant never went into operation after the buildings were completed.

Sales of equipment and personal property assets of the company were conducted previously and all bought by Leverette prior to purchase of the real property holdings Friday.

Kellington, of the firm of Roberts, Branchfield and Kellington, said he was unable to state what plans his client had for the operation of the lime plant.

From the Grants Pass Daily Courier, January 4, 1949.

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SCHOOL MINERAL COLLECTIONS

A visual educational program designed to provide information on Oregon rocks and minerals has been started by the State Department of Geology and Mineral Industries. For several years past, members of the Department staff have given frequent talks on minerals and rocks to students, teachers, and collectors. Now this work has been expanded to include distribution and circulation of small representative mineral collections. These come under three classifications. They are similar as far as kind and quality of container is concerned; the difference lies in size and number of specimens furnished.

In order to be as economical as possible and still have a reasonably substantial container, the specimens are put in stiff cardboard boxes 1 inch deep containing 1/8-inch thick wood partitions, egg crate style. The cardboard boxes, covers, and partitions were made in quantity on contract at a price of 11½¢ each for the 6 by 6 by 1 inches, and 17¢ for the 9 by 10 by 1 inches.

The boxes are furnished in two sizes, 6 by 6 inches and 9 by 10 inches. The smaller size has 16 divisions. The larger-sized box has 15 divisions, and two of these make up a set of 30 minerals and rocks. The first size is sold to students for 40 cents each. The other, planned for school teachers, is sold for $1.00. A third set of 60 specimens is packed in four 9 by 10-inch boxes. This set will be circulated among schools throughout the State with the schools paying the transportation cost. A pamphlet giving brief descriptions of the specimens accompany each set.

In the small student sets the sixteen specimens are:

diatomite	obsidian	asbestos	cinnabar
coal	basalt	bauxite	quartz (or gold ore)
limestone	schist	chalcopyrite	stibnite
pumice	galena	chromite	garnierite

The 30-specimen size sets, in addition to those of the first set consist of:

shale	volcanic tuff	molybdenite
sandstone (fossiliferous)	granite	barite
conglomerate	peridotite	talc
volcanic cinders	quartzite	feldspar
	magnetite	amphibole

The largest set besides specimens listed above includes:

travertine	rhyolite	saxonite	gneiss
fossiliferous sandstone or shale	andesite	gabbro	marble
	granite	diabase	serpentine
gypsum	diorite	slate	argillite
perlitic obsidian			

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PHILIP H. HOLDSWORTH

Mr. P. H. Holdsworth, mining engineer, died at his home in Seattle November 21, 1948. Mr. Holdsworth was prominent in Oregon mining for a number of years, first as superintendent of the Almeda mine and smelter near Galice early in the present century, and in the 30's as a leaser at the Almeda. He was greatly interested in geophysical work and made several investigations both in Oregon and Washington employing resistivity methods.

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KAISER GEOLOGIST TRANSFERRED

Louis C. Ball, formerly geologist for the Permanente Metals Corporation has been transferred to another Henry J. Kaiser Company subsidiary, the Standard Gypsum Company of California, with headquarters in the Kaiser Building, Oakland, California.

Mr. Ball has made several geological investigations in Oregon for the Permanente Company since termination of active service in the Navy in 1946.

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