STATE OF OREGON
DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES

PORTLAND, OREGON

THE ORE.-BIN

VOL. 10 NO. 11 PORTLAND, OREGON November 1948

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

State Governing Board

Niel R. Allen, Chairman, Grants Pass
E. B. MacNaughton Portland
H. E. Hendryx Baker
F. W. Libbey, Director

Staff

Hollis M. Dole Geologist
L. L. Hoagland Assayer & Chemist
C. W. F. Jacobs Ceramist
Ralph S. Mason Mining Engineer
T. C. Matthews Spectroscopist
M. L. Steere Geologist
R. E. Stewart Geologist
D. J. White Geologist

Field Offices

2033 First Street, Baker
N. S. Wagner, Field Geologist

714 East "H" Street, Grants Pass
Harold D. Wolfe, Field Geologist

****

TWO MULTNOMAH COUNTY BRICK WORKS

Columbia Brick Works (face and common brick, tile)

Operator: Mr. Franze Olbrich, president, Gresham.

Location: The plant is located on the Portland Electric Power Company Railroad, 1½ miles southeast of Gresham at Hogan station, in the SW¼ sec. 14, T. 1 S., R. 3 E., Multnomah County, just north of Johnson Creek at about 350 feet in elevation. The pit lies 2000 feet to the east, where it is excavated in the 400-ft. terrace to a depth of about 30 feet.

Area and development: 50 acres, of which 20 acres has been mined and 20 acres of clay ground remains. Recent work has been done on a lower terrace at plant level, with about 1 acre stripped. The clay here is reportedly of lower grade than the upper level. Thirty men are employed.

History and production: The Columbia Brick Works was founded in 1905, incorporated in 1909, and remained under the same ownership until August 1948. The plant originally consisted of scove kilns; at present there is a bank of 22 Hoffmann semi-continuous kilns. Production of tile was almost discontinued during the war years; later the following quantities of brick were produced:

	Brick
1945	3,800,000
1946	3,500,000

Geology: The pit is cut in the 400-foot or highest terrace stage of Pleistocene alluviation. The present pit face consists of 1 to 2 feet of soil, 10 feet of silty yellow clay, 10 feet of gray clay, and 20 feet of yellow sandy clay. The various grades of clay at the face are mixed in mining. The clay is of transported origin. It was probably deposited in a stagnant backwater which had been ponded during the ace-age flooding and valley-filling stage of the Columbia drainage. Bedrock across Johnson Creek to the southwest consists of Boring lava,* and the terrace levels to the southeast at higher elevations consist of glacio-fluvial outwash deposits from the Sandy River drainage.

Equipment and processing: The clay is dug with a ¼-yard dipper electric shovel, which dumps into a 4-yard bottom-dump narrow gauge car, hauled by a small gasoline locomotive over 1500 feet of track to the dry storage shed. Shovel and car are operated by one man, who makes about 30 trips a day, delivering an average of 120 cubic yards of clay.

*Treasher, R. C., Geologic history of the Portland (Oregon) area: Oregon Dept. Geology and Min. Industries Short Paper 7, 1942.

The dry storage shed was completed in 1946, and is 80 by 125 feet in size. The pit car pumps directly into bins from an overhead trestle. A scoopmobile and bulldozer transfer stored clay into bins.

A 300-foot conveyor belt transports the raw clay to the main plant, where it passes through rolls and pug mill driven by a 150-hp. electric motor. The semi-automatic, rotary wire brick-cutter delivers the brick onto a loading belt. Green brick are stacked on steel drying cars, which are then placed in a tunnel dry shed 93 feet long containing 18 tracks, and heated by hog fuel firing together with waste heat from the kilns.

The kilns are the coal-fired, continuous Hoffman type. There are 22 chambers 10 by 25 feet in size, arranged in a single row about 270 feet long. They are fired progressively by coal fed through openings in the top of the chambers. The heat from the chambers being fired is carried into the next kilns to perform the preliminary drying and heating. Wyoming coal is used. Two blowers supply sufficient draft. Each chamber contains 24,000 brick, and there are about 9 kilns fired per week, giving an average monthly production of about 800,000 brick. The long storage shed parallels the railroad track, and is supplied with two sunken roadways for truck loading.

Fired brick are crushed and sacked for "Mortar-Mix." There are a number of car sheds, a change room, oil storage, tool, and smithy sheds, and a small office building.

Sylvan Brick Company (face brick)

Operators: Mr. H. R. Kreitzer, president; Mr. Charles E. Jensen, vice-president and general manager, Sylvan.

Location: Just east of Sylvan and north of State Highway 8 (Canyon Road) on the west boundary of Portland, in the center of the S½ sec. 6, T. 1 S., R. 1 E., at an elevation of about 750 feet.

Area and development: 13 acres. The clay pit has been mined back from the plant a distance of over 100 yards, and now has a face at least 50 feet high and 800 feet long. Thirty-six men are employed.

History and record of production: The clay pit at this locality was first opened up by Randles and Kinsey in 1893. It has been known by many names, among them "Standard Brick and Tile Company." It was taken over in 1933 by the Columbia Brick Works, and in August 1948 became the Sylvan Brick Works. Production during the war years has been restricted to face brick, although the plant is equipped to turn out a large variety of tile. Production since 1945 is given as follows:

	Brick
1945	4,500,000
1946	7,000,000
1947	7,000,000

Geology: The top of the clay lies at about 50 feet above the plant. A well drilled near the plant to a depth of 187 feet was still in clay, whereas basalt outcrops in the walls of the canyon below the plant and over the ridge to the west. The elevation is higher than most known deposits of transported clay in the Portland area. Several isolated, irregularly shaped pebbles of basalt and three or four water-worn pebbles of exotic rocks were found on the surface in the pit; they are reported to have been found in place in the clay. No lenses of pebbles or sandy material were seen or have been reported. At the east end of the pit the clay has a definite vertical structure caused by minute vertical holes, a typical loessal structure which is interpreted to have been caused by grass which was buried by the material. The origin of the thick clay section at Sylvan and of the clays and silts lying upon a weathered surface of Columbia River basalts in the Portland Hills and farther north has been a subject of discussion since it was first described.[1] Diller believed that even the

[1] Diller, J. S., A geological reconnaissance in northwestern Oregon: U.S. Geol. Survey 17th Ann. Rept., pt. 1, p. 485, 1896.

deposits as high as 660 feet in elevation were "evidently laid down in water." Darton[2] described it as a loess; and Treasher[3] states that it is in part water and in part wind laid. Libbey, Lowry, and Mason[4] believe that the presence of quartzite pebbles in the clay at Sylvan is conclusive evidence that it was water laid.

Equipment and processes: The clay is excavated with a bulldozer which moves it into a dry storage shed 100 by 300 feet in size holding several thousand yards. A belt conveyor runs beneath the storage shed, and the raw clay is fed to it by the bulldozer and by hand. It is lifted and dropped through a disintegrator and an 18-inch roll. From there it is carried by a short belt to an American pug mill and auger machine. Power is supplied by a 150-hp. electric motor. A dry pan crushes dried clay and green for a dry clay source which is carried by bucket elevator to a bin above the pug mill.

The auger machine has a capacity of 40,000 brick per day; the brick pass through a semi-automatic wire cutter. Brick are stacked on steel cars, and enter a 2-story tunnel drier by way of narrow gauge track and elevator. They remain in the drier about 3 days. The drying house contains 15 tracks, and is 100 feet long. It is heated by warm air from the cooling kilns, forced into the kilns by 2 small portable electric blowers and into the drier by 2 larger electric blowers.

From the drier house the brick is loaded from both sides into a double row of down-draft kilns, consisting of 11 units (5 on each side and 1 at the end) each unit being 11 by 40 feet in size and 12 feet high, with a capacity of 25,000 brick. The dimensions of the row of kilns are 40 by 230 feet. They are individually fired through 3 ports at each end of each kiln by six electric motor-driven "Enterprise" crude oil burners. There are two electric driven oil pumps which supply oil from the large storage tank, and maintain a closed circuit movement of the oil while the burners are not in operation. About 35 barrels of oil ($1.52 to $1.88 per barrel) are required to fire each kiln, and almost every day one kiln is finished firing (25 kilns during November 1946). The periodic kilns operate on a 12-day cycle as follows:

Stacking and unstacking	3 days
Drying and heating	2 days
Firing	2 days
Cooling	4 days
Final cooling with blower	1 day

The heat from the down draft kilns is carried from the duct beneath the kilns into and up through the next kiln where the brick are given preliminary water-smoking, drying, and heating, and is then pulled through a duct by the exhaust fan and stack. Another duct parallel and below this exhaust duct carries the heat from the cooling kilns to the drier house, thus transferring and using much of the waste heat. A round down-draft or beehive kiln 32 feet in diameter is used as an auxiliary for special work.

Brick from the kilns are stacked on pallets which are loaded directly upon trucks by means of 3-wheeled fork-trucks. There is a large amount of storage space for finished bricks. Other buildings contain a lunch room, small office, and show room, a wash room, and a machine shop.

---

[2]Darton, N. H., Structural materials in parts of Oregon and Washington: U.S. Geol. Survey Bull. 387, p. 11, 1909.

[3]Treasher, R. C., op. cit., p. 14.

[4]Libbey, Lowry, and Mason, Ferruginous bauxite deposits in northwestern Oregon: Oregon Dept. Geology and Min. Industries Bull 29, p. 10, 1945.

****

BIENNIAL REPORT

The sixth Biennial Report of the State Department of Geology and Mineral Industries covering the period from July 1, 1946, to June 30, 1948, has just been released by the Governing Board of the Department. This report, issued as Bulletin No. 38, contains more than just a description of the activities of the Department. Included also are a review of the State's mineral industries; lists of active mines and prospects, sand and gravel producers, brick and tile producers; and index maps showing topographic and geologic map coverage of the State. The report may be obtained free of charge at the office of the Department, 702 Woodlark Building, Portland, Oregon, or the field offices at Baker and Grants Pass.

****

OREGON STEEL CHANGES HANDS

Gilmore Steel & Supply Co., San Francisco, has purchased the Oregon Steel Mills, Portland, according to A. T. Thies, vice-president and manager for the Gilmore organization, and new manager for the Portland plant.

Arthur Mears, Oregon president, will remain as consultant, Mr. Thies stated, and the newly acquired mill will continue under the name of Oregon Steel Mills without changes in operating policy.

Gilmore now operates a fabricating and distribution plant at Swan Island, and the new plant will serve to augment Gilmore operations on the West Coast. Oregon Steel Co. rolls bars, angles and light structurals, with annual capacity of 60,000 tons of ingots from two electric furnaces. The plant was built in 1942 by the Schnitzer interests and taken over by the Mears and Hall control a year later. Portland is a favorable point for the production of steel scrap and warehouse distribution throughout Oregon and eastern Washington, and its fabricating industries have expanded remarkably in the last decade.

Taken from Iron Age, November 9, 1948.

****

A PAT ON THE BACK

Each month when the editor of the Ore.-Bin reads the Mining and Industrial News, San Francisco, he is attracted anew by its excellently written material. If there is a more entertaining column than "Rambling Rufe" published anywhere, this writer hasn't seen it.

****

NEW DEPARTMENT GEOLOGIST

David White, formerly geologist with Alcoa Mining Company, has joined the staff of the State Department of Geology and Mineral Industries. White graduated in geology from the University of Texas and was in the Army for nearly 4 years, leaving in 1946. He then joined the staff of Alcoa working out of Hillsboro, Oregon.

****

URANIUM DISCOVERIES

According to the Grants Pass Courier, the U.S. Geological Survey reports that a rich deposit of uranium has been found in Antelope Valley, Los Angeles County, California. The ore, yellow carnotite, was so close to the surface that it was exposed by gopher holes. The carnotite registers 80 (maximum) on the Geiger counter.

* * * * *

An A.P. dispatch in the Grants Pass Courier tells of the discovery of a new uranium mineral called "sengierite" (named after Edward Sengier, managing director of a mining company in Belgian Congo where the mineral was found). The mineral is green and is related to the yellow carnotite. Like carnotite, sengierite is about 60 percent uranium. The find will be one of utmost importance if the mineral turns out to be practical for uranium extraction.

****

OREGON MINING NOTES

Currant Creek Mining, Inc., a company organized in Prineville, Oregon, is driving a crosscut to the southeast from the east side of Currant Creek, Jefferson County. It is said that an occurrence of antimony, known at the surface above, is sought at depth. It is also understood that silver and lead are expected in the ore. The work is located about 8 miles east of Ashwood below the Ashwood-Horseheaven highway.

* * * * *

Morris and Benson, in active charge at the Johnson Creek Mine of the Amity Mining Company, Ochoco area, Crook County, are erecting a 20-ton Nichols-Herreshoff furnace. Completion of the installation has been delayed by numerous obstacles. They hoped to start the furnace this fall. Underground development continues.

* * * * *

According to the Oregon Journal, the Deschutes Geology Club has announced the discovery of a 200-pound agate of gem quality. The location of the mineral has not as yet been announced.

****

ART CHAMPION PASSES

Arthur J. Champion, long a familiar figure in the Prineville-Ochoco mountain area, died October 17, 1948. He was 66 years old. He was born in Michigan and came to the Ochoco area in 1909 where he followed his training as sawmill operator and woodsman for years.

His first venture in mining apparently was at the Mayflower gold mine. He and his partners made stakes there in the interval between 1916 and 1923.

He is credited with the discovery of several of the cinnabar prospects and mines in the Ochoco district. He and partners operated some of them.

Champion and partner, Mr. Hunt of Portland, operated the Mother Lode cinnabar mine during the years 1940-1941.

Of late years his natural longing to prospect for cinnabar and gold was prevented by ill health.

****

FURTHER STOCKPILING FROM ABROAD IS PLANNED

It is expected that President Truman will recommend a further $600 million for carrying out the stockpiling program through the coming fiscal year. There seems no reason to believe at this time that there will be any improvement in the administration policy as far as domestic procurements are concerned.

The influences which caused the President to state he signed the Stockpile Act of 1946 "with reluctance" because of the "Buy American" clause still remain in the White House. The message still stands as a directive to the agencies concerned with stockpiling. They have deliberately warped the policy laid down by Congress in the opening section of the Act to conform with the President's wishes.

We are beginning to reap the harvest of this short-sighted policy. ECA is not too hopeful of getting much metal from abroad, the stockpiles are only 18 percent complete and

"badly out of balance," industry is short of metal, industrial manganese stockpiles are melting fast, and the morning headlines read "8 Snorkel Subs 'Sink, Wreck' War Game Fleet of 100 Ships." How about some domestic mineral self-sufficiency, Mr. President? Russia is reported to have 200 Snorkels.

From Pay Dirt, November 18, 1948.

****

SHORT BIBLIOGRAPHY FOR URANIUM PROSPECTORS

Anonymous

"Canada mines uranium in Arctic": Life, Chicago, vol. 20, pp. 21-26, Jan. 14, 1946.

" Occurrence and identity of uranium and thorium minerals: AEC Raw Materials Division, New York; and U.S. Geol. Survey, Washington, (to be published).

" Prospectors' guide for uranium and thorium minerals in Canada: Bur. Mines, Ottawa, Canada, 1948.

" United States Atomic Energy Commission, Murray Hill, New York, Circulars 1, 2, and 3, April 1948.

Anthony, John W.

"Radioactive uranium and thorium": Arizona Bur. Mines, Tucson, Circular 13, June 1948.

Dement, Jack, and Dake, H. C.

Handbook of uranium minerals: The Mineralogist Publishing Company, Portland, Oregon, 1947.

Hersey, R. L.

"Tables of fluorescent and radioactive minerals": New Mexico Bur. Mines and Min. Resources, Socorro, Circular 15, 1947.

Leach, Paul, Jr.

"Uranium ore - how to go about finding and mining it": Engineering and Mining Journal, New York, vol. 149, no. 9, pp. 75-77, September 1948.

Matthews, Allan F.

"Uranium and thorium": U.S. Bur. Mines Minerals Yearbook 1946, preprint.

Ridland, G. C.

"Use of the Geiger-Mueller counter in the search for pitchblende-bearing veins at Great Bear Lake, Canada": American Inst. of Mining and Metallurgical Engineers, New York, Tech. Pub. 1614, 1943.

Sill, Claude W., and Peterson, H. E.

"Fluorescence test for uranium": U.S. Bur. Mines Inf. Circ. 7337, 1945.

Tyler, Paul M.

"Radium": U.S. Bur. Mines Inf. Circ. 6312, 1930 (contains information on uranium).

Winston, W. B.

"Uranium": California Journal of Mines and Geology, San Francisco, vol. 44, no. 1, pp. 73-92, January 1948.

****

FROM THE GROUND UP*

The book discusses for the lay reader the problems of producing minerals and metals. The title arouses interest, and the reader's interest is held from the title to the end of the book. To anyone who has the welfare of the domestic mining industry at heart, the book is most timely. Mr. Tyler, who is exceptionally well qualified to discuss the subject, has filled his book with nourishing material. It is fervently to be hoped that those who guide our country's destiny will read this book carefully, understandingly, without bias.

*By Paul M. Tyler, Mineral Technologist, Rutgers University, New Brunswick, New Jersey.

****

The ORE.-BIN
State of Oregon
DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES
702 Woodlark Bldg., Portland 5, Oregon
POSTMASTER: Return Postage Guaranteed

Sec. 562, P. L. & R.