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DEPARTMENT LOSES GEOLOGISTS

Three geologists occupying key positions in the Department have resigned to accept better jobs. Their leaving brings home a condition in the country which was confidently predicted in educational and scientific circles, but was given little attention by those in authority during the war.

Young scientists were grabbed by the draft and in many instances put into service bearing little relation to their training and possible future use to the country. As a consequence, they lost three or four years of training work in their professions, causing a present shortage of those qualified to carry on scientific investigations and research. This shortage is accentuated by the large increase in enrollment at institutions of higher learning and the increased need for teachers, especially those qualified to teach science and engineering. The shortage, of course, has resulted in bidding (in which the Federal Government has participated) for qualified men, which leaves relatively small agencies like the Department, whose salary ranges are pretty well fixed by law, out in the cold. Such small departments are not able to fill vacancies immediately by promotion, and must suffer a setback in work on projects which are interrupted by resignations.

Dr. Wallace D. Lowry left the Department on August 1st to take a position in California as geologist with the Texas Company.

Dr. Ewart M. Baldwin has accepted the position of Assistant Professor of Geology, University of Oregon, at Eugene. He is leaving the Department early in September.

Dr. John Eliot Allen, department geologist for ten years, is leaving in September to become Associate Professor of Geology at Pennsylvania State College.

Editor

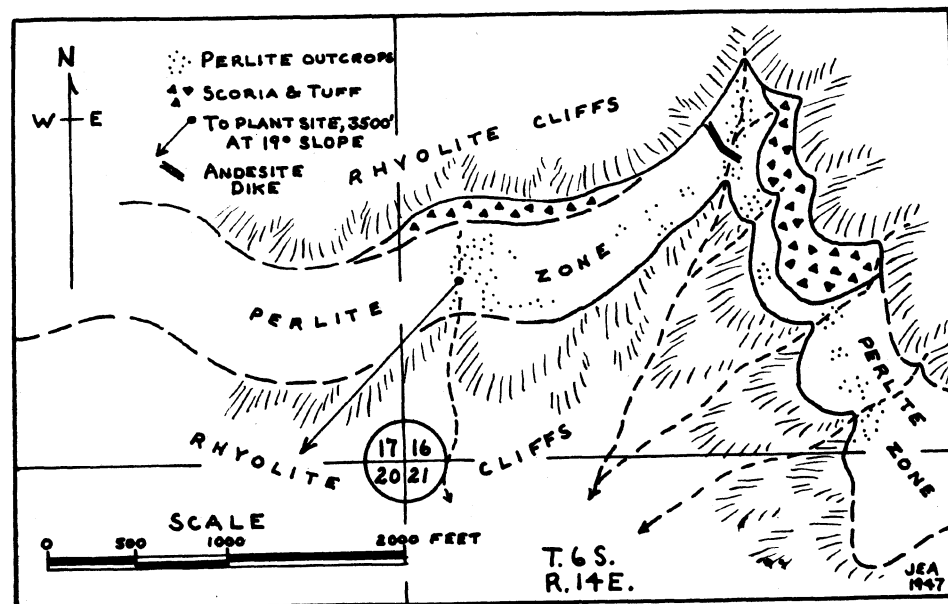
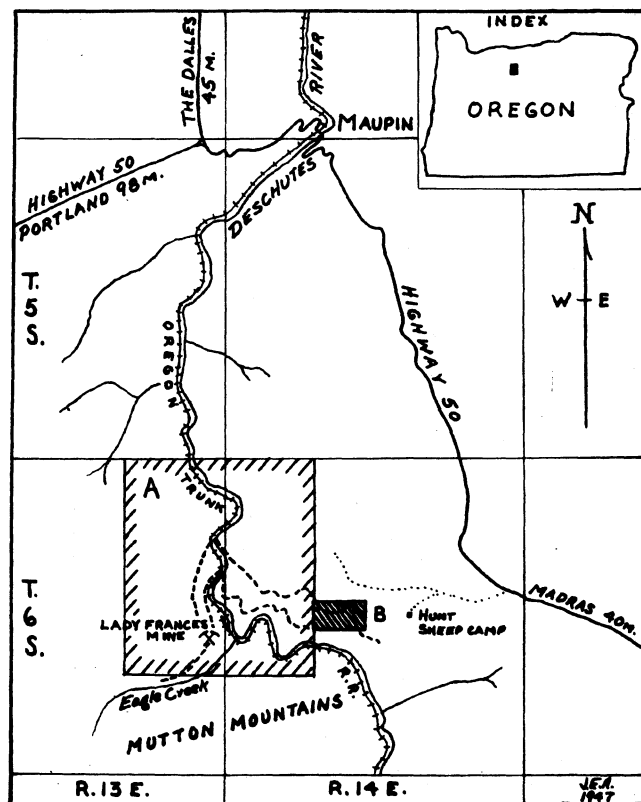


Fig. 2 Sketch geology of Oxford-Hunt perlite deposit.

Fig. 1 Location of perlite deposits north of the Mutton Mountains, Oregon

Perlite zones ----

A Area mapped in Short Paper No. 16.
B Area mapped in this report.

ANOTHER PERLITE DEPOSIT IN OREGON

by

John Eliot Allen*

Introduction:

The expanding use of perlite for plaster and concrete aggregate, wallboard, and other insulating, acoustical, and building materials has stimulated search for other perlite deposits in the West. This glassy volcanic rock, which, when heated to 1700° F. "pops" like popcorn to produce a white, frothy, lightweight aggregate, is already being mined at one place on the Deschutes River in Wasco County. This deposit has been described recently in Short Paper No. 16 of the Department (Allen, 1946).

Location and ownership:

Another deposit, owned by Joseph M. Axford and Clarence N. Hunt, lies about 2 miles farther east. The perlite zone extends through the SW $\frac{1}{4}$ of section 16 into the SE $\frac{1}{4}$ of section 17, T. 6 S., R. 14 E., in southern Wasco County, about 9 miles airline south of Maupin on the north side of the Deschutes River at an elevation varying from 2300 to 2450 feet (see fig. 1).

History:

Perlite in central Oregon was first definitely identified in 1919 when Axford sent samples from this deposit to the Oregon Bureau of Mines. When Dant and Russell, Inc., became interested in perlite early in 1945, and was told of the Wasco County deposits by the Department of Geology and Mineral Industries, Axford took the engineers for Dant and Russell over the ground and they located the deposit 3 miles due west of the Axford-Hunt deposit, which is now being developed as the Lady Frances mine.

Topography:

The perlite zone lies from 1300 to 1450 feet above and north of the Deschutes River, which at this point is flowing west. The deposits are less than 3500 feet airline from the river, so steep are the cliffs below. Both above and below the zone the hillside is steeply cliffed, but it would not be too difficult to build a road in from the north, a distance of about 1 mile.

Geology:

The general geology of the district has been treated by Wilkinson (1932) and the perlite deposits immediately adjacent to the west (see fig. 1 for location) have been discussed by Allen (1946). The perlite zone on this property has not been connected with the zones to the west, but it is believed to represent the upper perlite of the Frieda area. It overlies banded, lithophysal rhyolite at least 300 feet thick and is overlain for a distance of more than 1000 feet by 10 to 100 feet of andesitic scoria, thin flows and ash, overlain in turn by massive rhyolite at least 500 feet thick. The entire series appears to dip gently to the north (from 4 to 5 degrees) although the dips in the red scoria are steeper in places, probably representing initial dips in a cinder cone.

The perlite zone varies in thickness from 40 to 180 feet, the thickest section visible appearing at the west edge of section 16 (fig. 2). The lower 10 to 40 feet of the perlite section is made up of a dark gray crumbly perlite (Sample No. 4) containing occasional marekanite (black glass) cores and is in places penetrated by chalcedonic crusts and seams. This is overlain by a 5- to 10-foot bed of dark-colored brown to gray dense massive pumiceous rock (Sample No. 1). Above this bed, which is particularly prominent at the west edge of section 16, lies 120 to 140 feet of pale gray perlite breccia, containing angular

* Geologist, Oregon Department of Geology and Mineral Industries.

fragments of granular perlite from a few inches to several feet in diameter, in a matrix of finer grained perlite material. The upper 10 to 30 feet consists of a fine-grained sandy perlite (Sample No. 5) having almost the appearance of a pumicite.

Relationships are actually not as simple as the above, which is generalized. The gray crumbly perlite is found in zones of variable size within the breccia and throughout the section.

Samples from the perlite zone were crushed, screened to -14 and +20 mesh, and expanded in an electric furnace at 1850° F. to give the following results:

Sample No.		Approx. Expansion	Pounds per cu. ft. (calc.)
5	Fine sandy perlite	x3	20.4
4	Gray crumbly perlite	x $5\frac{1}{2}$	15.6
2	Light-colored massive pumiceous rock	x $3\frac{1}{2}$	18.5
1	Dense brown to gray massive pumiceous rock	x3	17.2

Results of these preliminary tests indicate that the best material (Sample No. 4) is commercial in grade, and that the other samples, with proper expansion technique (not obtainable with laboratory equipment available), may also be of economic value. Tonnage estimates cannot be made on this material on the basis of prospecting work now done. Further trenching, sampling, and tests must be made before it can be told how large an amount of expandable material is present, but it may be large.

Economics:

The value of perlite, as with other nonmetallic products, depends in large part upon the ease of access and transportation facilities. This property is located about 14 miles by road from the railroad at Maupin, but it is only 3500 or 4000 feet from the railroad across the river in the gorge below. If the deposit should prove to be of sufficient grade and size, an aerial tramway to the mill and railroad-siding site across the river might solve the transportation problem.

Bibliography:

Allen, John Elliot
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Perlite deposits near the Deschutes River, southern Wasco County, Oregon: Oregon State Department of Geology and Min. Industries Short Paper 16.

Wilkinson, W. D.
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Petrography of the Mutton Mountains formations of Oregon: Univ. of Oregon, Ph.D. Thesis, 1932.

PHILIPPINE GOLD AND THE BLACK MARKET

Press reports emanating from Hong Kong early in August stated that a large quantity (approximately 13 tons) of gold was to be flown from Manila to Macao, the Portuguese colony at the mouth of the Canton River. According to the reports, Philippine officials were alerted to prevent shipment as such export of gold has been banned by the Philippine government. It is stated that Macao is the center of a large gold black market and that Chinese in the colony pay premium prices for the metal - at the time of the report about \$51 an ounce.

SUSTAINED YIELD OF TIMBER ON O&C REVESTED LANDS

by

E. K. Peterson*

The topic of your discussion today concerns one of our basic, but nonrenewable, natural resources - minerals. We shouldn't forget for a moment that the natural resources with which this country was endowed were almost completely responsible for victory in the recent war and for this country's dominant economic position in the world today.

It is true that the United States also has superior scientific brains and unexcelled organization and efficiency in our manufacturing of consumer goods; but how many of you think that the present high standard of living which we enjoy could have been reached if we had no gold in this country, or if we had to import most of our iron ore, or coal, or oil, or food supplies, or timber?

The O&C and Coos Bay Wagon Road lands in western Oregon, comprising approximately 2½ million acres, have two predominant natural resources: One being scattered and as yet largely undeveloped deposits of minerals such as gold, chrome, iron, copper, manganese, limestone, and silica; and the other, a renewable resource, the forests - representing approximately 30 percent of the remaining merchantable timber in western Oregon.

I think all of you know the importance of timber in a state which is the largest lumber producing state in the Union and in which lumbering and associated industries comprise more than 50 percent of the total payroll. Mr. Bristol has asked me to discuss with you briefly today the sustained yield management of the timber on these lands, because the forests often occur on the same ground or in the same vicinity as paying deposits of minerals. All of us are, or should be, striving for the wisest development of both resources and it is felt that their development will be more harmonious if the mining interests fully understand the importance, methods, and long-term objectives of the timber interests, and vice versa.

In order to enable all of you to understand better the present situation concerning timber management on the O&C lands, I shall attempt to give you a brief glimpse into their very interesting legislative history.

Congress created the O&C lands from the public domain in 1866 for the purpose of subsidizing the construction of a railroad from the Columbia River to the California line. The Oregon & California Railroad Company was granted title to all lands in alternate odd sections for a distance of 20 miles (later, 30 miles) on both sides of the right-of-way. Title was not granted to lands classified as mineral. In the 1880's the Oregon & California Railroad went into bankruptcy and was taken over by the Southern Pacific Company.

In 1916, by a Supreme Court decision, such of these lands that had not already been sold were taken away from the Southern Pacific Company because of violations of the original grant, and were returned to the United States with the provision that they be administered by the Secretary of the Interior. The land, except power sites, then became subject to the general mining laws of the United States, with the exception that holders of mining claims could use the timber therefrom in the development of their claims only until the United States decided to sell it. Also, the government reserved title to the timber on all timberlands patented as mining claims.

The Act further provided that the timber from the O&C lands should be sold as fast as a reasonable market would permit. This condition continued until Congress passed, and the President signed on August 28, 1937, an act requiring that the timber on the O&C lands be managed on a sustained yield basis. The Secretary of the Interior was directed to divide the O&C lands into sustained yield units and to determine the rate of timber growth in each

*District Forester, O&C Lands Administration. Talk presented at meeting of Oregon Mining Association, Grants Pass, May 24, 1947.

unit, and then to limit the timber sales in any given period to that figure. To carry out the Act of 1937, the O&C Administration was created, with W. H. Horning as Chief Forester in Portland, and district headquarters at Salem, Eugene, Roseburg, Coos Bay, and Medford.

The Act of 1937 specifically repealed any laws of Congress in conflict with its stated major objective - the sustained yield management of its timber resources. In 1941, Mr. Oscar Chapman, Assistant Secretary of the Interior, ruled that the general mining laws of the United States were in conflict and therefore did not apply to the O&C lands after August 1937.

Meanwhile, the O&C lands have been divided into over 100 sustained yield units, and timber sales in each of these units have been limited to the amount that will grow each year. For western Oregon this figure is now approximately 600 million. Furthermore, the purchasers of the timber are required to cut it in the manner best designed to save all existing young trees and to get another crop of seedlings started by natural seeding as rapidly as possible.

In most cases, our loggers cutting O&C timber are anxious to do, and are doing, a good job. This policy has already resulted in a fairly uniform distribution of the lumber industry throughout western Oregon, in contrast to the previous over-development of the industry in northern Oregon and the under-development in southern Oregon. However, the sustained yield management of the private timberlands intermingled with the O&C lands is still not a reality. In most areas at the present time, including Josephine, Jackson, and Douglas Counties, cutting on private lands far exceeds the annual growth.

To encourage an improvement in the methods of cutting timber on private lands and to make possible their management on a sustained yield basis, the O&C Administration is willing to enter into cooperative sustained yield agreements with owners of private timberland for periods of 100 years or more. In order to qualify, a possible co-operator would agree to commit a substantial acreage of forest-producing land as his contribution, keeping it all on the tax rolls, and agree to cut the timber in a manner best designed to get another crop of trees established as soon as possible, and to limit the cutting of timber on his own lands to the number of board feet they will grow each year. The O&C Administration, in return, would agree to sell to the co-operator all of their timber in the proposed area without competitive bidding, but at a fair appraisal.

The cooperative sustained yield approach to our forest problems has been adopted by the West Coast Lumberman's Association, the Pacific Northwest Loggers Association, the Western Pine Association, and the Willamette Valley Lumbermen's Association, and it is heartily endorsed and actively promoted by the entire Oregon Congressional delegation, especially by Senator Gordon.

It is expected that within the next 5 years 60 percent of the forest area where O&C lands occur will be included in cooperative sustained yield agreements. The remaining 40 percent probably will be available for competitive bidding in the present form for a long time.

In December 1945 the O&C Administration held at Eugene, Oregon, a public hearing for the purpose of hearing evidence, pro and con, on the proposal that cooperative agreements be authorized for western Lane County, called the Siuslaw Master Unit. A year later the Siuslaw Master Unit was declared by the Secretary of the Interior, Krug, and the O&C Administration as preparing cooperative agreements with various operators in western Lane County. I believe one with the Hult Lumber Company near Triangle Lake will be the first one adopted. Similar hearings for Josephine, Jackson, and Douglas Counties are tentatively scheduled to be held at Roseburg during July.

We believe that if the principle of cooperative agreements is approved for these areas that cooperative agreements will soon follow and the lumber industry will then become stabilized; will be able to install and operate at a profit various types of wood remanufacturing plants, wood chemical plants, and pressed wood factories of various types; and will be in the business of growing trees in addition to harvesting and manufacturing them.

OAC LANDS LEGISLATION

S. 579 and H.R. 2354, in effect to restore application of the Federal mining laws to OAC and Coos Bay Wagon Road grant lands, were introduced in the Senate and House of the last Congress by Senator Gordon and Congressman Ellsworth respectively. In reply to an inquiry by the Department concerning the fate of these bills, Senator Gordon wired that they were not acted upon during the last session but that he hoped to get his bill passed early after the second session convenes in January 1948.

BENTONITE COMPONENT OF NEW PLASTIC

According to Science News Letter, May 24, 1947, a new use for bentonite has been developed by the Mellon Institute in Pittsburgh. The process takes advantage of the very fine grain size of the silicate particles in bentonite. A chemical reaction is induced between the silicate particles and resin-forming organic polymers so that a copolymer of the organic resin and the mineral is formed. The advantages of the new plastic substance are that the material, when molded, absorbs only a little moisture, has great resistance to chemical attack, and also can withstand elevated temperatures.

TO PRODUCE BURNED LIME

A new corporation called the Horsehead Lime Corporation with headquarters at 319 Leverette Building, Medford, Oregon, has taken over the Washington Brick and Lime property at Williams, Josephine County, Oregon. This company is actively engaged at the present time in installing new equipment and reconditioning the old plant. They expect to be in operation as soon as this work has been accomplished.

The company is composed of Mr. Walter Leverette, Medford, President; W. E. Coleman, Portland, Vice-president; Vincent Vaughn, Medford, Secretary-Treasurer; and W. H. Holloway, Medford, Manager. Mr. Wolf G. Bauer, Chemical Engineer of Seattle, is the Consulting Engineer.

SOUTHERN OREGON MINING BULLETIN

The Benton mine, largest prewar gold producer in southern Oregon, is among the twenty-four mining properties in the Mt. Reuben mining district, Josephine County, which are listed and described in Bulletin 34, just issued by the State Department of Geology and Mineral Industries. This district, the scene of much gold mining activity early in the present century, is in the northwestern part of the county and extends from the Rogue River north to Mt. Reuben near the Douglas County line. Mining activity subsided and there was little in the way of development or production for many years until the price of gold was raised in the early 1930's. From then until the war stopped gold production in 1942, the Benton mine situated near the center of the Mt. Reuben district was one of the most important gold producers in the State.

Bulletin No. 34 is entitled "Mines and Prospects of the Mount Reuben Mining District, Josephine County, Oregon." It describes the geology and ore deposits of the area and contains several illustrations and maps. The author is E. A. Youngberg, formerly field engineer for the Department at Grants Pass. The bulletin may be obtained from the Portland office of the Department at 702 Woodlark Building or from the field offices situated in Baker and Grants Pass. Price is 50 cents postpaid.

DEPARTMENT PERSONNEL CHANGES

Mr. Hollis M. Dole, Field Geologist stationed at Grants Pass, has been transferred to the Portland office. Mr. Harold Wolfe has succeeded Mr. Dole at the Grants Pass office. Both Mr. Dole and Mr. Wolfe are graduates in geology of Oregon State College and both are ex-service men. Mr. Dole served with the Navy in the combat zone of the South Pacific. Mr. Wolfe was with combat troops in Italy.

RESOLUTIONS

The Mining Association of Montana at its recent convention in Butte, August 3-4, adopted a set of strong resolutions, a few of which are given below:

Bureaucracy

It is written in the pages of all history that the downfall of government "by the people and for the people" began with the birth of bureaucracy, centralizing the power in the hands of a few.

During the past two decades especially, the federal government has increasingly been usurping the functions and sovereignty of the states of this union, contrary to the spirit of the Declaration of Independence, the Constitution, and the Bill of Rights, and foreign to the minds of the great patriots who planned this form of government.

We urge a revival of state and local interests and that our elected representatives immediately begin unraveling this totalitarian skein to the end that government start in the states, rather than in Washington, D.C.; that we work from the bottom up, rather than the top down.

As an illustration of this encroachment: The taxpayers of Montana in 1933 contributed 23.9 percent of their tax money to the federal government, 20 percent to the state government, and 56.1 percent to county and city government. In 1946 the federal government, as a result of the war, took 79.2 percent of the tax money of the people of Montana, leaving only 9.8 percent to the state government and 11 percent for county and city governments. With the war now over "it's time for a change."

Taxation

Government spending means government taxation, from which no one escapes. An old maxim states: "Let George do it." In the past few decades the tendency has been to let the government do it; the people little realizing that they are the government and that whatever the government spends, the citizens themselves must pay directly or indirectly. The present income tax alone at this time is from 20 to 90 percent of the yearly income. Taxes inevitably are added to the cost of production, thereby placing the burden on the consumer, be he large or small. This condition cannot continue; like the vampire, it devours the substance of the people and will destroy the incentive to individual effort. We favor immediate drastic reduction in public expenditures, to the end that taxes may be lowered, thus giving a larger "take home" pay check to the workers and enabling industry to accumulate funds for expansion of business and creation of more jobs.

Public land policy

We condemn the policy of the federal government to nationalize and withdraw from entry large acreages of public lands that rightfully belong to all citizens for location and settlement. That policy takes from the homesteader an inalienable right that long has been recognized; and deprives the prospector and mine operator of the incentive to develop the latent resources, by placing upon them restrictions and royalty burdens of no benefit to the community or the state and depriving the state of taxable property.

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