

August 15, 1973

Mr. Henry W. Jones
U. S. Forest Service
P.O. Box 2050
Quincy, California 95971

Dear Mr. Jones:

As you requested in our telephone conversation, I am sending a couple of maps showing the locations of obsidian occurrences in south and central Oregon.

More accurate locations are as follows:

1. Newberry Volcano - T. 21, 22S., R. 12, 13E., The Caldera of Newberry contains probably the largest occurrences and there are 4 separate obsidian flows, the largest of which is called the "Big Obsidian Flow". It is up to 100 feet thick and covers at least a square mile. The obsidian is rather typical, flow banded and gray to black, with zones of scoria and pumiceous glass.
2. Middle & South Sister - The largest occurrences are non-porphyrific black obsidian that outcrop in broad ridges and cliffs at the west base of the Middle Sister. Two prominent landmarks, Obsidian Cliffs and Obsidian Falls are also located on the west and northwest flank of Middle Sister. The contested Rock Mesa occurrence, south of South Sister, is basically an obsidian dome with much pumiceous glass and scoria. There is also a chain of dacite vitrophyre domes extending down the south side of the South Sister. The material in these tends to be opaque and flinty, but shows the familiar flow banding.
3. Crater Lake - Dacite vitrophyre flows are common at Crater Lake, ranging from gray, reddish, to black and usually porphyritic; these rocks could be called pitchstones.
4. Quartz Mountain - SW $\frac{1}{4}$ of T. 22 S., R. 15E. Black to reddish brown flow banded obsidian occurs over a large area of this eroded dome-shaped land form. Large blocks and chunks of obsidian are mixed with pumiceous soils and weathered zones. In some places cliffs of flow banded glass and breccias are exposed.

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5. Cougar Mountain - Secs. 14, 15, T. 25 S., R. 15 E., - At Cougar Mountain minor amounts of flow banded obsidian and breccia is mixed with glassy rhyolite and perlite. This occurrence appears to be part of an eroded explosive volcanic complex. Obsidian fragments are not too large and appear to be weathering out of flow bands and breccia zones.
6. Drews Valley Ranch - Sec. 17, T. 38 S., R. 17 E. This is a small occurrence of transparent to translucent dark gray to black obsidian. The obsidian weathers out of a pumiceous soil cover and was not found in place. The obsidian fragments litter the surface over an area of several hundred yards. The land is privately owned.
7. Horse Mountain - On the west edge of T. 28 S., R. 22 E., is an eroded volcanic complex and large to small chunks of greenish to black obsidian litters the area over several square miles. This occurrence is probably not too well known as it is very remote.
8. Glass Buttes - Ts. 23, 24 S., R. 23 E. Large areas here are underlain by obsidian and glassy rhyolite. This locality is well known by rockhounds and the "Mahogany", "Rainbow", "Silver Sheen", and "Gold Sheen" varieties of obsidian are all collected here. I am sure there are mining claims being occupied and worked at Glass Buttes.

The occurrences listed above are those that I know about. There are probably minor occurrences in the Burns area.

Hopefully this information will be helpful to you.

Sincerely,

Norman V. Peterson

NVP:rep
Encs: 2 maps

Oct. 11, 1961

N. S. Wagner
Baker Field Office
Baker, Oregon

Dear Wag,

With reference to Hollis' letter about localities of obsidian, I am not sure I can be of too much help.

I'll list the ones that I know about mainly from reading of the literature.

Glass Buttes -- T. 23 S., R. 22 E. in north Lake County--eroded domes and flows of varied colors, opaque to smoky, large amount and mostly BLM land, as far as I know, open to location.

Newberry Crater -- Sec. 1, T. 22 S., R. 12 E. Deschutes County, fresh, uneroded flow of black, somewhat smoky, banded obsidian. Inexhaustable supply. Public land, status unknown.

Three Sisters area -- South Sister -- domes and flows of black obsidian--large quantities. Public land--status unknown--probably a part of a wilderness area.

Draws Valley Ranch -- The obsidian occurs scattered with perlite in low rounded hills. Angular to rounded chunks and fragments from 10" in diameter down. Some is banded and quite clear. Privately owned.

Beatty Butte, Southwest Harney County. Obsidian reported by R. E. Fuller in Journal of Geology, vol. 35, no. 6, p. 570-573, 1927.

Another locality where colorful and interesting obsidian is found is just south of the Oregon state line in California at Sugar Hill. It is east of Highway 395 between New Pine Creek and Alturas.

I hope **this** will be of some help and if you want us to check a locality be sure to let us know.

Best regards,

NVP:amj

Norm

COPY
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Washington 25, D. C.

Mr. Theodore Dunham, Jr., Scientific Director,
Fund for Astrophysical Research,
234 Castleman Road,
Rochester 7, New York.

Dear Mr. Dunham:

I regret the delay which has occurred in replying to your previously acknowledged letter of January 17 requesting information on the location of deposits of obsidian for use in research now being done for the Office of Naval Research on a substitute for optical glass, and hope that you have not been seriously inconvenienced thereby.

In California, aside from the Modoc lava beds, deposits of obsidian which may be of interest to you are known to occur in the following localities: on Negit Island in Mono Lake, and throughout the Mono Craters extending from Mono Lake about 10 miles southward in Mono County; west of Mount Hannah in Lake County; and in T. 8 N., R. 6 W., M. D. (projected) within a few miles north of St. Helena in Napa County. These localities are described respectively in the following papers: The quaternary history of Mono Valley, Calif., by I. C. Russell; Eighth Ann. Rept. of the U. S. Geol. Surv., 1886-87, pp. 261-394, 1889; Lake County, by W. A. Goodyear; Calif. State Mining Bur., Tenth Ann. Rept. State Mineralogist, pp. 227-271, 1890; Mines and Mineral Resources of Napa County, Calif., by F. F. Davis; Calif. Jour. Mines and Geol., vol. 44, no. 2, pp. 159-189, 1948.

In Oregon obsidian occurs in the Glass Buttes, which rise in the vicinity of the Post Office at Rolyat, Lake County, and extend southeastward for 22 miles. The following description of the material is quoted from: A structural and petrographic study of the Glass Buttes, Lake County, Ore., by Aaron Waters; Jour. Geol., vol. 35, no. 5, pp. 411-452, 1927.

"Obsidian, although very common as boulders in the dry stream channels and as loose blocks in the pumiceous sand of the Glass Buttes region, is rarely found in place. One flow of perlite is exposed at the southwestern corner of the Glass Buttes range which contains blocks of black obsidian that are not affected by the perlitic cracks. In obsidian in its upper pumiceous part.

"The obsidian is of two types. One of these is jet-black in color in thick pieces, but is almost perfectly transparent in slices one-fourth inch or less in thickness. The other is a variegated type which contains angular black fragments in a brilliant brownish-red opaque base..."

COPY
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In a paper entitled: Obsidian Cliff, Yellowstone National Park, by J. P. Iddings: Seventh Ann. Rept. of the U.S. Geol. Surv., 1885-86, pp. 249-295, 1888, the author mentions, as additional localities, Obsidian Hill, on the Rio San Diego, and other localities in the Tewan Mountains, N. Mex., and near Coyote Spring, 30 miles north of Milford, and near Beaver Valley, Utah. However, in both of these States, as well as in Nevada, Tertiary lava flows containing obsidian occur in many places, although such occurrences have not been described in the literature.

For more detailed information on occurrences of obsidian in those States in which you expressed particular interest in your letter, it is suggested you write to the following officials:

Dr. Olaf P. Jenkins, Chief,
Division of Mines,
State Department of Natural Resources,
Ferry Building,
San Francisco 11, Calif.

Mr. Jay A. Carpenter, Director,
Nevada Bureau of Mines,
Reno, Nevada.

Dr. E. C. Anderson, Director,
State Bureau of Mines & Mineral Resources,
Socorro, New Mexico.

Mr. Fay W. Libbey, Director,
State Dept. of Geology & Mineral Industries,
702 Woodlark Building,
Portland 5, Oregon.

The publications mentioned in this letter are probably available in the libraries of Rochester University or the Rochester Academy of Science, as well as the many university and technical libraries in New York City.

Sincerely yours,

Olaf N. Rove
Chief, Mineral Deposits Branch

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NORMAN S. WAGNER
FIELD GEOLOGIST
714 EAST "H" STREET, GRANTS PASS
HAROLD D. WOLFE
FIELD GEOLOGIST

STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES

702 WOODLARK BUILDING
PORTLAND 5, OREGON

March 21, 1949

Mr. Harold D. Wolfe
714 East H Street
Grants Pass, Oregon

Dear Harold:

The enclosed correspondence is, I believe, self explanatory.

Under separate cover we are sending a sample of the kind of obsidian in which Dr. Hanna is interested. All you have to do to make yourself forever famous in the annals of economic rock discovery is to locate a source of supply of this clear volcanic glass. May your search be crowned with success, and prosperity haunt you all the days of your life.

Sincerely yours,

"Doc"

R. E. Stewart
Geologist

RES:lk

Enclosures 2

COPY

CALIFORNIA ACADEMY OF SCIENCES
GOLDEN GATE PARK

San Francisco 18, California

October 27, 1948

Dr. Roscoe Stewart
State Department of Geology
and Mineral Industries
702 Woodlark Building
Portland, Oregon

Dear Dr. Stewart:

Last week I went on a trip up into northeastern California on a search for obsidian which could be used for reflectors in optical work. What I found looks very good at this stage but the final answer can be given only after grinding, polishing and aluminizing the surfaces. While I was up there I went on to Glass Buttes in the northeast corner of Lake County, Oregon. There is a lot of fine obsidian there but I found no pieces which would yield disks over eight inches in diameter. I wanted to run down a rumor that clear green glass had been found there, a glass similar in outward appearance to plate glass. I found no trace of it. Can you tell me if any one on your staff has any information on such material from either Glass Buttes or elsewhere in Oregon? Dr. Waters once wrote a paper (Journal of Geology) on the obsidian of the Buttes and mentions "clear" pieces up to a quarter of an inch thick but he does not say it was "green." I found plenty of pieces which show a good measure of transparency but it is all more or less smoky.

I am anxious to learn if there be any truth to the various rumors because if there is there might be a use for the material in the near future. In no case have I learned of a geologist who has actually found and collected such glass in the field. The reports have come from amateurs and often in a round about manner. However, my mind is open in the matter and since I have been thrust into the obsidian problem I would like to get all the information it is possible to secure.

Sincerely yours,

G. Dallas Hanna

GDH:gf

STATE DEPARTMENT OF GEOLOGY AND
MINERAL INDUSTRIES

702 WOODLARK BUILDING
PORTLAND, OREGON

November 5, 1948

Dr. G. Dallas Hanna
California Academy of Sciences
Golden Gate Park
San Francisco 18, California

Dear Dr. Hanna:

Mr. Stewart conferred with me concerning your letter of October 27 and I sought advice from several persons who have collected minerals in the State, especially in central Oregon. None of them could give me any definite information other than that which you have - namely that the best chance of finding clear obsidian appears to be at Glass Buttes.

I shall bear the matter in mind and will ask members of our staff to watch out for possible favorable material when they are in the field.

Very truly yours,

Director

FWL: jr

Make up file Obsidian, optical



**STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES**

702 WOODLARK BUILDING
PORTLAND 5, OREGON

April 4, 1949

TO: Norman Wagner
Harold Wolfe ✓

FROM: F. W. Libbey

You will recall that some time back I wrote you that Dr. Hanna of the California Academy of Science was seeking our assistance in obtaining optical obsidian. The enclosed copy of letter is concerned with occurrence of obsidian in Glass Buttes, Oregon. A copy was sent to our office by the U. S. Geological Survey. I do not know the contents of Mr. Dunham's letter to the U.S.G.S. but assume that he also is interested in optical obsidian.

I am sending this letter to you because of the reference to Glass Buttes obsidian. I shall try to obtain the complete paper by Aaron Waters. In the meantime I thought you would like this reference for your files.

FWL: jr
Encl.

OBSIDIAN
SNOWFLAKE
CHRYSANTHEMUM
BABY SPOT

Gene Pressler
U.S. Bureau of Mines
2921 Argyle Drive
Alexandria, Virginia 22305

Dear Gene:

I have done a little looking into the "snowflake" or "chrysanthemum" or "baby spot" obsidian and find that the supply and price are variable.

There are no sources in Oregon that I know of, apparently the best material comes from someplace in Utah. There is some material available at a local rock shop here but the price is rather high.

Here are some wholesale-retail dealers that advertise material for sale:

OBSIDIAN

Arrow Gems and Minerals

9827 Cave Creek Road

Phoenix, Arizona 85020 602-997-6373

Baby Spot Obsidian - 3/4" x 3"
sizes - 35⁰⁰ per 100 lbs
18⁵⁰ per 50 lbs.

Colorado Lapidary Supply

1900 E. Lincoln

Ft. Collins, Colo 80521

Retail - 1²⁵ lb.

Wright's Rock Shop

Route 4 Box 462 Hwy. 270 W.

Hot Springs, Arkansas

Wholesale + retail

Hope this will help you find some good material.
Jen says hello and if you get out this way be sure
to stop by.

Best regards,

Norm Peterson

OBSIDIAN

The volcanic glass referred to as obsidian, is classed as a rock and not as a mineral. At Glass Buttes, Lake County, Oregon, is an enormous deposit of a variety of obsidian known as "iridescent", owing to the fact that green, purple, bluish, and other shades are seen when viewed on the fractured surface. A great deal of this material has been utilized as a gem and ornamental stone. It is available in very large masses, and can be readily worked into paper weights, book ends, ink stands and similar useful ornaments. Some mining of iridescent obsidian has been carried on but the rock has never been exploited in a commercial manner, despite the fact that it can be obtained cheaply in quantity and is suitable for many uses.