

Reconnaissance of the Badger Lake District
in Search of Bauxitic Material.

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and
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Location:

Badger Lake is about 5 miles southeast of Mt. Hood in Hood River County. It is near the center of T. 3 S., R. 10 E., W. M. The lake is nearly 4500 feet above sea level and can be reached from Bennett Pass on the Mt. Hood Loop highway. It can also be reached by road from Dufur on the east.

History:

On July 12, 1946, Mr. Ike Kusisto reported that he and Mr. Al Batham, Rt. 2, Hood River, Oregon, had discovered bauxitic material along the Badger Creek trail several miles below Badger Lake. The trail, which follows the north side of the creek, was reported to be about 100 feet above the stream at the reported point of discovery. Mr. Kusisto stated that Mr. Batham had received work from the Aluminum Company of America to the effect that the sample submitted by them from the Badger Lake district was bauxite.

As Mr. Kusisto said that he would have Mr. Batham write the Department regarding the matter, no attempt by the Department to contact Mr. Batham was made until October 5, 1946 at which time a trip to the Wasco area was planned for October 8, 1946. On the return trip from Wasco, a reconnaissance was made of the Badger Lake district on October 10, 1946. As Columbia River

basalt, with which bauxitic material occurs in northwestern Oregon, was shown by Hodge's geologic map of north-central Oregon to be present in this district, it was reasonable to believe that bauxitic material might occur there. However, no bauxitic material was seen and the geologic relationship of the Columbia River basalt to the overlying Cascan formation indicates that none is likely to be present in the area.

After returning to Portland, we received a letter from Mr. Batham in which he stated that no bauxitic material had been found and that as he recalled, the sample in question contained only 14 percent alumina. He thought that it was probably clay.

Geology:

E. T. Hodge's geologic map of north-central Oregon shows that Miocene Columbia River basalt, which is overlain unconformably by the Cascan formation of Pliocene age, occurs along Badger Creek as far up as Badger Lake. That picture is essentially correct although no Columbia River basalt was encountered in this reconnaissance along Badger Creek trail below Badger Lake above the mouth of Cattle Creek, about 4 miles below the lake. There, typical blocky dark gray, fine-grained basalt not only forms rapids and falls in Badger Creek but also forms the lower part of the northeast slope of Badger Butte. The basalt was traced probably 700 feet up this slope above Badger Creek where andesite float and rock believed to be in place were encountered. The character of the Columbia River basalt-Cascan formation contact indicates that the basaltic terrane had several hundred feet or more of relief before the Cascan flows were erupted. Therefore, if true, the chances for finding a remnant of laterite at the top of the basaltic section are very poor.

Badger Lake and upper Badger Creek valley are of glacial origin. A small glacier may have persisted for a considerable time in this narrow valley whose floor is covered with glacial debris including large boulders of Cascan andesite. Glacial debris also forms the dam at the lower end of the lake.

RECONNAISSANCE NOTES
ON TRIP TO WASCO AND BADGER LAKE
October 8-10, 1946
by
R.S. Mason and W.D. Lowry

Columbia River Highway -

Cascade Locks and on east. Fairly well developed terrace level along highway.

55 mile post - Looks like Goble.

79 mile post - SW $\frac{1}{4}$ sec. 29, T. 3 N., R. 12 E. A small mesa of conglomeratic (?) material. May be Dalles or Hood River. Did not stop.

U.S. 97 -

Wasco area - Tcr in Spanish Hollow canyon somewhat south of Thornberry - more than Hodge shows. Chalcedony associated with Tcr (in roadcuts) 1-2 miles northwest of Wasco. Deep silt and puniceous ash, both with sponge spicules, 3/4 mile west of Wasco in cuts and washes. Ash contains magnetite, hypersthene, enstatite, and unusual composite grains of feldspar and orthopyroxene. Volcanic glass has a refractive index approximately but slightly less than 1.51 so is medium, probably andesitic. Both silt and ash are part of Shutler. Silt contains biotite, quartz, plagioclase, magnetite, muscovite, pyriboles, apatite (?), and augite (?). Chalcedony occurs with Tcr in roadcut about 6 miles W. N.W. of Wasco in sec. 33, T. 2 N., R. 16 E. A quarry just northwest shows well-developed pillow structures in a Tcr flow which probably overlies the one to the east with the associated chalcedony.

From Wasco looking north Hodge's Columbia River fault scarp is plainly evident. It appears to be particularly well developed at Celilo. The scarp and truncated spurs form the main steep slope north of the river. Light-colored, nearly white sediments along the scarp, best shown a mile or so east of Celilo, may be the Shutler formation faulted down. The fault which apparently produced the scarp appears to swing northwestward somewhat west of Celilo.

The Dalles -

Although the Dalles beds are essentially flat-lying back of the town, the Tcr is also nearly horizontal. Nevertheless the Dalles beds appear to be horizontal when projected

northwestward toward the Ortley anticline and there is good reason to believe the Dalles beds unconformably overlies the Ter, occupying a syncline in the Ter (Dalles syncline).

Oregon 23 -

11.4 miles south of junction with U.S. 30. Bedded pumiceous layers overlain by volcanic breccia similar to those in Troutdale, Molalla, Fern Ridge.

0.5 mile north of Dufur at crest in road. Silt in roadcut contains hornblende, plagioclase, biotite, augite (?), diatoms and sponge spicules.

Dufur to Badger Lake road -

The Dalles in this area, as judged from roadcuts is mud breccias and some rounded gravel. The beds of the formation dip gently eastward and toward the west give way upward to apparently conformably overlying Cascan lavas, some of which resemble Boring in color and texture. Others are characterized by numerous plagioclase phenocrysts. Farther south in the area of Juniper Flat traversed by the Wapinitia Highway the Dalles forms a gently eastward sloping dip surface. The slope of 600 feet in the 12 miles west of the Deschutes River would appear to be largely the result of warping, although part of the slope is initial.

Oregon 35, Mt. Hood Loop -

Polallie Creek area. Volcanic breccias and associated lavas with well-developed columns which resemble those on Clackamas River above Estacada.

Van Horn Butte. Ralph Mason reports granite boulder on this butte. Elevation 800 feet. Terrace along highway this side of butte is made up of silt.

Parkdale loam. Loam in roadcut short distance west of town contains plagioclase, orthopyroxene, volcanic glass, hornblende, sponge spicules (?), and diatoms (?). Parkdale lava is a basalt or basic andesite with labradorite (?) and hypersthene (?) phenocrysts.

Booth Hill. Silt from roadcut one-half mile north of crest contains biotite, muscovite, plagioclase, hornblende, but little or no volcanic glass. Possibly contains a few sponge spicules.