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GEOLOGICAL SURVEY

TORBERNITE OCCURRENCE AT THE
ROBINEAU CLAIMS,
CLEAR CREEK COUNTY, COLORADO

by

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and

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PART I

by

Robert U. King

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Abstract

The Robineau claims, owned by L. G. Robineau and J. H. Harris of Dumont, Colorado, include the George Peabody (patented), MacGregor, and Little Mac claims. They are in sec. 35, T. 3 S., R. 74 W., Sixth principal meridian, Clear Creek County, Colorado.

Fractured, iron-stained granite pegmatite has been prospected by two shallow shafts on the George Peabody claim and several prospect pits on the other claims. As the mine workings were inaccessible at the time of examination, July 1949, radiometric traverses were made of the area covered by the claims, and the dump at one shaft was sampled.

Torbernite and an unidentified radioactive mineral are associated with hydrous iron oxides on fracture surfaces in pre-Cambrian granite and pegmatite. A composite sample from the George Peabody dump contained 0.013 percent U_3O_8 .

Introduction

The Robineau claims, sec. 35, T. 3 S., R. 74 W., Sixth principal meridian, Clear Creek County, Colorado, consisting of one patented claim, the George Peabody, and two unpatented claims, the MacGregor and Little Mac, are owned by L. G. Robineau and J. H. Harris of Dumont, Colorado. At the time of the field work described in this report the claims were reportedly leased by J. H. and M. R. Phillips of Leadville, Colorado.

The claims are at an altitude of approximately 10,000 feet on a ridge separating the Clear Creek and Silver Creek valleys. They are about 1 mile from the town of Silver Creek (fig. 1) and are reached by means of a trail. Silver Creek is approximately half a mile by dirt road from Lawson, Colorado.

The claims were examined on July 18, 1949, by a party consisting of H. C. Granger and R. U. King of the U. S. Geological Survey, D.L. Everhart of the Atomic Energy Commission, and H. Wright of Columbia University.

All accessible mine workings and outcrops within an area of about half a square mile were traversed radiometrically using Beckman and El-Tronics survey meters.

The workings on the George Peabody claim consist of two shallow shafts, both now caved and inaccessible, and a number of small prospect pits. The west shaft is about 40 feet deep, and there is said to be a 30-foot crosscut at the bottom. Both shafts were sunk in a fractured zone of the granite country rock.

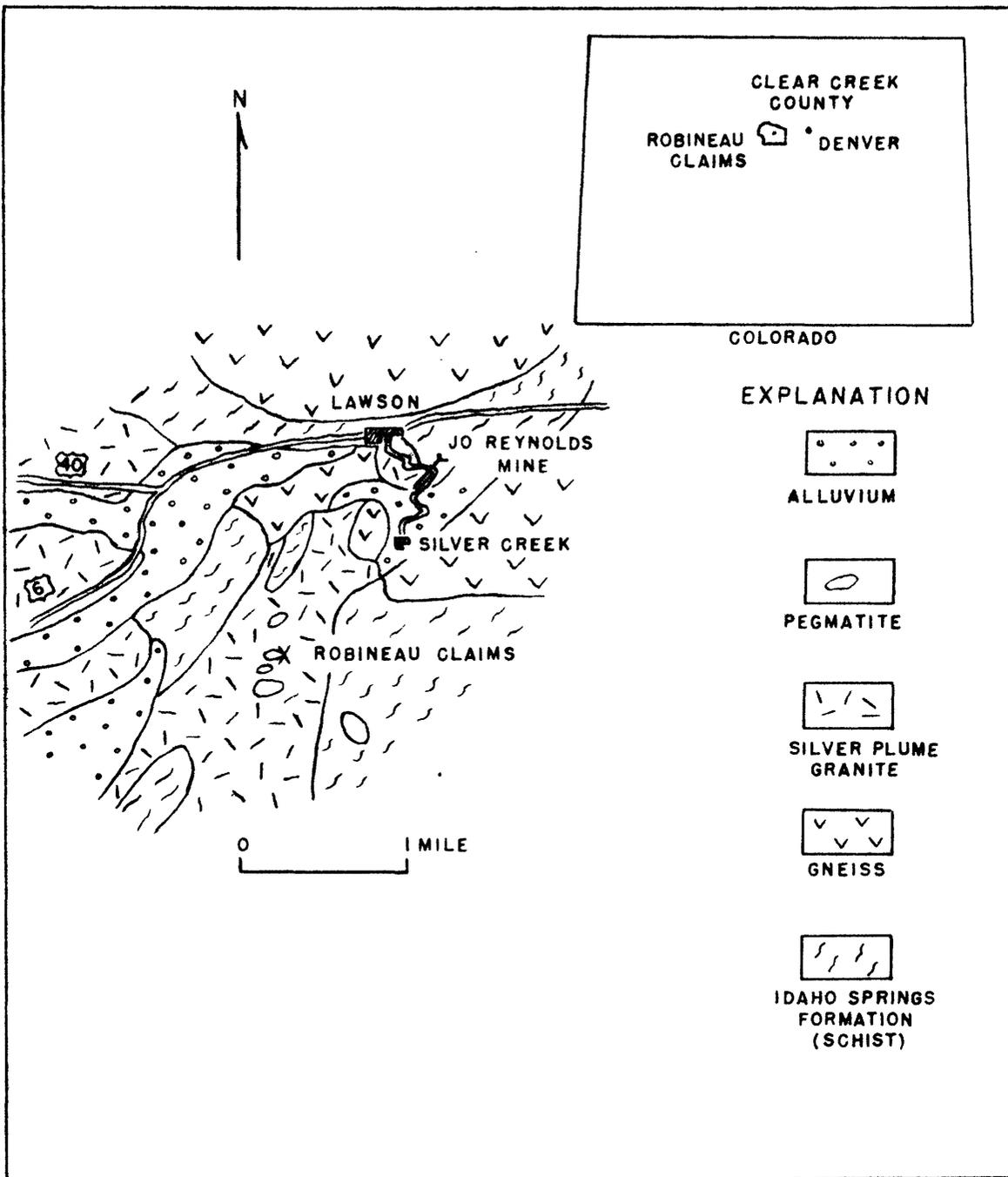


FIGURE I.- MAP SHOWING THE LOCATION AND GENERAL GEOLOGY OF THE ROBINEAU CLAIMS, CLEAR CREEK COUNTY, COLORADO

Geology

The geology of the area has been described by Spurr, Garry, and Ball /, and by Bastin and Hill /.

/ Spurr, J. E., Garry, G. H., and Ball, S. H., Economic geology of the Georgetown quadrangle, Colo.: U. S. Geol. Survey Prof. Paper 63, 1908.

/ Bastin, E. S., and Hill, J. M., Economic geology of Gilpin County, and adjacent parts of Clear Creek and Boulder Counties, Colo.: U. S. Geol. Survey Prof. Paper 94, 1917.

The rocks in the immediate vicinity of the Robineau claims are pre-Cambrian in age. A quartz-biotite schist of the Idaho Springs formation is the oldest rock in the area. This schist has been intruded by granite, and is now an injection gneiss.

Younger rocks are a coarse-grained quartz-feldspar-biotite granite gneiss, and the Silver Flume biotite granite. The Silver Flume granite is medium- to coarse-grained and commonly contains lath-shaped feldspar phenocrysts which are roughly parallel to one another.

The youngest pre-Cambrian rocks of the area are small granite pegmatite dikes. They are generally less than 15 feet wide and 100 feet long.

Radioactive material at the Robineau claims appears to be restricted to a granite pegmatite. Fracture surfaces of pieces of rock on the dump and at the collar of the west shaft on the George Peabody claim are coated with a heavy black mineral, tentatively

identified as goethite. Bright green scales of torbernite also occur as coatings on fracture walls and seem to be closely associated with brown and black iron oxide stains. An unidentified, non-fluorescent, dull yellow, radioactive mineral occurs as minute acicular rosettes lining fractures in the pegmatite. Although autunite has been reported from the deposit /, no specimens were seen during this examination.

/ Randall, J. S., Minerals of Colorado, 49 pp., Georgetown, Colo., 1886

All of the observed minerals appeared to be secondary, and no sulphide minerals were noted.

No uranium minerals were found in any of the prospect pits on the MacGregor and Little Mac claims. In the pits only iron-stained, fractured granite and schist are exposed.

Some production of pitchblende has been reported from the Jo Reynolds mine, about 1.5 miles northeast of the Robineau claims (fig. 1). The occurrence is of interest in its effect on the appraisal of the district for uranium deposits.

Radioactivity

The radioactivity at most of the prospect pits on the Robineau claims is slightly higher than background. Background readings taken at several stations in the immediate vicinity averaged 5 divisions on the .2 scale of an El-Tronics field counter. The average

radioactivity of Idaho Springs schist at the east shaft is 10 divisions on the .2 scale or two times background. The dump at the west shaft on the George Peabody claim, where torbernite is visible, is the most radioactive area examined, rate-meter readings averaging about 13 divisions on the 0.2 scale (between 2 and 3 times background). Selected samples of torbernite from the dump give readings as high as 3 divisions on the 20 scale. One composite sample of waste rock taken from seven parts of the dump contained 0.013 percent U_3O_8 .