W. P. Blake on the Gold Region of California and Oregon. 13

creek these transparent plates are found in the Miocene strata; some of them are combined with the fibrous variety, and form beautiful cabinet specimens. Good crystals are also found in this county, at the antimony localities. Thin transparent plates are numerous in the Miocene strata bordering the Colorado Desert, and on the borders of Carrizo creek they are found lying loose upon the surface where the strata have been worn away by the rains. Seams of gypsum are numerous in the tertiary strata of Benicia.

Wherever I saw the gypsum in the tertiary strata, it appeared to have been formed by the infiltration of sulphates and their decomposition by the lime of the beds.

BITUMEN — The occurrence of bitumen springs in the Coast Mountains has been noticed in the writer's preliminary Report.*

Near the Pueblo de los Angeles, there is a large pond or lake of the bitumen about one quarter of a mile in diameter. Its central portion is soft and semifluid but the outer parts are hardened by exposure. The material is much used for covering roofs, and at Monterey I saw a good basement formed from its mixture with sand and gravel.

SULPHUR.—Very interesting specimens of sulphur can be obtained at the Geysers or hot springs in Napa Valley. It occurs in crusts or lining fissures in the soil and tufaceous deposits around the springs, and is in small crystals, forming drusy surfaces.

BERVL?—*Twolumne Co.*—Small and well formed bexagonal crystals having the hardness and color of beryl have been obtained from the Tuolumne river three or four miles from Jamestown. The specimens that I saw were apple-green, and one of the smallest was emerald-green and transparent. The largest crystal was nearly $\frac{1}{4}$ of an inch in diameter and terminated at both ends with the plancs R, and $-\frac{1}{2}$, as in tourmaline. I was unable to retain the specimens for further examination.

TOURMALINE.—San Diego Co.—Black tourmalines of unusual size (from six to eight inches in diameter) occur abundantly in the huge feldspathic veins that traverse the granite ridges bordering the elevated valley of San Felipe, in the mountains between San Diego and the Colorado desert. These crystals are not perfect.

FELDSPAR.—ORTHOCLASE.—San Diego Co.—Good crystallizations of this mineral can be found in the granite veins near the road between Santa Isabel and San Pasquale. They are associated with tourmalines and garnets.

ANDALUSITE, Mariposa Co.—This interesting mineral was found in great abundance in a conglomerate that caps the hills along the Churchillas rivers (San Joaquin valley) at the crossing of the road leading to Fort Miller.

* See also this Journal, [2] xix, p. 433.

regon.

o of the debris this ac-; one of en wide. decomner with ong pris-

on or efof ponds bundant hat flow the init. shallow streams tertiary

e evapot of salt o the one

the Sivicinity nick bed, ken, and Indians. red to a able use. the Mothrough-

quantity Los An-

ed about bay. It llized in locality shipped

n in the he state. ick lyipg at Ocoya Preliminary

rvey in Cal-