

mercial importance, so far discovered, occur in the state of California.¹ There they are found in numerous widely scattered localities throughout the coast range and on the western slope of the Sierra Nevadas, extending from Mendicino county in the north to Riverside county in the south, a distance of approximately 500 miles. Deposits of considerable size are said to occur in eleven different counties in this territory, but up to the outbreak of the war mining operations on most of the properties had scarcely passed the prospect stage. The most important deposits are situated in Tulare, Sonoma, and Santa Clara counties, a considerable part of the total production of the state being derived from deposits in the vicinity of Porterville, Tulare county.

With the exception of certain deposits of magnesite near Bissel in Kern county, which occur associated with clays and clay shales and on that account are regarded as of sedimentary origin, all the Californian magnesite deposits occur as irregular veins, masses, or stockworks in serpentine resulting from the alteration of magnesian igneous rocks. Though in some localities veins and masses of magnesite 20 feet or more in width are present, most of the deposits consist of numerous small veins; and, in consequence, a considerable portion of the material mined requires hand sorting and the proportion of waste rock is large.

The chemical composition of typical samples of Californian magnesite is indicated in the following table:

Chemical Analyses of Californian Magnesite.

	I	II	III	IV
Silica.....	2.28	7.67	0.73	4.73
Alumina.....	0.03	0.26	0.14	0.12
Ferric oxide.....	0.26	0.29	0.21	0.08
Lime.....	1.32	0.04	0.40	0.43
Magnesia.....	45.17	43.42	46.61	44.73
Carbon dioxide.....	50.74	48.08	51.52	49.40
Total.....	99.80	99.76	99.61	99.55

- I. Porterville, Tulare county, Bull. 355, U.S.G.S., 1908, p. 56.
- II. Red Slide, Sonoma county, Bull. 355, U.S.G.S., 1908, p. 26.
- III. Red Mountain, Santa Clara county, Bull. 355, U.S.G.S., 1908, p. 36.
- IV. Near Winchester, Riverside county.

The preceding analyses indicate that in chemical composition the Californian magnesite differs little from the Grecian magnesite; but the higher cost of production and transportation has made it difficult for the Californian magnesite to compete with the Grecian product even on

¹ Deposits of magnesite of possible commercial importance have recently been reported to occur near St. Thomas in Clark county, Nevada, and in the northern part of the state of Washington. Eng. and Min. World, vol. XLIV, 1916, p. 482, and Eng. and Min. Jour., vol. CIII, 1917, p. 601.