

granitic rock (leucogranite) for the most part. It does not appear likely that this deposit will be developed further because 1) hand-cobbing would not result in a consistently high-grade potash feldspar product; 2) a relatively pure feldspar product could be obtained only through expensive grinding and flotation; and 3) the present feldspar markets in California are supplied mostly by flotation feldspar from dune sand near Pacific Grove and by high-grade pegmatite feldspar from out of state.

#### GEM STONES

Semiprecious gem stones have been gathered in Monterey County for many years by mineral dealers, amateur collectors, and lapidarists, but there has been no formal mining of these materials. Most of the gem stones so obtained are sold rough, slabbed, or as finished jewelry and art work. However, only a small portion of the gem stones sold are believed to be reported on official records. The recorded (intermittent from 1935 to 1963) production of unprocessed nephrite jade and jasper, plus small amounts of rhodonite and other minerals, amounts to 7,168 pounds valued at \$3,883.

#### Nephrite Jade

Nephrite jade is a compact, fibrous form of tremolite or actinolite and is similar in appearance to jadeite. It is found in place at Jade Cove (W $\frac{1}{2}$  sec. 19, T. 23 S., R. 5 E.) just south of Plaskett Creek and at Cape San Martin (NE $\frac{1}{4}$  sec. 31, T. 23 S., R. 5 E.) just south of the Willow Creek bridge. Here the jade is exposed as pods and nodules in cataclastic schist and mylonite, probably derived from Franciscan sedimentary rocks and the intruded serpentinite. R. A. Crippen, Jr. (1951, pp. 3-14), who has described these deposits in great detail, points out that the exposures of nephrite "are excellent for geologic observation, but the material found in place is not of choice color."

The Jade Cove jade was the first discovery of nephrite jade in place in California. Jade pebbles and boulders have been found along the beaches in southern Monterey County, especially near Jade Cove and Cape San Martin, and have provided excellent museum specimens and fine quality lapidary material for more than 20 years. These jade localities are well known among the numerous mineral dealers and mineral and lapidary societies, and constant collecting over the years has left the beaches practically free of jade. However, small quantities of jade pebbles are exposed on the beaches after storms.

In addition to the beaches and cliffs, nephrite jade also has been found offshore in the Cape San Martin-Jade Cove areas by skin divers. Individual boulders weighing as much as 100 pounds or more have been obtained from the sea floor as early as 1955-1956 by divers using self-contained underwater breathing apparatus. Prior to May 1957 (Mohler 1957, p. 4-5) nearly

1,000 pounds of jade had been recovered by this method.

Unpublished data show that recorded production of jade through 1960 amounts to more than 1,000 pounds and is valued at nearly \$2,000. However, the actual amount of jade collected undoubtedly is many times this amount, although not all is of gem quality.

#### Jasper

Jasper is a cryptocrystalline variety of quartz that is generally opaque. The inclusion of finely divided iron oxides usually give the jasper its characteristic colors, which may be solid or variegated. Jasper is commonly found as pebbles, in streams or along the beach; outcrops are much less abundant. One of the most notable deposits of in-place jasper in California is located in Stone Canyon, 16 miles northeast of Bradley. Here, the jasper is brecciated and cemented with chalcedony. Other occurrences of similar material have been noted on Mustang Ridge along State Highway 198 near the western margin of the San Andreas fault zone. The recorded production of jasper to 1960 is 3,775 pounds, valued at nearly \$1,000, most of which probably came from the Stone Canyon deposit. It is likely that more jasper has been collected in Monterey County than records indicate.

*Stone Canyon deposit.* Location: Probably SW $\frac{1}{4}$  sec. 16, T. 22 S., R. 13 E., M.D., near the confluence of Stone Canyon and Nelson Creek. Ownership: Mrs. Hope Bagby, Hidden Valley Ranch, San Miguel.

This deposit has been known and developed as a collecting site at least as early as 1892 when the first of several specimens of Stone Canyon jasper was donated to the California Mining Bureau (now Division of Mines and Geology) for exhibit. The deposit consists of a "vein" 2 to 4 feet thick of distinctive, brecciated jasper cemented with chalcedony (Rowe, 1956, pp. 44, 46). The origin of this material is not definitely known, but probably it formed as a result of brecciation of Franciscan chert and later cementation by secondary chalcedony. According to Sperisen (1938, p. 49), "the deposit contains several thousand tons of jasper, including boulders weighing as much as several tons each. The dominant color of the jasper here is tan and brown and the breccia is cemented with chalcedony varying in color from white, through blue, purple, brown, and black." The material is said to be easy to work and takes a high polish.

Little if any formal development has taken place and, in all probability, a substantial amount of material remains at the deposit. However, the deposit is on private property and is not open to individual prospectors or collectors.

#### Rhodonite

Rhodonite is a pink manganese silicate generally associated with black manganese oxides or pink carbonate. It is similar in color to rhodochrosite (manganese carbonate), but is harder, being about 6 on