The limestone is mined by quarrying and shrinkage stoping. Originally the limestone bed formed a prominent cliff so that it could be mined by quarrying with little dilution from the overlying dolomite. In recent years, however, the amount of overlying dolomite quarried with the limestone became excessive and preparations were made to mine the limestone by shrinkage stoping. For this purpose development headings 12 feet and 8 feet in width are driven at the base of the limestone bed. The shrinkage stopes are about 30 feet wide, 80 feet high, and up to 250 feet long. Pillars left between successive stopes average 20 feet in width. To facilitate drawing off the broken ore from the stopes, drifts are driven into the pillars, and from these drifts small crosscuts tap the stopes at convenient intervals. At the time of writer's visit the shrinkage-stoping operations were in the experimental stage, and all the details had not been worked out completely.

The stopes are advanced by drilling on broken rock. Holes are drilled from 8 to 12 feet deep with jackhammers and 7/8-inch hollow hexagonal steel with detachable bits. Blasting is done with 40-percent gelatin dynamite and No. 6 detonaters.

The broken limestone is shoveled off the floor of the level by hand into 1-ton mine cars. Eventually, mucking machines may be employed. Tramming is done by hand. The crushing and lime-burning plants are below the quarry floor, so that the limestone is transported by gravity trams of the 3-rail type.

Carnotite Deposit

In 1915 carnotite was discovered in a railroad cut several miles south of Sloan by N. E. Williams of Las Vegas, Nev.

The carnotite, associated with calcite and manganese oxides, occurs as thin coatings along joint planes in rhyolite. Very little prospecting work has been done, and the deposits are too small to be of commercial interest.

SUNSET DISTRICT

(Gold, Feldspar)

The Sunset district is in southern Clark County near the California boundary line 4 1/2 miles east of Desert, Calif., a station on the Los Angeles & Salt Lake R.R. This district adjoins the Crescent district on the north. The only productive property in this area has been the Lucy Gray mine, discovered by Lee Bright in 1905. This property is said to have produced about $50,000 and, judging from the tailings pile at the mine, comprising about 4,000 tons, this is probably substantially correct. The property formerly was equipped with a Lane slow-speed Chilean mill and cyanide leaching equipment.

Deposits of feldspar in pegmatite dikes were located in this area in 1936, but no production has been made.

Lucy Gray Mine

The Lucy Gray mine comprises nine unpatented claims owned by the Bright brothers, John and Will, of Los Angeles, Calif. The property was last worked under company management in 1920, but since that date lessees have made sporadic shipments. In February 1937 the property was under 10-year lease to J. W. Collis and J. H. Roese of Los Angeles, who were preparing to equip it. The lease specifies royalty payments of 10 percent on the net mill or smelter returns.

Development includes a two-compartment vertical shaft 300 feet deep with main levels at 100-, 200-, and 300-foot elevations, and five short adits none of which is over 100 feet long. Total workings comprise 3,200 feet. Most of the equipment has been removed from the property.

The ore deposits occur as pockets in shattered zones in a granitic gneiss formation. The values are principally in gold, with minor amounts of silver. The gangue is chiefly jaspery quartz and iron oxides.

Feldspar Deposits

Feldspar occurs in the Sunset district 4 miles east from Desert, Calif. The deposits are covered by three unpatented claims located by George Noltkamper of Nipton, Calif., in 1936. Very little work has been done on the claims.

The feldspar occurs in numerous pegmatite dikes varying from a few feet to 30 feet in width. In most of the dikes the feldspar is intimately associated with quartz and biotite. However, in one dike averaging 30 feet in width and outcropping for a length of 500 feet masses of fairly clean feldspar are exposed.