

served a reddish brown mineral which proved on investigation to be andalusite. Since andalusite is not a common constituent of pegmatites, the occurrence seems worthy of mention and a brief description.

The country rock is a metamorphosed sedimentary series, now a schist, intruded by peridotite, and the whole mass is cut by a number of small pegmatite dikes. The peridotite is almost completely altered to serpentine, with veins of magnesite, while the pegmatites are essentially unaltered. Andalusite occurs in two distinct types of dikes, one dark in color, the other light.

The dark pegmatite is well exposed in one of the quarry pits, and shows clean cut, regular walls against the serpentine. The component minerals are, roughly in order of abundance, as follows: a dirty white to gray plagioclase feldspar, white orthoclase, quartz, black tourmaline, andalusite, biotite, sillimanite, and exceptionally, a grain or two of bright blue cordierite. The gray plagioclase is oligoclase ($Ab_3 An_2$), frequently filled with poikilitic blebs of quartz. The orthoclase is entirely free from quartz, and occurs in scattered, rather large individuals. Quartz also occurs interstitially to the feldspars. Andalusite appears as square prisms from an eighth to half an inch across, by one to three inches long, or in more irregular masses of varying size. Most of it is nearly opaque, but occasionally the interior of a prism may be perfectly transparent, reddish, green, or even colorless. Andalusite tends to be concentrated along the borders of this dike, with a little perhaps even in the wall rock. Close examination shows the presence of sillimanite more or less completely replacing some of the andalusite grains. Thin sections further confirm this relationship, and show the strong pleochroism of the andalusite, pink to colorless.

While the gray feldspar is dominantly oligoclase, one nearby portion of this dike carries a blue gray, much darker feldspar, and black tourmaline, but no andalusite. This feldspar is andesine (about $Ab_3 An_6$), which shows both albite and pericline twinning, sometimes in "checker-board" structure.

In the light colored pegmatite the grain is rather fine, and the mineral association is albite and quartz, in about equal proportions, rather evenly distributed andalusite, and a very small amount of black tourmaline. The andalusite in this locality tends to be paler in color than that in the dark colored dike.

BUSTAMITE FROM INYO COUNTY, CALIFORNIA

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In the course of field work in Saline Valley, Inyo County, California, numerous boulders of a silicate rock containing large irregular patches

of a pink mineral were collected in a large alluvial fan on the east side of the valley near the south end. The mineral proved upon examination to be bustamite.

Qualitative tests indicate: (1) manganese, strong test with borax bead; (2) magnesium, small amount when precipitated as magnesium ammonium phosphate; (3) presence of iron; (4) presence of calcium. Physical properties are: hardness, 5.5–6.5; cleavages, two directions, one prominent, one imperfect; color, brilliant pink to rose; luster, vitreous to pearly. The beta index was determined as 1.70.

The source of the boulders could not be located. This is the first occurrence of this member of the rhodonite series known to the authors in the State of California.

THE PROBABLE NON-EXISTENCE OF ARSENOFERRITE

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Foshag and Short¹ have described some apparently isotropic metallic mineral of analysis close to ideal FeAs_2 . They suggested that this mineral might be the iron arsenide member of the pyrite group.

From certain crystal structural considerations it seemed to the writer unlikely that FeAs_2 would assume the pyrite type of structure, and that this isotropic material, therefore, represented some other crystal structure type. Dr. Foshag was kind enough to supply some coarse powder from the original analyzed arsenoferrite for x-ray examination. Powder photographs were taken of this material using cobalt radiation (which is only slightly absorbed by iron-bearing minerals).



ARSENOFERRITE
LÖLLINGITE

FIG. 1

It quickly became apparent that it was impossible to reconcile the arsenoferrite diffraction pattern with that to be expected from a crystal based on any of the cubic space lattices. Since the mineral is not cubic, the possibility therefore suggested itself that it is löllingite. That this is indeed the case is proved by a comparison of the powder photograph of arsenoferrite with that of löllingite from Reichenstein, Germany. Figure 1 clearly indicates that these two materials are identical, except that the arsenoferrite has slightly greater interplanar spacings.

¹ Foshag, William F., and Short, M. N., Arsenoferrite from Jachymov, Czechoslovakia: *Am. Mineral.*, vol. 15, pp. 428–439, 1930.