

Azurite.—Blue carbonate of copper is not so common, but was observed in a small cavity in quartz at the *O.K.* mine.

SILICATES.

Wollastonite.—Wollastonite has been reported from Rosslund, and the optical properties of a greyish bladed mineral from the *War Eagle* indicate that it should be referred to this species.

Actinolite.—Actinolite occurs in a sample of ore from the 600-foot level of the *Le Roi*. It forms rosettes of silky green needles between which chalcopyrite and pyrrhotite have been deposited. Also in a small cavity in monzonite from the *City of Spokane* tunnel small dark-green radiating needles of actinolite occur. It is an associate of the chalcopyrite ore of the *Deer Park* mine, and in general seems to be frequently developed as a secondary mineral near ore-bearing fissures.

Gaucht.—Massive reddish-brown garnet occurs in the ores occasionally, and in vugs small deep-red crystals are sometimes found. The usual form is the trapezohedron.

Epidote.—Epidote is a frequent secondary product of rock-alteration and is found in fissures and irregular masses in all formations but more especially in the older granite rocks. In the deeper levels the rocks sometimes exhibit a faint banding that seems to be due to the presence of epidote along certain zones.

Apophyllite.—Apophyllite is one of the most common of the crystallized minerals in the vugs and the open fissures. Crystals of three different habits have been noted:—

(a.) Crystals of the type common in apophyllite, consisting of the almost cubic form of the prism and basal pinacoid. The corners are usually modified by the unit pyramid. The colour of this variety is white with a pearly lustre.

(b.) The second type has the prism relatively elongated and the pyramid developed to the exclusion of the basal pinacoid. The colour is a faint pink.

(c.) The third type is flat tabular. The prism is only slightly developed and unshaded. The base and unit pyramid are the prominent forms. The crystals are aggregated either in parallel groups with the basal faces in contact or in radiating growths. The colour is pink.

Apophyllite of the first type with crystals $\frac{1}{2}$ inch in diameter forms an encrustation on bleached vein-matter on the 1,200-foot level of the *Centre Star*. Crystals from the second level approach the second type, but still retain a small basal pinacoid.

Lanmontite.—This mineral is also commonly found among the minerals of the vugs. It forms delicate needle-like crystals showing the unit prism terminated by the orthodome (201). When first obtained the crystals are bright and transparent, but on exposure to surface conditions they lose water and soon become white and opaque and finally disintegrate.

Chabazite.—Chabazite occurs under the same conditions as and in association with lanmontite. It forms almost cubic rhombohedra $\frac{1}{2}$ inch in diameter and often forms penetration twins. The variety is white with a delicate pearly lustre.

Gmelinite.—Gmelinite has been reported as reddish white well-formed translucent crystals of rhombohedral habit occurring in the *War Eagle* workings.*

Prehnite.—Translucent prehnite. Olive-green when fresh, but becoming white on exposure, was found in the No. 3 *War Eagle* tunnel. Minute pyrite crystals were found on the surface.

Muscovite.—Muscovite is common as an alteration product and a constituent on the zone of secondary minerals developed by the ore solutions.

Biotite.—The black mica is also produced rather commonly in the neighbourhood of the ores.

Chlorite.—This mineral is found in large amounts in similar relationships as muscovite and biotite.

Serpentine.—Impure serpentine forms a rock type exposed at various places near Rosslund. An outcrop is found on the Great Northern Railway near the *O.K.* mine. It is probably a product of the alteration of a pyroxenite or similar basic rock. Serpentine is also common in fissures and along fault surfaces.

Erythrite.—Hydrous cobalt arsenate forms as an earthy alteration product from cobaltiferous minerals. It is found chiefly as a thin coating on pyrrhotite or arsenopyrite.

* Annual Report, Geological Survey of Canada, 1899, page 28.

† Geological Survey of Canada, Memoir 77, page 82.