

Chalcedony, Carnelian, and Jasper.—Common in fissures in the slates.

Wood Opal and Semi-opal.—Abundant in the Miocene tuffs and breccias.

Felspars.—Orthoclase occurs in the Miocene trachytic dykes and plagioclases in all the solid lavas, as also do the amphiboles and pyroxes. These have already been dealt with microscopically in Chapter VIII.

Kaolin.—This is the “pug” of the miners, and is abundant in the reefs, resulting from the decomposition of the felspars in the country rock.

Glaucosite.—Occurs staining the Kathleen tuffs at the 345 ft. level, resulting probably from the decomposition of the ferro-magnesian silicates.

B.—Metallic Minerals.

Pyrolusite and Wad.—Occur in limited quantities in the reefs generally, but are more especially characteristic of the Tokatea Range, where the quartz is often stained black from the presence of these oxides.

Native Arsenic.—Occurs throughout the auriferous belt, and is one of the best local indicators for gold. Occurs massive in the Kapanga reef and in the Wynyardton Mine. In the Tokatea Consols it occurs as reniform nodules. Colour of freshly broken surface grey and shining, but face soon tarnishes on exposure, becoming a dull black. Geodes often 6 in. to 9 in. in diameter, and enclosing thread gold.

Arsenolite (As_2O_3), Orpiment, Realgar.—I have collected specimens of these minerals from the Tokatea Hill, but am rather inclined to the opinion that they are artificial products arising from a fire having been lighted near or on a reef containing native arsenic. They were found as an incrustation on the exposed wall of a quartz reef.

Antimonite or Stibnite.—Occurs in fine rhombic prisms, and also as an impalpable powder in the pug of reefs in the Blagrove's and Hauraki North Mines. It also occurs as longer needles in the Matawai district. It is, next to native arsenic, one of the best indicators for gold on the field.

Kermesite ($Sb_2S_3 + Sb_2O_3$).—Occurs in cherry-red fibrous crystals as an incrustation on the reef in the Hauraki North Mine.

Galena.—Occurs in considerable quantities in reefs in the Tiki and Matawai districts together with ores of copper. It is argentiferous, but not highly so.

Hedyphane (a variety of Mimetite).—Occurs in clay partings near the slaty shales, with, however, the greater part of the lead replaced by calcium. Lustre resinous; colour pale-yellow.

Magnetite.—Occurs in microscopic crystals as described in treating of the rock-sections under the microscope.

Hematite.—Earthy forms common in the Miocene breccias, resulting probably from the ultimate decomposition of the hornblendes common in those rocks.

Limonite.—Occurs also under the same conditions.

Pyrites.—Exceedingly common throughout the field, both in reefs and in the country rock. Reefs of pyrites up to 1 ft. in width are not uncommon. Pyrites is considered a very good indicator for gold. Occurs in cubes with striated faces, in pyritohedrons and combinations of the pyritohedron and cube faces.

Chalcopyrite or Copper-pyrites.—Abundant on the field, weathering in many cases to erubescite. Forms part of the galena lode in the Karaka Creek.

Marcasite; Mispickel.—These sulphides and sulph-arsenides are common in quartz reefs in the Matawai district, and it is to the presence of these, together with antimonite, that the Matawai ore owes its refractory nature.

Melanterite or Copperas.—Occurs in small stalactites in the Hauraki Mine. Found only in dry places. Abundant in mine-waters. The presence of this mineral necessitates the use of untanned-leather boots in the mines, as otherwise the $FeSO_4$ unites with the tannic acid of the leather to form an ink which stains the feet black.

Vivianite.—Occurs in small quantities as a whitish-blue incrustation on bones, generally in swampy places or in localities that have previously been swampy.

Ilmenite or Menaccanite.—Occurs massive as rolled pebbles in the Waikoromiko Creek. Colour black, lustre submetallic, streak brownish-red. Acts strongly on the magnetic needle.

Native Copper.—Found in small grains in the galena lode in the Karaka Creek. Grains rather finely arborescent. Associated with the copper-pyrites in this lode are the following copper-ores: Bornite occurs as an iridescent film on copper-pyrites. Malachite and azurite, the green and blue carbonates, are found as incrustations at the outcrop of the lode.

Argentite.—Occurs sparingly in black bands through some quartz reefs in the Matawai district.

Pyrrargyrite.—Found as small cochineal-red crystals in the Golden Pah Mine. I have, however, obtained only a single small crystal.

Kerargyrite.—Occurs in the Waikoromiko Creek district. Here several pounds were obtained some ten years ago. Brown on surface, and waxy-grey interior.

Native Gold.—The occurrence and properties of this mineral have been already described.

XVI.—FUTURE PROSPECTS OF THE FIELD, ETC.

On the majority of goldfields it is not a difficult matter to prognosticate with some degree of accuracy the future of the field for several years in advance, but in the case of the Coromandel field this is well-nigh impossible. The auriferous deposits are so extremely irregular both in position and extent that no data can be obtained for a calculation of this nature, and, speaking generally, there are no reefs in Coromandel with a uniform ore-value such as exist on the Ohinemuri goldfields, in the south of the Hauraki Peninsula.