

Compact Iron Ore, D'Urville Island, Nelson. Vein, thickness unknown, in diorite slate, with serpentine and chrome, yields, 63 per cent. of iron.

Concretionary Hæmatite or Limonite, Mongonui, Auckland. Occurs strewn on the surface from the decomposition of clays, associated with lignite seams; a common ore.

Hæmatite (about 40 per cent. of iron), Collingwood, Nelson. Occurs intermixed with quartz pebbles in a stratum 100 ft. thick, exposed over several acres.

Hæmatite. Exhibited by W. Lodder, Auckland.

Hæmatite, Collingwood. Exhibited by Johnston and Louisson, Nelson.

Hæmatite Pigment. Exhibited by Johnston and Louisson, Nelson.

Ironstone (two specimens). Exhibited by E. Ford, Christchurch, Canterbury.

Ironstone, Malvern, Canterbury. Exhibited by W. Wilson, Christchurch, Canterbury.

Bog Iron Ore, Spring Swamps, Auckland. Forms thick layers at the bottom of swamps. Though rich in iron, the ore is inferior, on account of the sulphur and phosphorus it usually contains.

Reniform Iron Ore, or Hydrous Hæmatite, Mongonui.

Carbonaceous Iron Ore with coal seams, Collingwood.

CHROME ORES.

The pure ore contains 50 per cent. of the chrome oxide, and is worth from £11 to £20 per ton, according to the state of the market. Used for manufacture of pigments and dye salts.

Massive Chromic Iron.

Crystalized Chromic Iron. From irregular lodes in serpentine bands. Dun Mountain, Nelson.

Dunite, interspersed with crystal of chrome ore. Dun Mountain, Nelson.

COPPER ORES.

Copper Pyrites. Mixture of sulphides of copper and iron. From a lode 3 ft. to 5 ft. thick in mica schist, Moke Creek, Wakatipu Lake. The ore is very pure, and contains from 11 to 25 per cent. of metallic copper; the usual average of such ore in Cornwall being only five per cent. There is limestone in close vicinity to the lode; so that there would be no difficulty in reducing the ore to a "regulus," in which state it would save cost in shipment.

Grey Sulphide, Wangapeka, Nelson. Contains 55 per cent. of copper, together with a little silver and gold.

Cupreous Iron Ore, in Serpentine, Dun Mountain. Interesting from its being slightly auriferous.

Copper Ore. Decimal Company's Mine, Collingwood, Nelson.

Graphite, Collingwood, Nelson.

LEAD ORES.

Galena, Wangapeka, Nelson. Sulphide of lead, with quartz that contains also sulphides of iron, and antimony with gold, in veins in felspathic schist. The Galena contains 26 oz. of silver per ton. The gold is only in those parts of the ore that contains iron pyrites.

Galena with Zinc Blende, Perseverance Mine, Collingwood, Nelson. Occurs in a band 2 ft. to 5 ft. thick, parallel with auriferous quartz veins. These two ores are both pure, but so intermixed in the lode that they could not be reduced separately. 100 tons has been sent to Great Britain to test the value of this ore.

ZINC ORE (YELLOW OR HONEY BLENDE).

This ore occurs in the Perseverance Mine, Collingwood, Nelson, and in small quantity in Tararua Creek, Thames, in white cement with auriferous veins. It contains 60 per cent. of metallic zinc.

MANGANESE ORES.

Uses: For generation of chlorine for bleaching purposes; also for calico printing, &c. The value of these common ores is £3 to £4 per ton.

Rhodonite (silicate of manganese), Dunstan, Otago. As rolled masses. Percentage of manganese about 40.

Wad (hydrous oxide). Port Hardy, D'Urville Island, Nelson. Percentage of manganese about 45.

Braunite (Oxide of Manganese), on Malvern Hills, Canterbury. Exhibited by E. Ford, Christchurch, Canterbury.

PETROLEUM ROCK OIL.

Oozes from cracks in trachyte breccia, Sugarloaf Point, Taranaki. Wells have been bored to the depth of many hundred feet, but no steady supply of oil has been obtained. Crude oil has a specific gravity of 962·7 at 60°, and yields by fractional distillation, oils, having the following gravities:—

2 per cent. of oil of sp. gr.	...	...	...	874
10 "	"	"	...	893
8 "	"	"	...	917
60 "	"	"	...	941
—				
80				

The kerosene oil of commerce has a density of ·810 to ·820.

This oil is therefore quite unadapted as a substitute for kerosene, but might be used with great advantage as a lubricant.

PETROLEUM.

Waiapu, East Coast of Auckland Province. Crude oil has a specific gravity of ·872 at 58° Fahr.; boiling point, 290° Fahr.; flashing point, 230° Fahr. This oil yields, when distilled, as follows:—