GALENA—Lead sulphide—when heated strongly on charcoal, will give a soft malleable bead of metallic lead, which may be dissolved in hot dilute nitric acid. The proper tests can then be applied to this solution.

CHROMIC IRON ORE, when fused with sodium carbonate and nitrate, or nitre, gives a yellow mass in which chromic acid may be detected.

GRAPHITE, when roasted, slowly burns away, leaving generally an earthy residue, insoluble in ammonia.

MOLYBDENITE, when roasted, gradually loses its dark colour, leaving a yellowish residue, which dissolves partly in ammonia. The molybdic acid can be detected by sodium phosphate (see page 13), or by blue colour produced by zinc and hydrochloric acid.

COPPER NICKEL.—Arsenide of nickel, of a red or copper colour, when heated in a tube open at both ends, and held in a slanting position, produces a white crystalline sublimate of arsenious acid. The residue, or the mineral itself, dissolved in nitric acid by the aid of heat, diluted, filtered and treated with hydrosulphuric acid, yields a yellow precipitate of arsenic sulphide; the filtrate is green, and gives the usual reactions of nickel. In some samples from mines on Lake Superior, the ore is mixed with metallic silver, sometimes in large quantities; the nitric solution will then give a precipitate with hydrochloric acid.

MISPICKEL, ARSENIDE AND SULPHIDE OF IRON.—The ore is of a whitish colour. When treated in a close tube gives a dark brown, or metallic ring if arsenic; if heated in an open tube gives a sublimate of arsenious acid, as above. Dissolves in nitric acid; the solution may be freed from arsenic by means of hydrosulphuric acid, and the filtrate tested for iron in the usual manner.

SILICIC ACID—Quartz—can be dissolved in fusing sodium carbonate with effervescence; the fused mass dissolved in water, the addition of hydrochloric acid will cause a gelatinous precipitate, or the acid solution may be evaporated to dryness, and washed with water; the silicic acid remains undissolved.

The above examples may serve as practice for the beginner. For plans for discriminating all the ordinarily occurring minerals, consult Chapman's "Minerals of Canada."

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