

**CUPREOUS BISMUTH.**—Kupferwismutherz. In long prismatic crystals cleavable very distinctly in one direction parallel to the axis of the prism. Fracture uneven. Opaque. Lustre metallic. Steel-grey, lead-grey, tin-white. Streak black. Sectile.  $H = 3.5$ .  $G = 5.0$ . Analysis by Klaproth:—copper 34.66, bismuth 47.24, sulphur 12.58. Was found at Galtenbach and Neuglück near Wittichen in Baden.

**CUPROPLUMBITE.**—Has a distinct cleavage parallel to the faces of a cube. Opaque. Lustre metallic. Blackish lead-grey. Streak black. Rather sectile.  $H = 2.5$ .  $G = 6.408 \dots 6.428$ . According to a quantitative blowpipe analysis by Plattner, it consists of:—sulphide of lead 74.98, sulphide of copper ( $Cu^2S$ ) 24.45, sulphide of silver 0.57. Occurs in Chile.

**ENARGITE.**—Prismatic.  $a$  100,  $b$  010,  $c$  001,  $m$  110.  $bc = 90^\circ 0'$ ,  $ca = 90^\circ 0'$ ,  $ab = 90^\circ 0'$ ,  $mm' = 81^\circ 49'$ . Cleavage.  $m$ , perfect;  $a$ ,  $b$ , distinct;  $c$ , indistinct. Fracture uneven. Lustre metallic. Black. Streak black. Brittle.  $H = 3$ .  $G = 4.430 \dots 4.445$ . When heated in the matrass decrepitates and yields a sublimate of sulphur, fuses into a globule below a red heat, and yields a sublimate of sulphurous acid and sulphide of arsenic. In the open tube gives off sulphurous acid and oxide of antimony. Before the blowpipe on charcoal emits fumes of sulphide of arsenic, and deposits a sublimate of arsenious acid, oxide of antimony, and oxide of zinc. After being roasted, it gives with borax the reactions of copper and iron. Analysis by Plattner:—sulphur 32.22, arsenic 17.60, antimony 1.61, copper 47.21, iron 0.57, zinc 0.23, silver 0.02. Is found abundantly in compact masses, containing sometimes crystalline druses, forming a vein in crystalline limestone, at Morococha, district of Jouli, in the Cordilleras of Peru.

**BISMUTHIC SILVER.**—Wismuthbleierz. Fracture uneven, fine-grained. Opaque. Lustre metallic. Light lead-grey. Acquires a dark tarnish by exposure. Soft. Sectile. Analysis by Klaproth:—silver, 15.0, lead 33.0, bismuth 27.0, iron 4.3, copper 0.9, sulphur 16.3. In delicate acicular and capillary crystals; massive; disseminated. Was found in gneiss in the Friedrich Christians mine at Schapbach in Baden.

**BISMUTHIC COBALT** is probably a mechanical mixture of bismuthine and smaltine. Analysis by Kersten:—cobalt 9.89, iron 4.77, bismuth 3.89, copper 1.30, nickel 1.11, arsenic 77.96, sulphur 1.02.