

Crystal Data: Triclinic. *Point Group:* $\bar{1}$ or 1. Small aggregates, to 1 cm, of thin laths or plates.

Physical Properties: *Cleavage:* Probable on $\{11\bar{1}\}$. *Hardness* = < 3 *D*(meas.) = 1.33–1.48 *D*(calc.) = 1.45

Optical Properties: Semitransparent. *Color:* Dark grayish purple, pale purplish red, reddish brown. *Luster:* Submetallic to adamantine.

Optical Class: [Biaxial.] *Absorption:* Strong reddish brown to reddish black. α = n.d. β = n.d. γ = n.d. *2V*(meas.) = n.d.

Cell Data: *Space Group:* $P\bar{1}$ or *P*1. $a = 8.508(24)$ $b = 11.185(27)$ $c = 7.299(15)$
 $\alpha = 90^\circ 51(15)'$ $\beta = 114^\circ 08(12)'$ $\gamma = 79^\circ 59(13)'$ $Z = 1$

X-ray Powder Pattern: Green River Formation, Utah, USA.
10.9 (100), 3.77 (80), 7.63 (50), 5.79 (40), 3.14 (40), 5.51 (35), 6.63 (30)

Chemistry: (1) Green River Formation, Utah, USA; electron microprobe analysis gave Ni 11%–14%; based on mass spectroscopic and IR results, the composition conforms to nickel porphyrin.

Occurrence: Of secondary origin on fracture surfaces in oil shale.

Association: Albite, orthoclase, pyrite, quartz, mica, dolomite, analcime.

Distribution: In the USA, in a drill core from Wosco, Big Pack Mountain Quadrangle, and several other localities in or near the Mahogany Zone, Green River Formation, Uintah Co., Utah, and in the Piceance Creek Basin, Rio Blanco Co., Colorado.

Name: Honors Philip Hauge Abelson (1913–), American organic geochemist, President of the Carnegie Institution of Washington, D.C., USA, and Editor of *Science*.

Type Material: The Natural History Museum, London, England, 1979,135; National Museum of Natural History, Washington, D.C., USA, 143566, 145712.

References: (1) Milton, C., E.J. Dwornik, P.A. Estep-Barnes, R.B. Finkelman, A. Pabst, and S. Palmer (1978) Abelsonite, nickel porphyrin, a new mineral from the Green River Formation, Utah. *Amer. Mineral.*, 63, 930–937. (2) Storm, C.B., J. Krane, T. Skjetne, N. Telnaes, J.F. Branthaver, and E.W. Baker (1984) The structure of abelsonite. *Science*, 223, 1075–1076. (3) Mason, G.M., L.G. Trudell, and J.F. Branthaver (1989) Review of the stratigraphic distribution and diagenetic history of abelsonite. *Organic Geochemistry*, 14, 585–594.