

NEW MINERAL NAMES

Hedleyite

H. V. WARREN AND M. A. PEACOCK: Hedleyite, a new bismuth telluride from British Columbia, with notes on wehrlite and some bismuth-tellurium alloys. *Univ. Toronto Studies*, Geol. Ser. No. 49, 55-69 (1945).

CRYSTALLOGRAPHY: Rhombohedral.

STRUCTURE CELL = a_{rh} 39.68 Å, $\alpha = 6^\circ 26\frac{1}{2}'$ (corresponding to the hexagonal cell a 4.46 Å, c 118.8 Å.); the rhombohedral unit cell contains 20 atoms or approximately $Bi_{14}Te_6$. This superlattice accounts for all lines in the x -ray pattern; a simpler cell a_{rh} 3.248 Å, $\alpha = 86^\circ 42\frac{1}{2}'$, containing 1 (Bi,Te) accounts for all but two lines.

HABIT: As plates up to 6 mm. wide and 1 mm. thick.

PHYSICAL PROPERTIES: Cleavage basal, easy, giving flexible and slightly elastic folia. Hardness = 2. $G. = 8.68-8.93$ (8.93 calcd. from x -ray data). Luster metallic, color tin white with iron-black tarnish. Opaque. By reflected light white in color and weakly anisotropic. Etch tests are given.

CHEMICAL PROPERTIES: Analyses by G. S. Eldridge of two samples gave Bi 80.60, 81.55; Te 18.52, 17.60; S 0.12, 0.04; sum 99.24, 99.19. Spectrographic analysis of the first sample gave Sb 0.05, Pb 0.01, Cu 0.01 per cent. This is nearest to Bi_5Te_3 , but Bi_7Te_3 is in better agreement with the requirements of the unit cell. Study of the system Bi-Te shows that hedleyite is a solid solution of Bi in Bi_2Te_3 . The Bi content is in excess of the maximum content under stability conditions.

OCCURRENCE: From the Good Hope mineral claim, about four miles southeast of Hedley, Osoyoos mining district, British Columbia. The country rock is a skarn composed mainly of garnet, epidote, and pyroxene, cut by irregular veins and stringers of quartz. Most of the hedleyite samples were in these quartz bodies, but some also was noted in the skarn. Associated minerals include bismuth, joseite, pyrrhotite, arsenopyrite, calcite, and gold.

NAME: For the locality.

MICHAEL FLEISCHER

Correction

Volume 29, page 444, Fig. 1, N_F should be interchanged with N_C , and F with C.