Crystal Data: Tetragonal. *Point Group:* $\bar{4}2m$. As crystals composed of pyramids and prisms, to 2 mm, and in crusts.

Physical Properties: Hardness = Soft. D(meas.) = 2.23 D(calc.) = 2.34 (from cell-dimension charts). Soluble in H_2O.

Optical Properties: Translucent. *Color:* Buff to colorless. *Streak:* White. *Optical Class:* Uniaxial (–). $\omega = 1.513$ $\epsilon = 1.470$

Cell Data: *Space Group:* $I\bar{4}2d$ (synthetic KH_2PO_4). $a = 7.451(1)$ $c = 6.792(15)$ $Z = 4$

X-ray Powder Pattern: Synthetic KH_2PO_4. (ICDD 35–807).
3.724 (100), 2.908 (83), 1.953 (51), 2.635 (23), 2.340 (15), 5.086 (14), 3.008 (14)

Chemistry:

	(1)
K_2O	10.8
NH_3	3.46
Total	

(1) Petrogale Cave, Western Australia; partial analysis, corresponding to $[K_{0.74}(NH_4)_{0.26}]_{\Sigma=1.00}$ H_2PO_4.

Occurrence: As a component of stalactites and crusts on the walls of caves containing bat guano deposits.

Association: Biphosphammite, aphthitalite, halite, syngenite, stercorite, oxammite, weddellite, whitlockite, guanine, newberyite, calcite, mundrabillaite.

Distribution: In Petrogale Cave, near Madura, and in Murra-el-elevyn Cave, about 200 km east of Balladonia, Western Australia.

Name: Honors Dr. Michael Archer (1945–), Curator of Mammals, Queensland Museum, Brisbane, Australia, who discovered the first specimens.

Type Material: Government Chemical Laboratories, Perth, Australia, MDC 5901.

References: (1) Bridge, P.J. (1977) Archerite, $(K,NH_4)H_2PO_4$, a new mineral from Madura, Western Australia. Mineral. Mag., 41, 33–35. (2) (1977) Amer. Mineral., 62, 1057 (abs. ref. 1). (3) West, J. (1930) A quantitative X-ray analysis of the structure of potassium dihydrogen phosphate (KH_2PO_4). Zeits. Krist., 74, 306–332.