

Crystal Data: Monoclinic, pseudo-orthorhombic. *Point Group:* $2/m$. As water-worn, bean-shaped pebbles, to 10 cm, with polycrystalline or radial-fibrous structure; also as curved and striated crystals, diamond-shaped or rectangular, lining pockets in the pebbles. *Twinning:* As pseudo-hexagonal multiple contact twins, chrysoberyllike.

Physical Properties: *Cleavage:* {100}, perfect. *Fracture:* Uneven. Hardness = 9 VHN = 1605 (100 g load). $D(\text{meas.}) = 4.78\text{--}5.29; 5.46$ for a crystal. $D(\text{calc.}) = 5.26$

Optical Properties: Transparent to translucent. *Color:* Tan, cream, orange-brown, brown; crystals colorless, tan, pale violet; yellow internal reflections in transmitted light. *Luster:* Adamantine.

Optical Class: Biaxial (-). *Pleochroism:* Weak. *Dispersion:* $r > v$. $\alpha = 1.81(1)$ $\beta = 1.87(1)$ $\gamma = 1.92(1)$ $2V(\text{meas.}) = \text{Large}$.

Cell Data: *Space Group:* $C2/m$. $a = 9.406(6)$ $b = 11.541(8)$ $c = 4.410(3)$ $\beta = 90.94(3)^\circ$ $Z = 2$

X-ray Powder Pattern: Paramirim region, Brazil.

3.241 (100), 3.194 (100), 2.156 (80), 4.712 (70), 2.457 (70), 2.411 (70), 1.648 (70)

| Chemistry: | (1) | (2) | (3) |
|-------------------------|-------|-------|--------|
| WO_3 | 1.20 | 0.3 | |
| Sb_2O_5 | 57.28 | 61.9 | 64.00 |
| SiO_2 | 1.03 | 3.5 | |
| TiO_2 | | 0.2 | |
| Al_2O_3 | 35.37 | 30.6 | 33.62 |
| Fe_2O_3 | 1.04 | 1.3 | |
| BeO | 0.75 | 0.75 | |
| MgO | | 0.1 | |
| H_2O | 2.77 | 0.85 | 2.38 |
| Total | 99.44 | 99.50 | 100.00 |

(1) Paramirim region, Brazil; by electron microprobe, average of four analyses, total Fe as Fe_2O_3 , H_2O by the Penfield method; corresponds to $\text{Al}_{5.49}\text{Be}_{0.24}\text{Si}_{0.14}\text{Fe}_{0.10}^{3+}\text{W}_{0.04}\text{Sb}_{2.80}\text{O}_{14}(\text{OH})_{2.44}$.

(2) Do. (3) $\text{Al}_5\text{Sb}_3\text{O}_{14}(\text{OH})_2$.

Occurrence: In potholes as stream-worn pebbles and as residual concentrates above weathered volcanic rock.

Association: Quartz, andalusite, kyanite, diaspore, phenakite, eskolaite, cassiterite, gold.

Distribution: About eight km southeast of the village of Paramirim das Crioulas, and elsewhere in the region around Rio do Picos das Almas, Serra das Almas, south-central Bahia, Brazil.

Name: For the occurrence in Bahia, Brazil.

Type Material: Harvard University, Cambridge, Massachusetts, 119088; National Museum of Natural History, Washington, D.C., USA, 133875, 135922.

References: (1) Moore, P.B., C. do P. Barbosa, and R.V. Gaines (1978) Bahianite, $\text{Sb}_3\text{Al}_5\text{O}_{14}(\text{OH})_2$, a new species. *Mineral. Mag.*, 42, 179–182. (2) (1979) *Amer. Mineral.*, 64, 464 (abs. ref. 1). (3) Moore, P.B. and T. Araki (1976) Bahianite, $\text{Al}_6\text{Sb}_3^{5+}\text{O}_{14}(\text{O}, \text{OH})_2$, a novel hexagonal close-packed oxide structure. *Neues Jahrb. Mineral., Abh.*, 126, 113–125. (4) Cassedanne, J.P. (1985) Bahianite from Brazil. *Mineral. Record*, 16, 111–115.

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