Crystal Data: Tetragonal. *Point Group:* $4/m$, 4, $\bar{4}$, 422, $4mm$, $\bar{4}2m$, or $4/m\ 2/m\ 2/m$. Flame-like aggregates and veinlets up to 20 μm across, in rims and intergrowths with other tellurides and sulfides.

Physical Properties: Hardness = n.d. VHN = n.d. D(meas.) = n.d. D(calc.) = 8.89

Optical Properties: Opaque. *Color:* Rose-brown in reflected light. *Anisotropism:* Distinct. R_1–R_2: 23.7–24.3 (400), 24.7–25.2 (420), 25.6–26.1 (440), 26.6–27.1 (460), 27.6–28.2 (480), 28.6–29.2 (500), 29.6–30.1 (520), 30.3–31.0 (540), 31.1–31.8 (560), 31.8–32.4 (580), 32.4–32.9 (600), 32.7–33.3 (620), 33.0–33.5 (640), 33.2–33.6 (660), 33.2–33.6 (680), 33.2–33.6 (700)

Cell Data: *Space Group:* $P4/m$, $P4$, $P\bar{4}$, $P422$, $P4mm$, $P\bar{4}2m$, $P4/mmm$ or $P\bar{4}m2$. $a = 5.71(5)$ $c = 3.77(5)$ $Z = 1$

X-ray Powder Pattern: Champion Reef mine, India. Electron diffraction. 3.16 (100), 3.78 (60), 1.92 (50), 1.78 (50), 2.73 (40), 2.29 (40), 1.59 (40)

Chemistry:

	(1)	(2)
Pb	29.17	31.35
Te	59.80	57.92
S	0.77	
Cl	9.90	10.73
Total	99.64	100.00

(1) Champion Reef mine, India; by electron microprobe, leading to $Pb_{0.94}Te_{3.06}(Cl_{1.84}S_{0.16})_{\Sigma=2.00}$. (2) $PbTe_3Cl_2$.

Occurrence: Of primary origin, in a hydrothermal gold-quartz vein containing sulfides and tellurides.

Association: Galena, altaite, kolarite, cotunnite, volynskite, hessite, pyrrhotite, chalcopyrite, ullmannite, hawleyite, cadmian tetrahedrite, cadmian sphalerite.

Distribution: From the Champion Reef mine, Kolar Gold Fields, Karnataka, India.

Name: For B.P. Radhakrishna, Indian geologist.

Type Material: Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, USSR.

References: (1) Genkin, A.D., Y.G. Safonov, V.N. Vasudev, B. Krishna Rao, V.A. Boronikhin, L.N. Vyalsov, A.I. Gorshkov, and A.V. Mokhov (1985) Kolarite $PbTeCl_2$ and radhakrishnaite $PbTe_3(Cl,S)_2$, new mineral species from the Kolar gold deposit, India. Can. Mineral., 23, 501–506. (2) (1986) Amer. Mineral., 71, 1545–1546 (abs. ref. 1).