Calcium catapleiite $CaZrSi_3O_9 \cdot 2H_2O$

Crystal Data: Hexagonal. *Point Group:* $[6/m\ 2/m\ 2/m]$ (by analogy to catapleiite). Lamellar crystals and grains, to a few cm.

Physical Properties: *Cleavage:* Present. Hardness = 4.5–5 D(meas.) = 2.77 D(calc.) = [2.75]

Optical Properties: Opaque, translucent on thin edges. *Color:* Pale yellow to cream. *Luster:* Vitreous to dull.
Optical Class: Uniaxial (+). $\omega = 1.603$ $\epsilon = 1.639$

Cell Data: *Space Group:* $[P6_3/mmc.]$ $a = 7.40$ $c = 10.07$ Z = [2]

X-ray Powder Pattern: Burpala massif, Russia; very close to catapleiite.
2.96 (100), 3.96 (80), 3.06 (80), 1.975 (80), 1.835 (80), 6.45 (70), 1.740 (70)

Chemistry:

	(1)
SiO_2	44.49
TiO_2	0.06
ZrO_2	31.00
Al_2O_3	0.60
RE_2O_3	0.28
Fe_2O_3	0.36
CaO	13.82
Na_2O	0.32
K_2O	0.10
H_2O^+	9.15
H_2O^-	0.18
Total	100.36

(1) Burpala massif, Russia; leading to $(Ca_{0.98}Na_{0.04})_{\Sigma=1.02}Zr_{1.00}(Si_{2.94}Al_{0.04})_{\Sigma=2.98}O_9 \cdot 2.01H_2O$.

Occurrence: In cavities between crystals of microcline, in syenite pegmatites of a differentiated alkalic massif.

Association: Pyrophanite, pyrochlore, titanian låvenite, loparite-(Ce), kupletskite, RE-apatite, hiortdahlite, calcian seidozerite, leucophane, microcline.

Distribution: In the Burpala massif, about 120 km north of Lake Baikal, eastern Siberia, Russia.

Name: For its *calcium* content and close relation to *catapleiite*.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 72035.

References: (1) Portnov, A.M. (1964) Calcium catapleiite, a new variety of catapleiite. Doklady Acad. Nauk SSSR, 154, 607–609 (in Russian). (2) (1964) Amer. Mineral., 49, 1153 (abs. ref. 1). (3) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. Ocean Pictures, Moscow, 52.