Takanawaite-(Y) $Y(Ta,Nb)O_4$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As tabular crystals flattened on {010} and displaying {100} and {001} with striations along [101] on {010}. As radial aggregates to 5 mm.

Physical Properties: *Cleavage*: None. *Fracture*: Conchoidal. *Tenacity*: n.d.
Hardness = 5.5 D(meas.) = n.d. D(calc.) = 6.97 Metamict.

Optical Properties: n.d. *Color*: Dark brown. *Streak*: n.d. *Luster*: n.d.
Optical Class: n.d.

Cell Data: *Space Group*: *I*2/*a*. $a = 5.3182(8)$ $b = 10.9583\ (13)$ $c = 5.0595\ (7)$ $\beta = 94.993(14)°$
$Z = 4$ [After heating to 1000° C]

X-ray Powder Pattern: Takanawa Mountain, Ehime Prefecture, Japan. [After heating to 1000° C]
3.133 (100), 2.953 (85), 1.905 (39), 2.739 (29), 1.855 (26), 1.912 (24), 2.649 (21)

Chemistry:	(1)	(2)
Y_2O_3	27.07	33.82
Gd_2O_3	1.16	
Dy_2O_3	4.64	
Yb_2O_3	2.90	
UO_2	2.77	
TiO	0.51	
FeO	0.39	
Nb_2O_5	19.22	
Ta_2O_5	40.49	66.18
Total	99.15	100.00

(1) Takanawa Mountain, Ehime Prefecture, Japan; electron microprobe analysis; corresponding to $(Y_{0.75}Dy_{0.08}Yb_{0.05}Gd_{0.02}U_{0.03}Ti_{0.02}Fe_{0.02})_{\Sigma=0.97}(Ta_{0.57}Nb_{0.45})_{\Sigma=1.02}O_4$. (2) $YTaO_4$.

Occurrence: In pegmatites in granite.

Association: Gadolinite-(Y), zircon, muscovite, allanite-(Ce), quartz, feldspar.

Distribution: At Takanawa Mountain, near Matsuyama City, Ehime Prefecture, Japan.

Name: For the locality that produced the first specimens and a suffix for the dominant rare earth element.

Type Material: National Museum of Nature and Science, Tokyo, Japan (NSM M-43517).

References: (1) Nishio-Hamane, D., T. Minakawa, and Y. Ohgoshi (2013) Takanawaite-(Y), a new mineral of the *M*-type polymorph with $Y(Ta,Nb)O_4$ from Takanawa Mountain, Ehime Prefecture, Japan. Journal of Mineralogical and Petrological Sciences, 108(6), 335-344. (2) (2016) Amer. Mineral., 101, 491-492 (abs. ref. 1).