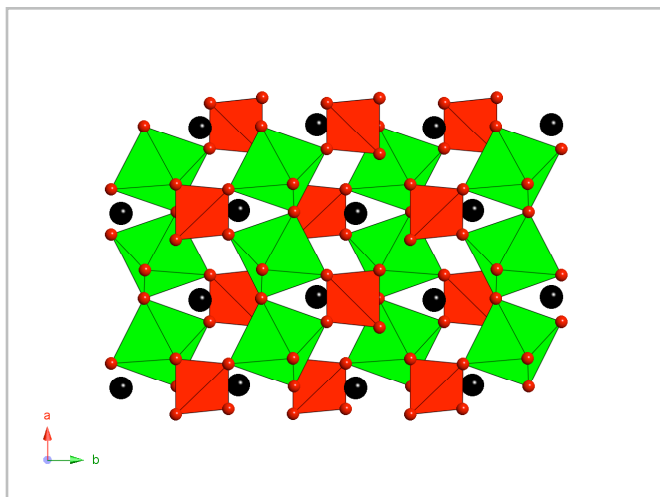
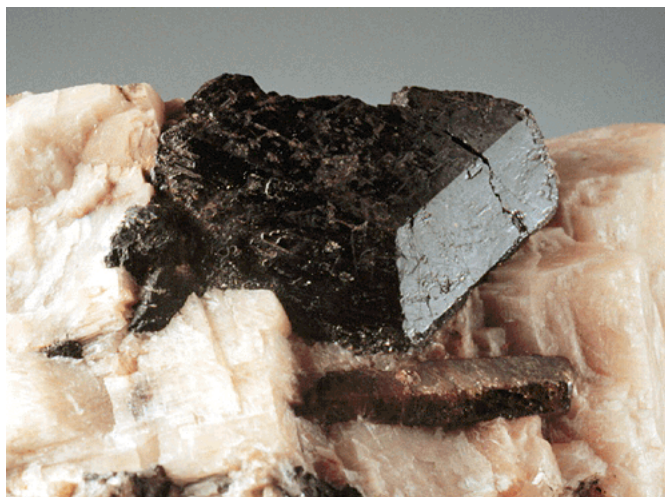


titanite
 CaTiSiO_5

52.4.3.1

mineral group	
mineral subgroup	
date named	1795
name derivation	Named by Klaproth, because of its composition.



Harvard ID # 131128
 Locality: Renfrew Co., Ontario, Canada

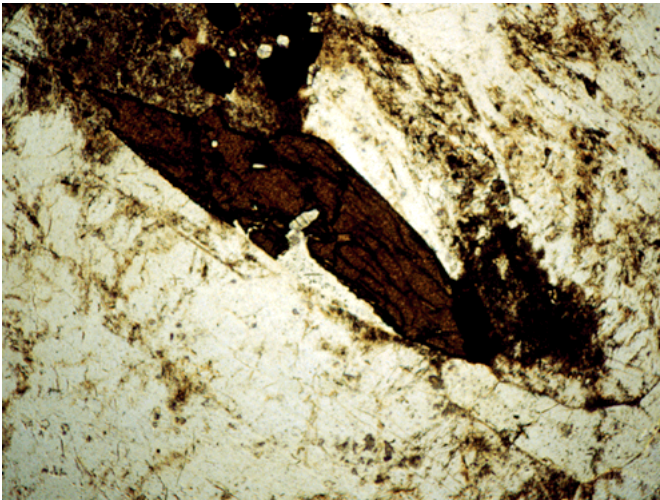
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Dana class	orthosilicate	
diagnostic properties	green to yellow to brown, "envelope-shaped" or wedge-shaped crystals characteristic	
color	brown, colorless, yellow, green, black, pink, red, blue	
luster	adamantine, resinous	
streak	white, pale brown	
Mohs hardness	5-5.5	specific gravity 3.45-3.55
cleavage	prismatic	
fracture & tenacity	conchoidal	
habits	wedge-shaped or prismatic crystals; also massive or granular	
special properties	transparent to opaque	
reaction with acid	decomposed by sulfuric acid, HF, or aqua regia	

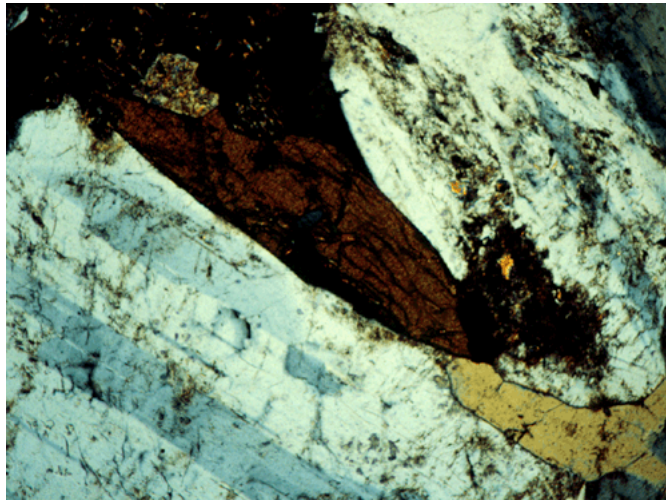
titanite
 CaTiSiO_5

52.4.3.1

PPL



XPL



crystal class	prismatic
birefringence	0.100-0.192
a Axis	7.066
b Axis	8.705
c Axis	6.561
alpha	90
beta	113.93
gamma	90
Z	4

crystal system	monoclinic
reflectance	
space group	A2/a
2V	17-40
optic type	biaxial
optic sign	+
alpha epsilon	1.843-1.950
beta omega	1.870-2.034
gamma	1.943-2.110

optical comment

occurrence

Found as an accessory mineral in many types of igneous (mostly intrusive) and metamorphic rocks. Found in pegmatites, quartz veins, and hydrothermal deposits. Often associated with albite, chlorite, epidote, apatite, allanite, monazite, magnetite, ilmenite, nepheline, biotite, diopside, and calcite.

selected localities

Tilley Foster mine, Brewster, Putnam Co., Diana, Lewis Co., Natural Bridge, Jefferson Co., and Monroe, Orange Co., New York; Bridgewater Station and upper Chichester Township, Delaware Co., Pennsylvania; Woburn, Massachusetts; Kings Mountain, North Carolina; Magnet Cove, Garland Co., Arkansas; Crestmore, Riverside Co., California; Butte, Silver Bow Co., Montana; U.S.A. Renfrew Co., Ontario; Canada. Tavetsch, Graubunden, St. Gotthard, Ticino; Zermatt, Valais, Switzerland. Val Maggia and St. Marcel, Val d'Acosta, Italy. Schwarzenstein and Rothenkopf Mountains, Zillertal, Tirol, Austria. Arendal, Norway. Nordmark, Varmland, Sweden. Lovozero and Khibiny massifs, Kola Peninsula, and Saranpaul, Polar Ural Mountains, Russia.