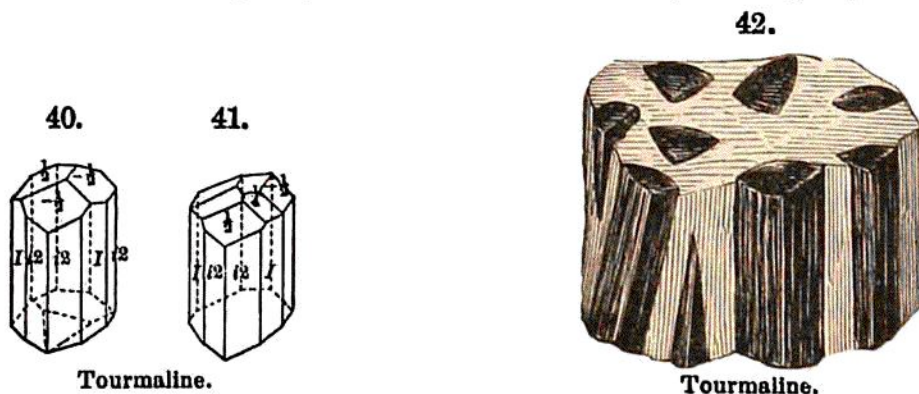


slender. Have $H = 6-7$. Are infusible. Andalusite occurs in gray, stoutish, nearly square, prisms ($90^\circ 48'$) which are often tessellated inside with white (then called *chiasolite*). Cyanite is commonly in long, bluish, bladed crystals; and fibrolite in rhombic prisms and fibers, having a brilliant diagonal cleavage.

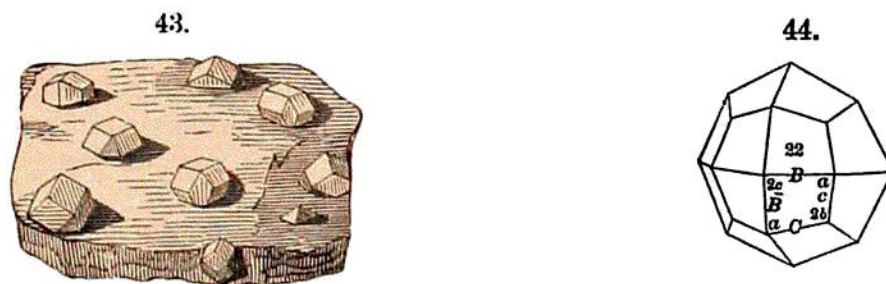
STAUROLITE. — In rhombic prisms of $129^\circ 20'$, imbedded in slaty rocks. Usual colors, brown to black. The crystals are often crossed as in Fig. 39, and hence the name, from the Greek for *cross*. $H = 7-7\frac{1}{2}$. Composition: Silica 29.3, alumina 53.5, sesquioxide of iron 17.2 = 100. Infusible.

TOURMALINE. — Usually in three-sided or six-sided black crystals, having the luster within, when black, like that of a black resin; and it has no distinct cleavage, and thus differs from hornblende. Figs. 40, 41 show two of the forms; and Fig. 42, the appear-

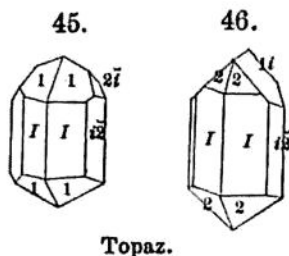


ance of the crystals in the rock, which is often quartz. Besides black, there are also brown, green, red, and white tourmalines. $H = 7-7\frac{1}{2}$. Constituents: Silica, alumina, magnesia, with fluorine and some *boracic acid*. Fusible, but fusibility varying much in varieties.

GARNET. — In crystals of the forms in Figs. 43, 44. $H = 6\frac{1}{2}-7\frac{1}{2}$. Colors usually red to brown and black, rarely green and colorless; sometimes chrome-green. $H = 6-7$. Consists of silica and alumina, with either iron, or lime, or manganese, and varying in its characters according to composition.



EPIDOTE. — In yellowish green to hair-brown prismatic crystals and masses. A peculiar yellowish green color is most common. It has nearly the composition of an iron garnet. $G = 3.25-3.5$. *Zoisite* is a related mineral of ash-gray to whitish color, containing much lime and little or no iron. It has high specific gravity, $G = 3.1-3.4$. Constituents as in garnet.



Topaz.

IDOCRASE. — In square prisms, of a brown to oil-green color. $H = 6\frac{1}{2}$. Composition: One kind, silica 37.3, alumina 16.1, iron sesquioxide 3.7, lime 35.4, magnesia 2.1, iron protoxide 2.9, water 2.1 = 99.6. Fusible.

TOPAZ. — In rhombic prisms of $124^\circ 17'$, remarkable for cleaving with ease and brilliancy parallel to the base of the prism. Colors, yellowish to white, also brown. Two of the forms of its crystals are shown in Figs. 45, 46. $H = 8$. Consists of silica 16.2, silicic fluoride 28.1, alumina 55.7 = 100. The amount of fluorine present is a remarkable quality. Infusible.