This value being half that of x in the protaxial form, the symbol becomes $\frac{1}{2}\bar{\mathrm{P}}$.

Note.—The assumption of this protaxial form or ***starting-point***, is, of course more or less arbitrary. As a general rule, we select a form of common occurrence, or one that predominates in the combinations; or otherwise, one to which the cleavage planes are parallel. Any one form, however, being chosen, the axial ratios of all the other forms belonging to the substance, will bear some simple relation to it. Thus, if the lower front polar were assumed to bear the symbol $\bar{\mathrm{P}}$, the upper front polar (in which $x = .3250$) would be $\frac{1}{2}\bar{\mathrm{P}}$; and the side polar (with $x = 1.299$) would be $2\breve{\mathrm{P}}$. In like manner, if the upper front polar were taken as a starting point ($= \bar{\mathrm{P}}$, *id est*, $1\bar{\mathrm{P}}$), the lower front polar would be $2\bar{\mathrm{P}}$; and the side polar, $4\breve{\mathrm{P}}$.

8. Fig. 12 represents a crystal of sulphur: a combination of three rhombic octahedrons or polars, each face cutting the three axes. The measured inclinations are as follows:

P on P	Over front edge...	106° 38′.
	Over side edge ..	84° 58′.
	Over middle edge	143° 17′.
$\frac{1}{3}$ P : $\frac{1}{3}$ P	Over front edge	127°
	Over side edge ...	113° 10′.
	Over middle edge	90° 16′.
$\frac{1}{5}$ P : $\frac{1}{5}$ P	Over front edge...	142° 4′.
	Over side edge ...	132° 44′.
	Over middle edge	62° 9′.

To calculate the axial ratios of these forms, we construct the spherical triangle, figure 13, in which A = half the inclination over a front edge; B = half the inclination over a side edge; and $C = 90°$, or the meeting of two sections taken through the axes. A simple inspection of the figure will render this evident.* We first determine the side a opposite the angle A. Here (with A and B given, and a required), A becomes the *middle* part, and B and a the ***extremes disjunct***, or ***opposites***. Hence:

$R \cos A = \sin B \cos a$. And, consequently,

$$\cos a = \frac{R \cos A}{\sin B}.$$

* The less-experienced student is advised to fashion a solid triangle of this kind out of a piece of soft wood or chalk, and to mark upon its sides the outlines of the spherical triangles as given in the text: Figs. 13, 14, and 15.