from the *rhombohedral* and the *square prismatic*, we are not led to distinguish the latter two from each other; inasmuch as they have no optical difference of character. But this distinction is quite essential in crystallography; for these two systems have faces formed by laws as different as those of the other two systems.

Moreover, Weiss and Mohs not only divided crystalline forms into certain classes, but showed that by doing this, the derivation of all the existing forms from the fundamental ones assumed a new aspect of simplicity and generality; and this was the essential part of what they did.

On the other hand, I do not think it is too much to say as I have elsewhere said[2] that " Sir D. Brewster's optical experiments must have led to a classification of crystals into the above systems, or something nearly equivalent, even if crystals had not been so arranged by attention to their forms."]

Many other most curious trains of research have confirmed the general truth, that the degree and kind of geometrical symmetry corresponds exactly with the symmetry of the optical properties. As an instance of this, eminently striking for its singularity, we may notice the discovery of Sir John Herschel, that the *plagihedral* crystallization of quartz, by which it exhibits faces *twisted* to the right or the left, is accompanied by right-handed or left-handed circular polarization respectively. No one acquainted with the subject can now doubt, that the correspondence of geometrical and optical symmetry is of the most complete and fundamental kind.

[2nd Ed.] [Our knowledge with respect to the positions of the optical axes of the oblique prismatic crystals is still imperfect. It appears to be ascertained that, in singly oblique crystals, one of the axes of optical elasticity coincides with the rectangular crystallographic axis. In doubly oblique crystals, one of the axes of optical elasticity is, in many cases, coincident with the axis of a principal zone. I believe no more determinate laws have been discovered.]

Thus the highest generalization at which mathematical crystallographers have yet arrived, may be considered as fully established; and the science of Crystallography, in the condition in which these place it, is fit to be employed as one of the members of Mineralogy, and thus to fill its appropriate place and office.

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[2] *Philosophy of the Inductive Sciences,* B. viii. C. iii. Art. 3.