circles, and we fall back upon the circular rings and cross proper to that class of bodies.

(172.) Neglecting the bending which the rays undergo at their emergence from the posterior surface of the crystal, or conceiving the eye as immersed within its substance, it is evident that when looking in the direction of either of the foci of the ovals, the visual ray will be directed along one of two axes, or *lines of no double refraction;* while if looking towards any point in the circumference of any one of the ovals, the visual ray will traverse the crystal in such a direction that an ordinary and extraordinary ray following that path shall gain or lose on each other so many semi-undulations, or parts of one, as shall correspond to the tint developed in that direction; and that, therefore, in all the directions marked out by the circumference of each individual oval, the tints being the same, the phase-difference, *and therefore* the difference of velocities of the interfering rays, *and therefore again*, the amount of double refraction in that direction is the same. The forms of these ovals, therefore, stand in immediate and intimate connexion with the law of double refraction in such crystals, and with the forms of the two wave surfaces belonging to the ordinary and extraordinary rays. The theory of these wave-surfaces belongs, however, to a higher department of geometry than we could hope to make intelligible in these pages. Suffice it to say that as delivered by M. Fresnel and his followers it explains all the facts in the most complete and satisfactory manner, and has even led to the prediction, antecedent to observation, of some