

of the ordinary, and spheroidal of the extraordinary ray, within them. In all or nearly all these, two lines inclined to one another at an angle greater or less according to the nature of the substance can always be found (either by a careful examination of the crystal in polarized light through the faces of its natural form, or by cutting and artificially polishing plates of it), which possess the properties of such axes;—along which, that is to say, refraction is single for a ray passing either way out of the crystal; and in which when examined in polarized light with an analyzing plate between the eye and the crystal, coloured rings are seen. The simplest and readiest instance of a crystal of this kind is furnished by a sheet of ordinary mica, such as may easily be procured in large sheets. If a sheet of this be held before the eye in a polarized field perpendicularly (an analyzing plate being interposed) and turned round in its own plane, two portions will be found at right angles to each other, in which the polarization of the incident light is not disturbed, and the field remains dark. Of the two planes perpendicular to the plate in which the plane of polarization cuts it in these two positions, one is the “principal section” of the plate, and contains its “optic axes.” These may be brought into sight by holding the eye (armed with the analyzer) quite close to the mica, and inclining the latter, either forward or backward in one of these two section-planes so as to make an angle of about 35° with the visual ray on either side of the perpendicular. In either situation a set of coloured rings will be seen, not circular, but of an oval form,