

especially is seen which would lead to a suspicion that the crystal were other than an ordinary piece of glass. But if, in this state of things, between the crystal and the eye, be placed another tourmaline plate, *having its axis horizontal*, a magnificent set of coloured rings will be seen; the exact counterpart of the reflected rings described by Newton (only infinitely more vivid and brilliant), in every respect but these:—First, that they are all divided into four quadrants of coloured light by a dark cross passing through their common centre, and having its arms vertical and horizontal; and, secondly, that the rings themselves are of unequal brightness in different parts of their circumference, being most luminous at the middle points of the quadrants into which the cross divides them, and fading away very gradually on either side of these points, till they cease to be traceable and are lost in the darkness of the cross. On the other hand, if the tourmaline plate between the eye and the crystal (which we shall call the “*analyzing plate*,” or the “*analyzer*,” for a reason which will presently appear) be placed with its axis *vertical*, a series of rings will also be seen: but they are, now, the complementary series—those seen by transmission in the Newtonian experiment; and the cross, instead of black, is now white. Lastly, if the analyzing plate be placed obliquely, both sets of rings will be partially, and, as it were, confusedly, exhibited; the one dislocating the other, in consequence of the brighter annuli of the one set abutting upon the obscurer of the other, the reds on the greens, the purples on the yellows, &c.: the preponderance in light, distinct-