The most remarkable is in the case of one variety of the mineral called apophyllite which (from the peculiarity in question) I have proposed to call *Leucocyclite*, in which the rings are almost devoid of colour, being merely a succession of dark and light circles, much more numerous than the coloured ones usually seen, and the more remote of which, from the centre, graduate into feeble shades of purplish and yellowish light. The physical interpretation of this phænomenon is as follows. Since the *colours* originate in the superposition of rings about a common centre, differing in diameter for the several coloured rays throughout the spectrum, (as already explained in Lecture VII.), it follows that in this case, no such difference of diameter, or but a very slight one exists. Now, for crystalline plates so cut, of a given thickness, the apparent diameters of the rings seen are a measure of the doubly refractive energy. The more intense this energy the closer and more compact the system of rings;—for this obvious reason, that the same difference of phases between the ordinary and extraordinary pencils is developed at a less angle of inclination to the axis; and the difference of phases is a direct result of difference of velocities in their internal propagation; and this again, of the doubly refractive energy. Hence we conclude that in the *leucocyclite* all the coloured rays throughout the spectrum undergo equal, or very nearly equal *separation* at a given angle of incidence, by *double refraction;* and that therefore in a doubly refracting prism cut from this substance, the two spectra formed by a sunbeam would be of precisely *equal lengths*, though un-