

ticular colour assuming a greater richness and depth of tint, but, by the gradual *withdrawal* of the faint tints from the vertex, while fresh, and more and more intense hues appear at that point, and open out into circular rings surrounding it; giving place as they enlarge to others still more brilliant, until at length a very bright white spot makes its appearance, quickly succeeded by a perfectly black one. Soon after the appearance of this the bubble bursts. During the whole process it has been growing gradually thinner by the slow descent of its liquid substance on all sides from the vertex, till at length the cohesion of the film at that point gives way under the general tension of the surface. The annular arrangement of the colours, and the coincidence of their common centre with this, the thinnest point of the film, evidently go to connect their tints with the thicknesses of that film at their points of manifestation, and to indicate that *a certain tint is developed at a certain thickness, and at no other.* This, we shall presently see, is really the case.

(71.) The order of the colours and the sequence of the tints is in all cases one and the same, provided the series be complete, *i.e.*, provided time has been given for the black central spot to form. Thus the *first* series, or order, contained within *the first ring* consists of black, very pale blue, brilliant white, very pale yellow, orange, red; *the second* of dark purple, blue, imperfect yellow-green, bright yellow, crimson; *the third* of purple, blue, grass green, fine yellow, pink, crimson; *the fourth* of bluish-green, pale pink inclining to yellow, red; *the*