

therefore, proceed to the next branch of our general subject, that of the Diffraction of Light.

(101.) DIFFRACTION.—The optical phænomena which refer themselves to this head are many and various. They are not, for the most part, very obvious, but are exceedingly curious and interesting in their details, and some of them, under careful arrangement and with good optical appliances, very brilliant. Familiar examples offer themselves in the twinkling of the stars and the changes of colour they exhibit during the different phases of their scintillations:—in the vivid radiating streaks of light which seem to stream outwards from any small and *dazzlingly* brilliant point of light (as for instance the reflection of the sun on a small polished globe, as a thermometer ball):—in the colours exhibited when a bright point is seen reflected on or refracted through a surface regularly striated or scratched across with fine equidistant lines, as beautifully exhibited in the so-called “Barton’s buttons” (from the name of the ingenious and skilful amateur mechanist who first executed them); brass or steel buttons delicately cross-lined by engine work:—in the lateral images of a candle seen reflected on polished mother-of pearl: and in the coloured halos often seen to surround the flame of a candle in certain states of the eye and their artificial imitations in a mode presently to be described. Less obvious to common observation, and requiring particular arrangement, instrumental or otherwise, to see them distinctly, are the phænomena (referable to the head of diffraction) of the rings and other appendages seen to surround the images