affected one way or the other. The attraction on one of its sides would precisely equal the repulsion on the other. The separation of one portion of the matter of a comet from the other by the action of the sun, which we see, unmistakably, operated at and near the perihelion passage (a separation which the late Sir William Herschel certainly *had* in mind, though perhaps somewhat indistinctly, when he spoke of a comet visiting our system for the first time as consisting of "unperihelioned" matter in contradistinction to those which he considered to have lost their tails by the effect of repeated appulses, and to consist mainly of *perihelioned* matter) —this separation I can only conceive, as I have ventured to express it above, as an *analysis* of the materials: analogous to that analysis or rather disunion by the action of heat which St Clair Deville has lately shown to take place between the constituents of water at high temperatures. In this latter case the chemical affinity is so weakened that the mere difference of difficulty in traversing an earthenware tube suffices to set them free of one another. How much more so, then, were the one constituent of a chemical compound subject to a powerful repulsion from a centre which should attract the other, and with it by far the larger mass of the total comet. Might not, under such circumstances, the mere ordinary action of the sun's heat sufficiently weaken their bond of union: and might not the residual mass, losing at every return to the perihelion more and more of its levitating constituents, at length settle down into a quiet, sober, unexcitable denizen of our system?