have already spoken of (in § 177.); which, by placing our conclusions, as it were, in violent circumstances, try their temper, and bring their vigor to the test.

(194.) "Collective instances," in Bacon's classification, are no other than general facts, or laws of some degree of generality, and are themselves the results of induction. But there is a species of collective instance which Bacon does not seem to have contemplated, of a peculiarly instructive character; and that is, where particular cases are offered to our observation in such numbers at once as to make the induction of their law a matter of ocular inspection. For example, the parabolic form assumed by a jet of water spouted from a round hole, is a *collective instance* of the velocities and directions of the motions of all the particles which compose it, *seen at once*, and which thus leads us, without trouble, to recognise the law of the motion of a projectile. Again, the beautiful figures exhibited by sand strewed on regular plates of glass or metal set in vibration, are *collective instances* of an infinite number of points which remain at rest while the remainder of the plate vibrates; and in consequence afford us, as it were, a sight of the law which regulates their arrangement and sequence throughout the whole surface. The beautifully colored lemniscates seen around the optic axes of crystals exposed to polarized light afford a superb example of the same kind, pointing at once to the general mathematical expression of the law which regulates their production.* Of such collective instances as these, it is easy to see the importance, and its reason. They lead us to a general law by an induction which offers itself spontaneously, and thus furnish advanced points in our inquiries; and when we start from these, already "a thousand steps are lost."

(195.) A fine example of a collective instance is that of the system of Jupiter or Saturn with its satellites. We have here, in miniature, and seen at one view, a system similar to that of the planets about the sun; of

* See Phil. Trans. 1819.