as we have once before observed, their application to particular facts in the descending or deductive method is limited by nothing but the limited extent of our mathematics. It would seem, then, that dynamical science were taken thenceforward out of the pale of induction, and transformed into a matter of absolute *a priori* reasoning, as much as geometry; and so it would be, were our mathematics perfect, and all the *data* known. Unhappily, the first is so far from being the case, that in many of the most interesting branches of dynamical inquiry they leave us completely at a loss. In what relates to the motions of fluids, for instance, this is severely felt. We can include our problems, it is true, in algebraical equations, and we can demonstrate that they *contain* the solutions; but the equations themselves are so intractable, and present such insuperable difficulties, that they often leave us quite as much in the dark as before. But even were these difficulties overcome, recourse to experience must still be had, to establish the *data* on which particular applications are to depend; and although mathematical analysis affords very powerful means of *representing* in general terms the data of any proposed case, and *afterwards*, by comparison of its results with fact, determining *what* those data must be to explain the observed phenomena, still, in any mode of considering the matter, an appeal to experience in every particular instance of application is unavoidable, even when the general principles are regarded as sufficiently established without it. Now, in all such cases of difficulty, we must recur to our inductive processes, and regard the branches of dynamical science where this takes place as purely experimental. By this we gain an immense advantage, viz. that in all those points of them where the abstract dynamical principles *do* afford distinct conclusions, we obtain verifications for our inductions of the highest and finest possible kind. When we work our way up inductively to one of these results, we cannot help feeling the strongest assurance of the validity of the induction.