

most vivid and beautiful colors (every way resembling those observed by Newton in thin films of air or liquids, only infinitely more developed and striking), in certain transparent crystallized substances, when divided into flat plates in particular directions, and exposed in a beam of polarized light. The attentive examination of these colors by Wollaston, Biot, and Arago, but more especially by Brewster, speedily led to the disclosure of a series of optical phenomena so various, so brilliant, and evidently so closely connected with the most important points relating to the intimate structure of crystallized bodies, as to excite the highest interest,—that sort of interest which is raised when we feel we are on the eve of some extraordinary discovery, and expect every moment that some leading fact will turn up, which will throw light on all that appears obscure, and reduce into order all that seems anomalous.

(288.) This expectation was not disappointed. So long before the time we are speaking of as the first year of the present century, our illustrious countryman, the late Dr. Thomas Young, had established a principle in optics, which, regarded as a physical law, has hardly its equal for beauty, simplicity, and extent of application, in the whole circle of science. Considering the manner in which the vibrations of two musical sounds arriving at once at the ear affect the sense with an impression of sound or silence according as they conspire or oppose each other's effects, he was led to the idea that the same ought to hold good with light as with sound, if the theory which makes light analogous to sound be the true one; and that, therefore, two rays of light, setting off from the same origin, at the same instant, and arriving at the same place by different routes, ought to strengthen or wholly or partially destroy each other's effects according to the difference in length of the routes described by them. That two lights should in any circumstances combine to produce darkness may be considered strange, but is *literally true*; and it had even been noticed long ago as a singular and unaccountable fact by Grimaldi, in his experiments on the inflection of light. The ex-