far as the mathematical side was concerned — was studied later. The former theory has been furthered more by the ingenuity of physical observers, the latter more by mathematical reasoning applied to the invention of crucial experiments which pure observation would probably never have suggested. Since the time of Newton, whose name has been used in a one-sided way to discredit the vibratory theory, although, as already stated, his discoveries contributed equally to the formation of both views, the development of the corpuscular theory owes most to the experimental labours of Biot in France and Brewster in this country; whilst no doubt Laplace's great predilection for atomic and astronomical explanation of all natural phenomena gave it great support in the eyes of his many followers and admirers. The vibratory theory was first made the subject of detailed study by Huygens, Newton's contemporary; it was accepted on purely mathematical grounds by Euler; the lines of reasoning on which its ultimate success depended were elaborated by Lagrange's and d'Alembert's mathematical study of vibrations; but the first great step in advance, based upon experiment and calculation alike, was taken by Dr Young, who from 1793 onward studied the subject, and who in 1801 published his 'Principle of Interferences.' Young was led to his reflections on the phenomena of light by an inquiry into the nature of sound,[1] a province where

10. **Biot, Brewster, and Laplace against the undulatory theory.**

11. **Euler the successor of Huygens.**

12. **Young.**

[1] In his 'Reply to the Edinburgh Reviewers' (published as a pamphlet in 1804, see Works, ed. Peacock, vol. i. pp. 192-215), Young gives the following history of his speculations: "When I took a degree in physic at Göttingen, it was necessary, besides publishing a medical dissertation, to deliver a lecture upon some subject connected with medical studies, and I chose for this the Formation of the Human