he "discovered a law which appeared to account for a greater variety of interesting phenomena than any other optical principle that had yet been made known."[1] This principle he familiarly illustrated by the well-known observation that two series of waves of water entering a channel reinforce or destroy each other according as their elevations coincide or alternate in time. He maintained that similar effects take place whenever two portions of light are thus mixed, and this he called "the general law of the interference of light." He showed[2] "that this law agrees most accurately with the measures recorded in Newton's 'Opticks,' relative to the colours of transparent substances, and with a great diversity of other experiments never before explained."[3] In three papers Young entered "minutely into the consequences of the law of the interference of light." Especially in the case of the remarkable phenomena discovered by Grimaldi, where light seems to bend round the edge of screening surfaces, he showed how under certain conditions light added to light would create darkness, and, if removed, would leave light; and he boldly generalised the undulatory theory by maintaining that[4] "a luminiferous ether pervades the universe, rare and elastic in a high degree," that the sensation of

13. His "general law of the interference of light."

14. Theory of the luminiferous ether.

[1] Works, vol. i. p. 202.

[2] Ibid., p. 203.

[3] "This, I assert, is a most powerful argument in favour of the theory which I had before revived: there was nothing that could have led to it in any author with whom I am acquainted, except some imperfect hints in those inexhaustible but neglected mines of nascent inventions, the works of the great Dr Robert Hooke, which had never occurred to me at the time that I discovered the law" (ibid., p. 203).

[4] The sentences in quotation marks are the headings of the different paragraphs in the "Bakerian Lecture" of November 12, 1801. Works, vol. i. p. 140 *sqq.*