

ster a *new property of light*, is completed in the *Philosophical Magazine* for November, 1846. It is there shown that a dependence of the breadth of the bands upon the aperture of the pupil, which had been supposed to result from the theory, and which does not appear in the experiment, did really result from certain limited conditions of the hypothesis, which conditions do not belong to the experiment; and that when the problem is solved without those limitations, the discrepancy of theory and observation vanishes; so that, as Mr. Airy says, "this very remarkable experiment, which long appeared inexplicable, seems destined to give one of the strongest confirmations to the Undulatory Theory."

I may remark also that there is no force in the objection which has been urged against the admirers of the undulatory theory, that by the fulness of their assent to it, they discourage further researches which may contradict or confirm it. We must, in this point of view also, look at the course of the theory of gravitation and its results. The acceptance of that theory did not prevent mathematicians and observers from attending to the apparent exceptions, but on the contrary, stimulated them to calculate and to observe with additional zeal, and still does so. The acceleration of the Moon, the mutual disturbances of Jupiter and Saturn, the motions of Jupiter's Satellites, the effect of the Earth's oblateness on the Moon's motion, the motions of the Moon about her own centre, and many other phenomena, were studied with the greater attention, *because* the general theory was deemed so convincing: and the same cause makes the remaining exceptions objects of intense interest to astronomers and mathematicians. The mathematicians and optical experimenters who accept the undulatory theory, will of course follow out their conviction in the same manner. Accordingly, this has been done and is still doing, as in Mr. Airy's mathematical investigation of the effect of an annular aperture; Mr. Earnshaw's, of the effect of a triangular aperture; Mr. Talbot's explanation of the effect of interposing a film of mica between a part of the pupil and the pure spectrum, so nearly approaching to the phenomena which have been spoken of as a new Polarity of Light; besides other labors of eminent mathematicians, elsewhere mentioned in these pages.

The phenomena of the *absorption* of light have no especial bearing upon the undulatory theory. There is not much difficulty in explaining the *possibility* of absorption upon the theory. When the light is absorbed, it ceases to belong to the theory.