

suggesting that the rays of light were possessed of fits of easy transmission and reflexion, *i.e.*, of regular periodic changes which could be measured and numbered. To this amplification of the simple geometrical emission theory Newton was driven by his own immortal researches, which revealed the wonderful regularly arranged colours of thin plates known as Newton's rings. In reading, after the lapse of nearly two centuries, the reflections of Newton on the nature of light, reflections which he never gathered up into a compact and exhaustive treatise, as he did the theory of gravitation,¹ we recognise that he had clearly before his mind the two fundamental phenomena peculiar to light, namely, its property of travelling in straight lines, and its periodicity, as revealed by certain delicate experiments of his own. Which of the two theories should in the end prevail depended on the more intimate knowledge—to be gained by experiment and calculation—of the two kinds of motion involved; of rectilinear motion of particles under the influence of contending forces, and of the more complicated periodic motion peculiar to waves, tremors, or oscillations. The first kind of motion, being more easily studied and also more nearly related to other prevailing studies, received earlier attention; the second—especially so

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but also
suggests
the other
theory.

¹ It is now sufficiently known and recognised that Newton, both in the theory of gravitation and that of light, did not propose to do more than give a preliminary formulation which was applicable as a basis for experiment and calculation. His further speculations are contained mostly in the well-known 'Queries' to the 'Opticks,' which

were extended in later editions, and among which, "to show that" he "did not take gravity for an essential property of bodies," he added one question concerning its cause, choosing to propose it by way of a question, because "he was not yet satisfied about it for want of experiments" (Advertisement to second edition, 1717).