celestial motions as distinctly as the motions which took place close to him;—considered them as of the same kind, and applied the same rules to each, without hesitation or obscurity. But so far, this thought was merely a guess: its occurrence showed the activity of the thinker; but to give it any value, it required much more than a "why not?"—a "perhaps." Accordingly, Newton's "why not?" was immediately succeeded by his "if so, what then?" His reasoning was, that if gravity reach to the moon, it is probably of the same kind as the central force of the sun, and follows the same rule with respect to the distance. What is this rule? We have already seen that, by calculating from Kepler's laws, and supposing the orbits to be circles, the rule of the force appears to be the inverse duplicate proportion of the distance; and this, which had been current as a conjecture among the previous generation of mathematicians, Newton had already proved by indisputable reasonings, and was thus prepared to proceed in his train of inquiry. If, then, he went on, pursuing his train of thought, the earth's gravity extend to the moon, diminishing according to the inverse square of the distance, will it, at the moon's orbit, be of the proper magnitude for retaining her in her path? Here again came in calculation, and a calculation of extreme interest; for how important and how critical was the decision which depended on the resulting numbers? According to Newton's calculations, made at this time, the moon by her motion in her orbit, was deflected from the tangent every minute through a space of thirteen feet. But by noticing the space through which bodies would fall in one minute at the earth's surface, and supposing this to be diminished in the ratio of the inverse square, it appeared that gravity would, at the moon's orbit, draw a body through more than fifteen feet. The difference seems small, the approximation encouraging, the theory plausible; a man in love with his own fancies would readily have discovered or invented some probable cause of this difference. But Newton acquiesced in it as a disproof of his conjecture, and "laid aside at that time any further thoughts of this matter; thus resigning a favorite hypothesis, with a candor and openness to conviction not inferior to Kepler, though his notion had been taken up on far stronger and sounder grounds than Kepler dealt in; and without even, so far as we know, Kepler's regrets and struggles. Nor was this levity or indifference; the idea, though thus laid aside, was not finally condemned and abandoned. When Hooke, in 1679, contradicted Newton on the subject of the curve described by a falling body, and asserted it to be an ellipse, Newton