time an improved edition was in contemplation; that Newton had been pressed by his friends to undertake it, and had refused.

When Bentley had induced Newton to consent that a new edition should be printed, he announces his success with obvious exultation to Cotes, who was to superintend the work. And in the mean time the *Astronomy* of David Gregory, published in 1702, showed in every page how familiar the Newtonian doctrines were to English philosophers, and tended to make them more so, as the sermons of Bentley himself had done in 1692.

Newton's Cambridge contemporaries were among those who took a part in bringing the *Principia* before the world. The manuscript draft of it was conveyed to the Royal Society (April 28, 1686) by Dr. Vincent, Fellow of Clare Hall, who was the tutor of Whiston, Newton's deputy in his professorship; and he, in presenting the work, spoke of the novelty and dignity of the subject. There exists in the library of the University of Cambridge a manuscript containing the early Propositions of the *Principia* as far as Prop. xxxiii. (which is a part of Section vii., about Falling Bodies). This appears to have been a transcript of Newton's Lectures, delivered as Lucasian Professor: it is dated October, 1684.

Is Gravitation proportional to Quantity of Matter?

It was a portion of Newton's assertion in his great discovery, that all the bodies of the universe attract each other with forces which are *as the quantity of matter* in each: that is, for instance, the sun attracts the satellites of any planet just as much as he attracts the planet itself, in proportion to the quantity of matter in each; and the planets attract one another just as much as they attract the sun, according to the quantity of matter.

To prove this part of the law *exactly* is a matter which requires careful experiments; and though proved experimentally by Newton, has been considered in our time worthy of re-examination by the great astronomer Bessel. There was some ground for doubt; for the mass of Jupiter, as deduced from the perturbations of Saturn, was only $\frac{1}{1070}$ of the mass of the sun; the mass of the same planet as deduced from the perturbations of Juno and Pallas was $\frac{1}{1045}$ of that of the Sun. If this difference were to be confirmed by accurate observations and calculations, it would follow that the attractive power exercised by Jupiter upon the minor planets was greater than that exercised upon