they moved should be, absolutely and metaphysically speaking, a vacuum.

This, however, is not necessary to the truth of the Newtonian doctrines, and does not appear to have been intended to be asserted by Newton himself. Undoubtedly, according to his theory, the motions of the heavenly bodies were calculated *on the supposition* that they do move in a space void of any resisting fluid; and the comparison of the places so calculated with the places actually observed, (continued for a long course of years, and tried in innumerable cases,) did not show any difference which implied the existence of a resisting fluid. The Newtonian, therefore, was justified in asserting that *either* there was no such fluid, *or* that it was so thin and rarefied, that no phenomenon yet examined by astronomers was capable of betraying its effects.

This was all that the Newtonian needed or ought to maintain; for his philosophy, founded altogether upon observation, had nothing to do with abstract possibilities and metaphysical necessities. And in the same manner in which observation and calculation thus showed that there could be none but a very rare medium pervading the solar system, it was left open to observation and calculation to prove that there was such a medium, if any facts could be discovered which offered suitable evidence.

Within the last few years, facts have been observed which show, in the opinion of some of the best mathematicians of Europe, that such a very rare medium does really occupy the spaces in which the planets move; and it may be proper and interesting to consider the bearing of this opinion upon the views and arguments which we have had here to present.

1. Reasons might be offered, founded on the universal diffusion of light and on other grounds, for believing that the planetary spaces cannot be entirely free from matter of some kind; and wherever matter is, we should expect resistance. But the facts which have thus led astronomers to the conviction