

professor at Paris; Wallis, who was appointed Savilian professor at Oxford in 1649, his predecessor being ejected by the parliamentary commissioners. It is not necessary for us to trace the progress of purely mathematical inventions, which constitute a great part of the works of these authors; but a few circumstances may be mentioned.

The question of the proof of the Second Law of Motion was, from the first, identified with the controversy respecting the truth of the Copernican System; for this law supplied the true answer to the most formidable of the objections against the motion of the earth; namely, that if the earth were moving, bodies which were dropt from an elevated object would be left behind by the place from which they fell. This argument was reproduced in various forms by the opponents of the new doctrine; and the answers to the argument, though they belong to the history of Astronomy, and form part of the Sequel to the Epoch of Copernicus, belong more peculiarly to the history of Mechanics, and are events in the sequel to the Discoveries of Galileo. So far, indeed, as the mechanical controversy was concerned, the advocates of the Second Law of Motion appealed, very triumphantly, to experiment. Gassendi made many experiments on this subject publicly, of which an account is given in his *Epistolæ tres de Motu Impresso a Motore Translato*.² It appeared in these experiments, that bodies let fall downwards, or cast upwards, forwards, or backwards, from a ship, or chariot, or man, whether at rest, or in any degree of motion, had always the same motion relatively to the *motor*. In the application of this principle to the system of the world, indeed, Gassendi and other philosophers of his time were greatly hampered; for the deference which religious scruples required, did not allow them to say that the earth really moved, but only that the physical reasons against its motion were invalid. This restriction enabled Riccioli and other writers on the geocentric side to involve the subject in metaphysical difficulties; but the conviction of men was not permanently shaken by these, and the Second Law of Motion was soon assumed as unquestioned.

The Laws of the Motion of Falling Bodies, as assigned by Galileo, were confirmed by the reasonings of Gassendi and Fermat, and the experiments of Riccioli and Grimaldi; and the effect of resistance was pointed out by Marsenne and Dechales. The parabolic motion of Projectiles was more especially illustrated by experiments on the jet which spouts from an orifice in a vessel full of fluid. This mode of experimenting

² Mont. ii. 109.