

statue in honor of him in one of the public places of his native city. He was born in 1548, as I learn from M. Quetelet's notice of him, and died in 1620. Montucla says that he died in 1633; misled apparently by the preface to Albert Girard's edition of Stevin's works, which was published in 1634, and which speaks of a death which took place in the preceding year; but on examination it will be seen that this refers to Girard, not to Stevin.

I ought to have mentioned, in consideration of the importance of the proposition, that Stevin distinctly states the *triangle of forces*; namely, that three forces which act upon a point are in equilibrium when they are parallel and proportional to the three sides of any plane triangle. This includes the principle of the *Composition of Statical Forces*. Stevin also applies his principle of equilibrium to cordage, pulleys, funicular polygons, and especially to the bits of bridles; a branch of mechanics which he calls *Chalinothlipsis*.

He has also the merit of having seen very clearly, the distinction of statical and dynamical problems. He remarks that the question, What force will *support* a loaded wagon on an inclined plane? is a statical question, depending on simple conditions; but that the question, What force will *move* the wagon? requires additional considerations to be introduced.

In Chapter iv. of this Book, I have noticed Stevin's share in the re-discovery of the *Laws of the Equilibrium of Fluids*. He distinctly explains the *hydrostatic paradox*, of which the discovery is generally ascribed to Pascal.

Earlier than Stevinus, Leonardo da Vinci must have a place among the discoverers of the Conditions of Equilibrium of Oblique Forces. He published no work on this subject; but extracts from his manuscripts have been published by Venturi, in his *Essai sur les Ouvrages Physico-Mathématiques de Leonard da Vinci, avec des Fragmens tirés de ses Manuscrits apportés d'Italie*. Paris, 1797: and by Libri, in his *Hist. des Sc. Math. en Italie*, 1839. I have also myself examined these manuscripts in the Royal Library at Paris.

It appears that, as early as 1499, Leonardo gave a perfectly correct statement of the proportion of the forces exerted by a cord which acts obliquely and supports a weight on a lever. He distinguishes between the real lever, and the *potential levers*, that is, the perpendiculars drawn from the centre upon the directions of the forces. This is quite sound and satisfactory. These views must in all probability have been sufficiently promulgated in Italy to influence the speculations of Galileo;