

danus and Tartalea.³ No progress was likely to occur, till the mathematicians had distinctly recovered the genuine Idea of Pressure, as a Force producing equilibrium, which Archimedes had possessed, and which was soon to reappear in Stevinus.

The properties of the Lever had always continued known to mathematicians, although, in the dark period, the superiority of the proof given by Archimedes had not been recognized. We are not to be surprised, if reasonings like those of Jordanus were applied to demonstrate the theories of the Lever with apparent success. Writers on Mechanics were, as we have seen, so vacillating in their mode of dealing with words and propositions, that their maxims could be made to prove any thing which was already known to be true.

We proceed to speak of the beginning of the real progress of Mechanics in modern times.

*Sect. 2.—Revival of the Scientific Idea of Pressure.—Stevinus.—
Equilibrium of Oblique Forces.*

THE doctrine of the Centre of Gravity was the part of the mechanical speculations of Archimedes which was most diligently prosecuted after his time. Pappus and others, among the ancients, had solved some new problems on this subject, and Commandinus, in 1565, published *De Centro Gravitatis Solidorum*. Such treatises contained, for the most part, only mathematical consequences of the doctrines of Archimedes; but the mathematicians also retained a steady conviction of the mechanical property of the Centre of Gravity, namely, that all the weight of the body might be collected there, without any change in the mechanical results; a conviction which is closely connected with our fundamental conceptions of mechanical action. Such a principle, also, will enable us to determine the result of many simple mechanical arrangements; for instance, if a mathematician of those days had been asked whether a solid ball could be made of such a form, that, when placed on a horizontal plane, it should go on rolling forwards without limit merely by the effect of its own weight, he would probably have answered, that it could not; for that the centre of gravity of the ball would seek the lowest position it could find, and that, when it had found this, the ball could have no tendency to roll any further. And, in making this assertion, the supposed reasoner would not be an-

³ Ubaldi mentions and blames Jordanus's way of treating the Lever. (See his Preface.)