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Bernoulli  
and Euler.

chical with physical phenomena. Fechner, the founder of psycho-physics as an independent doctrine, refers notably to two<sup>1</sup> such instances. They were contributed by two great mathematicians, Daniel Bernoulli and Leonhard Euler. The former pointed out that the value which we attach morally to the addition to any material possession is not measured by the actual magnitude of such addition, but by the relation it bears to that which we already possess. The first sovereign earned by a poor and starving labourer has an almost infinite value compared with what it has for a person already possessed of a million. Laplace and Poisson referred to this statement of Bernoulli, and introduced the terms "fortune physique," "fortune morale," showing that they stand in a simple mathematical relation. The same relation was shown by Euler to exist between our estimate of musical intervals in the harmonic scale and the difference of the number of vibrations of the strings which produce the two notes. It was above a century before Fechner correlated these isolated remarks with observations of modern psycho-physics in his celebrated law, of which more anon.

On the whole, little progress was made during the eighteenth century in the department of research I am now dealing with; but the end of the eighteenth and the beginning of the following century brought several important discoveries, some of which were at the time much over-estimated, whilst others were for a long time forgotten or overlooked.

The first is the accidental discovery by Galvani in

<sup>1</sup> 'Psychophysik,' 1860, vol. ii. p. 548, &c.