

demy, which was based upon the endowment of research, and which prompted the co-operation of its members in organised<sup>1</sup> scientific work. Whilst the Royal Society of London only received a charter, and existed by the entrance payments and contributions of its own members, augmented by private donations, the Paris Academy had, as far back as 1671, received the funds with which to commence its labours in connection with the survey of the kingdom and its extensive dependencies. It was these labours which led to the measurements of the length of the seconds pendulum, and of the variation of gravity in different latitudes; to the explanation of this variation by Huygens; to the controversy regarding the figure of the earth; to the direct measurements of the arcs of the meridian in Peru and Lapland; and, finally, to Clairault's celebrated work on this subject.<sup>2</sup> It was almost exclusively by these observations that the data were found with which to substantiate Newton's mathematical reasonings: in his own country that fruitful co-operation which

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<sup>1</sup> "Le roi assurait l'existence des Académiciens par des pensions et mettait libéralement à leur disposition un fonds destiné à pourvoir aux frais de leurs expériences et de leurs instruments" (Maury, 'Les Académies d'autrefois,' vol. i. p. 13). Organisation and co-operation are difficult to obtain in societies founded on private and voluntary contributions. In England they scarcely existed before the foundation of the British Association, with perhaps one illustrious exception pointed out by Struve ('Description de l'Observatoire de Pulkowa,' 4to, Pétersbourg, p. 5): "Il y a, dans l'histoire de l'observatoire de Greenwich, un point très remarquable, savoir que

les astronomes ont travaillé sur un même plan, depuis l'origine de l'établissement jusqu'à l'époque actuelle." Organisation and co-operation were the order in the Paris Academy from the beginning. "On y travaillait de concert"; and, "Dès les premiers mois de 1667, Perrault proposa un plan de travail pour la physique, c'est à dire pour l'ensemble de l'histoire naturelle" (Maury, *loc. cit.*, p. 15).

<sup>2</sup> A full account of these is given in Todhunter ('Hist. of Theories of Attraction, &c.,' vol. i.) Clairault's book was published in 1743, and had the title, 'Théorie de la Figure de la Terre, tirée des Principes de l'Hydrostatique, par Clairault.'