prompted by the needs of the medical profession, which studied animals as affording an insight into the analogous structure and functions of the human body;[1] and plants, because they largely furnished the materials for the preparation of medicines. To this must further be added the practical interests of agriculture, of gardening, and of the artificial culture of flowers and exotic plants, and the breeding of domestic animals. All these interests, however stimulating they may have been and still are, introduce an element of artificiality into the study of nature. They have all a greater concern for natural objects, be they beautiful or useful, than they have for nature itself. From this artificial position the true sciences of nature had to emancipate themselves by slow degrees and with many efforts. Ever since the time of Linnæus, through whose labours the systematic attempts received a kind of finality, and even in his own writings, great discussions were carried on as to the difference between a natural and an artificial order of plants and animals. "The natural orders,"[2] says Linnæus, "teach us the nature of plants, the artificial orders enable us to recognise plants. The natural orders, without a key, do not constitute a method; the method ought to be available without a master. . . . The habit of a plant must be secretly consulted. A practised botanist will

19. Artificial and natural systems.

[1] Referring to Albrecht von Haller, Victor Carus ('Gesch. d. Zoologie,' p. 567) says, "Through the leap which physiology took, thanks to his labours, zootomical researches developed in a direction which brought them into complete subjection to physiology, with a neglect of the independent importance which belongs to them. . . . It diverted attention from the immediate object of zoology, the explanation of animal forms and their variety, to the more remote problem—the explanation of the phenomena of life."

[2] Quoted by Whewell ('Hist.,' vol. iii. p. 268) from the 'Genera Plantarum' (1764).