

method, that this division according to the cotyledons is of a higher order than the other divisions according to number; and corresponds to a distinction in the general structure and organization of the plant. The apprehension of the due rank of this distinction has gradually grown clearer. Cuvier<sup>9</sup> conceives that he finds such a division clearly marked in Lobel, in 1581, and employed by Ray as the basis of his classification a century later. This difference has had its due place assigned it in more recent systems of arrangement; but it is only later still that its full import has been distinctly brought into view. Desfontaines discovered<sup>10</sup> that the ligneous fibre is developed in an opposite manner in vegetables with one and with two cotyledons;—towards the inside in the former case, and towards the outside in the latter; and hence these two great classes have been since termed *endogenous* and *exogenous*.

Thus this division, according to the cotyledons, appears to have the stamp of reality put upon it, by acquiring a physiological meaning. Yet we are not allowed to forget, even at this elevated point of generalization, that *no one* character can be imperative in a natural method. Lamarck, who employed his great talents on botany, before he devoted himself exclusively to other branches of natural history, published his views concerning methods, systems,<sup>11</sup> and characters. His main principle is, that no single part of a plant, however essential, can be an absolute rule for classification; and hence he blames the Jussieuan method, as giving this inadmissible authority to the cotyledons. Roscoe<sup>12</sup> further urges that some plants, as *Orchis morio*, and *Limodorum verecundum*, have no visible cotyledons. Yet De Candolle, who labored along with Lamarck, in the new edition of the *Flore Française*, has, as we have already intimated, been led, by the most careful application of the wisest principles, to a system of Natural Orders, of which Jussieu's may be looked upon as the basis; and we shall find the greatest botanists, up to the most recent period, recognizing, and employing themselves in improving, Jussieu's Natural Families; so that in the progress of this part of our knowledge, vague and perplexing as it is, we have no exception to our general aphorism, that no real acquisition in science is ever discarded.

<sup>9</sup> *Hist. Sc. Nat.* ii. 197.

<sup>10</sup> *Hist. Sc. Nat.* i. pp. 196, 290.

<sup>11</sup> Sprengel, ii. 296; and, there quoted, *Flore Française*, t. i. 3, 1778. *Mém. Ac. P.* 1785. *Journ. Hist. Nat.* t. i. For Lamarck's *Méthode Analytique*, see Dumeril, *Sc. Nat.* i. Art. 390.

<sup>12</sup> Roscoe, *Linn. Tr.* vol. xi. *Cuscuta* also has no cotyledons.