Why, then, should not observers of nature have appreciated rightly the relationship between animals or plants before getting a scientific clue to the classifications they were led to adopt as practical?

Such considerations, above all others, have guided and encouraged me while I was seeking for the meaning of all these systems, so different one from the other in their details, and yet so similar in some of their general features. The history of our science shows how early some of the principles, which obtain to this day, have been acknowledged by all reflecting naturalists. Aristotle, for instance, already knew the principal differences which distinguish Vertebrata from all other animals, and his distinction of *Enaima* and *Anaima*[1] corresponds exactly to that of *Vertebrata* and *Invertebrata* of Lamarck,[2] or to that of *Flesh-* and *Gut-Animals* of Oken,[3] or to that of *Myeloneura* and *Ganglioneura* of Ehrenberg;[4] and one who is at all familiar with the progress of science at different periods can but smile at the claims to novelty or originality so frequently brought forward for views long before current among men. Here, for instance, is one and the same fact presented in different aspects; first, by Aristotle with reference to the character of the formative fluid, next by Lamarck with reference to the general frame,—for I will do Lamarck the justice to believe, that he did not unite the Invertebrata simply because they have no skeleton, but because of that something, which even Professor Owen fails to express,[5] and which yet exists, the one cavity of the body in Invertebrata containing all organs, whilst Vertebrata have one distinct cavity for the centres of the nervous system, and another for the organs of the vegetative life. This acknowledgment is due to Lamarck as truly as it would be due to Aristotle not to accuse him of having denied the Invertebrata any fluid answering the office of the blood, though he calls them *Anaima;* for he knew nearly as well as we now know, that there moves a nutritive fluid in their body, though that information is generally denied him because he had no correct knowledge of the circulation of the blood.

Again, when Oken speaks of Flesh-Animals he does not mean that Vertebrates consist of nothing but flesh, or that the Invertebrates have no muscular fibres; but he brings prominently before us the presence, in the former, of those masses, forming mainly the bulk of the body, which consist of flesh and bones as well as blood and nerves, and constitute another of the leading features distinguishing Vertebrata and Invertebrata. Ehrenberg presents the same relations between the same beings as expressed by their nervous system. If we now take the expressions

[1] Histor. Anim., Lib. I., Ch. 5 and 6.
[2] Anim. Vert., 2d édit., vol. 1, p. 313.
[3] Naturphilosophie, 3d edit., p. 400.
[4] Das Naturreich des Menschen; a diagram, upon a large sheet, folio.
[5] Comparat. Anat. of Inv., 2d edit., p. 11.