

that of *Anaima* and *Enaima* of Aristotle. The three leading groups designated under the name of Apathetic, Sensitive, and Intelligent animals, are an imitation of the four branches of Cuvier; but, far from resting upon such a definite idea as the divisions of Cuvier, which involve a special plan of structure, they are founded upon the assumption that the psychical faculties of animals present a serial gradation, which, when applied as a principle of classification, is certainly not admissible. To say that neither Infusoria, nor Polypi, nor Radiata, nor Tunicata, nor Worms feel, is certainly a very erroneous assertion. They manifest sensations quite as distinctly as many of the animals included in the second type which are called Sensitive. And as to the other assertion, that they move only by their excited irritability, we need only watch the Starfishes to be satisfied that their motions are determined by internal impulses and not by external excitation. Modern investigations have shown that most of them have a nervous system, and many even organs of senses.

The Sensitive animals are distinguished from the third type, the Intelligent animals, by the character of their sensations. It is stated, in respect to the Sensitive animals, that they obtain from their sensations only perceptions of objects, a sort of simple ideas which they are unable to combine so as to derive from them complex ones, while the Intelligent animals are said to obtain ideas which they may preserve, and to perform with them operations by which they arrive at new ideas. They are said to be Intelligent. Even now, fifty years after Lamarck made those assertions, I doubt whether it is possible to distinguish in that way between the sensations of the Fishes, for instance, and those of the Cephalopods. It is true, the structure of the animals called Sensitive and Intelligent by Lamarck differs greatly, but a large number of his Sensitive animals are constructed upon the same plan as many of those he includes among the Apathetic; they embrace, moreover, two different plans of structure, and animal psychology is certainly not so far advanced as to afford the least foundation for the distinctions here introduced.

Even from his own point of view, his arrangement of the classes is less perfect than he might have made it, as the Annelids stand nearer to the Worms than the Insects, and are very inferior to them. Having failed to perceive the value of the idea of plan, and having substituted for it that of a more or less complicated structure, Lamarck unites among his Apathetic animals, Radiates (the Polypi and Radiaria) with Mollusks, (the Tunicata,) and with Articulates (the Worms.) Among the Sensitive animals, he unites Articulates (the Insects, Arachnids, Crustacea, Annelids, and Cirripeds) with Mollusks (the Conchifera, and the Mollusks proper.) Among the Intelligent animals, he includes the ancient four classes of Vertebrates, the Fishes, Reptiles, Birds, and Mammalia.