

rate and easily discoverable signs in the number, size, place, and form of individual organic parts of the body, Cuvier penetrated much more deeply into the essence of organization. He demonstrated great and wide differences in the inner structure of animals, as the real foundation of a scientific knowledge and classification of them. He distinguished natural families in the classes of animals, and established his natural system of the animal kingdom on their comparative anatomy.

The progress from Linnæus' artificial system to Cuvier's natural system was exceedingly important. Linnæus had arranged all animals in a single series, which he divided into six classes—two classes of Invertebrate, and four classes of Vertebrate animals. He distinguished these artificially, according to the nature of their blood and heart. Cuvier, on the other hand, showed that in the animal kingdom there were four great natural divisions to be distinguished, which he termed Principal Forms, or General Plans, or Branches of the animal kingdom (Embranchements), namely: 1. The Vertebrate animals (Vertebrata); 2. The Articulate animals (Articulata); 3. The Molluscous animals (Mollusca); and 4. The Radiate animals (Radiata). He further demonstrated that in each of these four branches a peculiar plan of structure or type was discernible, distinguishing each branch from the three others. In the Vertebrate animals it is distinctly expressed by the form of the skeleton, or bony framework, as also by the structure and position of the dorsal nerve-chord, apart from many other peculiarities. The Articulate animals are characterized by their ventral nerve-chord and their dorsal heart. In Molluscs the sack-shaped and non-articulate body is the distinguishing feature.