

*priori* considerations can supply, has long preceded the knowledge of them as real and verified laws. In such a way it was seen, before Newton, that the motions of the planets must result from attraction; and so, before Dufay and Franklin, it was held that electrical actions must result from a fluid. Cuvier's merit consisted, not in seeing that an animal cannot exist without combining all the conditions of its existence; but in perceiving that this truth may be taken as a guide in our researches concerning animals;—that the mode of their existence may be collected from one part of their structure, and then applied to interpret or detect another part. He went on the supposition not only that animal forms have *some* plan, *some* purpose, but that they have an intelligible plan, a discoverable purpose. He proceeded in his investigations like the decipherer of a manuscript, who makes out his alphabet from one part of the context, and then applies it to read the rest. The proof that his principle was something very different from an identical proposition, is to be found in the fact, that it enabled him to understand and arrange the structures of animals with unprecedented clearness and completeness of order; and to restore the forms of the extinct animals which are found in the rocks of the earth, in a manner which has been universally assented to as irresistibly convincing. These results cannot flow from a trifling or barren principle; and they show us that if we are disposed to form such a judgment of Cuvier's doctrine, it must be because we do not fully apprehend its import.

To illustrate this, we need only quote the statement which he makes, and the uses to which he applies it. Thus in the Introduction to his great work on *Fossil Remains* he says, "Every organized being forms an entire system of its own, all the parts of which mutually correspond, and concur to produce a certain definite purpose by reciprocal reaction, or by combining to the same end. Hence none of these separate parts can change their forms without a corresponding change in the other parts of the same animal; and consequently each of these parts, taken separately, indicates all the other parts to which it has belonged. Thus, if the viscera of an animal are so organized as only to be fitted for the digestion of recent flesh, it is also requisite that the jaws should be so constructed as to fit them for devouring prey; the claws must be constructed for seizing it and tearing it to pieces; the teeth for cutting and dividing its flesh; the entire system of the limbs or organs of motion for pursuing and overtaking it; and the organs of sense for discovering it at a distance. Nature must also have endowed the brain of the animal with instincts sufficient for concealing itself, and for laying plans to