

we are indebted to the genius of George Cuvier—that I wish to impress. Suffice it to say that all animals are either *vertebrated*—possessed of a backbone; *articulated*—with an external horny crust, composed of rings, like insects, lobsters, and worms; *molluscous*—with soft bodies like slugs, very often covered by a shell, like snails and oysters; or *radiated*—with bodies composed of parts somewhat symmetrically arranged on all sides with reference to the centre, like the starfish and corals. I have named the most striking character which distinguishes each of these great branches of the animal kingdom. All the other parts conform to these; indeed, the basis of each peculiar plan is laid in the nervous system, at a very early period of embryonic development; and the hard parts—the bones and external crust—are moulded to this, so that, though the real basis of these distinctions is hidden from view, the external form and proportions become always an infallible exponent of the fundamental plan.

Three of these fundamental plans are called into requisition in the constitution of the very first population of our globe, omitting any consideration of the little-known existences of the Eözoic Time. The coral was a radiate; the *Lingula* was a mollusc; the trilobite was an articulate. The fourth plan was drawn upon before the close of the first great period of animal history, and was realized in the form of a fish.

In the very first chapter of the book of Nature, then, we read the announcement of a programme which is still in process of execution. The type of the primeval coral has sprouted into the sea-anemone, the sea-nettle, and the starfish. The type of the *Lingula* has been degraded into the Bryozoan and nummulite, and expanded into the clam, the snail, and the cuttle-fish. The type of the trilobite has varied into the worm below and the insect above; while