

animals may be preserved as fossils. This subject is of such importance that we may shortly consider each of the primary sub-divisions of the animal kingdom separately from this point of view.

*a. Protozoa:*—As regards the sub-kingdom of the *Protozoa*, the entire classes of the *Infusorian Animalcules* and the parasitic *Gregarines*, from their absence of hard parts, must ever be unrepresented in a fossil condition. The same may be said of the *Monera* and *Amœbea*, though one or two of the latter are provided with structures which it is just possible might be preserved. The other three *Rhizopodous* orders, *viz.*, the *Foraminifera*, the *Radiolaria*, and the *Spongida* are composed of organisms in which hard structures of lime or flint are generally developed, and all these orders, therefore, have left traces of their existence in past time.

*b. Cœlenterata:*—Amongst the *Cœlenterate Animals*, the Fresh-water Polypes (*Hydra*), the Oceanic *Hydrozoa*, the Jelly-fishes (*Medusidæ*), the Sea-blubbers (*Lucernarida*), the Sea-anemones (*Actinidæ*), and the *Ctenophora* are all destitute of hard parts which could be preserved as fossils. The Sea-blubbers, however, supply us with an instance of how even a completely soft-bodied creature may leave traces of its former existence; for there is no doubt that impressions left by the stranded carcasses of these animals have been detected in certain fine-grained rocks (*e. g.* the Solenhofen slates of Bavaria). On the other hand the Coralligenous Zoophytes, or "corals," (*Zoantharia sclerodermata* and *sclerobasica* and most of the *Alcyonaria*) possess hard parts capable of preservation; and the same is the case with most of the Hydroid Zoophytes. Accordingly there are few more abundant fossils than corals, whilst the large extinct group of the *Graptolites* is generally placed in the neighborhood of the Sea-firs (*Sertularians*).

*c. Annuloida:*—In this sub-kingdom the great class of the *Echinodermata* may be said to be represented more or less completely by all its orders. In the Sea-cucumbers (*Holothuroidea*), however, the calcareous structures so characteristic of the integument of the other Echinoderms are reduced to their minimum or are wholly wanting; and accordingly the evidence of the past existence of these creatures is of the most scanty description. The other great class of the *Annuloida*, (*viz.*, that of the *Scolecida*) comprises animals which are without exception destitute of hard parts, and which in many cases live parasitically in the interior of other animals (*e. g.*, the Tape-