sea-hedgehog, so called from the spines that stand out in all directions over the thin, but firm, hollow shell; *third*, the *Holothurians*, or *sea-slugs*, alluded to on page 129, whose bodies are long and flexible, and the exterior is a fleshy skin, usually thick, often with calcareous points or pieces in the skin, but not enough to interfere with its slug-like flexibility. There are also other lower kinds, which need not be here described.

In Polyps the number of similar radiate parts in the structure is typically a multiple either of *six* or of *four*; in Acalephs, of *four*; in Echinoderms, of *five*. Some variations occur under each of these divisions; but they may probably be regarded as modifications of the type by suppression in development, or the reverse.

The Echinoderms are the highest of Radiates. They show their superiority of rank in having more perfect nervous, digestive, and branchial systems, generally an anal opening to the alimentary canal instead of only a mouth, and a better organized mouth; also in the absence of lasso-cells, this provision of a stinging apparatus in the skin being a special attribute of inferiority. They have tentacles (under the form of suckers and also of branchiæ), but these organs are usually arranged along the body radiately with reference to the mouth or the opposite extremity of the animal; and the tentacular (or ambulacral) compartments alternate with others non-tentacular (inter-ambulacral). When the body is long, as in the Holothurians, the five ranges of tentacles extend along the sides of the body.

In many points, the Echinoderms are unlike Polyps; and yet the two are fundamentally similar in the radiate system at the basis of the structure; in the alternation of tentacular and non-tentacular compartments when both kinds exist; in the annular character of the nervous system—for, although the nervous ring is not complete either in Polyps or Acalephs, the isolated parts existing in these species are manifestly rudiments of the nervous ring of the Echinoderms; in the system of water-circulation, which in Polyps differs from that of Echinoderms only in being less perfect; and in other points which cannot here be dwelt upon.

To the more scientific reader a word is here added on the question whether Echinoderms are true Radiates. They have been separated from this sub-kingdom by some zoölogists on the ground of their having a better defined alimentary canal, with two extremities to it instead of only a mouth; also a more perfect nervous system and a more perfect aquiferous system; and their not being furnished with lasso-cells:—the Polyps and Acalephs being distinctively designated by such systematists *Cœlenterates*. But the organs, or arrangements, for the purposes of digestion, sensation, aeration, prehension, are only the means by which the animal sustains itself and does its work, while the type of structure is something fundamental to all these conditions of its exhibition. The fact of the radiate structure, and of the general homology in the several parts between the Echinoderms and other Radiates, is not affected by the