

# DESCRIPTIONS,

&c.

## Kingdom ANIMALIA.

THE Animal Kingdom consists of all the organized beings possessed of a mouth and internal digestive cavity. By these characters they are excluded from the Vegetable Kingdom, which contains all the rest of the organic creation.

The Animal Kingdom is divided into four Sub-kingdoms: 1st, *Radiata*; 2nd, *Articulata*; 3rd, *Mollusca*; and 4th, *Vertebrata*. Examples of all occur in the Palæozoic Rocks.

### 1st Sub-kingdom RADIATA.

This sub-kingdom comprises a vast number of the lowest organised forms of animal life. One great section, named *Acrita* by Prof. Owen, shewing no trace of a nervous system, being capable of increase by spontaneous fission, and by buds, as well as by ova, and having only one opening to the digestive cavity. The higher section, named *Nematoneura* by the same author, from having a rudimentary nervous system of threads, without ganglions or distinct nervous centres, is generally speaking increased by ova alone, and has two openings to a distinctly-walled digestive cavity. This 2nd group comprehends the *Rotifera*, *Echinodermata*, *Polyzoa*, and *Entozoa*—some of the last being the most highly organized, and approaching the true worms in many points. The most universal character of the group *Radiata* is that which suggested its name, namely, the more or less perfect radiated arrangement of all the parts round the mouth as a centre: this appearance is often deceptive, but is on the whole scarcely to be met with in any other division of the animal kingdom. The existence of distinct nervous threads in the *Actiniae*, and the progress of discovery shewing every year the existence of nervous filaments in others of the *Acrita*, induce me to leave the *Radiata* as one group.

This sub-kingdom is divided into the following Classes: 1st *Infusoria*; 2nd, *Entozoa* or intestinal worms; 3rd, *Zoophyta*; 4th, *Polyzoa*; 5th, *Acalephæ* or sea-jellies; and 6th, *Echinodermata*. The first are not known in the Palæozoic rocks, and the second and fifth, from the softness of their tissues, cannot be expected in the fossil state, though it is probable they may have existed from very early geological periods.

SECT. I.—RADIATA OF THE LOWER PALEOZOIC ROCKS. (*Cambrian and Silurian*).

### 3rd Class, ZOOPHYTA. (*Lin.*)

= *Anthozoa*, *Ehrenberg*.

In the lower types of this Class the body is soft, and capable of expansion by water received through the mouth; all the parts, internal and external, perform equally the same functions; respiration is performed by the whole surface; no circulation has been discovered, nor organs of sense, nor distinction of sex; the individuals are essentially composed of a closed tubular stomach terminating in a mouth and circle of tentacles.

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