have an additional characteristic of this branch, distinguishing it from the three other branches of the animal kingdom. The significance of this upright position of the lowest type of animals with a radiating structure is most striking in view of the upright position of man, at the head of the animal creation.

The same reasons which induce me to discard the indications of the Holothuriæ in determining the normal position of the Radiates, apply to the Medusæ, Star-fishes, and Sea-urchins, when considering which end of the vertical axis should be regarded as the upper and which as the lower. The centre of radiation, as developed in the actinostome, is evidently the prominent feature of the whole organization of this type; it is the climax of the concentration of their structure; upon that side the most sensitive parts of the body are combined; around it the nervous ring with its ganglions is placed, in those representatives of the type in which the differentiation of the tissues goes so far as to lead to the development of a nervous system. It seems natural, therefore, to consider the oral end of the vertical axis as its upper end. But why that end should be turned upwards in the lower Radiates only, I am unable to say: I can only surmise that this position is connected with the immovability of the Polyps, the Hydroids, and the pedunculated Crinoids, and that the advantage they have in that respect over the Medusæ, the Star-fishes, and the Sea-urchins, is a compensation for their inability to move about freely.

Supposing, however, that the actinostome should be considered as the upper end of the vertical axis, it would not be advisable to use the expressions of *upper* and *lower* end or side of the body, in describing the one or the other end of the vertical axis of the Radiates; for, evidently, there would be something unnatural in constantly contrasting the normal position and the natural attitude of the different representatives of this type. I would therefore prefer to apply the name of *actinal* to the side or pole at which the so-called mouth or actinostome is placed, and that of *abactinal* to the opposite side or pole. In this way the description of a Sea-urchin, compared to that of an Actinia, will not involve a seeming contradiction with the attitudes in which these animals are constantly observed in their natural element.

This once fully understood, and assuming that the body of a Radiate, whatever be its real figure and its natural attitudes, may be reduced to a spheroidal form by homological transformations, it is self-evident that the essential segments composing this living sphere will bear to one another identical relations, and as parts of a sphere be homologous to one another, as far as they retain symmetrical relations to the main axis. For these homological segments of the body of Radiates I would propose the name of *Spheromeres*, and, in allusion to the well-known structure of these animals, describe the body of a Holothuria, for instance, or that