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swimming motion is effected. The few surviving forms of gastræads, the gastræmaria (trichoplacidae) and cyemaria (orthonectidae), are extremely interesting, from the fact that they remain throughout life at a stage of structure which is passed by all the other metazoa (from the sponge to man) at the commencement of their embryonic development. As I have shown in my Theory of the Gastraea (1872), a very characteristic embryonic form, the gastrula, is immediately developed from the blastula in all the tissue animals. The germinal membrane (blastoderm), which represents the wall of the hollow vesicle, forms a depression at one side, and this soon sinks in so deep that the inner cavity of the vesicle disappears. The half of the membrane which bends in is thus laid on, and inside, the other half; the latter forms the skin-layer, or outer germinal layer (ectoderm or epiblast), and the former becomes the gutlayer, or inner germinal layer (endoderm or hypoblast). The new cavity of the cup-shaped body is the digestive stomach cavity (the progaste), and its opening is the primitive mouth (or prostoma).* The skin-layer, or ectoderm, is the primitive psychic organ in the metazoa; from it, in all the nerve animals, not only the external skin and the organs of sense, but also the nervous system, are developed. In the gastræads, which have no nerves, all the cells which compose the simple epithelium of the ectoderm are equally organs of sensation and of movement; we have here the tissue-soul in its simplest form.

The platodaria, the earliest and simplest form of the platodes, seem to be of the same primitive construction. Some of these cryptocœla—the *convoluta*, etc.—have

^{*} Cf. Anthropogeny and Natural History of Creation.