or immediately after their extrusion; that the first developmental stages are run through rapidly; and that the young are passed back from the ovarial opening, which is at the side of the mouth, along the dorsal ambulacra, and arranged in their places by the automatic action of the ambulacral tentacles themselves.

The very remarkable mode of reproduction of certain members of all the recent classes of Echinodermata by the intervention of a free-swimming bilaterally symmetrical "pseudembryo" developed directly from the "morula," from which the true young is subsequently produced by a process of internal budding or rearrangement, has long been well known through the labors of a host of observers headed and represented by the late illustrious Professor Johannes Müller, of Berlin.

At the same time, it has all along been fully recognized that reproduction through the medium of a pseudembryo is not the only method observed in the class; but that in several of the Echinoderm orders, while in a certain species a wonderfully perfect and independent bilateral locomotive zooid may be produced, in very nearly allied species the young Echinoderm may be developed immediately from the segmented yelk without the formation of a pseudembryo, or, at all events, with no further indication of its presence than certain obscure temporary processes attached to the embryo, to which I have elsewhere (Phil. Trans. for 1865, p. 517) given the name of "pseudembryonic appendages."

This direct mode of development has been described in *Holothuria tremula* by MM. Koren and Danielssen, in *Synaptula vivipara* by Professor Oersted, in a "viviparous sea-urchin" by Professor Grube, in *Echinaster* and in *Pteraster* by Professor Sars, in *Asteracanthion* by Professor Sars, Professor Agassiz, Dr. Busch, and myself, in *Ophiolepis squamata* by Professor Max Schultze, and in a "viviparous ophiurid" by Professor Krohn. No less than four of these observations were made on the coast of Scandinavia. In temperate regions, where the