than certain obscure temporary processes attached to the embryo, to which I have elsewhere given the name of 'pseudembryonic appendages.'[1]

"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 by 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 economy of the Echinoderms has been under the eye of a greater number of observers, the development of the free-swimming larva appeared to be so entirely the rule that it is usually described as the normal habit of the class; while on the other hand, direct development seemed to be most exceptional. I was therefore greatly surprised to find that in the Southern Ocean and sub-antarctic regions a large proportion of the Echinoderms of all orders, with the exception perhaps of the Crinoids (with regard to which we have no observations), develop their young after a fashion which precludes the possibility, while it nullifies the object, of a pseudembryonic perambulator, and that in these high southern latitudes the formation of such a locomotive zooid is apparently the exception.

"This modification of the reproductive process consists in all these cases, as it does likewise in those few instances in which direct development has already been described, of a device by which the young are reared within or upon the body of the parent, and are retained in a kind of commensal connection with her until they are sufficiently grown to fend for themselves. The receptacle, in cases where a special receptacle exists in which the young are reared, has been called a 'marsupium' (Sars), a term appropriately borrowed from the analogous arrangement in their neighbours the aplacental mammals of Australia. The young do not appear to have in any case an organic connection with the parent; the impregnated egg from the time of its reaching the 'morula' stage is entirely free; the embryos are indebted to the mother for protection, and for nutrition only indirectly through the mucus exuded from the surface of her perisome, and through the currents of freshly aerated water containing organic matter brought to them or driven over them by the action of her cilia.

"Animals hatching their eggs in this way ought certainly to give the best possible opportunities for studying the early stages in the development of their young. Unfortunately, however, this is a kind of investigation which requires time and stillness and passable comfort; and such are not the usual conditions of a voyage in the Antarctic Ocean. Specimens have been carefully preserved with the young in all stages; and I hope that a careful examination of these may yield some further results.

"*Cladodactyla crocea* is one of the forms in which there is no special marsupium

[1] *Phil. Trans.*, p. 517, 1865.