

made a casual observation which has since become very famous. He observed that in a species of the free-swimming Tunicate, *Salpa*, a solitary form gave rise to embryos quite different in character and linked together in a chain, and that each link of the chain again produced a solitary form. His observation was not altogether accurate, but it called attention to a remarkable fact, which for a time seemed to stand alone.

Alternation  
of Genera-  
tions.

The progress of marine zoology and the study of parasites, in the hands of men like Sars, Dalyell, Lovén, Von Siebold, and Leuckart, disclosed other alternations somewhat similar to that observed by Chamisso, but the results were not generalized until 1842, when Steenstrup (1813-1897) published a work entitled, *On the Alternation of Generations; or, The Propagation and Development of Animals through alternate generations, a peculiar form of fostering the young in the lower classes of animals*. From Hydroids (zoophytes) and Trematodes (flukes) he gave illustrations of the "natural phenomenon of an animal producing an offspring which at no time resembles its parent, but which itself brings forth a progeny that returns in its form and nature to the parent".

In 1838-39, as we have already noticed, Schwann and Schleiden formulated the cell-theory, towards which the researches of many workers had been steadily leading. In this doctrine there were three correlated conclusions: (a) that the organism has a cellular structure; (b) that its life depends on the reciprocal action of the component cells; and (c) that development means cell-formation, and begins by the cleavage of the ovum. "Every elementary part", Schwann said, "possesses a power of its own, an independent life, by means of which it would be enabled to develop independently, if the relations which it bore to external parts were but similar to those in which it stands in the organism. The ova of animals afford us examples of such independent cells, growing apart from the organism." Under the influence of the cell-theory it became the pressing task of the embryologists to

The Influence  
of the Cell-  
theory.