

in an extreme case, finally quit the ovigerous capsule."* Koren and Danielsson in 1857 studied the eggs of the large whelk (*Buccinum*) and decided that many eggs united to form one large embryo, the remaining eggs dying and breaking up; but, immediately after the publication of the Danish observers' views, Dr. Carpenter gave the correct account of the strange phenomenon, an account supported by the later researches of Dr. Dyster. Part of the eggs are fertilized and part are not fertilized but are devoured by the former while still contained in the capsule. Long before the infant mollusks become active "veligers," or free-swimming larvæ, with a crown of waving cilia, they turn cannibal. Dr. Carpenter noticed that some larvæ did not devour their fellows; but depended for nutriment upon their own stock of yolk-macromeres. These became stunted, and many died. The macromeres, it is hardly necessary to say, are the large segments at one side of the egg, as distinguished from the micromeres at the other side, the latter forming the germ. Selenka confirmed Dr. Carpenter's results but held that the cleavage of the early unfertilized egg was not true segmentation, and inferred that, while the minute features of the yolk, in both kinds of eggs, appeared to be the same, there was no nucleus discoverable in the unfertilized eggs. In the Gastropod *Tergipes ansea* he found that when this irregular segmentation took place, portions of the yolk were thrown off, developed cilia, and became independent moving "cosmellæ," as Von Nordmann called them, and they have been regarded as parasitic in nature. Edouard Clapareda, again, from his study of *Neritina fluviatilis* was able to further confirm Carpenter, and Blochmann discovered, in the same small fresh-water shellfish, that one embryo only may survive out of 70 or 80 contained originally in one capsule. Dr. W. K. Brooks announced, more recently, that in the egg-case of *Urosalpinx*, containing six to twenty ova, many of them are devoured by the others both in the earlier and the later stages of embryonic development. Professor J. P. McMurrich, of Toronto, has confirmed these last results by a study of *Crepidula* and *Purpura floridana*, finding that a number of eggs always break down or disintegrate to serve as food for their surviving brethren. In *Fasciolaria tulipa*, one of the Muricidæ, he noted that four, or five, or six, embryos may ultimately emerge from one nidamental capsule, which originally contains about two hundred eggs. But not only in

*Haacke has stated that in certain Australian Rays (Trygorrhina and Rhinobatis) more than one ovum is contained in one horny capsule, and Dr. Otto Klotz, of Ottawa, brought the same fact to my attention in the huge British Columbia skate (*Raja cooperi*, Gir.)