Numerous amœboid cells are always present in the uterus among the embryos. These are probably concerned in the nutrition of the embryos, since they may be seen passing through the uterine wall, and the uterus is surrounded by a great quantity of cells filled with yellow granules, probably of food material.

Perhaps the most important developmental point thus far made out is that the peribranchial sacs *arise as two well defined ectodermal invaginations on the dorsal side of the embryo.*

The results, then, support the conclusions of Kowalevsky, Seeliger, Willey, Hjort and Caullery on this head, and oppose those of Della Valle, van Beneden et Julin, Pizon and Garstang, who hold, in one way and another, that these structures arise from the endoderm.

Notes on Chelyosoma productum, Stimpson. F. W. BANCROFT.

An examination of about 20 individuals in the collections of the University of California shows that this western ascidian is quite distinct from its Atlantic and Arctic representative, *C. macleayanum.* Stimpson describes the species as having the disk, which is characteristic of the genus, divided into fourteen plates; but in the individuals examined the number was found to vary from thirteen to twenty. This variability is associated with a muscular system that is quite different from what is found in the other member of the genus. In *C. productum* the systems of short muscles joining adjacent plates are wanting, except around the orifices, and are replaced by a series of fibres extending from near the center of the disk to its periphery and some distance down the sides of the animal. The method of attachment of these muscles is different from that described for any other ascidian. Both ends of every bundle of muscle fibres are firmly attached to little projections of the inner surface of the test. On these the ectoderm is thrown into deep folds and pockets which greatly increase the surface of contact with the test, so that the muscles which are joined to the inner ends of the ectoderm cells cannot tear them away.

The matrix of the test, like that of some other tunicates, consists of an inner layer of cellulose and an outer one, very distinctly separated from it, which is not cellulose, and which corresponds to the 'yellow layer' of the early authors. In our species it is easily seen that this outer layer is formed from the cellulose matrix by the activity of the mesodermic bladder cells which the latter contains. The first traces of the 'yellow substance' are seen about isolated bladder cells near the outer layer, and all transitions can be traced from this stage until the cell and the yellow substance it has produced are incorporated into the outer layer. The other organs of *Chelyosoma* are of a less exceptional character and clearly show that it is more closely related to *Corella* than to any other genus.

On the Plan of Development of a Myxinoid. BASHFORD DEAN.

The marked dissimilarity in the development of Bdellostoma and Petromyzon was noted. In the former a large supply of yolk produces a merocytic condition at a very early stage; The head region of the embryo, appearing first, very much as in Elasmobranchs, takes its position near the animal pole; the body region is then laid down, apparently by concrescence, in an almost straight line extending in the direction of the yolk pole almost the entire length of the egg. The subsequent growth of the embryo constricts both head and tail from the yolk sac, and in very late stages an embryo of nearly two inches lies coiled within the egg A preliminary study confirms Professor Price's observations as to the great number of gill slits.