

## PRELIMINARY REPORT ON THE DEVELOPMENT OF THE GILL IN MYTILUS.

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(*Abstract.*)

The early development of the gill of this form was very thoroughly worked out by Lacaze-Duthiers in 1856. To his account of the development of the earlier filaments the present writer has nothing to add. As described, a papilla is formed, growing downward from the gill axis, and is reflexed on itself, giving rise to the familiar U-shaped filament. Later filaments follow a very different scheme, there being no such bending of an originally simple filament. At the posterior end of the curiously bent gill axis a series of thin transverse ridges are developed. At first the edge of each ridge is entire; but growth is very early checked in the center, so that the ridge is divided into two flat, rounded lobes, corresponding respectively to a filament of the outer and one of the inner gill plate. As the lobe elongates it becomes perforated at its proximal end, thus being resolved into the two branches of a U-shaped filament identical in form with those first developed. This mode of development of the later filaments has been observed in *Modiola*, *Arca*, *Anomia*, and *Mya*; the earlier filaments have been studied only in *Mya*, where they correspond with *Mytilus*.

An interesting parallel is seen in the development of the interlamellar connections. The interlamellar connection, in its finished form, is a simple bar, containing a blood channel, and connecting the two branches of one and the same filament. In an early stage the two branches are connected by a continuous plate of tissue extending from the bend of the filament upward for a short distance. This stage is exactly comparable with the adult conditions in *Arca* and *Modiola*. Later a perforation appears in the plate, and the portion above the perforation is transformed into the characteristic bar-like connection.

As yet the examination of sections is too little advanced to allow any detailed statement concerning the mode of perforation in either case.

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