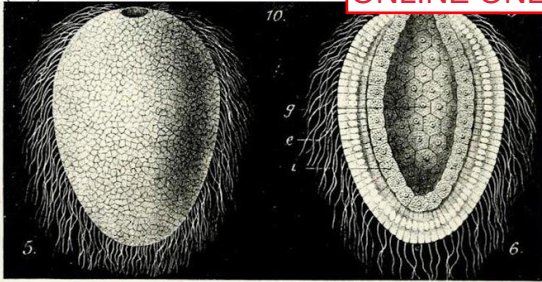


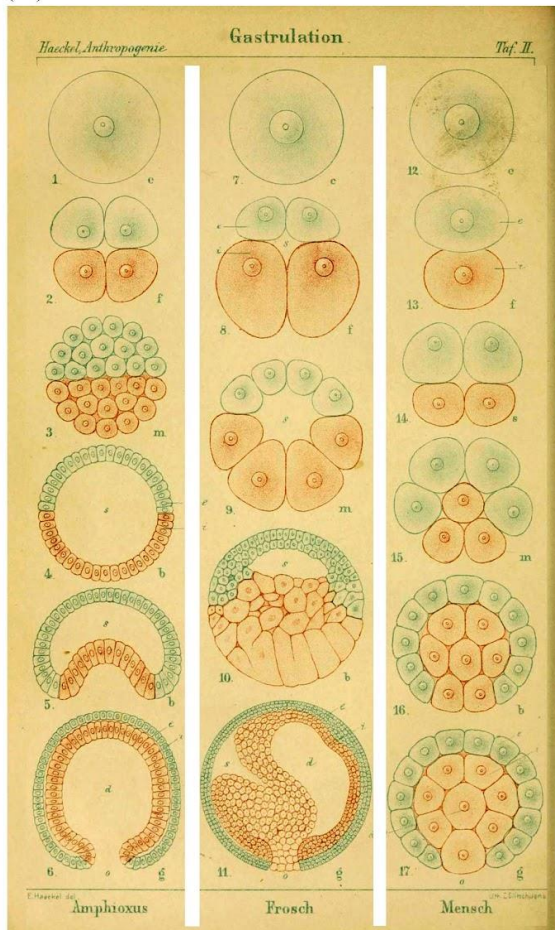
(A)

ONLINE ONLY



Development of a Calcareous Sponge (Olynthus)

(B)

**FIGURE 8.15**

Century drawing of gastrula made by Ernst Haeckel. A) A surface and cross-sectional rendering of the early sponge embryo. (B) Drawings showing a side-by-side comparison of the progressive stages of embryogenesis from one cell to blastula and gastrula (top to bottom) in amphioxus, frog, and human (left to right). After Haeckel, 1876; 1877.

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not this one

Haeckel E (1876) The history of creation, or the development of the earth and its inhabitants by the action of natural causes. A popular exposition of the doctrine of evolution in general, and of that of Darwin, Goethe, and Lamarck in particular, vol 2. Translation revised by E. Ray Lankester. Henry S. King and Co., London
<https://wellcomecollection.org/works/qnrqjmam>

Haeckel E (1877) Anthropogenie oder Entwicklungsgeschichte des Menschen. Dritte umgearbeitete auflage. Wilhelm Engelmann, Leipzig <https://www.biodiversitylibrary.org/item/124667#page/9/mode/1up>

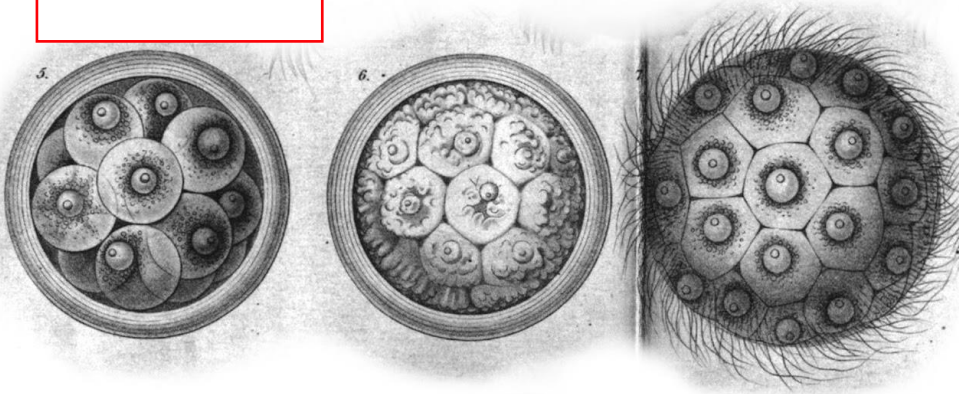
FD online 8.2

clean up.

(A)

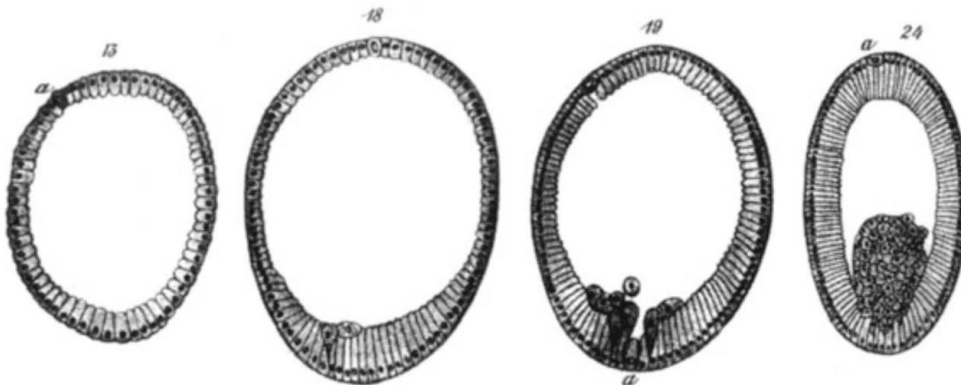
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Magosphaera planula

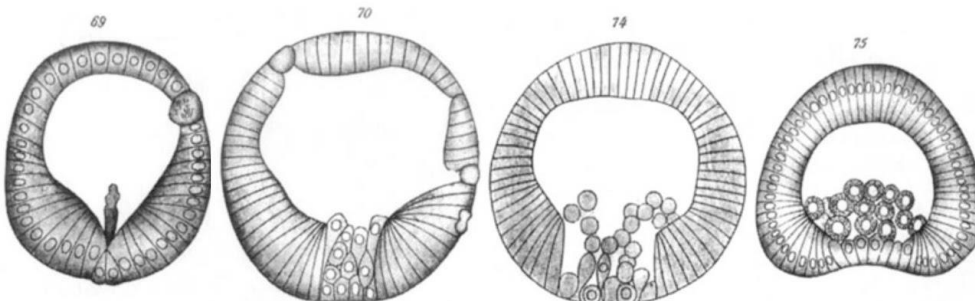


(B)

Jellyfish
(*Clytia viridicans*)



Sea Urchin
(*Strongylocentrotus lividus*)



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~~@ Drawings by Ernst Haeckel and Élie Metchnikoff of organisms supporting their differing theories of gastrulation. (A) Drawing of *Magosphaera planula* by Ernst Haeckel. Seen from left to right is the progressive stages of cleavages reaching the blastula-like adult stage. (B) Cross-sectional drawings by Metchnikoff of a species of jellyfish and sea urchin that detail successive moments of cell ingression from the vegetal epithelium (left to right) occurring in both animals. (A From (Haeckel, 1870; Reynolds and Hülsmann, 2008; B From Metchnikoff, 1886.)~~

Haeckel, E. (1870). Biologische Studien: Studien über Moneren und andere Protisten: nebst einer Rede über Entwicklungsgang und Aufgabe der Zoologie (Vol. 1). Engelmann.

Reynolds A, Hülsmann N. Ernst Haeckel's discovery of *Magosphaera planula*: a vestige of metazoan origins? Hist Philos Life Sci. 2008;30(3-4):339-86. PMID: 19579709.

Élie Metchnikoff, 1886. Embryological Studies on Medusae: On the Evolutionary Origins of the Primary Tissues Embryologische Studien an Medusen. Ein Beitrag zur Genealogie der Primitiv-Organen, Wien, IV.