

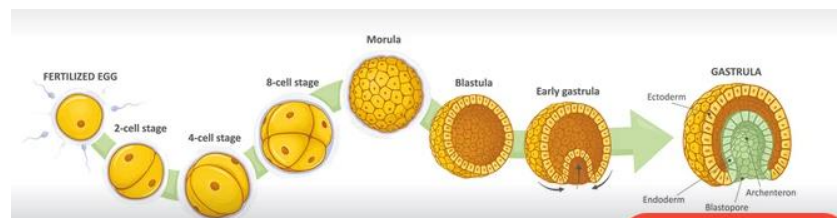
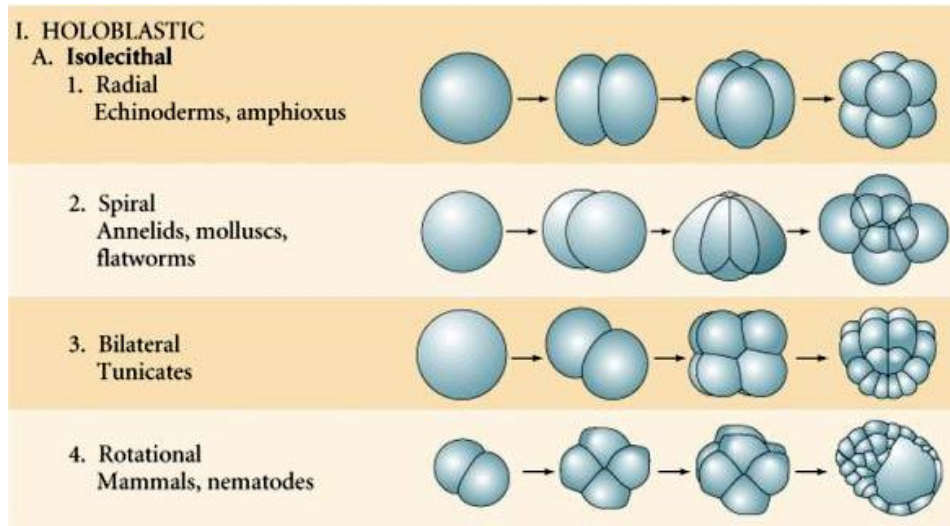
# ZOOLOGIA



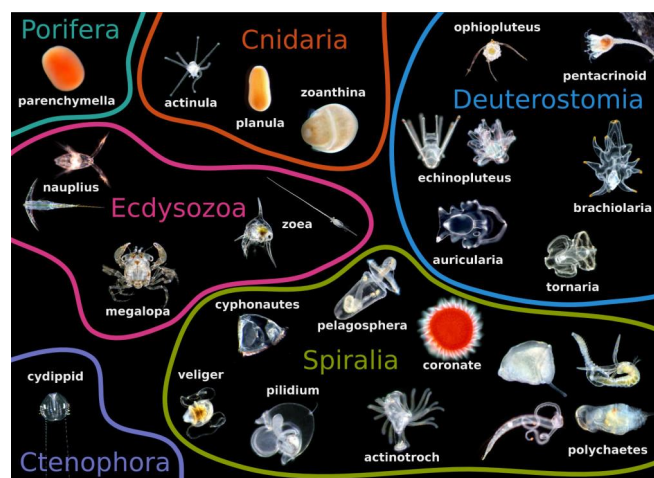
# *Le larve*



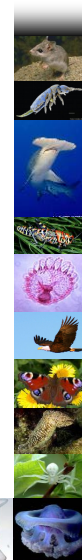
# Segmentazione



# Sviluppo embrionale

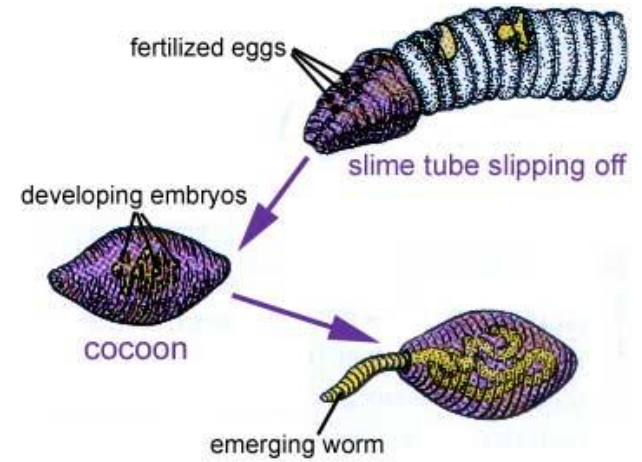


# Sviluppo larviale



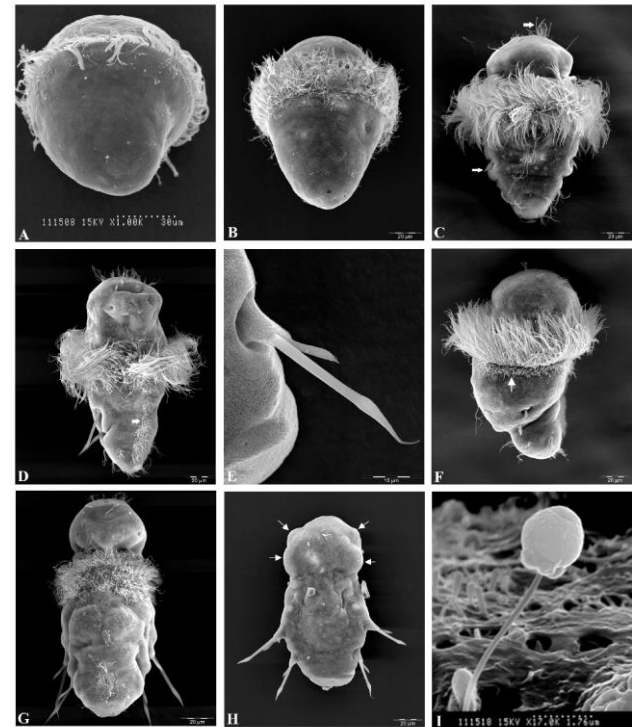
# Sviluppo diretto

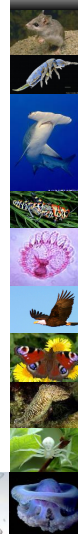
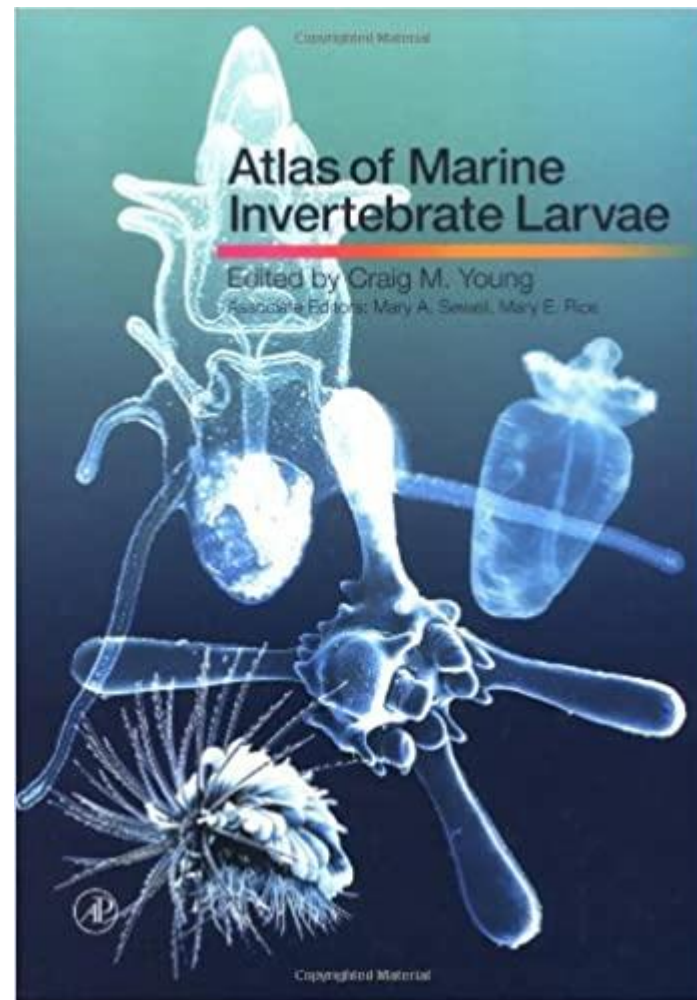
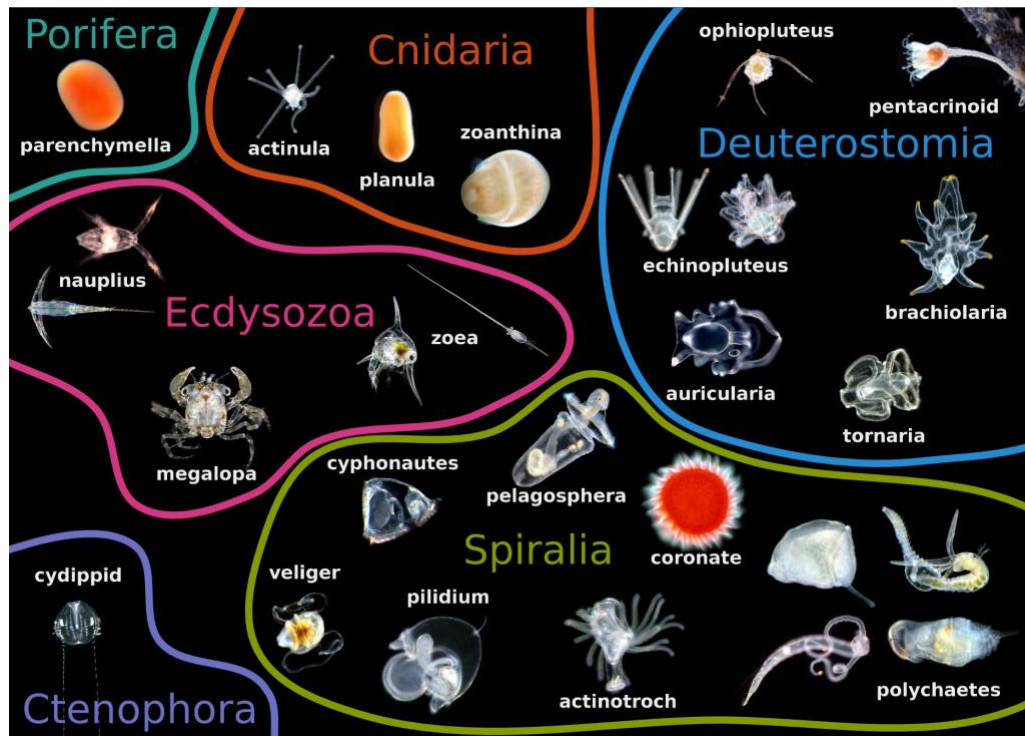
Segmentazione > embrione > giovanile



# Sviluppo indiretto

Segmentazione > embrione >  
> larva // metamorfosi // giovanile





# Sviluppo indiretto

Segmentazione>embrione>  
>larva//metamorfosi//giovanile

Larva planctotrofica

Larva pelagica

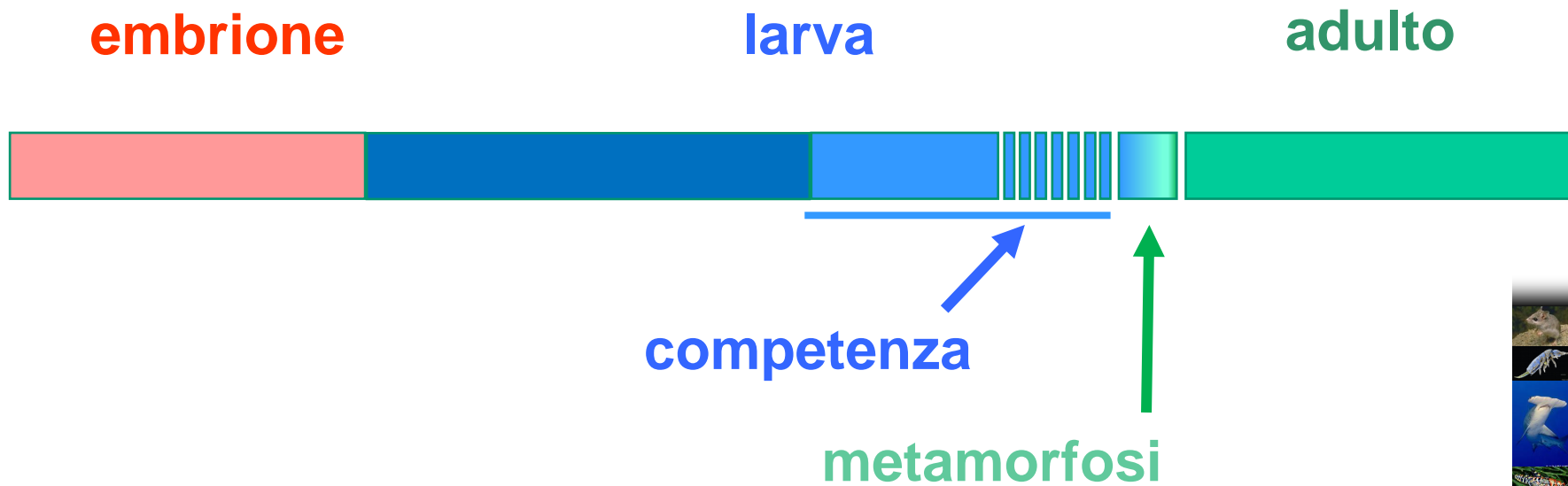
Larva non-planctotrofica

Larva lecitotrofica pelagica

Larva lecitotrofica incubata  
(brooding)



# Sviluppo larviale in mare



**embrione**

**larva**

**adulto**



**competenza**

**metamorfosi**

**Ricerca del substrato**  
**Chemiorecezione**  
**Timing (variabile)**



# Ruolo delle larve

## Colonizzazione di nuovi siti

Dispersione

Connettività genetica

Adulti bentonici (scarsa vagilità)

Distanze 'oceaniche'

Omogeneità genetica interpopolazione

Evoluzione





# Ruolo delle larve

Colonizzazione di nuovi siti

Dispersione

Connettività genetica

Adulti bentonici (scarsa vagilità)

Distanze 'oceaniche'

Omogeneità genetica interpopolazione

Evoluzione



# Ruolo delle larve

Colonizzazione di nuovi siti

Dispersione

**Connettività genetica**

**Adulti bentonici (scarsa vagilità)**

**Distanze 'oceaniche'**

**Omogeneità genetica interpopolazione**

Evoluzione

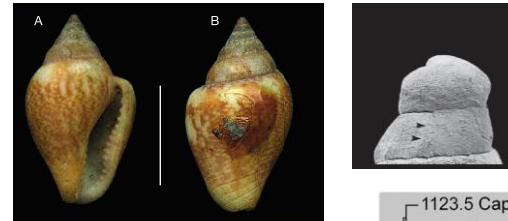


# Ecologia larviale e connettività

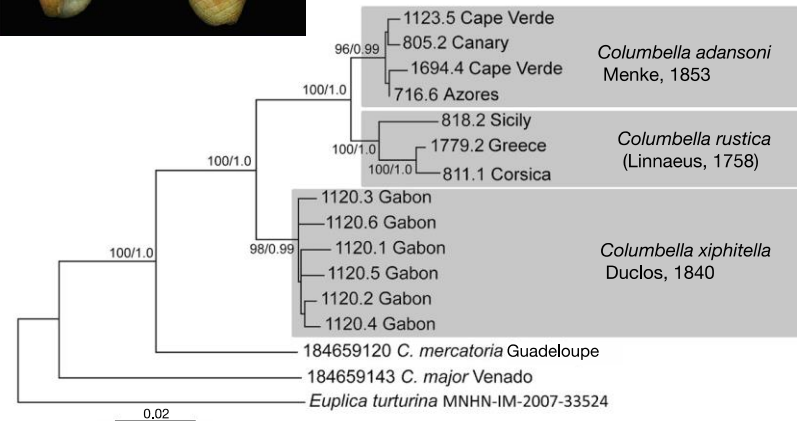
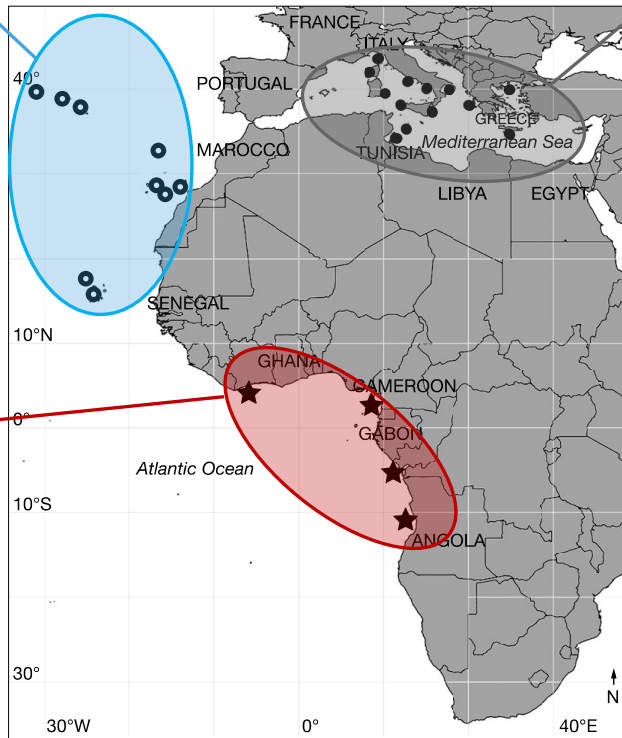
*C. adansoni*



*C. rustica*



*C. xiphitella*



N  
P  
P  
P

Russini et al. 2017. — An assessment of the genus *Columbella* Lamarck, 1799 (Gastropoda: Columbellidae) from eastern Atlantic. *Zoosystema* 39 (2): 197-212.



# Ecologia larviale e connettività

Marine Environmental Research 100 (2017) 1–10

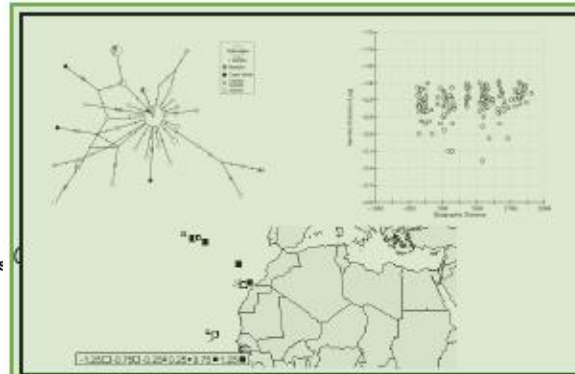
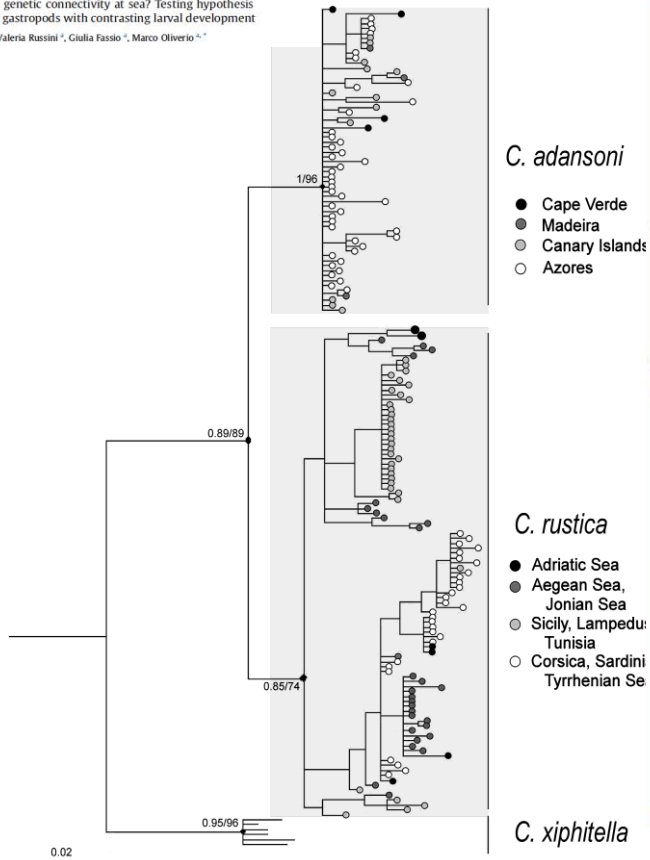
Contents lists available at ScienceDirect

Marine Environmental Research

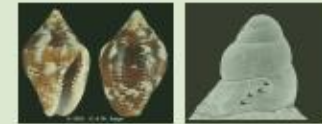
Journal homepage: www.elsevier.com/locate/marenvres



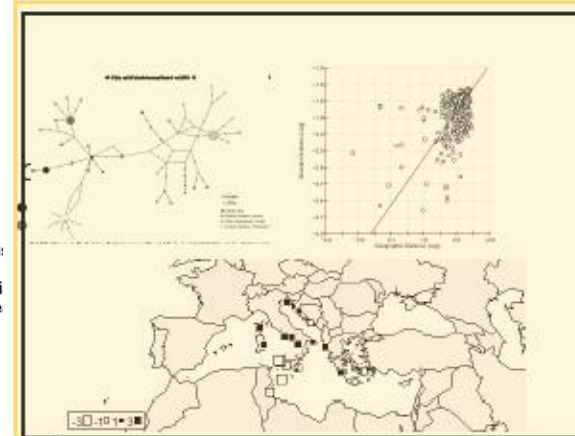
Do larval types affect genetic connectivity at sea? Testing hypothesis in two sibling marine gastropods with contrasting larval development  
 Maria Vittoria Modica <sup>a,b</sup>, Valeria Russini <sup>c</sup>, Giulia Fassio <sup>c</sup>, Marco Oliverio <sup>a,\*</sup>



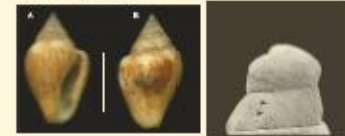
## *C. adansoni*



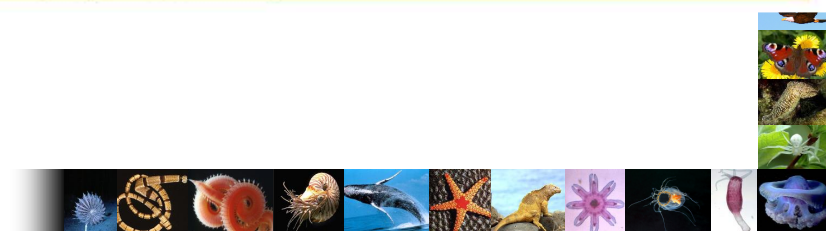
- Low intraspecific genetic distance
- No correlation genetic-geographic distances
- No spatial structure



## *C. rustica*



- High intraspecific genetic distance
- Significant correlation genetic-geographic distance
- Significant global spatial structure



# Ruolo delle larve

Colonizzazione di nuovi siti

Dispersione

Connettività genetica

Adulti bentonici (scarsa vagilità)

Distanze 'oceaniche'

Omogeneità genetica interpopolazione

**Evoluzione..... (to be continued)**

