

Diapause eggs of Pontella mediterranea (Copepoda:Calanoida)

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SUMMARY

The smooth eggs produced by females of Pontella mediterranea in late summer are subitaneous while the spiny eggs laid in fall are diapause eggs.

During the period September to November 1979 and January 1980 aspects of the reproductive biology of Pontella mediterranea collected near Cape Ferrat were examined at the Station Zoologica Villefranche-sur-Mer.

Adult females were removed from neuston collections to 125 ml dishes, fed *Artemia* and placed at temperatures of 18° to 23°C overnight. The next day the females were removed, eggs counted and distributed at 4°, 10°, 16°C and room temperature in small jars (7-65 eggs per jar) for 10-45 days. At the end of the incubation jars were warmed to 21° and the number of hatched nauplii enumerated. Forty-three sets of eggs from 25 females were brought to Woods Hole for further incubation in the laboratory and Woods Hole Harbor.

During September smooth and spiny eggs were laid by individual females but in October and November over 90% of the females (40) laid only spiny eggs. The smooth eggs hatched in two days at 21°C; spiny eggs did not hatch. Incubation of spiny eggs at 4°, 10°, 16° and 21°C for 10-45 days resulted in no hatching of these eggs. Of the eggs brought to Woods Hole hatching was observed in 16 of the 43 sets. Eggs that hatched were incubated at 13° and 18° as well as one set that had been incubated in Woods Hole Harbor (2°-10°C). Minimum incubation time before hatching of was 131 days. Eggs incubated in the laboratory did not hatch synchronously. Eggs incubated in Woods Hole Harbor hatched synchronously after 120 days following warming to 21°C.

It is concluded that P. mediterranea produces diapause eggs that can hatch after periods of incubation of at least three months at 18°C in the laboratory and after four months when incubated in Woods Hole Harbor. Diapause eggs probably permit the species to repopulate areas where it cannot exist throughout the year in the plankton. It has been previously shown that

two other species of pontellid copepods (Labidocera aestiva and Pontella meadi) also produce diapause eggs in fall in temperate waters near Woods Hole (Grice and Gibson, 1975; 1977).

Literature Cited

- Grice, G. D. and V. R. Gibson. 1975. Occurrence, viability and significance of resting eggs of the calanoid copepods Labidocera aestiva. Marine Biology 31(4): 335-337.
- Grice, G. D. and V. R. Gibson. 1977. Resting eggs in Pontella meadi (Copepoda: Calanoida). Jour. Fish. Res. Bd. Canada 34(3): 410-412.