

Bucephalus minimus, a deleterious trematode parasite of cockles *Cerastoderma* spp.

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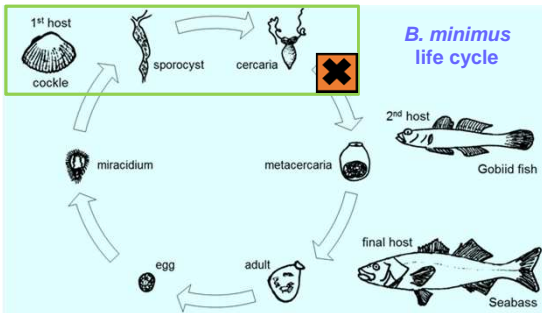
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Introduction



Trematodes

- The most prevalent and abundant macroparasites in coastal waters;
- With a complex life cycle: alternation of free-living and parasitic stages, most trematode species necessitating 3 host species;

- 1st intermediate host is the most deleterious stage.

Cockles

- A dominant bivalve in coastal waters;
- An important exploited living resource.



Aims

- Review the literature on *Cerastoderma* spp. infection by *Bucephalus minimus* (*Bm*) - see further information(*);
- Analyse a long-term data set on this host-parasite system.

Material and Methods

How?

- 1) 6 quadrats, sieving through 1-mm mesh;
- 2) Cockles shell length measured;
- 3) 10 cockles per cohort dissected and squeezed for trematode observation under a stereomicroscope.

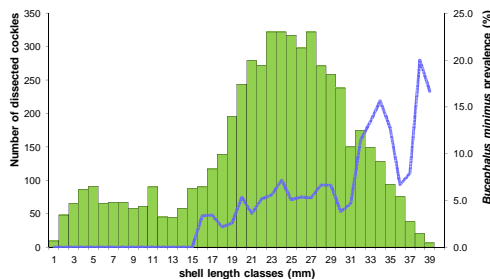


➤ **Where?** Banc d'Arguin (44.60°N, 1.25°W), Arcachon Bay, France.

➤ **When?** From Oct. 1997 to Sep. 2013 (16 yrs monthly sampled).

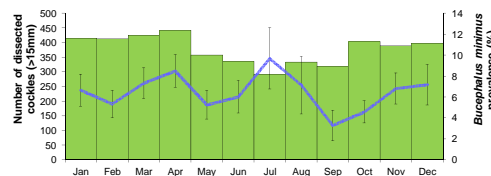


Results

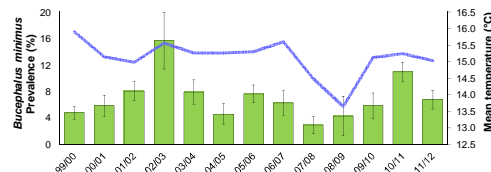


➤ Positive correlation between *Bm* prevalence and shell length.

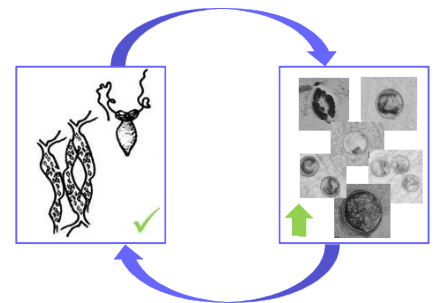
➤ First size of infection by *Bm* is 16-mm shell length.



➤ No noticeable seasonal trend.



➤ Negative correlation between *Bm* prevalence and mean T (°C) of the previous year.



➤ Cockles infected with *Bm* evidenced higher abundance (2 to 12 folds) and species richness of other trematode species.

Discussion and Conclusions

- *Bm* infects only mature cockles, **however** taking into account only the visible prevalence. Real first size of infection (miracidium) is difficult to detect.
- Colder T (°C) could favour first infection by miracidium **but** presence of the parasite (as sporocyst stage) is observed only few months later.
- No seasonality of infection due to favourable conditions **all year long**: presence of hosts and miracidia?
- Metacercariae of other trematode species considered as **hitchhikers**, taking advantage of the *Bm* infection which promotes migration at the sediment surface and increases cockle vulnerability.

(*) Further Information

<http://dx.doi.org/10.1007/s00436-015-4374-6>



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Planula 4
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