



PARASITES OF THE GENUS *BLASTODINIUM* ARE PERIDINIOID DINOFLAGELLATES

Alf Skovgaard

University of Copenhagen, Department of Phycology, Øster Farimagsgade 2D, DK-1353 Copenhagen K, Denmark

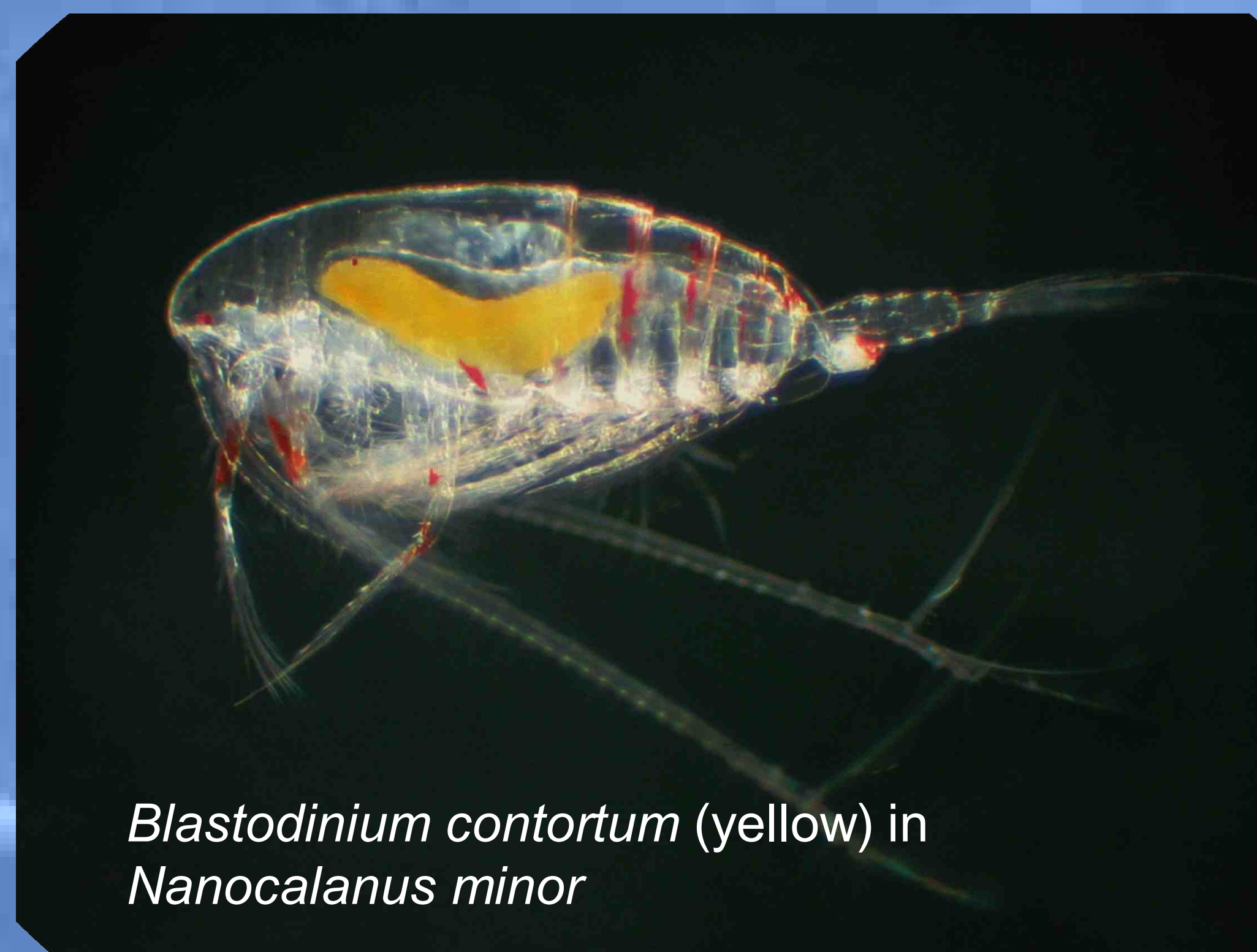
Ramon Massana and Enric Saiz

Institut de Ciències del Mar, Departament de Biologia Marina i Oceanografia, CSIC, Passeig Marítim de la Barceloneta 37-49, 08003 Barcelona, Catalonia, Spain

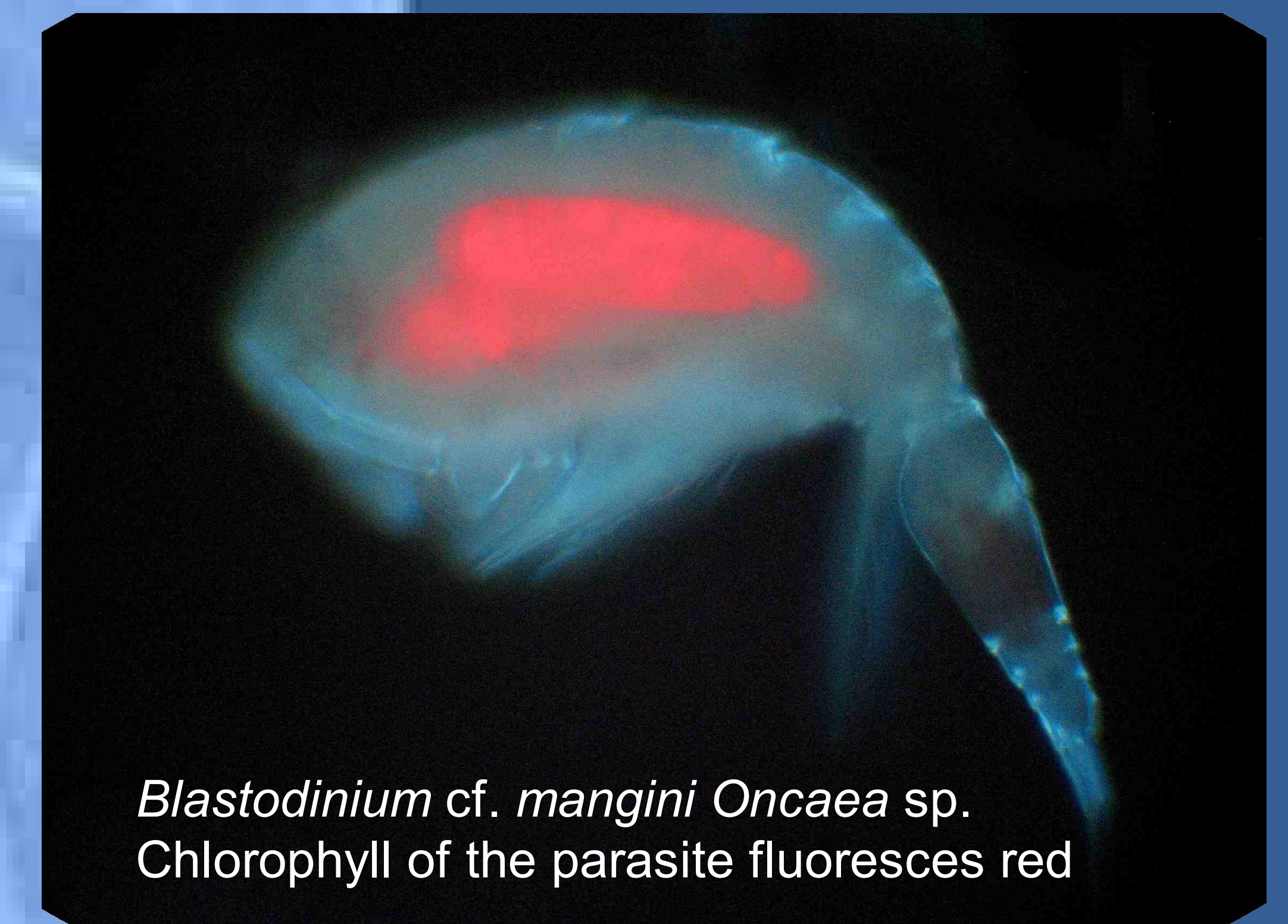
Introduction

Blastodinium (Chatton) spp. are parasites of marine, planktonic copepods - probably the most numerous metazoans on this planet. Despite being common, only little is known about the biology and taxonomy of *Blastodinium*.

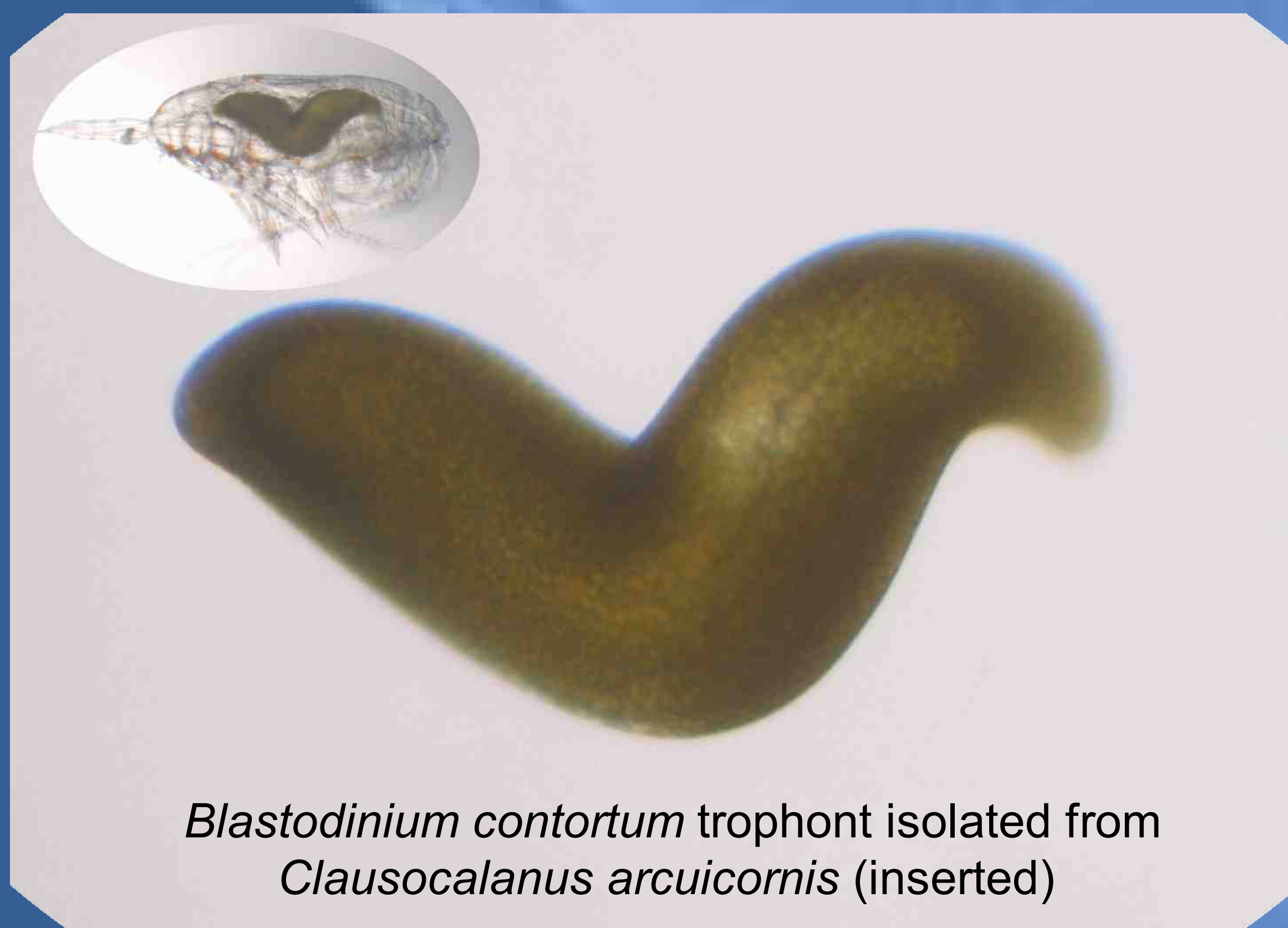
Blastodinium spp. spend part of their life cycle as multicellular trophonts inside the gut of their hosts. These trophonts grow in size and ultimately produce free-swimming dinospores.



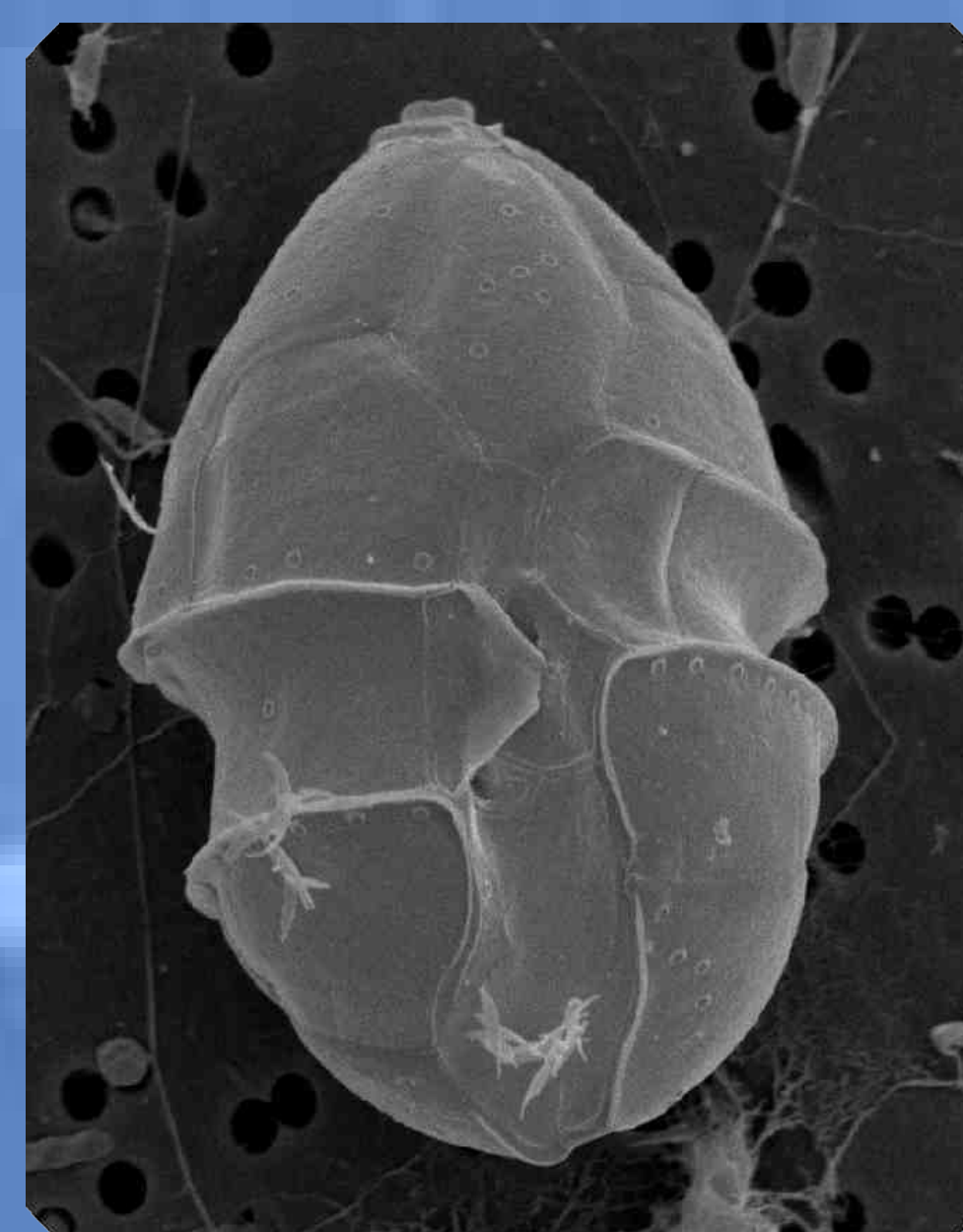
Blastodinium contortum (yellow) in *Nanocalanus minor*



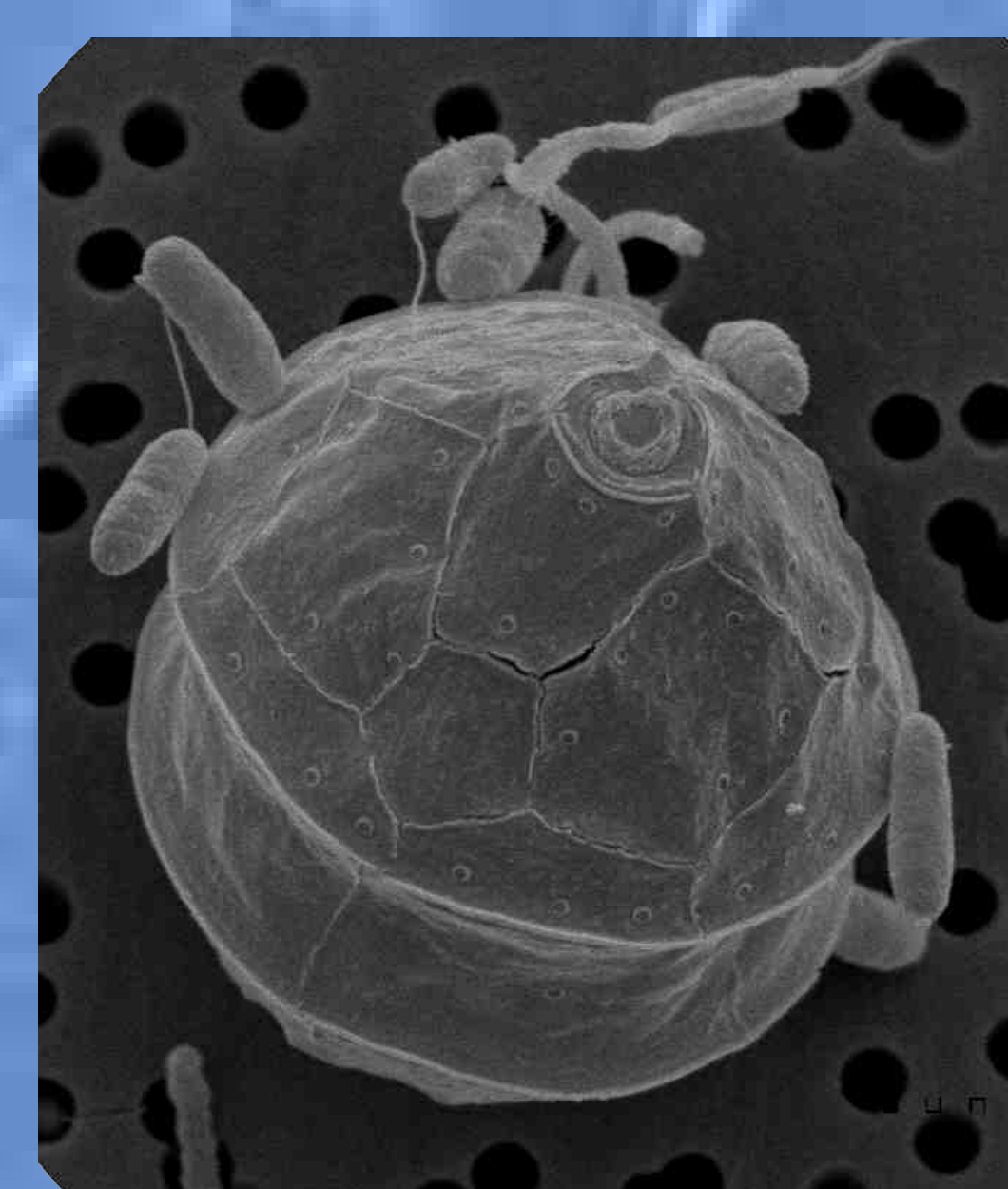
Blastodinium cf. *mangini* *Oncaea* sp. Chlorophyll of the parasite fluoresces red



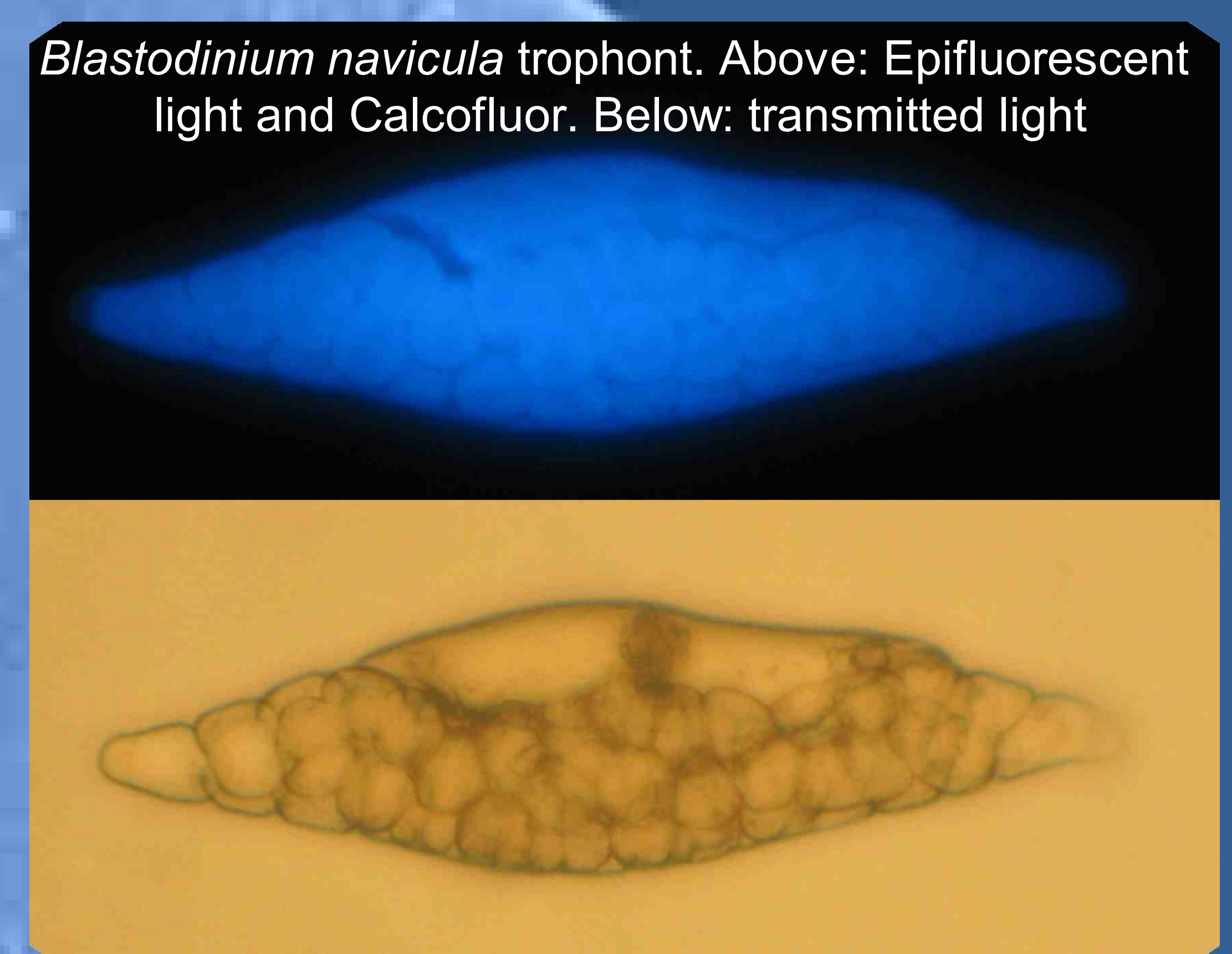
Blastodinium contortum trophont isolated from *Clausocalanus arcuicornis* (inserted)



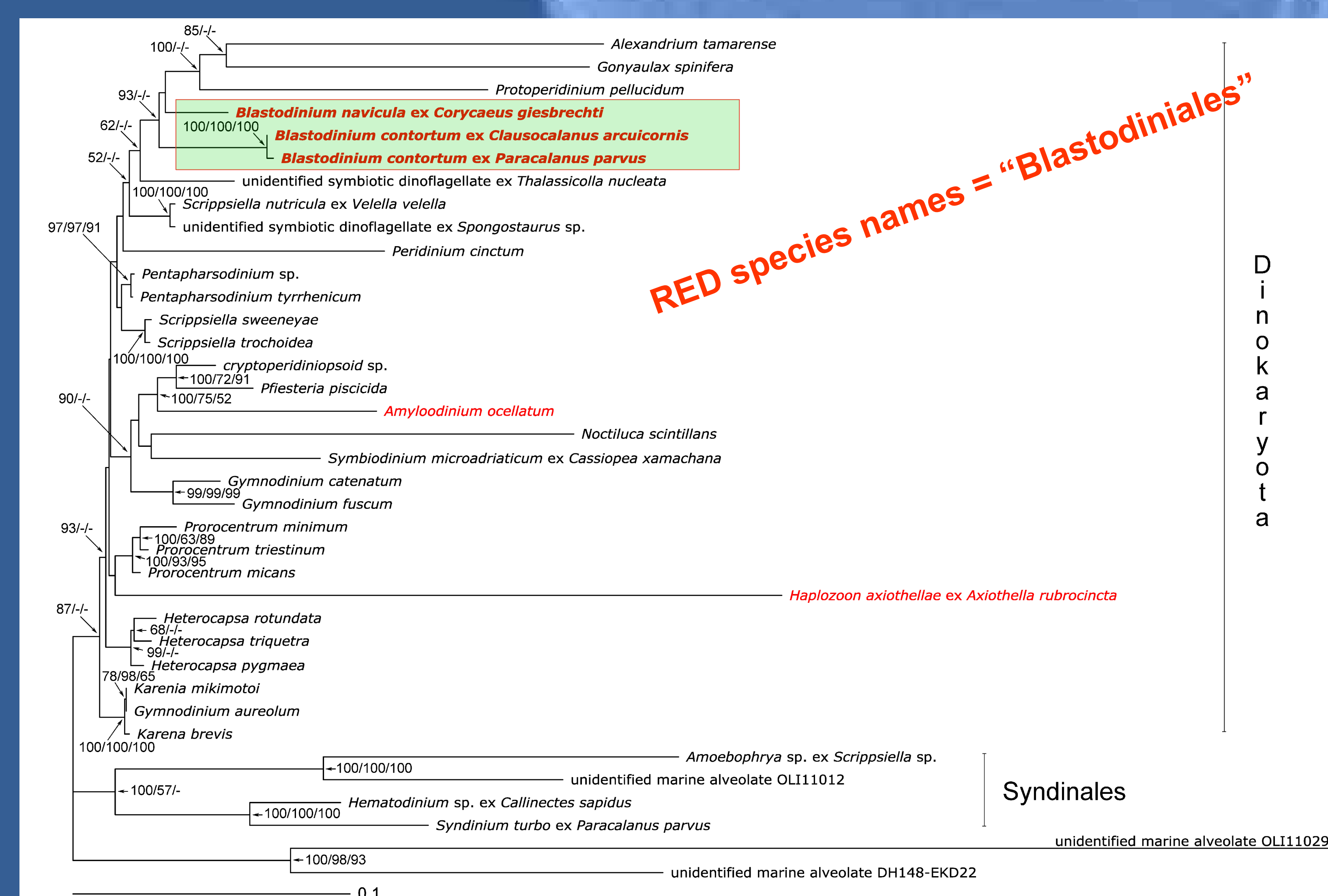
Blastodinium contortum dinospore, SEM



Blastodinium navicula dinospore, SEM



Blastodinium navicula trophont. Above: Epifluorescent light and Calcofluor. Below: transmitted light



Maximum-likelihood tree (SSU rDNA, 1717 nucleotide positions). Numbers shown are, respectively, Bayesian posterior probabilities (mean of four separate analyses) and neighbour-joining and maximum-parsimony bootstrap values.

Results and discussion

➤ In contrast to what has been thought for a century, *Blastodinium* dinospores are thecate with a typical peridinioid plate tabulation pattern

➤ *Blastodinium* spp. branch among the typical, dinokaryote dinoflagellates. The present hypothesis that Blastodinales have diverged early does, thus, not hold true.

➤ None of the genera of Blastodinales, which have been analysed so far, are genetically closely related. The order Blastodinales needs re-evaluation.