Reply to anonymous referee C3594

I think that the abstract is a little bit misleading. It is said that prevalences varied between 2-10%. However, an important number of species were infected with relatively low prevalence's (1-3%) and in all but one of the studied stations dinospores accounted for a very small proportion of the total eukaryotic cells (0.4-3.1%).

We changed for "prevalences generally varied between 1 to 10%".

Therefore, it is true that dinospores are infecting populations in oligotrophic waters, but the control on host populations is not clear yet. It would be important to rewrite the abstract somehow including this information.

We agree with the referee, and we removed sentence concerning the control on host populations.

Line 22 in abstract- with a notable exception for Blepharocysta paulsenii for which 25% of cells were infected at one of the studied stations (Station C means nothing in the abstract).

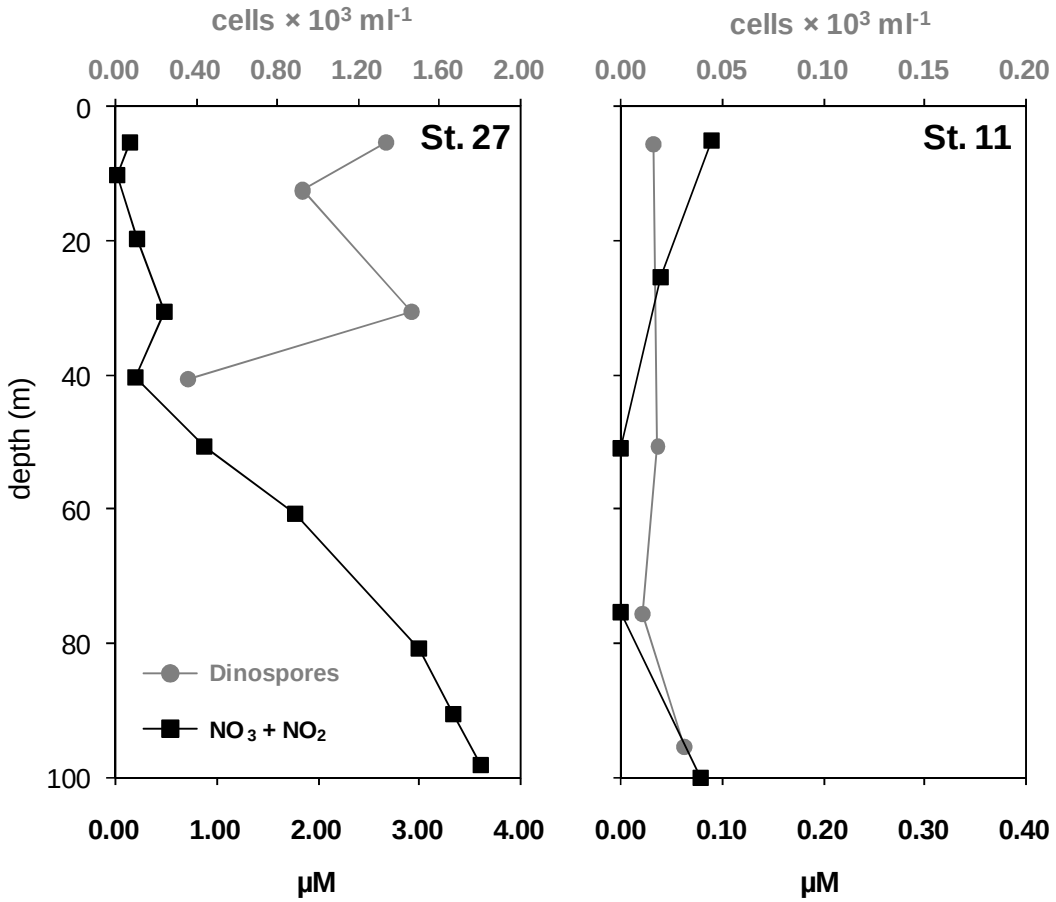
We changed for "at the most oligotrophic station"

Results and Discussion:
Line 7 (7395): The life-cycle is completed within 2-3 days with the death of the host cell- Is there any information about if this period is changed by environmental conditions?

We agree that the duration of Amoebophryidae life cycle is expected to be modified by environmental conditions. At least, culture experiments showed a different production and infectivity success of dinospores under different nutrient concentrations (Yin and Coats, 2000). We added "In optimal culture conditions" in the text to avoid confusions.

Lines 14-15 (7397) Concentrations of NO3+NO2 along the first 50m of the water column were notably higher…. How much is notably higher? Nothing is said in results about nutrient concentrations or if the NO3 values are significantly higher in station 27.

Concentrations are at least ten times more important at station 27 than in station 11 (chosen as representative of ultraoligotrophic conditions). To illustrate better this point, we proposed the following new figure, where the nutrient concentration and the dinospore abundances are represented along the water column (from the surface to 100 m depth) for both stations. Note the different scales on the nutrient axis of the two graphs.



It is stated several times that the abundance of dinospores at station 27 could not be associated with dinoflagellate abundance or a particular species presence. However we do not know if the data on dinoflagellates (on a personal communication) include also only thecated, larger than 60 µm dinoflagellates or include all. Could small or naked dinoflagellates explain the pattern in station 27? This information can be very important given the limitation of the method to dinoflagellate infections when dinoflagellates lack these characteristics.

Dinoflagellates have been studied using two different methods:
1- Dinoflagellate abundances that we referred as personal communication from F. Gomez concern cells larger than 15-20 µm (thecate and athecate species).
2- Prevalences (% of infected hosts) were deduced using CARD-FISH from samples collected by plankton nets (> 60 µm) after PFA fixation (although several species smaller than this were also observed).
This point was probably confusing in the text, and we tried to clarify that in the revised version.

We agree that dinoflagellates smaller than 15-20 µm were not analyzed at station 27. However, we yet recognized in the submitted version that dinoflagellates smaller than 15-20 µm may serve as host for these parasites at station 27, a fact that potentially explained the relative high abundances of dinospores recorded (see P 7404, L20).

Indeed, the explanations for the higher abundance of dinospores at station 27

are given in a quite confusing way in the discussion. If there are three possible explanations, they should be enumerated first and then discussed. 1) Presence of other potential hosts for dinospores, overlooked in the study; 2) Nutrient concentration or other chemical substances affecting infectivity success. 3) Physical factors (light, turbulence).

We agree to that point with the reviewer. A sentence has been added before discussing the possible explanations for the higher abundance of dinospores at station 27. The discussion has also been clarified on these hypotheses.

In this sense, in lines 23-24 (7405) Llaveríaet al. 2010 should be cited, given that these authors show an interesting model ofhow turbulence can affect parasite infection.

The paper and its information have been integrated into the text. The reference has been added to the reference list.

Additionally, the discussion on thepossible existence of differences in humic substances content in station 27 doesnot seem to be very relevant, given that the abundance of dinoflagellates was not affected (as it is expected in case this was the case).

We agree with the referee, the sentence referring to humic substance has been eliminated.

Because no temporal data is available, could the not higher abundance of dinoflagellates in this station be only a consequence of the higher infection?

Yes, we agree with the referee.
We added this point as a possible explanation of the higher abundances of dinospores at station 27.

Figures:

Figure 1. It could be interesting to see also NO3+NO2 along the first 50m together with prevalence levels in another figure.

See before

Figure 2. Lack of units in the right Y axis. The information on the legend about the Ocean Data View Software is unnecessary, as it is on M&M.

The unit is cells ml^{-1}. Is has been reported in the legend.
The information on the Ocean Data View Software has been eliminated from the legend

References:
Anderson 2006 is missing in the reference list

The citation has been eliminated in the text. The reference was included in the sentence referring to humic substances, which has been eliminated as stated before.