

## ***Interactive comment on “Picoplankton diversity in the South-East Pacific Ocean from cultures” by F. Le Gall et al.***

### **Anonymous Referee #1**

Received and published: 28 September 2007

The paper is well organized and presents biological data from an area that is poorly studied because of its remoteness and insights into organisms that are difficult to culture and study by regular microscopy and culturing techniques. I think it should be accepted with minor changes.

The present manuscript is an extensive effort to obtain cultures and subsequently knowledge about oceanic picoplankton. It presents new data on the occurrence of cultivable picoplankton in the South-East Pacific Ocean. The culturing efforts of the authors involve no new methods, but an interesting mix of already established methods that proved successful to a certain degree. They were able to exclude very many of the bigger species (nano and particularly microplankton) and quite a great variety of cultures were established. I think this is quite an achievement.

I would like the authors to explain why they filter their samples through 3 and 0.6  $\mu\text{m}$  filters, why did you choose 0.6 and 3  $\mu\text{m}$ ?

I would like to oppose to the stated fact that picoplankton were discovered 30 years ago. At that time their existence had been known for quite a while. I think that their importance and wide distribution was being gradually recognized to a much larger extent from that time (30 years ago).

At the end of the introduction, p. 2702 l. 27, p. 2703 l. 1-3; it is stated that the cultures established encompass five major phylogenetic divisions, which is true. For the alveolates however, the two species brought into culture were ca 15  $\mu\text{m}$ , which is much larger than picoplankton. I think it should be mentioned already at this time that for the alveolates no picoplankton cultures were established.

Page 2703 l. 19 remove full stop after photons

Page 2706 l 1; 1% glutaraldehyde. Is this final concentration?

On page 2709 in the first paragraph I would like you to add that you isolated many pico-sized straminopile, chlorophyte and haptophyte cultures, but no pico-sized dinoflagellates.

Page 2710, the sentence on l 19-21 does not make sense to me.

Page 2711 l 20-21, I would use heterokont flagella since one is hairy and the other is smooth.

Table 1

I think the legend is incomplete. The term sort should be explained.

Table 2

The columns CTD and names of the pre-cultures does not, in my opinion add much info to the reader and may be omitted. Do the sized measure length and or diameter?

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This should be mentioned in the legend.

### Table 3

For *Minutocellus* I think spherical would be more appropriate than rectangular since it is a centric diatom. Is not *Prorocentrum dentatum* flagellated? I think you should use cf *Prasinoderma* instead of *Prasinoderma*? Also you should consider the use of the terms coccoid and round. Do you mean round cells that have a cell wall when you say coccoid? Is round the same as spherical? May be spherical is a better term?

### Figure 3

For the 15 first pictures (counted from the top and from left to right) the legends correspond with the pictures. This is also true for the last two pictures. Something has happened to the Pelagophyceae and Bolidophyceae. RCC 852 and 853 are on the plate. 879, 871 and 852 are mentioned in the legends. Is the picture labelled 852 a *Bolidomonas*? To me it looks more like a *Pelagomonas*. The picture of RCC 1025 does not show the characteristics of *Chaetoceros* cells.

English is not my native tongue and I will restrain from making “improvements” to the spelling and grammar of the manuscript.

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Interactive comment on Biogeosciences Discuss., 4, 2699, 2007.

**BGD**

4, S1535–S1537, 2007

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