Corrigendum: Correction of biomass estimates for heterotrophic micro-organisms in Lake Tanganyika

SAMUEL PIRLOT,* JEAN-PIERRE DESCY* AND PIERRE SERVAIS†
*Laboratory of Freshwater Ecology, URBO, Department of Biology, University of Namur, Namur, Belgium
†Ecology of Aquatic Systems (ESA), Free University of Brussels, Brussels, Belgium

In July 2005, the article ‘Abundance and biomass of heterotrophic micro-organisms in Lake Tanganyika’ was published in Freshwater Biology (Pirlot et al., 2005). Epifluorescence microscopy coupled with image analysis was used to estimate bacterial and protozoan biovolumes and then to calculate biomass adopting C: cell volume conversion factors found in the literature (Børsheim & Bratbak, 1987; Putt & Stoecker, 1989; Simon & Azam, 1989). Unfortunately, we discovered after publication that an error had been made programming the macro used to estimate the biovolume of heterotrophic micro-organisms by image analysis. This error produced globally small underestimations of bacterial biomass but more importantly, a systematic overestimation of protozoan biomasses.

Recalculated values show that bacterial biomasses varied, in the mixed layer of Lake Tanganyika in 2002, between 17.6 and 48.7 mg C m⁻³, with an average of 26.8 mg C m⁻³. Fig. 1 presents the corrected biomass integrated on the 100 m water column. Averaged bacterial carbon content was 12.2 fg per cell in 2002. Flagellates biomass ranged between 0.46 and 1.76 mg C m⁻³, and ciliates biomass ranged between 0.05 and 0.69 mg C m⁻³. Averaged protozoan biomass was 9.0 mg C m⁻³ with 1.0 mg C m⁻³ attributed to the symbiotic green algae in Strombidium.

The corrections presented above do not modify substantially our previous figures on bacterial biomass in Lake Tanganyika (Fig. 1) but, as flagellate and ciliate biomass was overestimated, bacteria were actually the most important heterotrophic compartment. Even if protozoan biomass is much lower than previously presented in Pirlot et al. (2005), these results confirm that heterotrophic micro-organisms are an important part of total planktonic biomass.

Fig. 1 Biomass estimates of different plankton compartments, integrated in the water column (0–100 m) of Lake Tanganyika. (a) Kigoma in February and July 2002, (b) Mpulungu in January and July 2002 (redrawn from Fig. 8 in Pirlot et al., 2005). Phytoplankton biomass is from Descy et al. (2005).

References

Correspondence: Samuel Pirlot, Laboratory of Freshwater Ecology, URBO, Department of Biology, University of Namur, B-5000, Belgium. E-mail: samuel.pirlot@fundp.ac.be

© 2006 The Authors, Journal compilation © 2006 Blackwell Publishing Ltd


**MARKED PROOF**

Please correct and return this set

Please use the proof correction marks shown below for all alterations and corrections. If you wish to return your proof by fax you should ensure that all amendments are written clearly in dark ink and are made well within the page margins.

<table>
<thead>
<tr>
<th>Instruction to printer</th>
<th>Textual mark</th>
<th>Marginal mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leave unchanged</td>
<td>ППП under matter to remain</td>
<td>Стет</td>
</tr>
<tr>
<td>Insert in text the matter indicated in the margin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delete and close up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substitute character or substitute part of one or more word(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to italics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to capitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to small capitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to bold type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to bold italic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to lower case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change italic to upright type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert ‘superior’ character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert ‘inferior’ character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert full stop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert comma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert single quotation marks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert double quotation marks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert hyphen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start new paragraph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No new paragraph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transpose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert space between letters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert space between words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce space between letters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce space between words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to italics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to capitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to small capitals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to bold type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to bold italic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change to lower case</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change italic to upright type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert ‘superior’ character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert ‘inferior’ character</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert full stop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert comma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert single quotation marks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert double quotation marks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert hyphen</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start new paragraph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No new paragraph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transpose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert space between letters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert space between words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce space between letters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduce space between words</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(As above)

Insert 'superior' character

(As above)

Insert 'inferior' character

(As above)

Insert full stop

(As above)

Insert comma

(As above)

Insert single quotation marks

(As above)

Insert double quotation marks

(As above)

Insert hyphen

(As above)

Start new paragraph

(As above)

No new paragraph

(As above)

Transpose

(As above)

Close up

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)

Insert space between letters

(As above)

Insert space between words

(As above)

Reduce space between letters

(As above)

Reduce space between words

(As above)