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Phylactolaemates of St Stephen’s Green in Dublin (Ireland)

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Abstract: Floatoblasts collected in Summer 2001 in one of the ponds of St Stephen’s Green in the heart of the city of Dublin (Ireland) belonged to the following species: Plumatella casmiana, P. repens, P. emarginata, P. fruticosa, Cristatella mucedo. Concerning P. casmiana this is one of the first records of this species in Ireland.

Key words: Bryozoa, Phylactolaemata, Dublin, Ireland, Plumatella casmiana.

Introduction

In 2001 we attended the 12th International Conference of the International Bryozoology Association in Dublin (Trinity College, 16th - 20th July), and we had a routine look at the duck ponds of St Stephen’s Green situated in the heart of the city, not far away from Trinity College. This park of 9 ha, « a delightful combination of water, flower beds and lawns », was laid out in 1880 by Lord Ardilaun, whose statue stands on the west side (Michelin 2000). There are two ponds greatly appreciated by quite a lot of ducks. And we know by experience that duck ponds are good places for freshwater bryozoans...

Material

We did not find any living colony, but we found floatoblasts on the underside of dead leaves floating on the water near the edge of one the ponds (fig. 1). These leaves were collected and dried. Later on we examined them with a binocular microscope, removed the floatoblasts with a fine pencil and conserved them in 70% ethanol. The identification was made with the optical microscope and confirmed with the SEM.

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Results

Five different species were identified:

1. *Plumatella casmiana* Oka, 1907: numerous floatoblasts (only pycnoblasts, no leptoblasts) (figs 2-4).
2. *Plumatella repens* (Linné, 1758): numerous floatoblasts (fig. 5).
5. *Cristatella mucedo* Cuvier, 1798: several floatoblasts.

Concerning *P. casmiana*, some 50 floatoblasts were found and closely examined. They corresponded to the pycnoblast type. There were no leptoblasts. When touched with a dissecting needle or tweezers many of them tended to dissociate, so that the two valves of the floatoblasts were separated. This was not the case for *P. repens* floatoblasts. The optical microscope revealed a capsule with a faint reticulation and distinct tubercules. These features as well as their measurements (tab. 1) suggested that the floatoblasts belong to *P. casmiana*. This identification was confirmed by SEM examination and by referring to SEM photographs of undoubtful *P. casmiana* material such as published by Geimer & Massard (1986).

![Map of Dublin City Centre](image-url)

Fig. 1: Dublin City Centre: St Stephen’s Green with collecting site.
Fig. 2: *Plumatella casmiana*, floatoblast (pycnoblast), dorsal view (St Stephen’s Green), Dublin (SEM Du_3-5, LAM, CRP-Gabriel Lippmann, Luxembourg).

Fig. 3: *Plumatella casmiana*, floatoblast (pycnoblast), ventral view (St Stephen’s Green, Dublin) (SEM Du_5-4, LAM, CRP-Gabriel Lippmann, Luxembourg).
Fig. 4: *Plumatella casmiana*, floatoblast (pycnoblast), annulus suture connecting the dorsal valve with the ventral valve (St Stephen's Green, Dublin) (SEM Du_3-5Su, LAM, CRP-Gabriel Lippmann, Luxembourg).

Fig. 5: *Plumatella repens*, floatoblast, ventral side (St Stephen's Green, Dublin) (SEM Du_5-2, LAM, CRP-Gabriel Lippmann, Luxembourg).
Tab. 1: Plumatella casmiana. floatoblast (pycnoblast) measurements (in μm).

<table>
<thead>
<tr>
<th></th>
<th>max</th>
<th>min</th>
<th>mean</th>
<th>N</th>
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<tr>
<td>FB length</td>
<td>372</td>
<td>316</td>
<td>342</td>
<td>24</td>
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<td>FB width</td>
<td>267</td>
<td>236</td>
<td>240</td>
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<td>FB length/width</td>
<td>1.55</td>
<td>1.27</td>
<td>1.37</td>
<td>24</td>
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<td>CP length</td>
<td>316</td>
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<td>285</td>
<td>11</td>
</tr>
<tr>
<td>CP width</td>
<td>236</td>
<td>205</td>
<td>219</td>
<td>11</td>
</tr>
<tr>
<td>AN d. valve (polar)</td>
<td>68</td>
<td>50</td>
<td>58</td>
<td>6</td>
</tr>
<tr>
<td>AN v. valve (polar)</td>
<td>43</td>
<td>37</td>
<td>42</td>
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<tr>
<td>AN d. valve (lateral)</td>
<td>50</td>
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<td>6</td>
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<tr>
<td>AN v. valve (lateral)</td>
<td>31</td>
<td>25</td>
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FB = floatoblast, CP = capsule of the floatoblast, AN = annulus of the floatoblast, d. = dorsal, v. = ventral; max = maximum; min = minimum; N = number of measurements.

Five floatoblasts not included in the above table were nearly round (291 x 242 μm; 341 x 291 μm; 279 x 254 μm; 329 x 291 μm; 341 x 291), with a mean length/width ratio of 1.16 instead of the above 1.37.

**Discussion**

Smyth (1994) gives the following list of phylactolaemates occurring in Ireland: Fredericella sultana, Plumatella emarginata, P. fruticosa, P. fungosa, P. repens, Cristatella mucedo, Lophopus crystallinus (in a pond in the Zoological Gardens, Dublin, mentioned by Allman 1856). Four of these seven species were found in the duck pond of St Stephen’s Green. The discovery of P. casmiana, a species not reported by Smyth (1994), makes this pond so much more interesting.

*P. casmiana* was recently recorded for the first time in Great Britain (Wood & Okamura 2001). As far as we are aware, there is no published report of its occurrence in Ireland. But we know that Tim Wood and Michael Lore, who also attended the IBA conference in Dublin and undertook on that occasion a more thorough study of the Irish bryozoans, found *P. casmiana* as well (T. Wood, in litt.). Nevertheless it may be emphasized that the occurrence of *P. casmiana* in Ireland is a quite new fact for the European freshwater bryozoology. The question of how it arrived to Ireland (and to Great Britain) remains unanswered. In any case its zoogeographical distribution area in Europe has strangely increased since we discovered *P. casmiana* in 1985 in Echternach (Luxembourg), at that time one the most advanced western occurrences of the species in Europe (Geimer & Massard 1986). Since the publication of our paper on the distribution of *P. casmiana* in the European and Mediterranean parts of the
Palaearctic region (Massard & Geimer 1995), some new records have been made. So *P. casmiana* was reported from Mehlingen near Kaiserslautern, Germany (Gugel 1996), and it is also occurring in Norway (Massard et al. 2002).

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**References**

Allman, G.J., 1856. - A monograph of the fresh-water Polyzoa, including all the known species, both British and foreign. - Ray Society London, 17: I-VII, 1-119.


