

Timmia megapolitana with sporophytes in England

Ron D. Porley

*English Nature, Foxhold House, Crookham Common, Thatcham, RG19 8EL;
ron.porley@english-nature.org.uk*

During the BBS excursion to Suffolk and Norfolk in spring 2003 (Fisk, Mott & Stevenson, 2004) Wheatfen Broad was visited to admire *Timmia megapolitana*, a moss recently reported new to the British Isles (Porley & Ellis, 2002). In that paper it was noted that sporophytes apparently failed to develop beyond the 'Early Calyptra Intact' stage (Greene, 1960). However, on 13 April 2003 a few dehisced sporophytes, referable to Greene's 'Empty and Fresh' stage, were found, although the majority of sporophytes remained immature. Chris Preston collected a single dehisced capsule, and Michael Proctor kindly agreed to prepare the material for scanning electron microscopy.

SEMs of the peristome of *T. megapolitana* are given in Figures 1 and 2. They show a typical arthrodontous diplolepeidous peristome, where a line down the centre of the outer side of the exostome indicates the junction of two rows of cells. The 16 exostome teeth are papillose-striate on the outer surface, and the inner surface has prominent lamellae (note trapped spores in Figure 2). The endostome consists of a tall basal membrane from which cilia arise. The cilia are cross-striolate on the outer surface, with numerous spine-like or branched-stellate appendiculations on the inner surfaces, variously anastomosing in groups. The average spore size is 18.5 µm (range 16.2-20.2 µm).

The occurrence of spores in the Norfolk population of *T. megapolitana* clearly has implications for long-distance dispersal of the

species. Prevailing westerly winds within the British Isles may account for dispersal from Norfolk to the nearest known population at Biesbosch in Holland. Pluijm (1993) suggested that the establishment of *T. megapolitana* in the Biesbosch might be recent since the area was well known bryologically (unlike the Norfolk Broads, where large areas are still bryologically *terra incognita*). However, as *T. megapolitana* grows in carr woodland where wind speeds are presumably low, tidal movement of water may play the major role in moving the moss around locally.

Acknowledgements

Many thanks are due to Chris Preston for donating the *Timmia* capsule and for checking a draft of this note, and to Michael Proctor for preparing the capsule for SEM. The Ted Ellis Trust allowed access to Wheatfen Broad and provided much-appreciated refreshments at the end of the day.

References

- Fisk R, Mott J, Stevenson R. 2004. Spring field meeting 2003, Norfolk/Suffolk borders. *Field Bryology* 82: 18-22.
- Greene SW. 1960. The maturation cycle, or the stages of development of gametangia and capsules in mosses. *Transactions of the British Bryological Society* 3: 736-745.
- Pluijm A van der. 1993. *Timmia megapolitana* Hedw. in the fresh water tidal area 'Biesbosch', The Netherlands. *Lindbergia* 17: 86-90.
- Porley RD, Ellis RW. 2002. *Timmia megapolitana* Hedw. (Bryopsida, Timmiales) new to the British Isles. *Journal of Bryology* 24: 151-156.

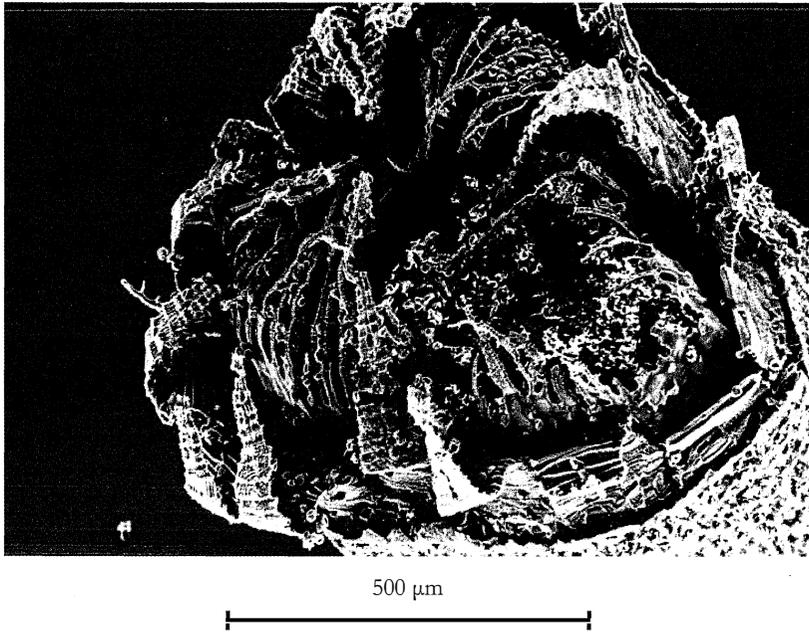


Figure 1. SEM of *Timmia megapolitana* peristome.

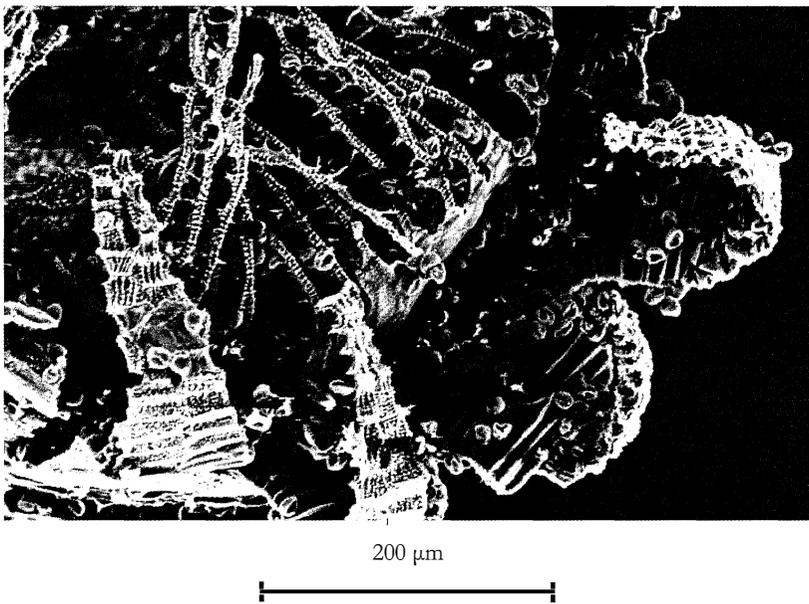


Figure 2. SEM of portion of *Timmia megapolitana* peristome.