



▲ From top left clockwise. Ash tree supporting an ever expanding community of epiphytes, including *Bryum argenteum*, *Grimmia pulvinata*, *Orthotrichum diaphanum* producing copious gemmiferous protonemata (dark brown patches), and, more recently *Syntrichia* spp. J. Duckett

Not necessarily NOXious: Blossoming bryophytes on London's roadside trees.

Throughout this century we have been systematically recording London's bryophytes. In addition to monitoring increasing epiphyte diversity all over the Metropolis we have also witnessed a dramatic surge in epiphyte colonization of trees along major roads. Here we report on a single ash tree (Lady Margaret Road, Tufnell Park) which we have had under constant observation for over a decade. Back in 2002 the sloping trunk of this tree supported but a few tufts of *Orthotrichum diaphanum* with *Bryum capillare* around its base. By 2010 the trunk had an almost continuous sward of leafy shoots c. sp and copious brown gemmiferous protonemata of *O. diaphanum*, with scattered

colonies of *O. affine*, 3 tufts of *Grimmia pulvinata* c. sp and one of *Bryum argenteum*. The last 3 species increased dramatically over the last 5 years and, in 2016, have been joined by *Bryum dichotomum*, *Orthotrichum tenellum* c. sp, *Syntrichia papillosa*, *S. virescens*, *Tortula laevipila* c. sp and *Tortula muralis* c. sp. The most likely explanation for this change from 2 to 11 species is increasing NOX deposition from car exhausts and all the more so since enhanced nutrients stimulate the production of gemmiferous protonemata. NOX may be bad for human health but apparently not for epiphytic mosses. Our chosen tree is not an isolated example; there are many many more along major thoroughfares in London that have acquired epiphytes in the last decade with *Orthotrichum diaphanum* almost invariably the primary colonist.

As far as we are aware these are the first published images of the living protonemal gemmae of *Orthotrichum diaphanum* showing the very thick walls and liberation by both abscission cells and schizolyis.

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