



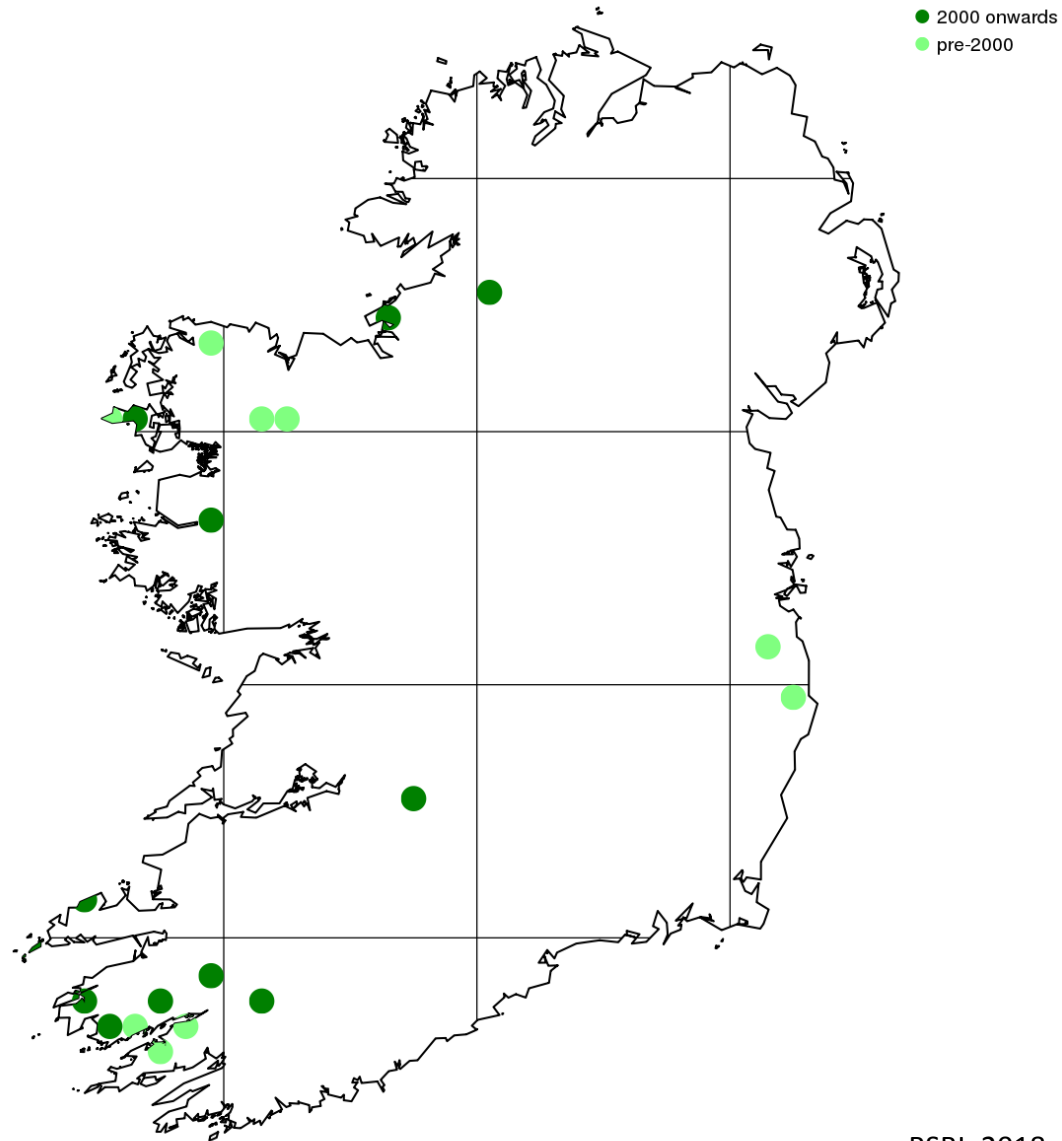
The overlooked  
gametophyte of Killarney  
Fern: a good reason for  
crawling into dark, damp  
crevices

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# What is a gametophyte?

- Alternation of generations – haploid gametophyte and diploid sporophyte
- Ferns have independent gametophyte and sporophyte generations
- Sporophyte dominant generation i.e. what we consider as ‘a fern’
- Gametophyte usually short lived and inconspicuous
- Killarney fern (*Trichomanes speciosum*) unique amongst European ferns as has a filamentous perennial gametophyte, producing gemmae, that often grows in areas with no sporophyte known (first recognised in 1991)

# Distribution of Killarney fern gametophyte on DDb



# Habitat of Killarney Fern gametophyte

- Woodland or north-facing mountain slopes, often in stream valleys
- Requires deep **shade** and high **humidity**
- Nearly always on **rock** (usually siliceous with  $\pm$  basic influence)
- Never in open (even under dense canopy)
- **Damp**, but not wet, rock surfaces
- Usually in dark crevices and caves, headtorch useful!
- If sporophyte present, there will almost certainly be gametophyte nearby, but often not vice-versa





# Features of Killarney Fern gametophyte

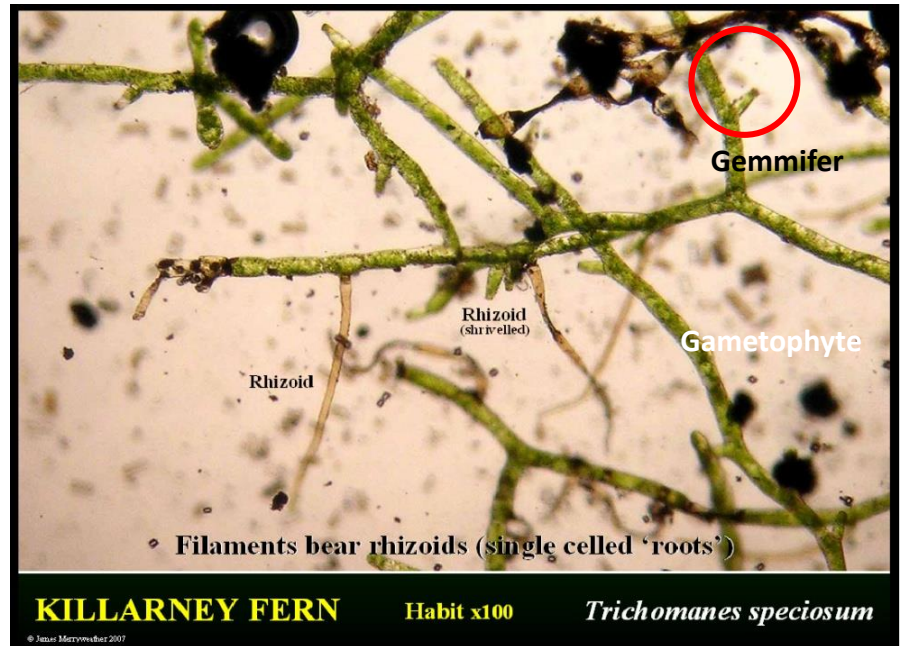
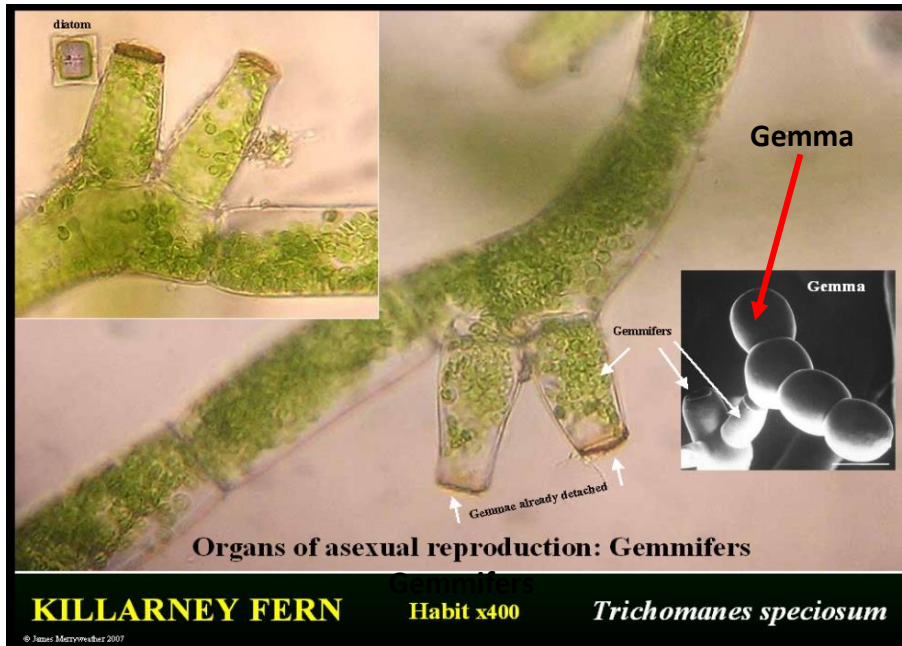
- Filamentous growth form
- Dichotomously branched
- No leaves
- Forms velvety, fuzzy mat, growing outwards from rock
- Shiny, dark green colour
- May be scattered amongst bryophytes or forming pure mats







# Gametophyte filaments



# Confusing organisms

- Bryophytes – will always have some leaves (or form flattened thallus) and are usually more wiry and less furry, main confusing species *Heterocladium heteroptemum*
- Algae – generally grow where water runs over substrate and usually somewhat slimy, don't form cushions and have less structure
- If its on soil, even in dark humid crevice, almost certainly not Killarney fern gametophyte



Look out for juvenile sporophytes!