Macaronesia: a source of hidden genetic diversity for post-glacial recolonization of western Europe in the leafy liverwort *Radula lindenbergiana.*

**Introduction**

Bryophytes exhibit apparently low rates of endemism in Macaronesia and differ in diversity patterns from angiosperms by the widespread occurrence of endemics within and among archipelagos. With a phylogeography of the leafy liverwort *Radula lindenbergiana* (top right) using molecular markers, we aim to address two main questions:

- Is there an evidence of morphologically cryptic diversification in Macaronesia?
- What are the past and present relationships between Macaronesia and the continent in this taxa?

**Materials and methods**

- 84 sampled populations
- 4 cpDNA loci: atpB-rbcL, trnL, trnG and rps4
- Genetic diversity index (H, pi)
- Bayesian ancestral area reconstruction
- Fst/Nst to test for phylogeographical signal

**Results**

- High genetic diversity (H) in Macaronesia (right map) with endemic haplotypes
- Low genetic diversity (H) in Caucasus/Asia and North Africa
- Non monophyly of macaronesian haplotypes
- Macaronesian origin of current european atlantic coast haplotypes (tree below)
- Nst+Fst → geographical structure of haplotypes

**Main Conclusion**

In *Radula lindenbergiana*, molecular markers have revealed a cryptic diversification in Macaronesia.

The apparent lack of radiation among macaronesian bryophytes may thus reflect the reduced morphology of bryophytes in comparison with angiosperms.

The high genetic diversity, the phylogeographic signal coupled with the macaronesian origin of current european haplotypes point macaronesian islands as potential glacial refugium.

Buffered climatic conditions may have favoured refugium during glacial period with subsequent « back colonisation » from island to the continent.

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