

# Fylogeografie

Studuje pomocí **molekulárních markerů** příbuznost mezi jedinci jednoho druhu v různých částech areálu

Historie druhu v geografickém kontextu

Další pohled na migraci, relikty refugia, taxonomii, původnost...

Často kombinace s klimatickými a migračními modely i paleoekologickými daty

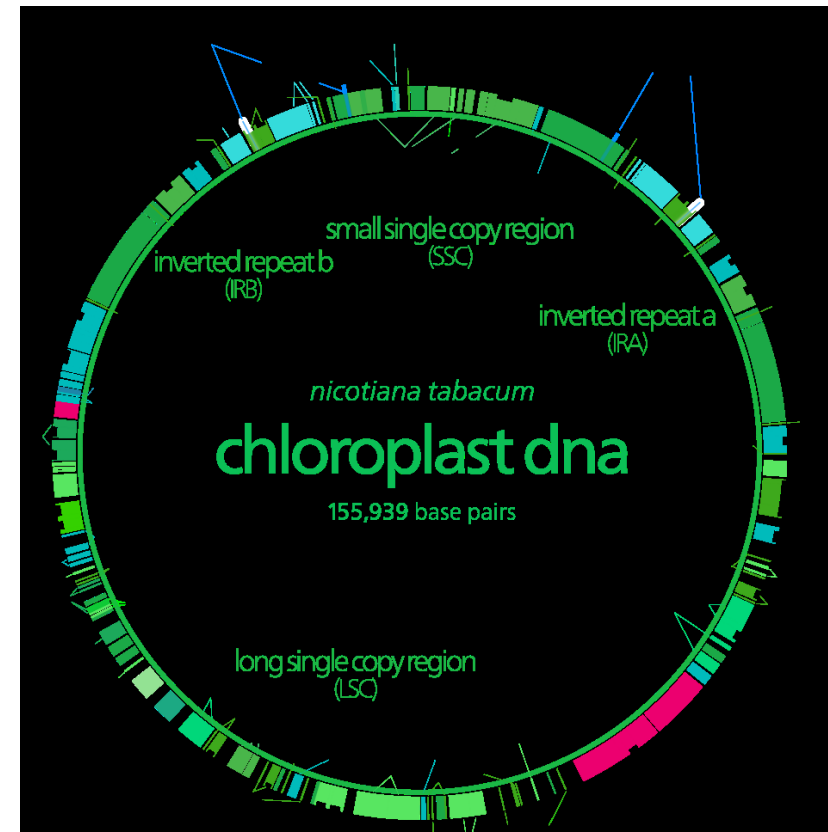
# Fylogeografie

- **Časté otázky**

- Glaciální refugia současné bioty
- Migrační koridory
- Původ izolovaných lokalit (relikty vs. přirozené výsadky)
- Změny genomu variability v prostoru a čase
- Vliv disperzních vlastností taxonu na genetickou strukturu

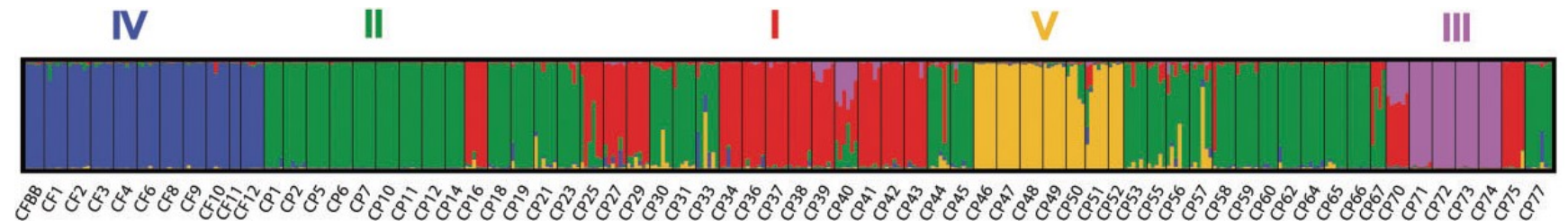
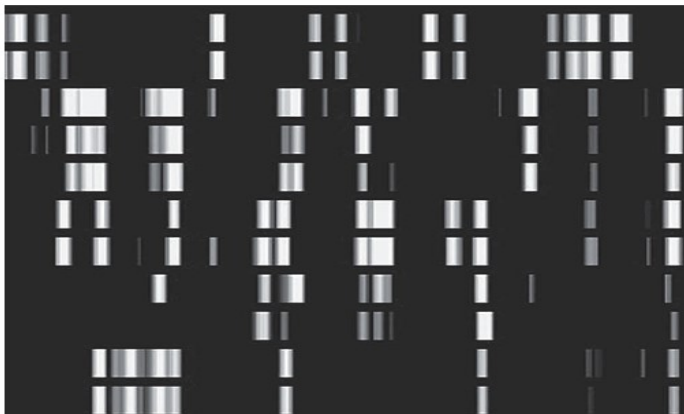
# Metody

- Organelární DNA (hlavně chloroplastová cpDNA - haplotyp)
  - maternální dedičnost
  - bez rekombinace
  - variabilita vzniká jen mutacemi (bodové, délkové)
  - nejčastěji zkoumány nekódující úseky
- Jaderná DNA



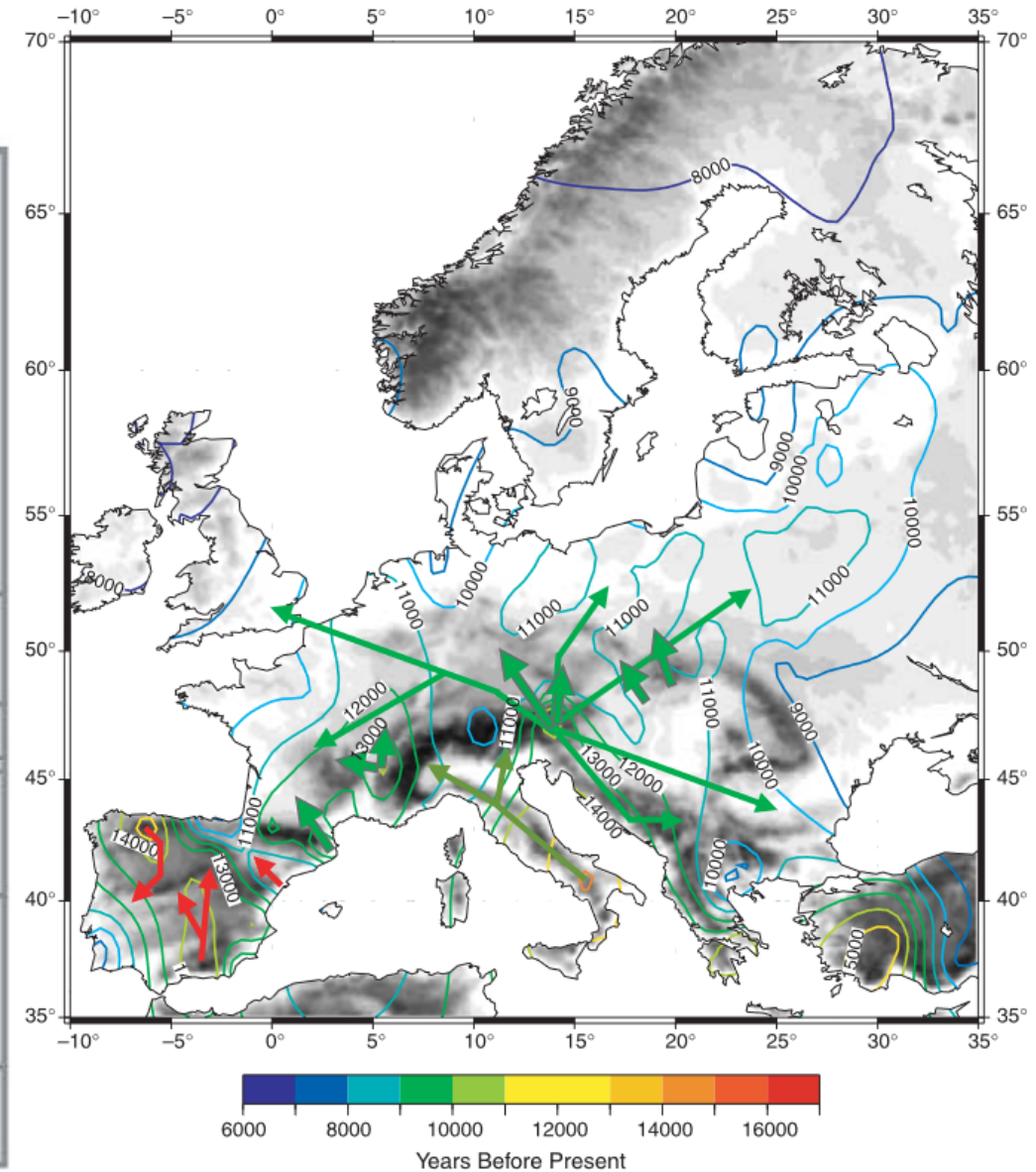
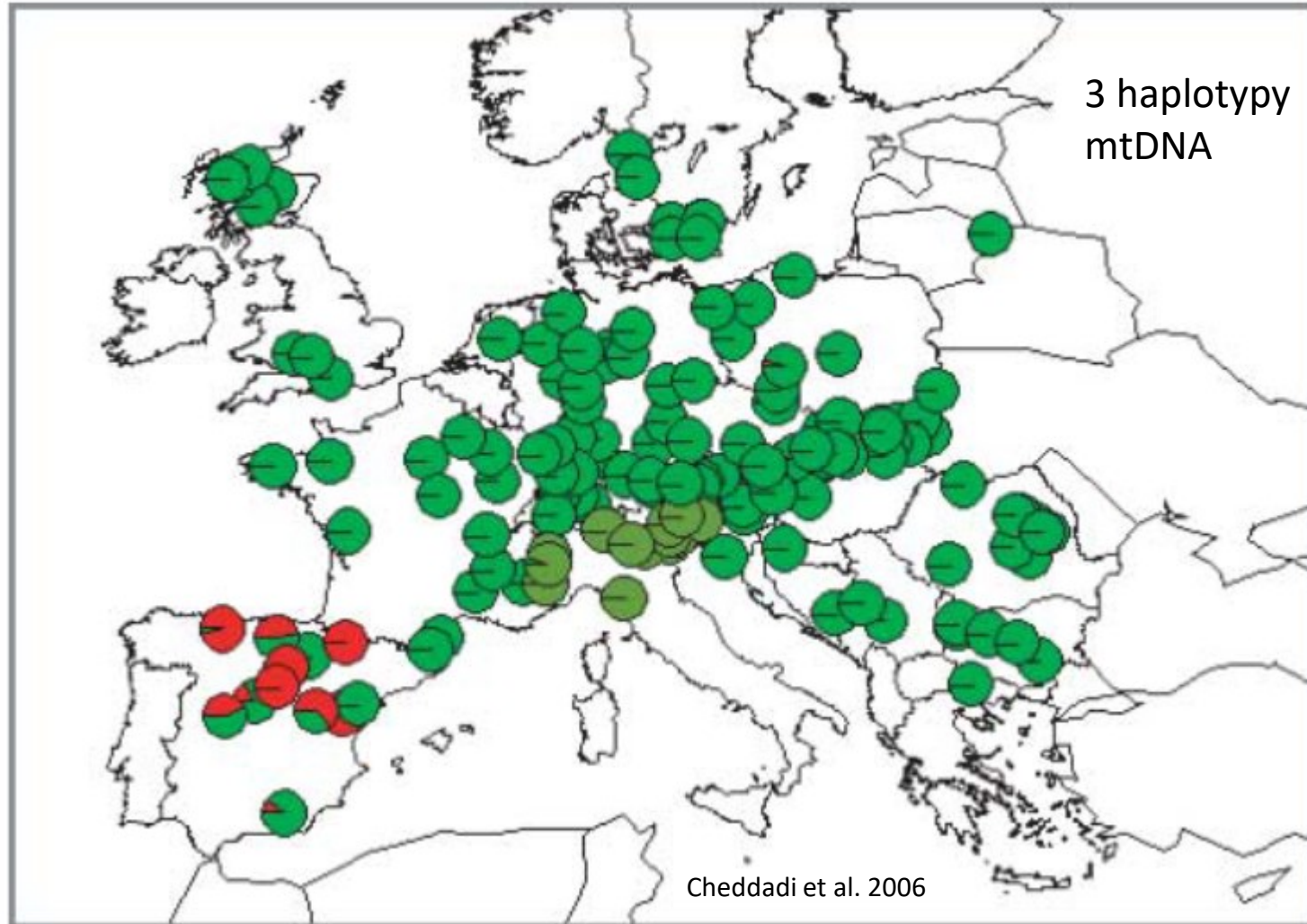
# Metody

- **AFLP** – štěpení **celkové DNA** restričním enzymem a porovnání fragmentů
  - Amplified Fragment Length Polymorphism
  - **DW index** – zastoupeních vzácných fragmentů, míra odlišnosti populace od ostatních
- **RFLP** – délková variabilita fragmentů **cpDNA** po štěpení restričním enzymem
  - Restriction fragment length polymorphism
- **Mikrosatelity** – krátké repetitivně sekvence v **cpDNA** a jejich variabilita
- **Haplotypová variabilita** – nekódující úseky **cpDNA** a jejich variabilita





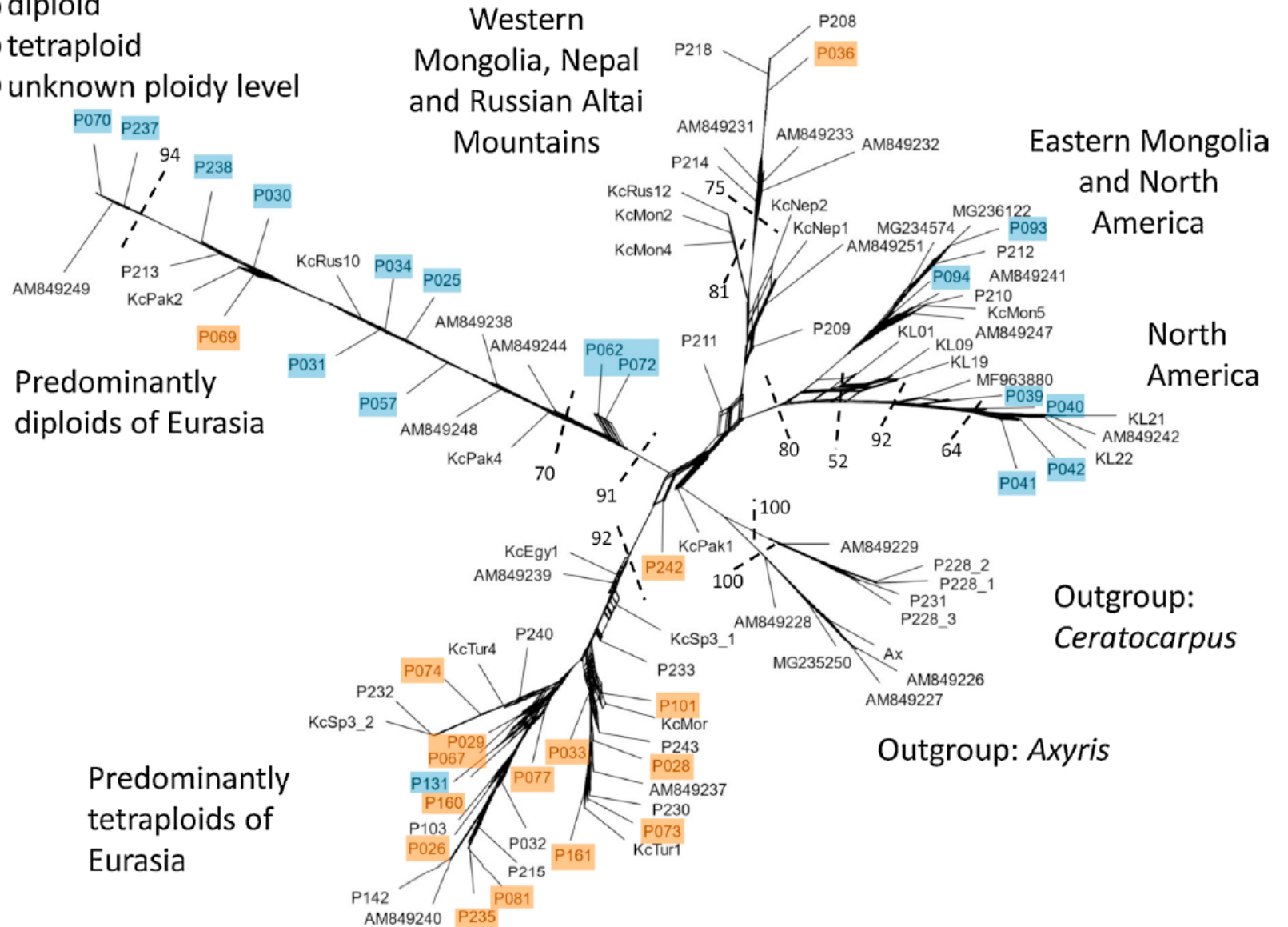
# *Pinus sylvestris*



# *Krascheninnikovia ceratoides*

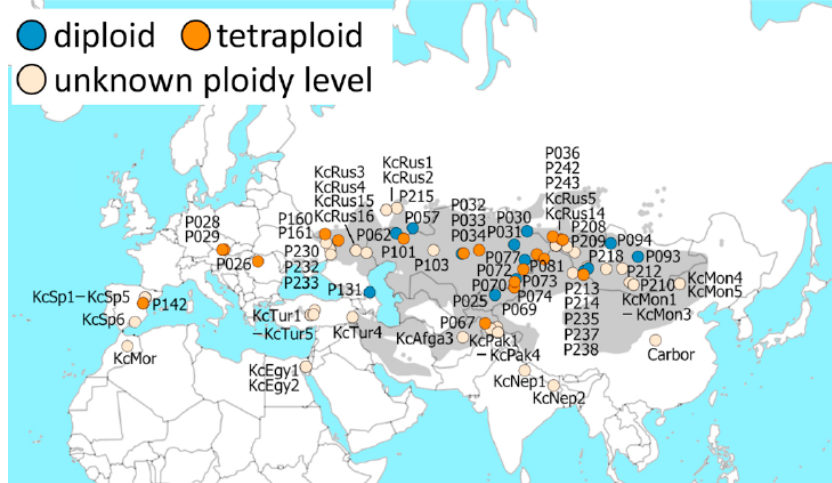


- diploid
- tetraploid
- unknown ploidy level



Predominantly diploids of Eurasia

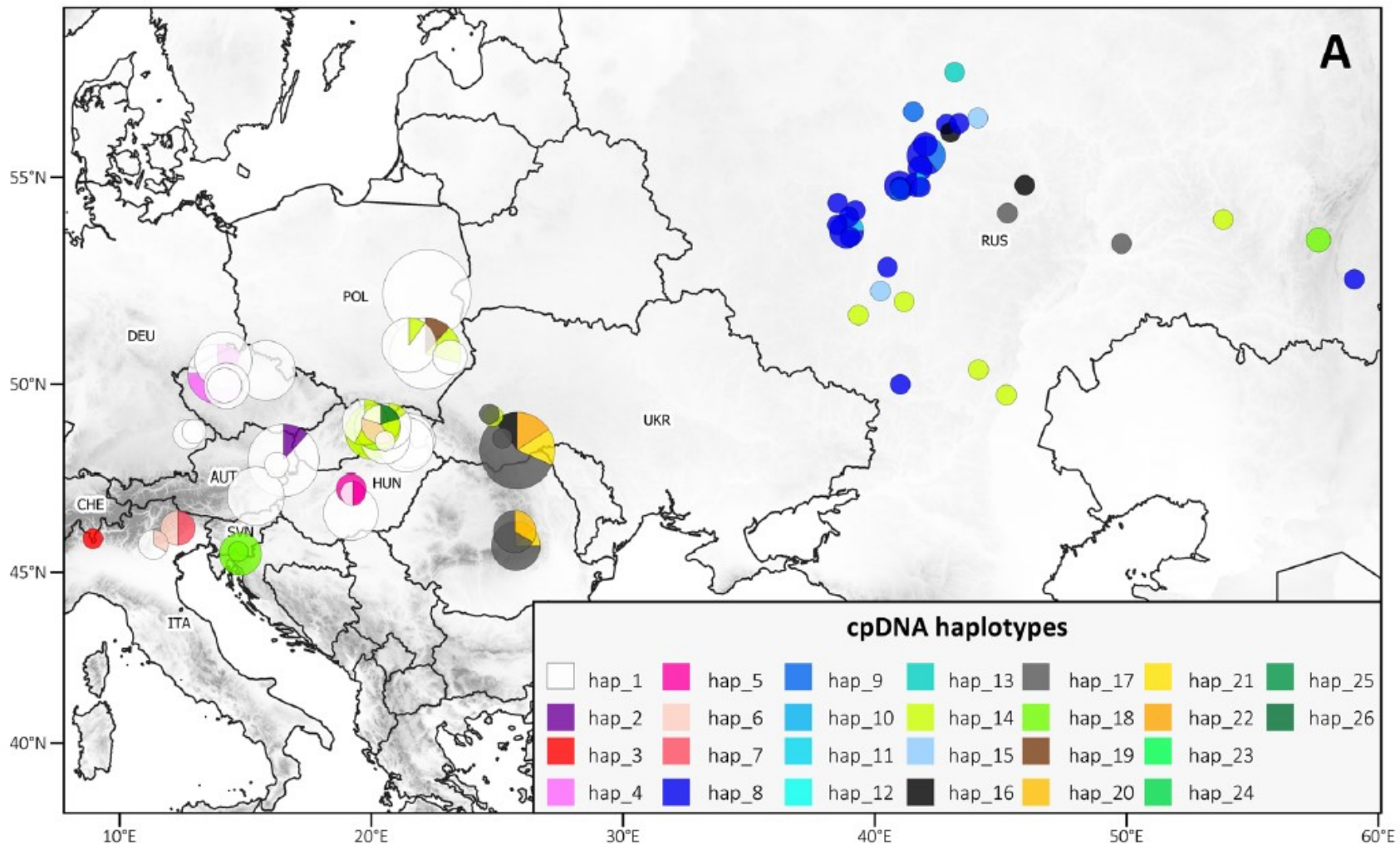
Predominantly tetraploids of Eurasia



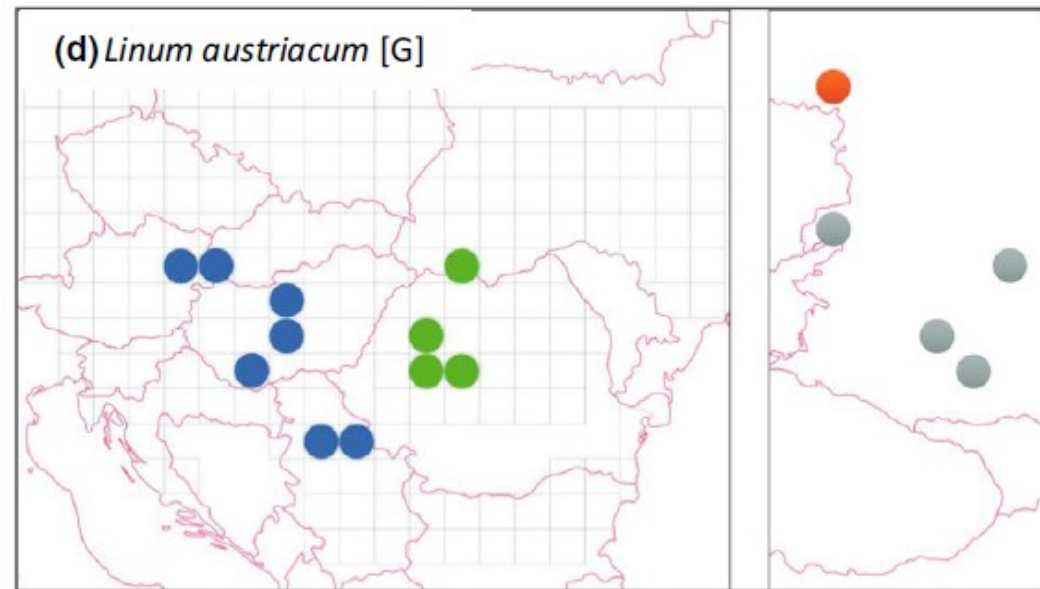
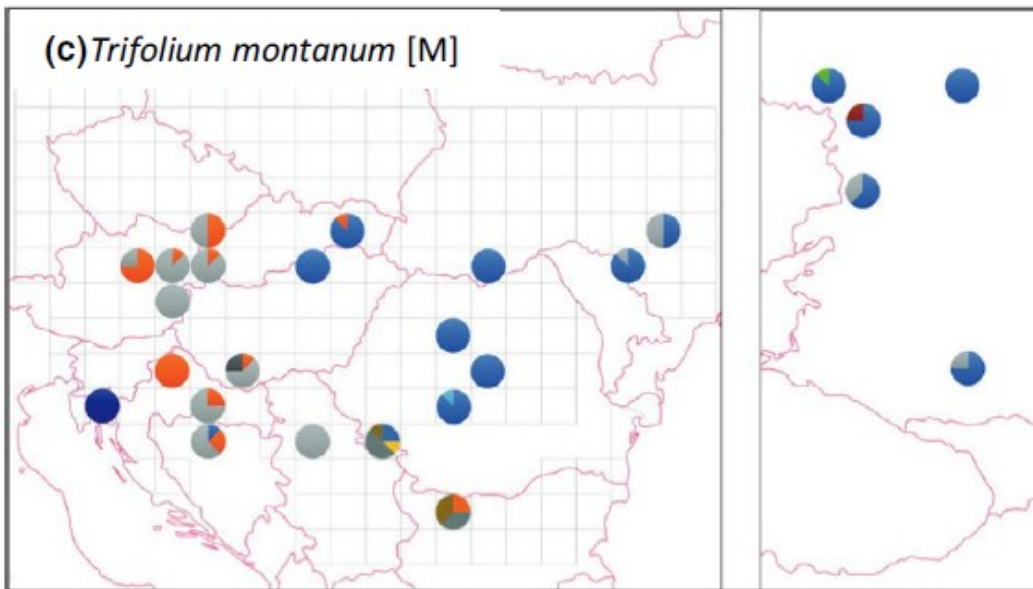
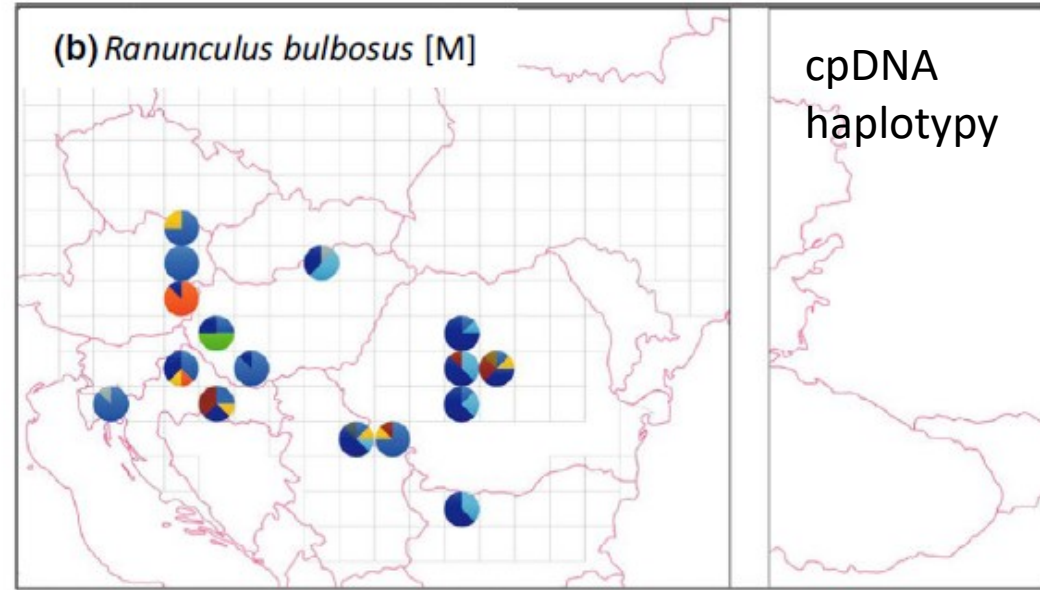
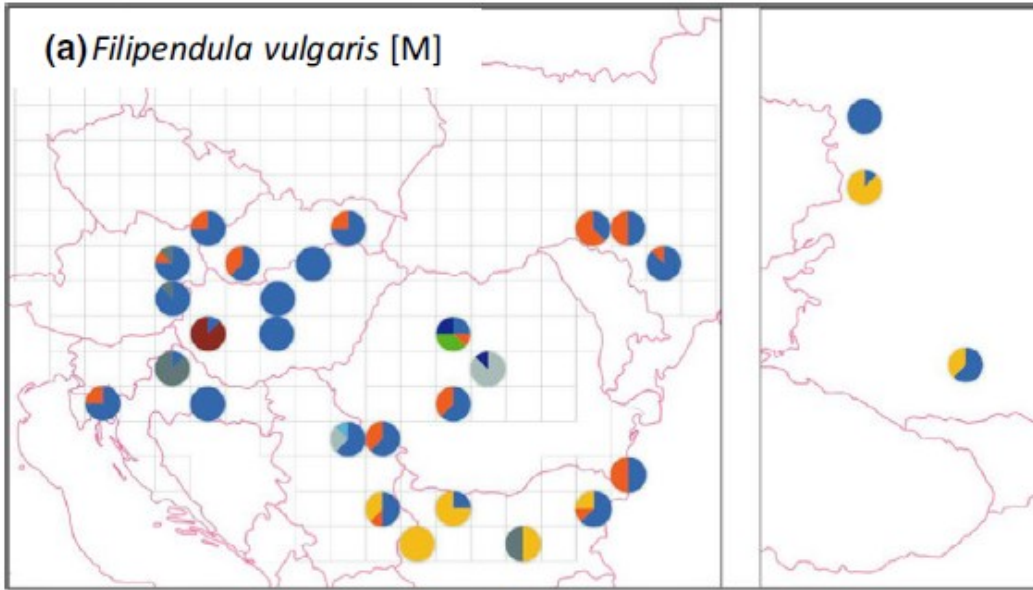
- diploid
- tetraploid
- unknown ploidy level



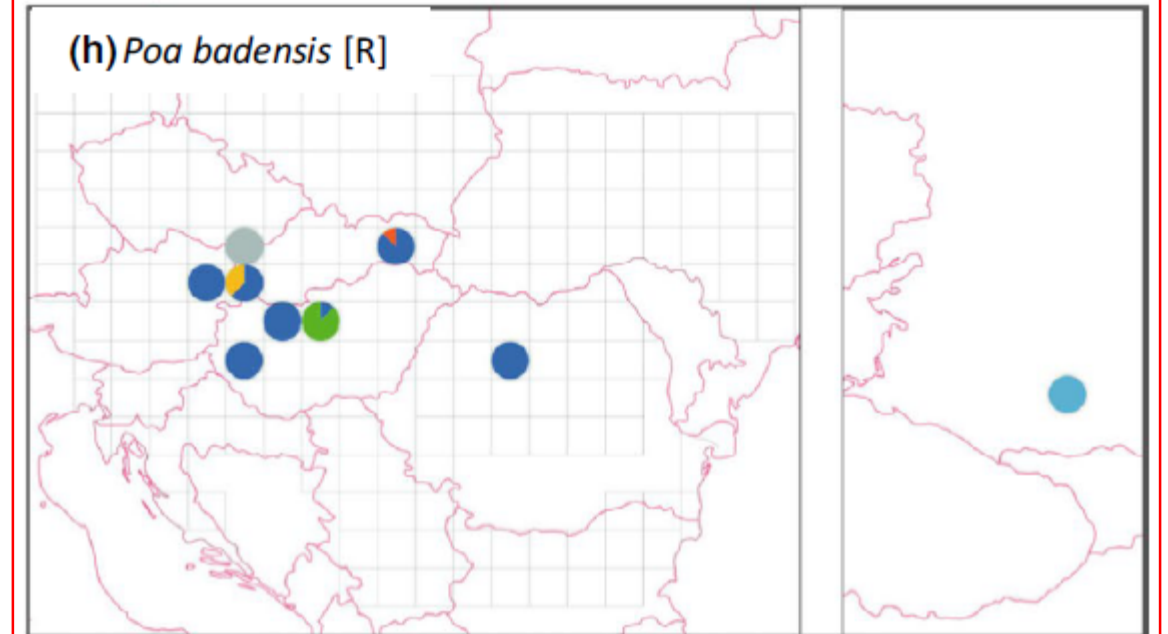
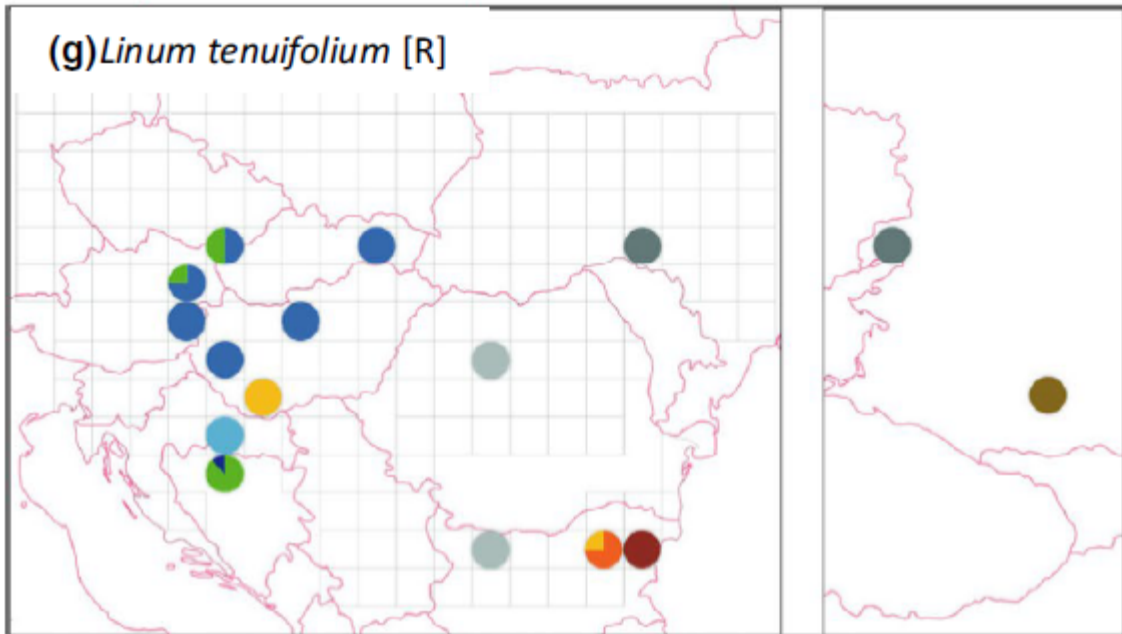
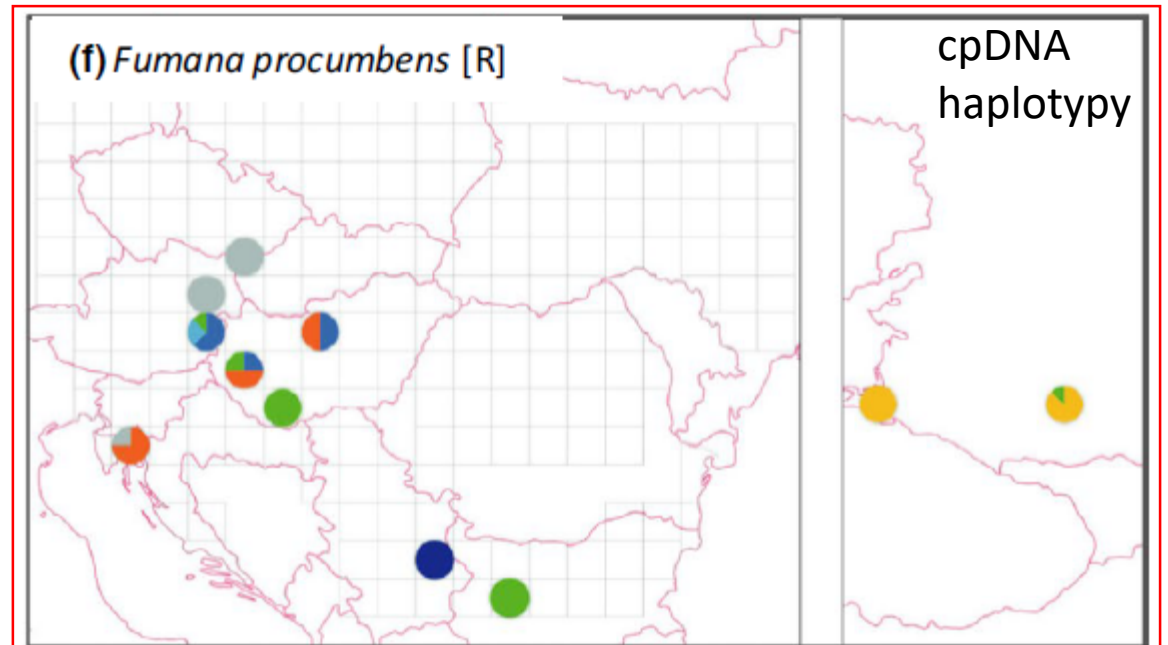
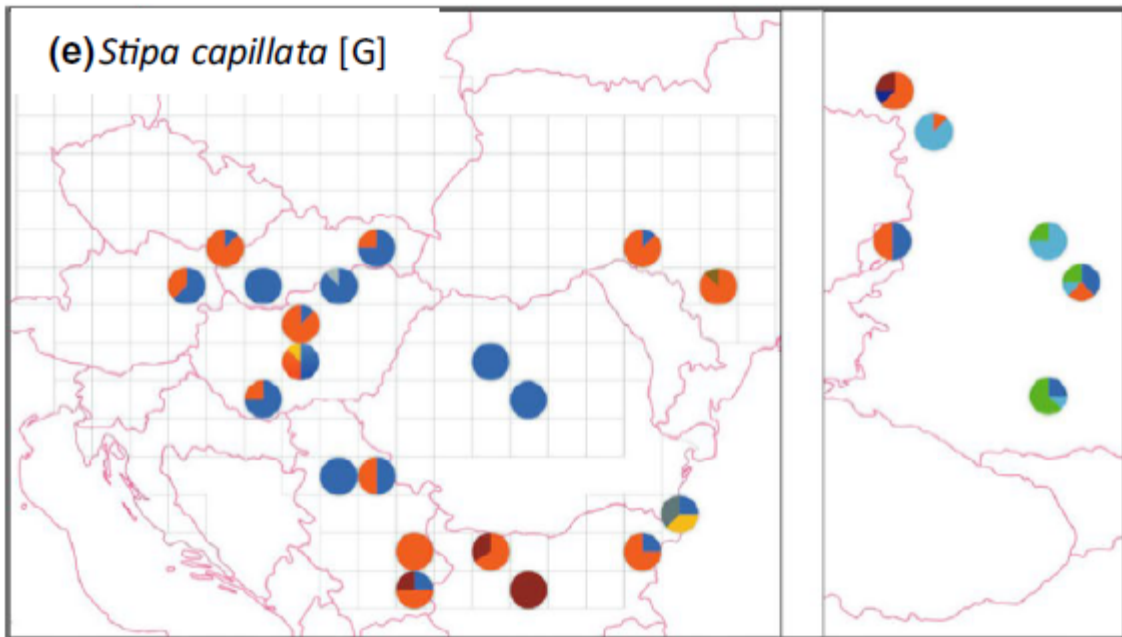
# *Adenophora liliifolia*



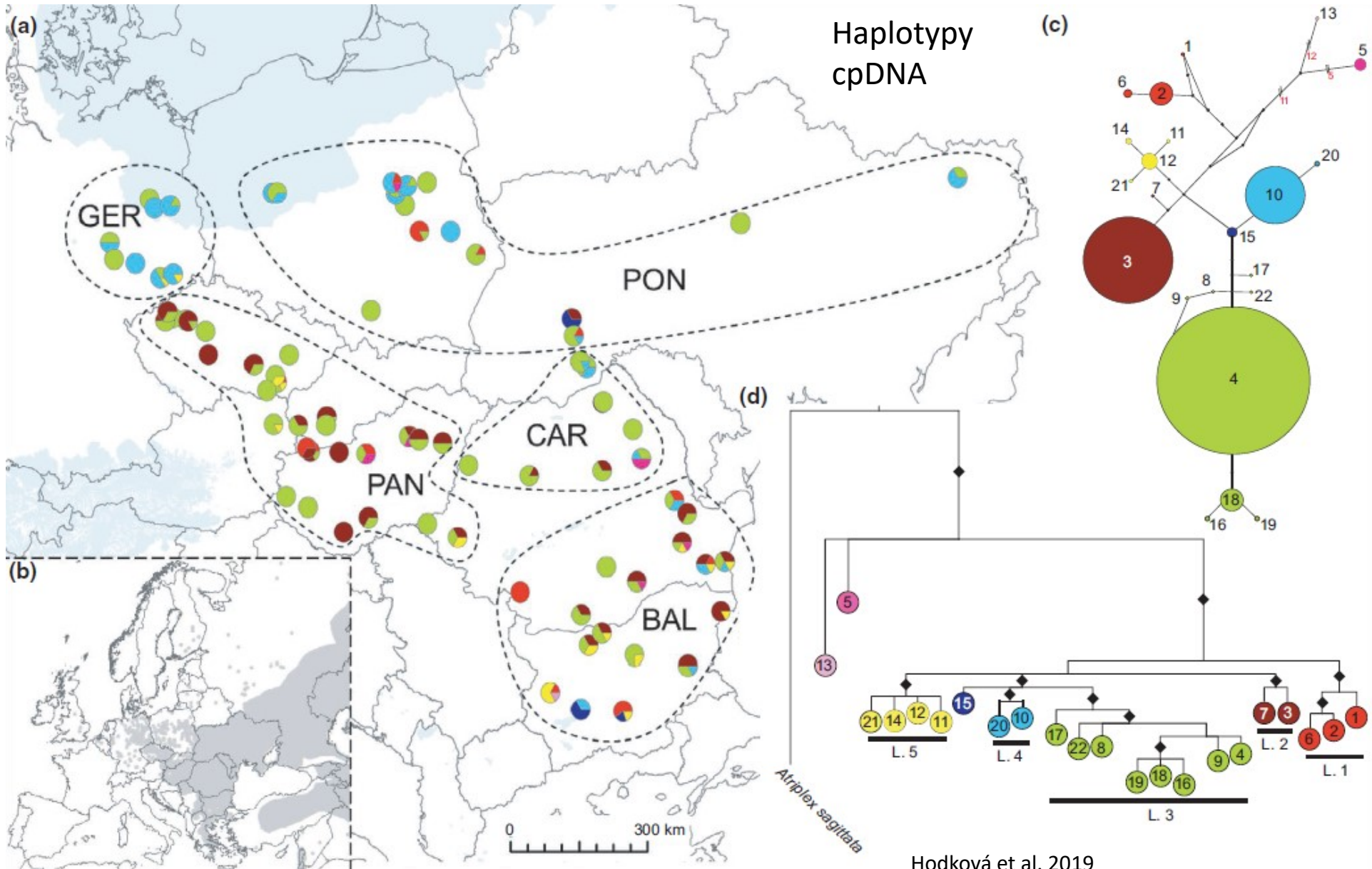
# Stepní druhy







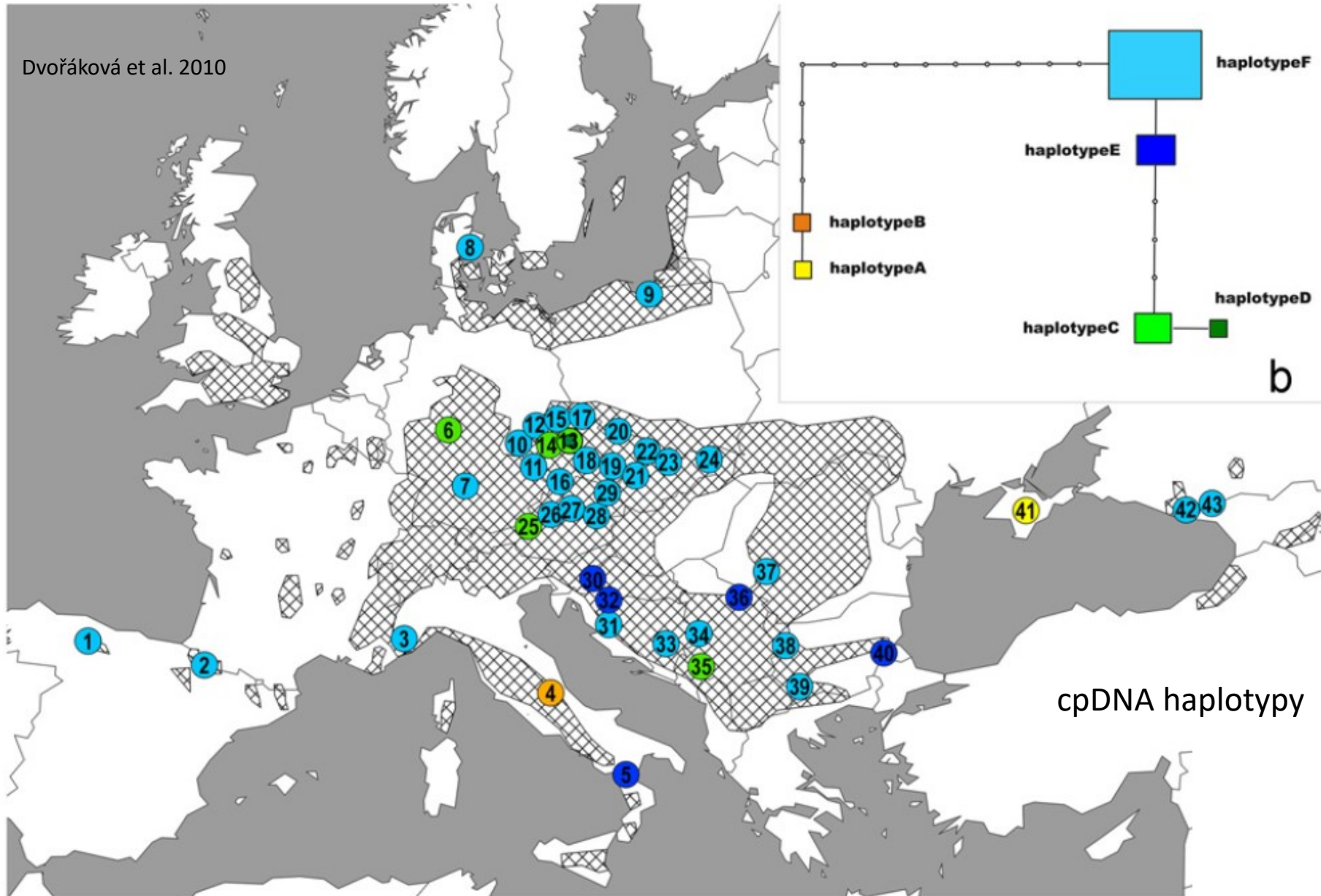
# *Atriplex tatarica*



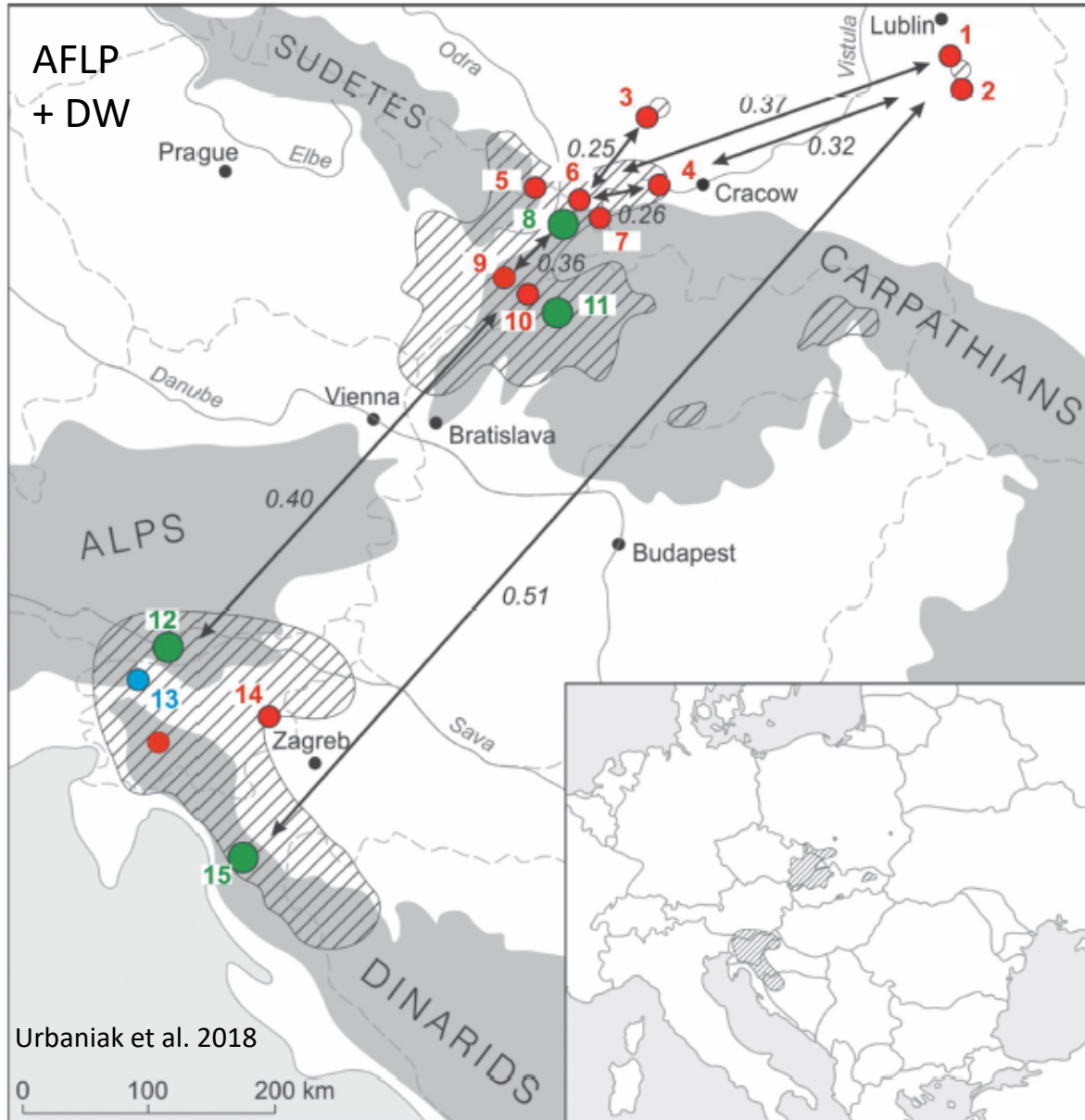


# *Hordelymus europaeus*

Dvořáková et al. 2010

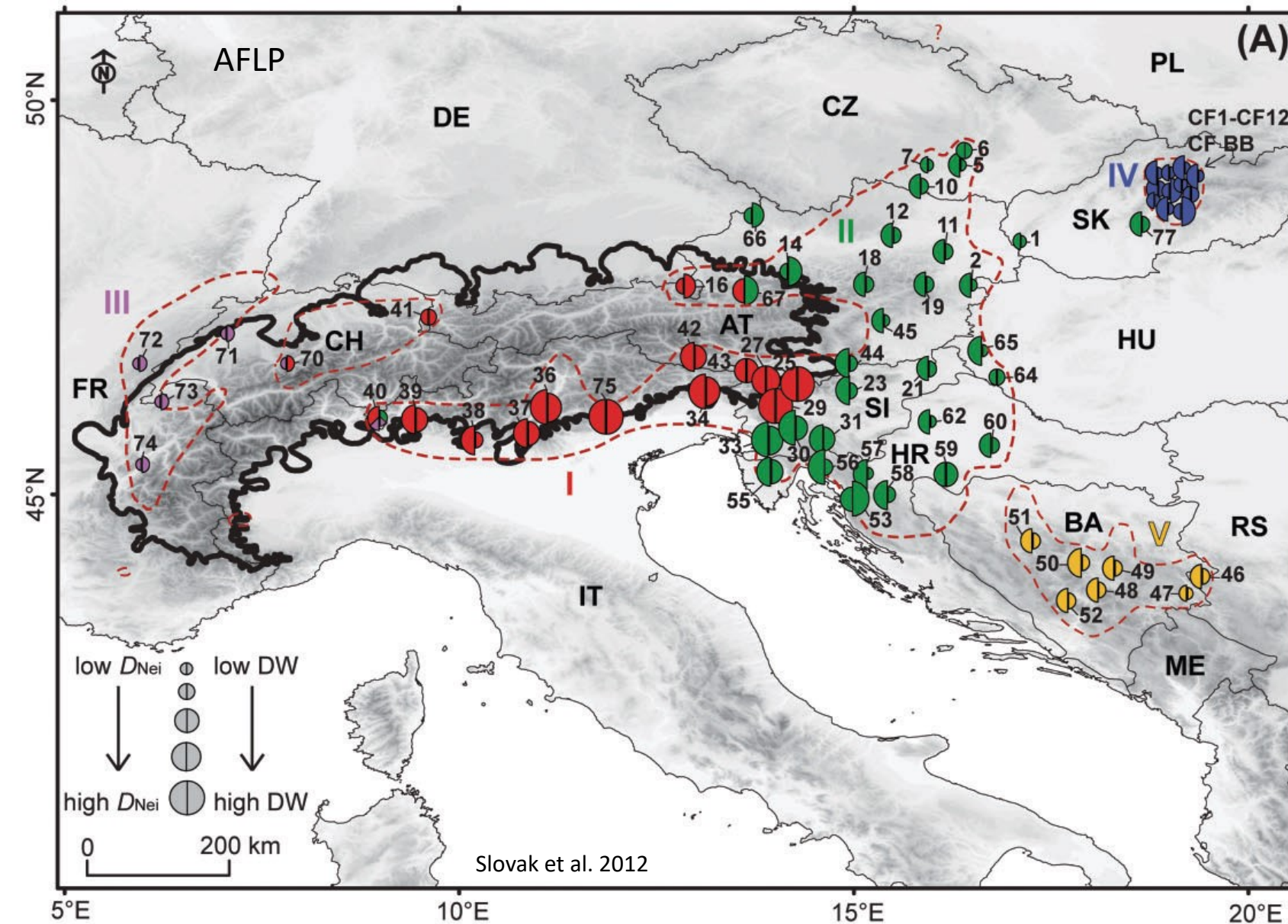


# *Hacquetia epipactis*



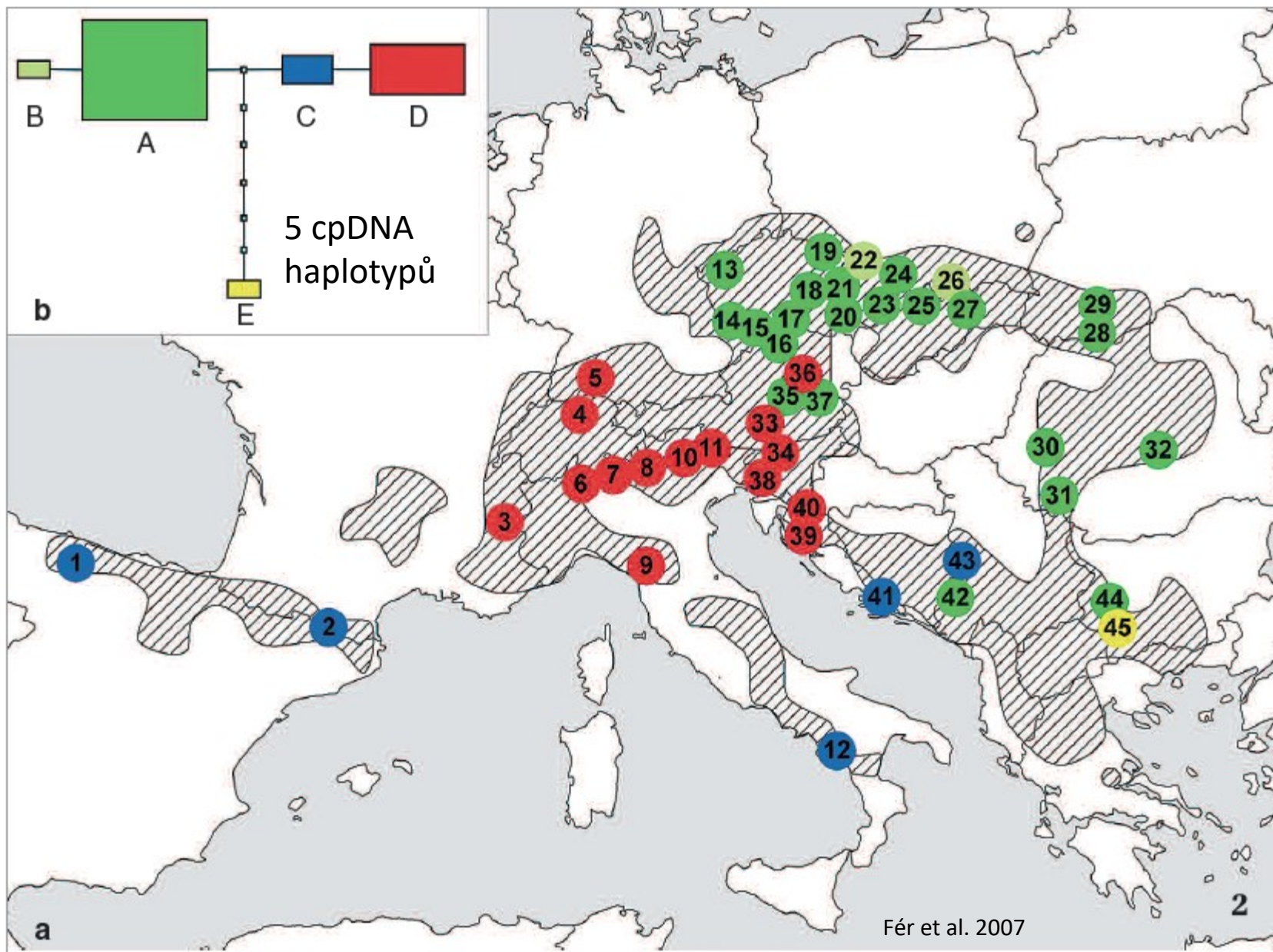
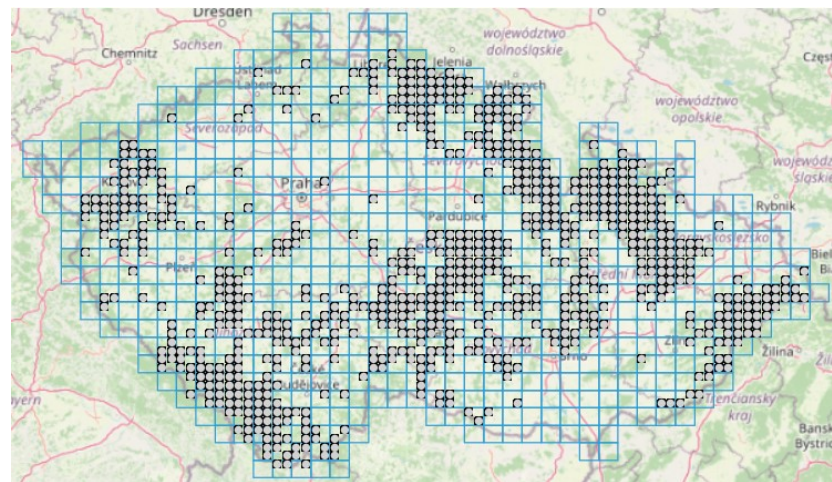


# *Cyclamen purpurascens*



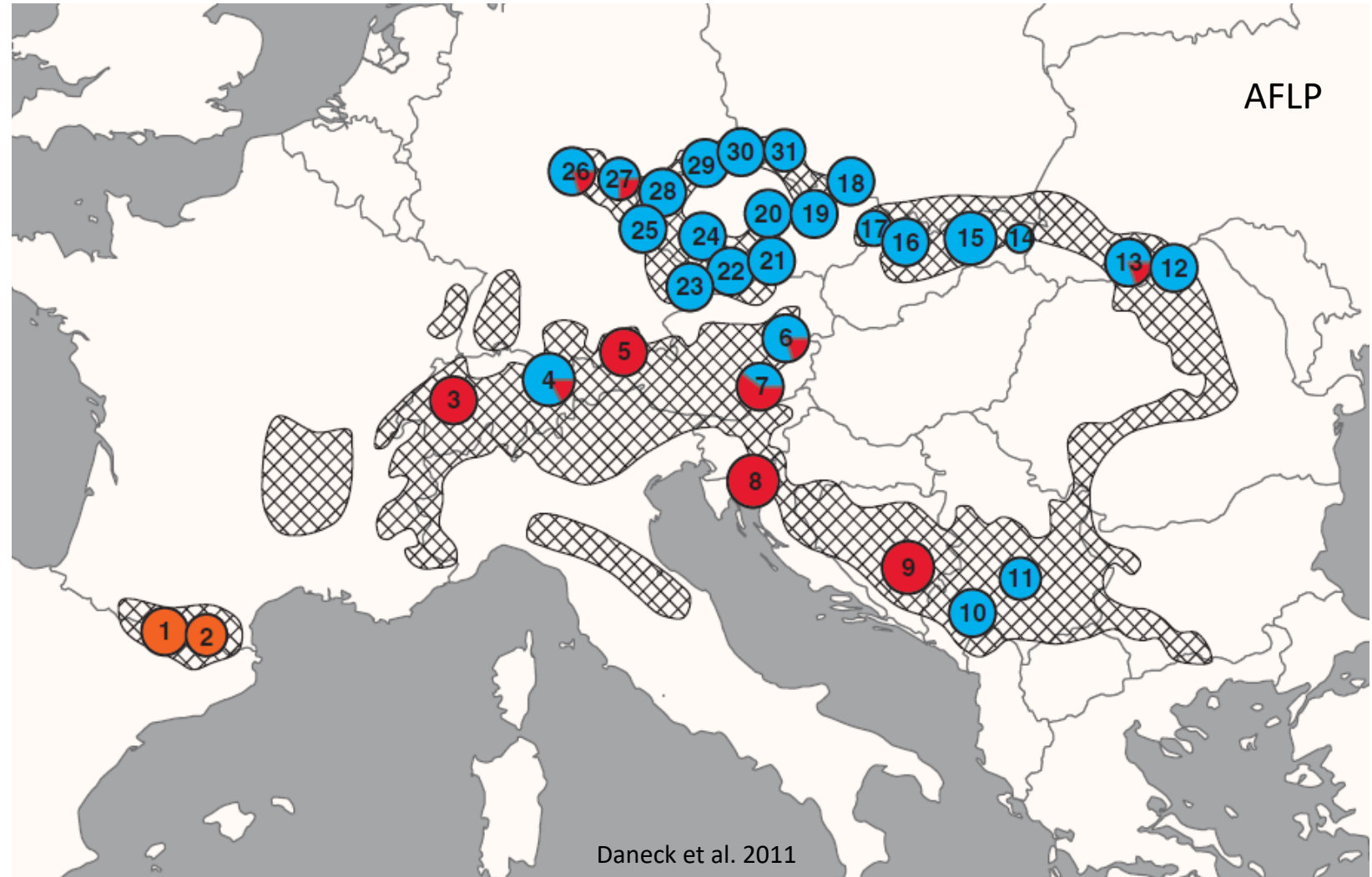
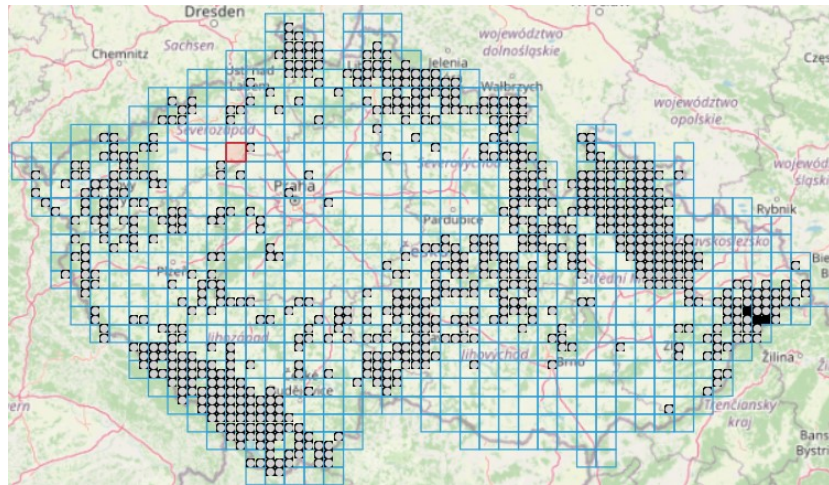


# *Rosa pendulina*





# *Lonicera nigra*



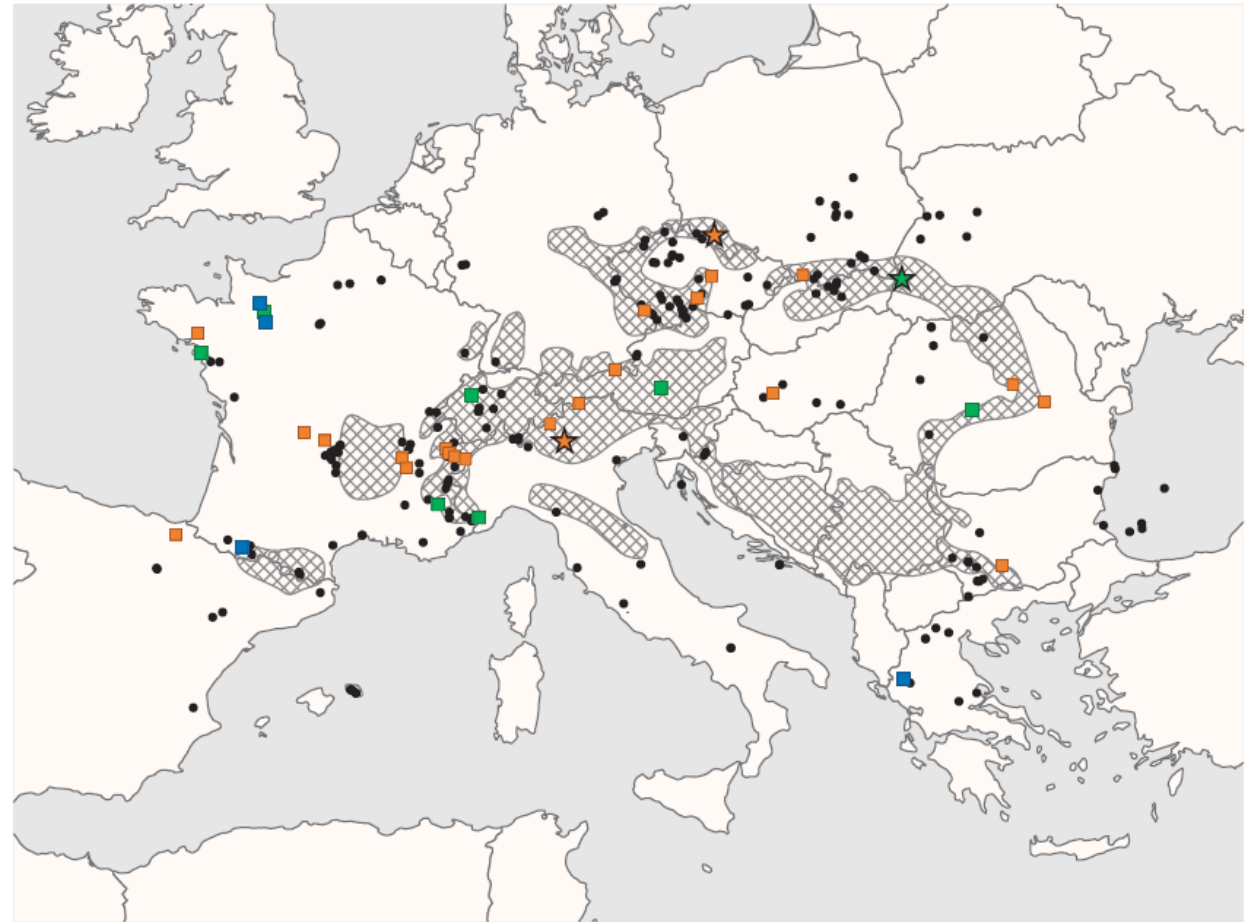
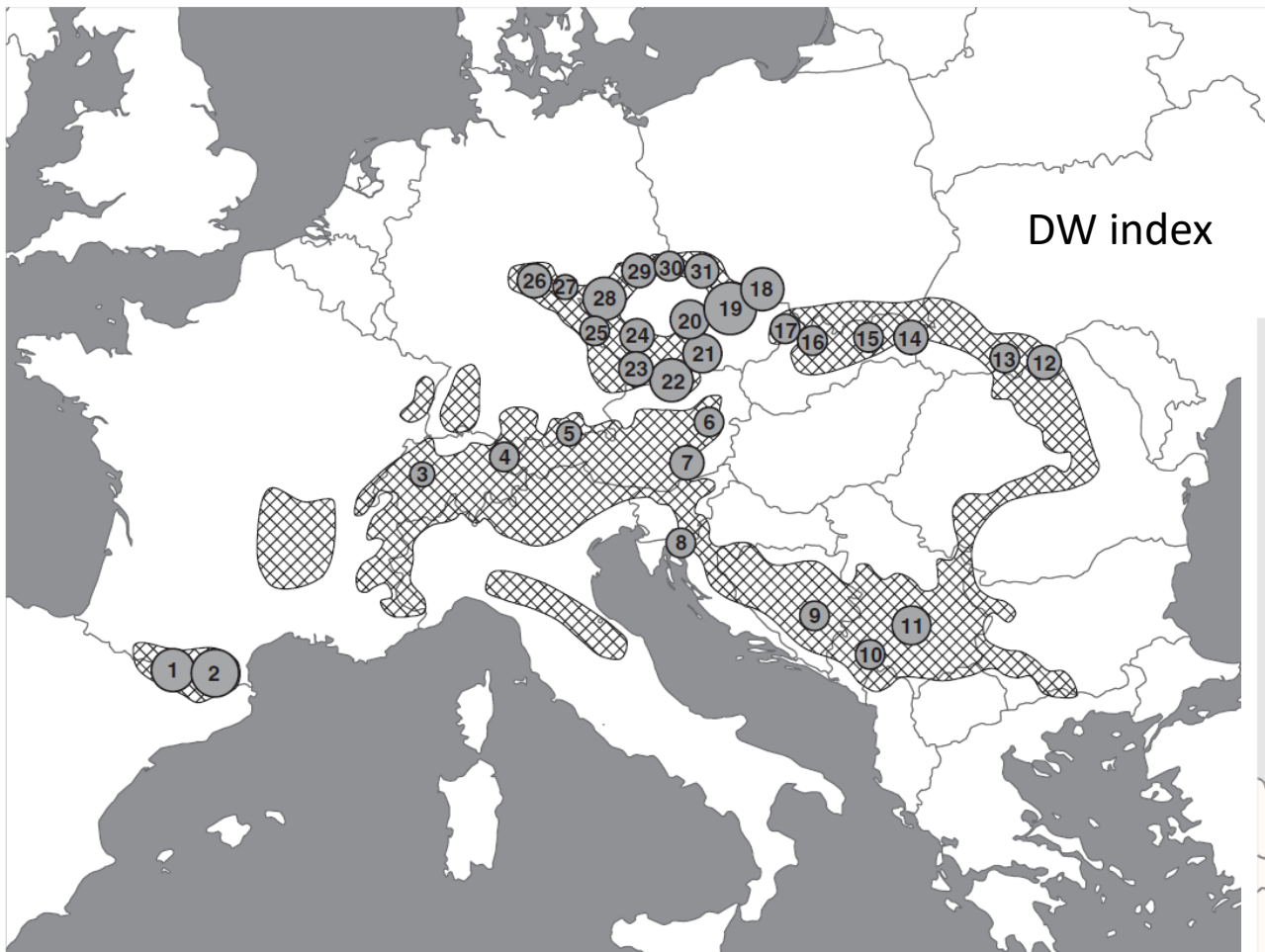
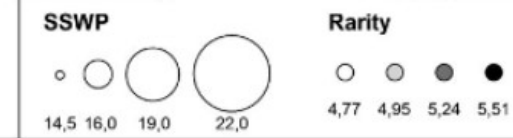
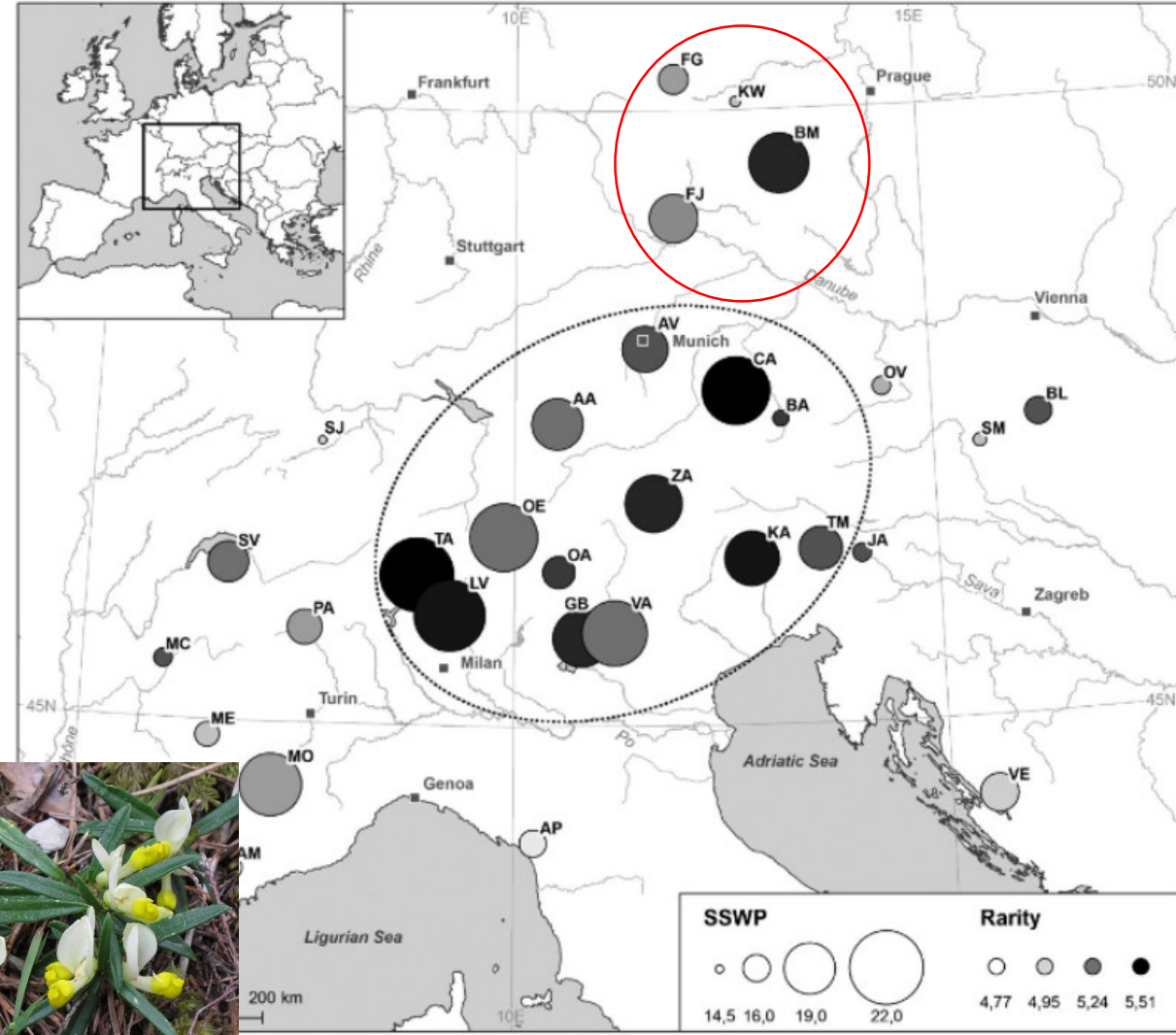


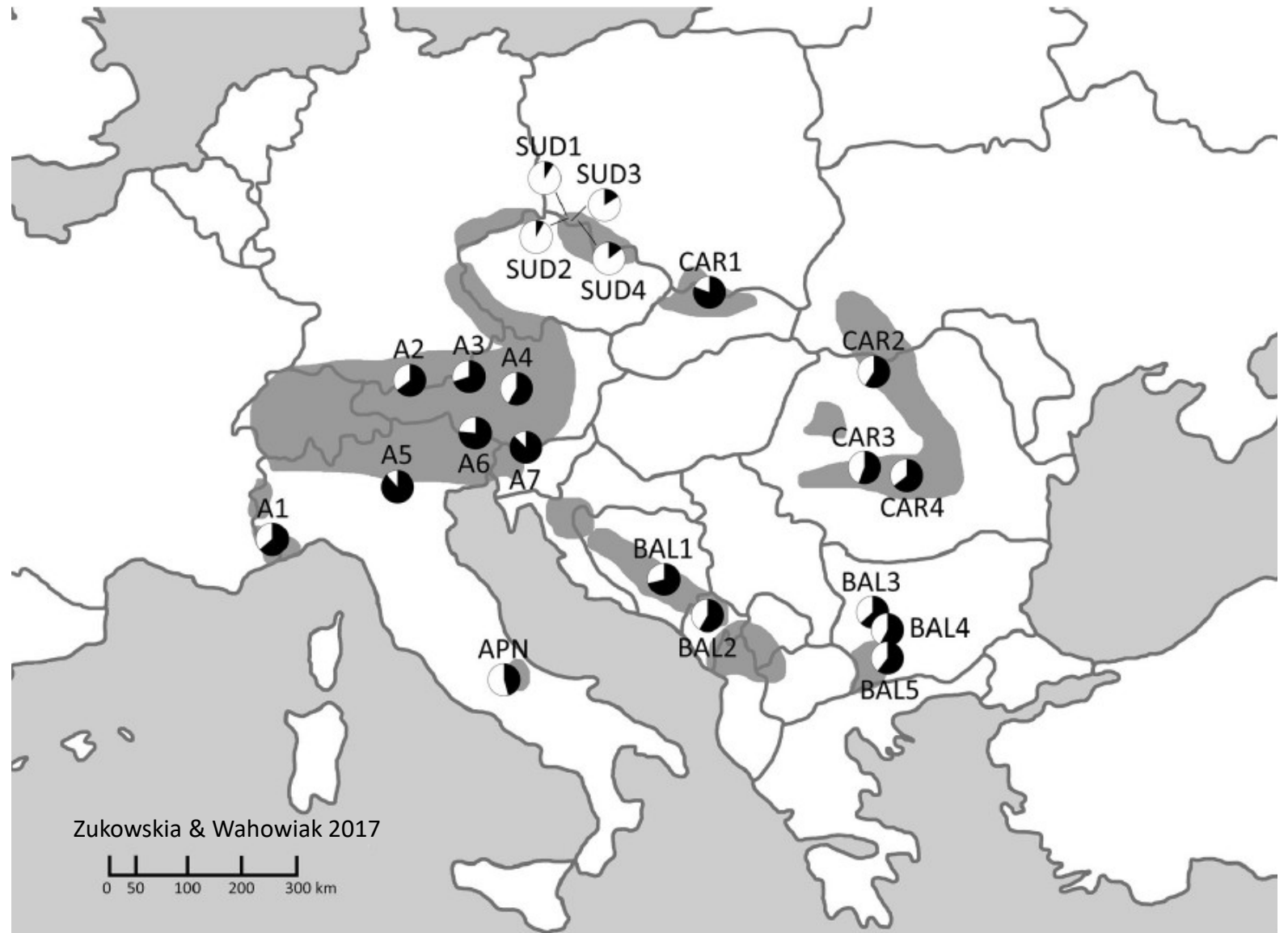
Fig. 4. – Locations in Europe from which the pollen data records studied came (absence of any *Lonicera* pollen – black dots, presence of *Lonicera* sp. pollen – squares, presence of *L. xylosteum*-type pollen – stars, Periodization: Pleniglacial – blue, Late-Glacial – green, Early Holocene – brown).



# *Polygala chamaebuxus*

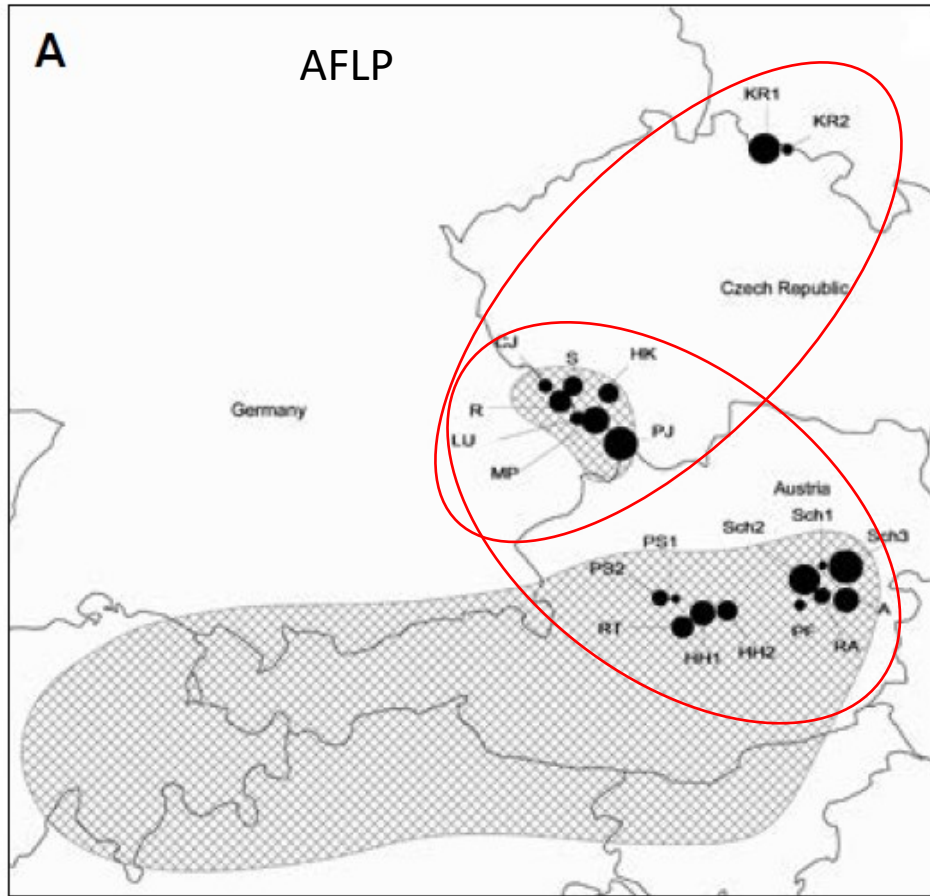


# *Pinus mugo*

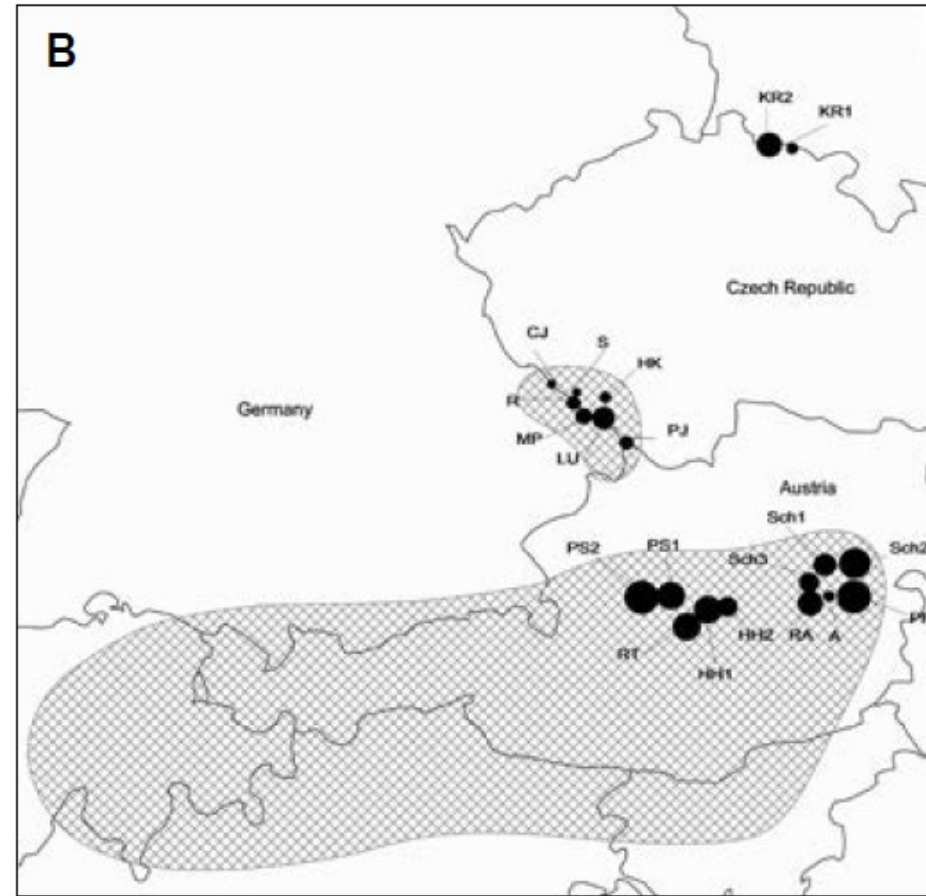




# *Gentiana pannonica*



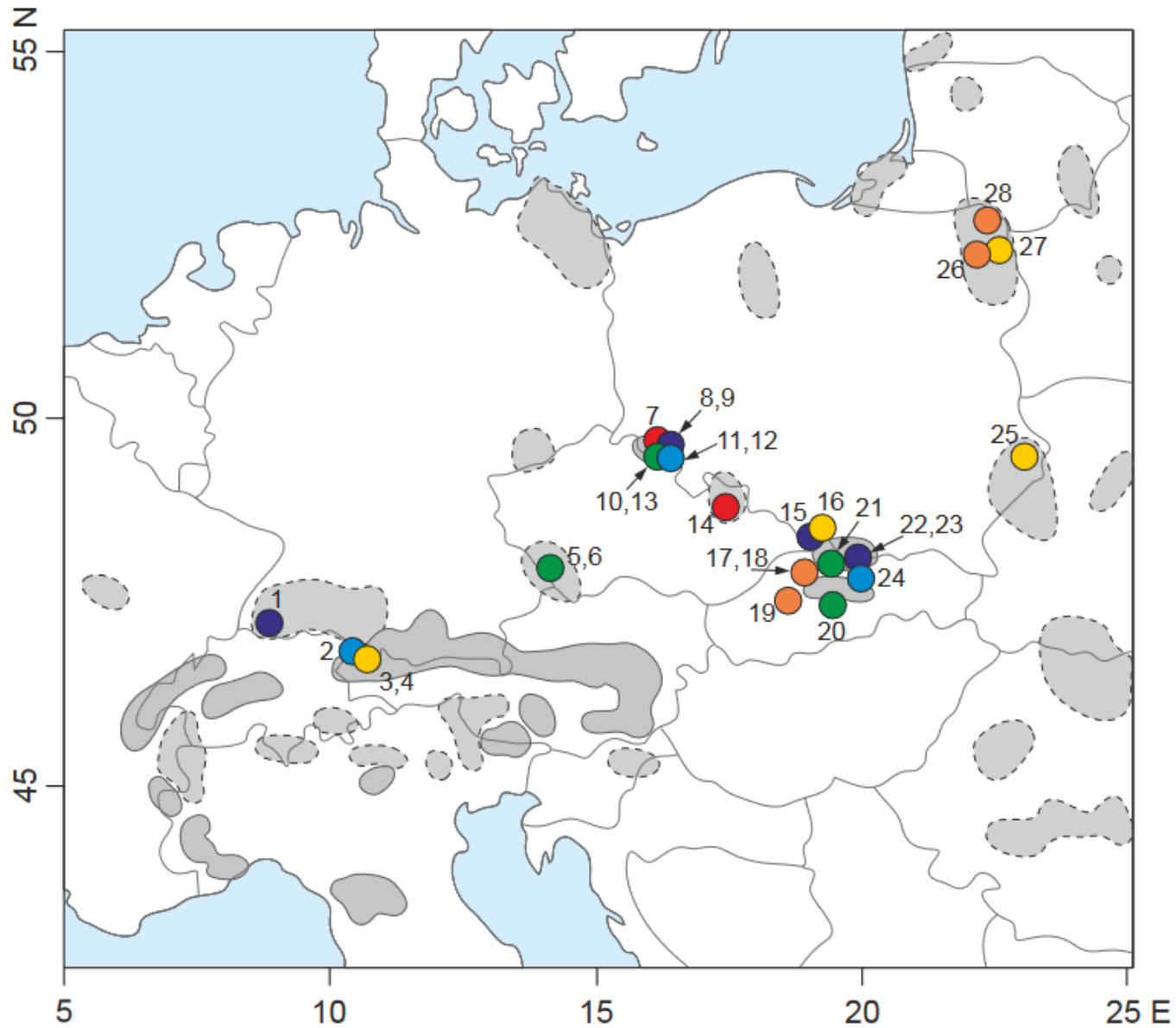
DW index uvnitř populací



DW index v rámci celého datasetu

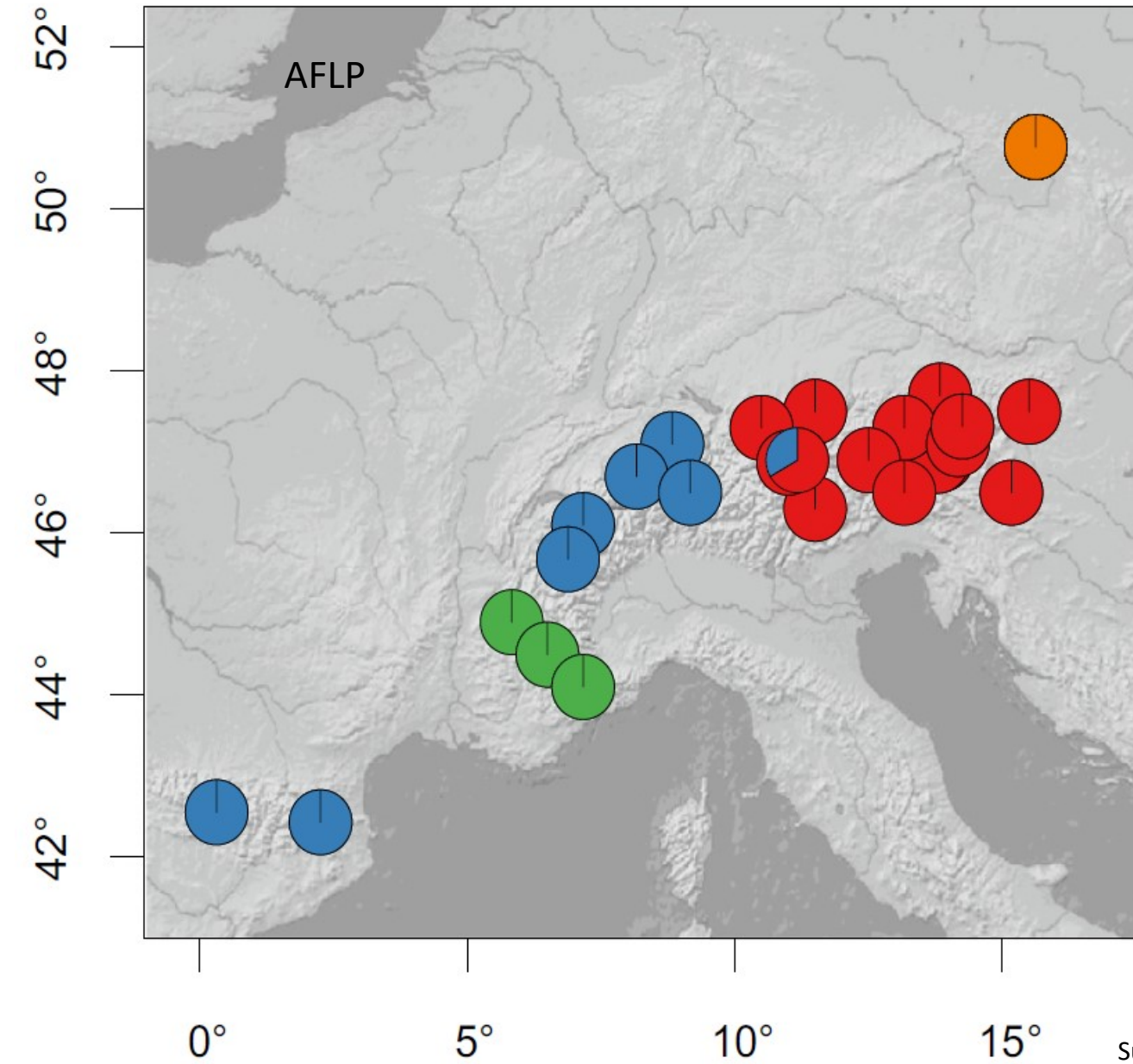


# *Swertia perennis*





# *Rhododendron ferrugineum*



Suchan et al. 2018





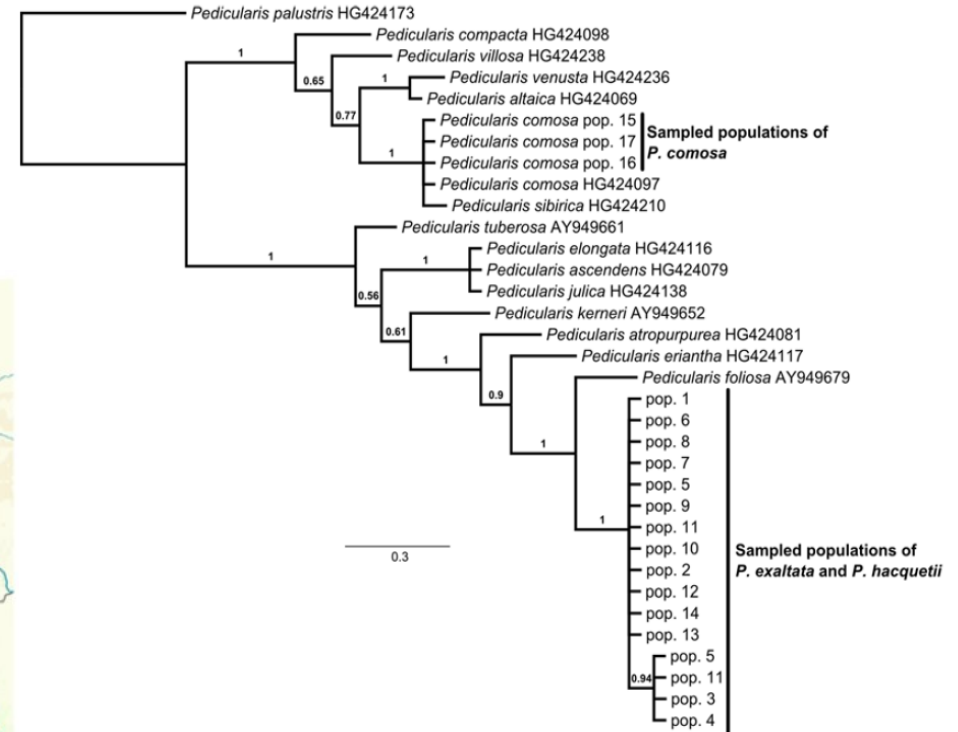
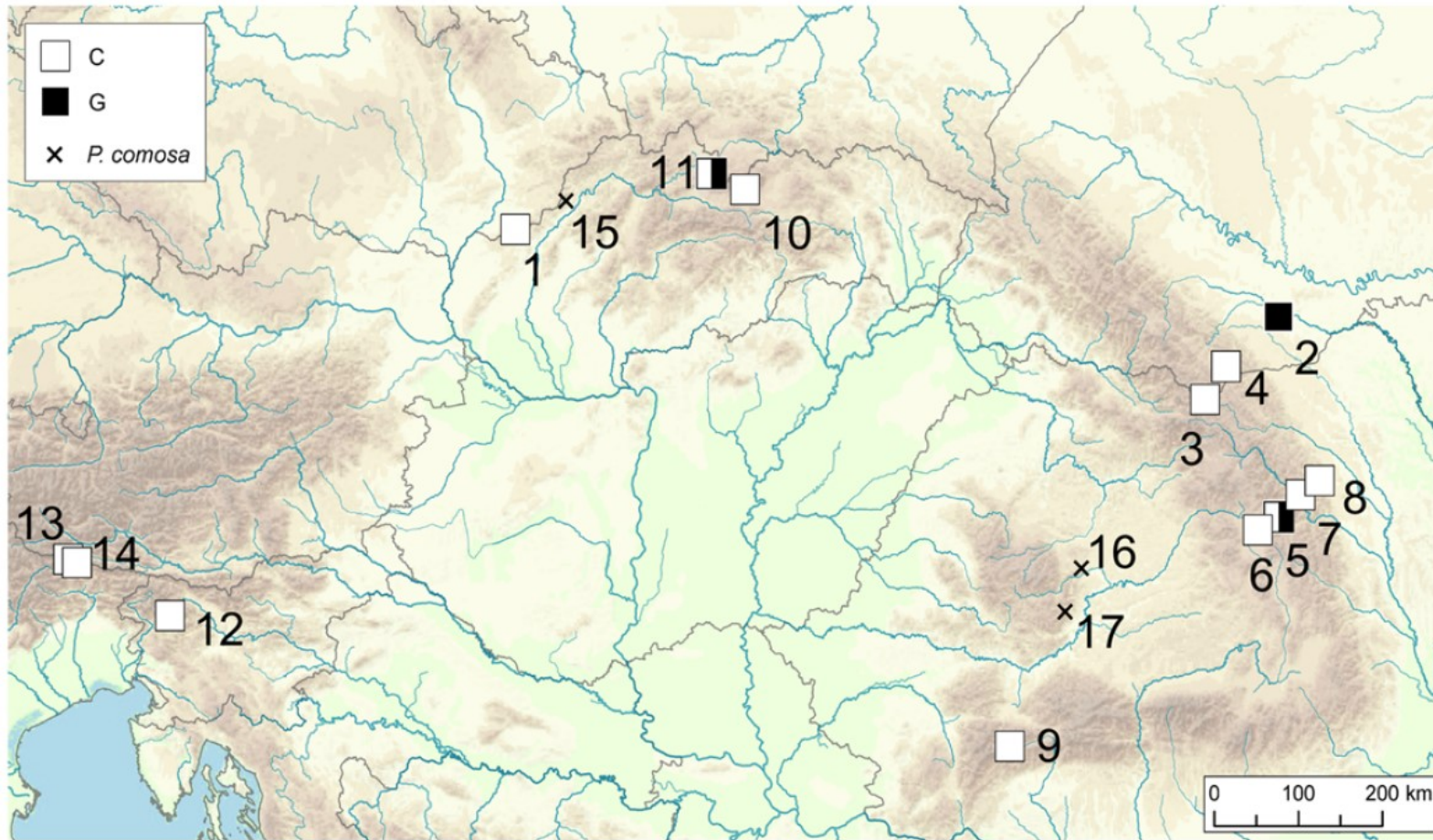
# *Pedicularis exaltata*

- Reliktní a velmi vzácný druh s disjunktivním areálem
- Bílé Karpaty, Rumunsko, Ukrajina
- Květnaté louky





# *Pedicularis exaltata*

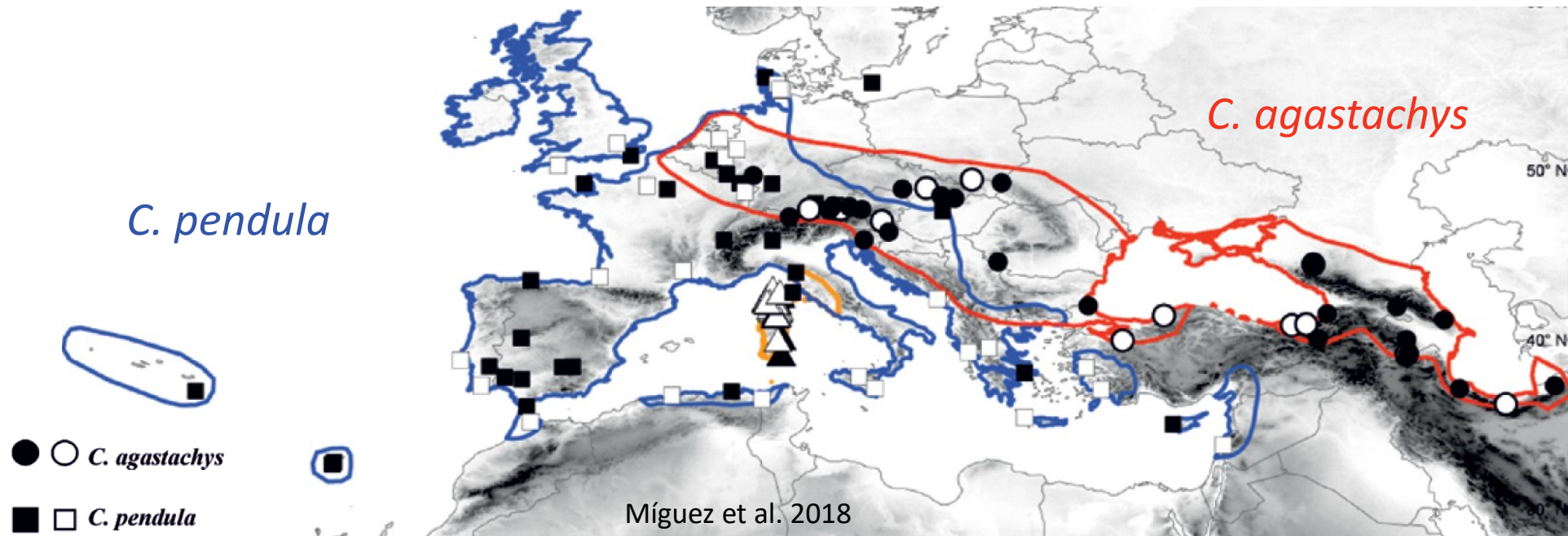


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# *Carex agastachys*

- *Carex pendula* agg.
- dva druhy + široká přechodná zóna





# *Trichomanes speciosum*

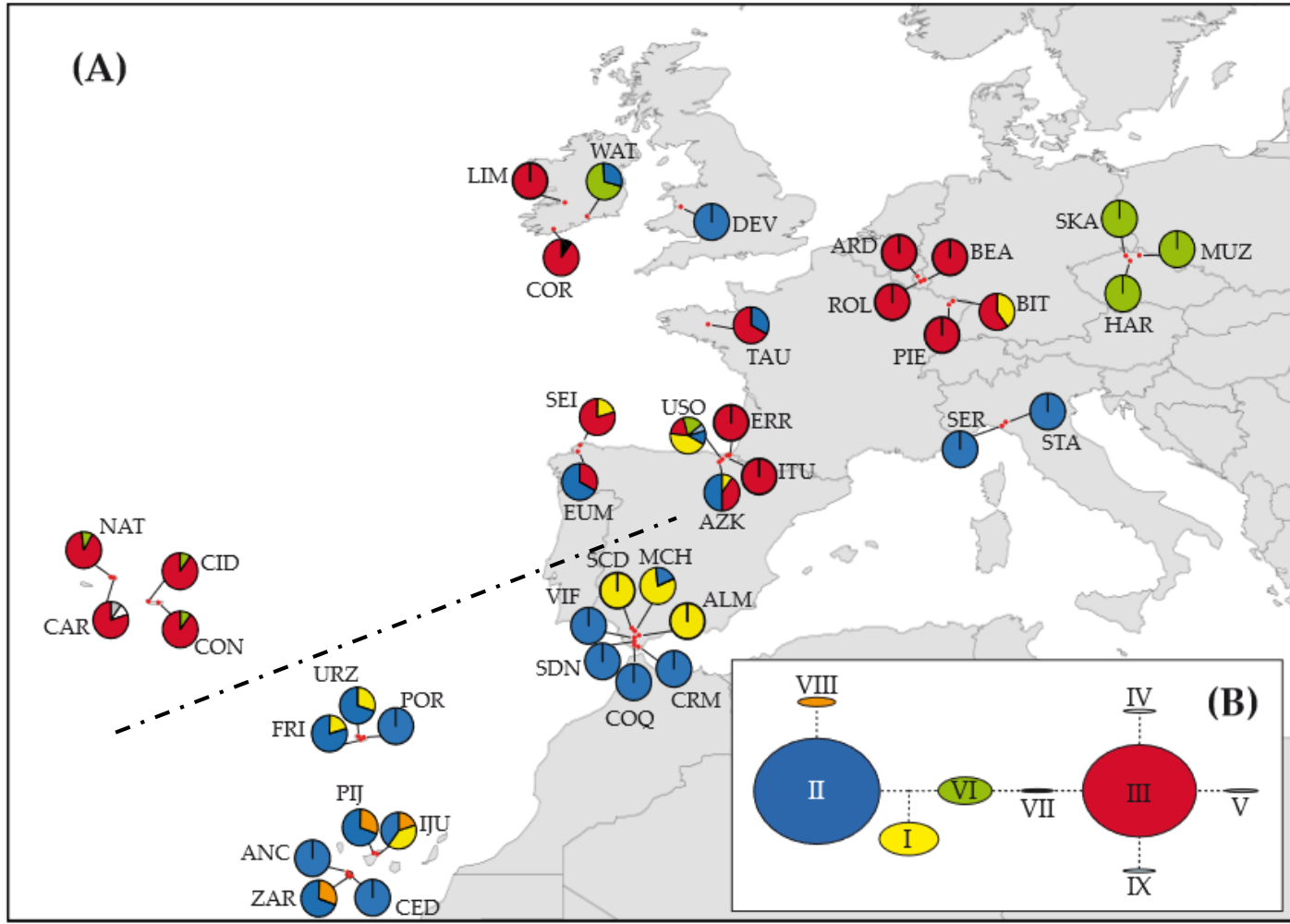


Figure 2. Distribution and network of the cpDNA haplotypes detected in the populations sampled of *Vandenboschia speciosa*.

# Kryptická invaze – *Puccinellia distans*

