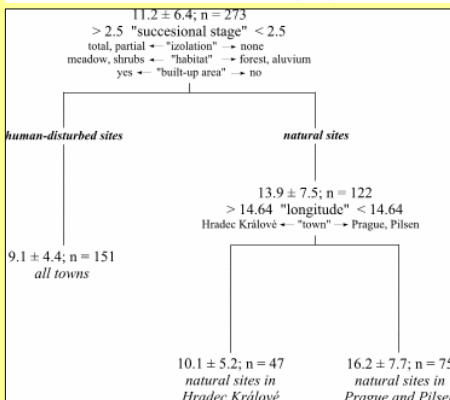


# Patterns of land snail diversity in cities as a result of urbanization

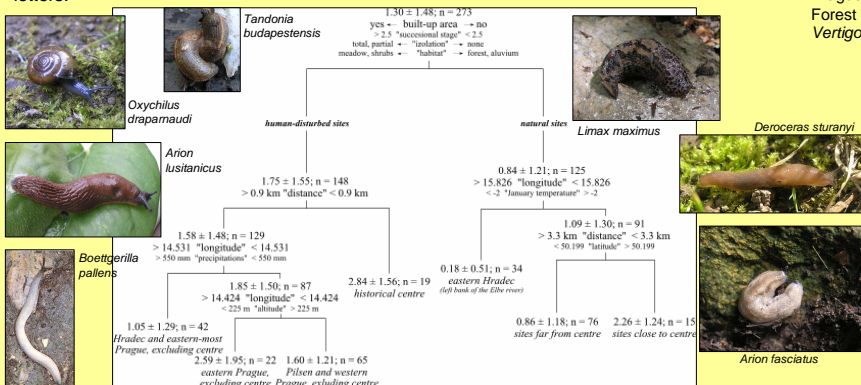
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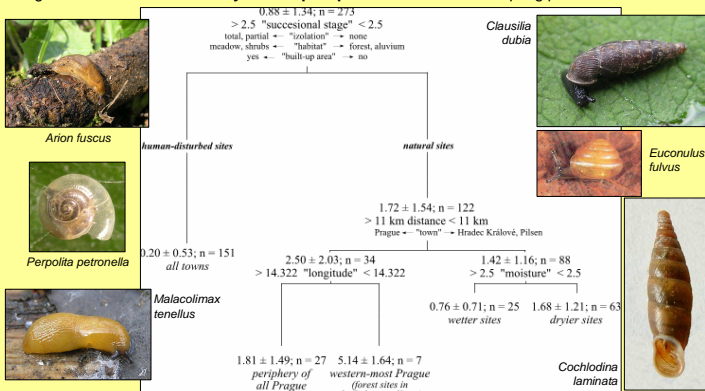
Terrestrial snails were studied at 273 sites in three large Czech cities. The main purpose of the study was to analyze whether it is possible to predict number of land snail species in urban habitats, particularly by means of variables characterizing human-made changes of the habitats. Out of 81 recorded species, 12 were scored as synanthropic and 24 as anthropophobic in order to test the hypothesis that species avoiding heavily distributed sites (i.e. anthropophobic species) could reveal more predictable distributions than the others, especially synanthropic species themselves.



Regression tree of number of **all species** recorded in sampling plots of three studied cities. Numbers at each node indicate the mean number of mollusc species per sampling site  $\pm$  standard deviation and the number of sites assigned to that node. The primary splitter variable and its split value are given in the second row followed by the surrogates, i.e. variables that allocate at least 75% of the cases to the same group as the primary splitter, given in smaller letters.

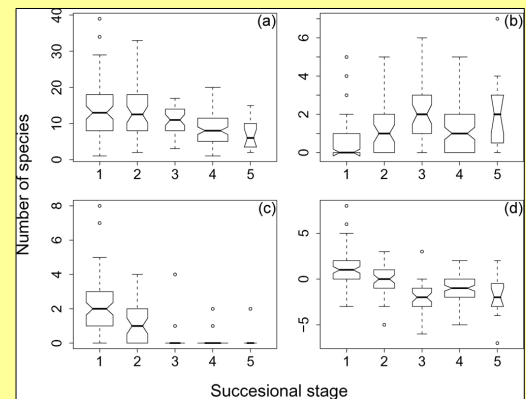


Regression tree of number of **synanthropic species** recorded in sampling plots of three studied cities.

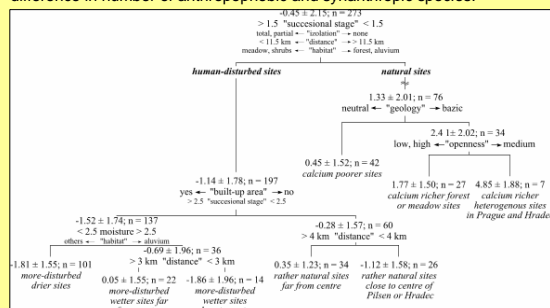


Regression tree of number of **anthropophobic species** recorded in sampling plots of three studied cities.

The longitude was important factor and the most frequent splitter for the number of synanthropic species. For example *Oxychilus draparnaudi*, a non-native synanthropic snail was common only in Prague. Forest environment in SW Prague host more anthropophobic species (for example *Euconulus fulvus*, *Vertigo substriata*) than open habitats in NW Prague (cf. distribution of *Chondrula tridens*).



Variation in number of species within each successional stage (1–5, from natural to human-disturbed sites). Abbreviations: (a), all species; (b), synanthropic species; (c), anthropophobic species; (d) difference in number of anthropophobic and synanthropic species.



Regression tree of difference in number of anthropophobic and synanthropic species recorded in sampling plots of three studied cities.

The response of local snail assemblages to urbanization can be generalized through a gradual decline of species richness. This pattern was mainly promoted by a sharp decrease of demanding anthropophobic species and simultaneously by relatively low number of alien species.

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