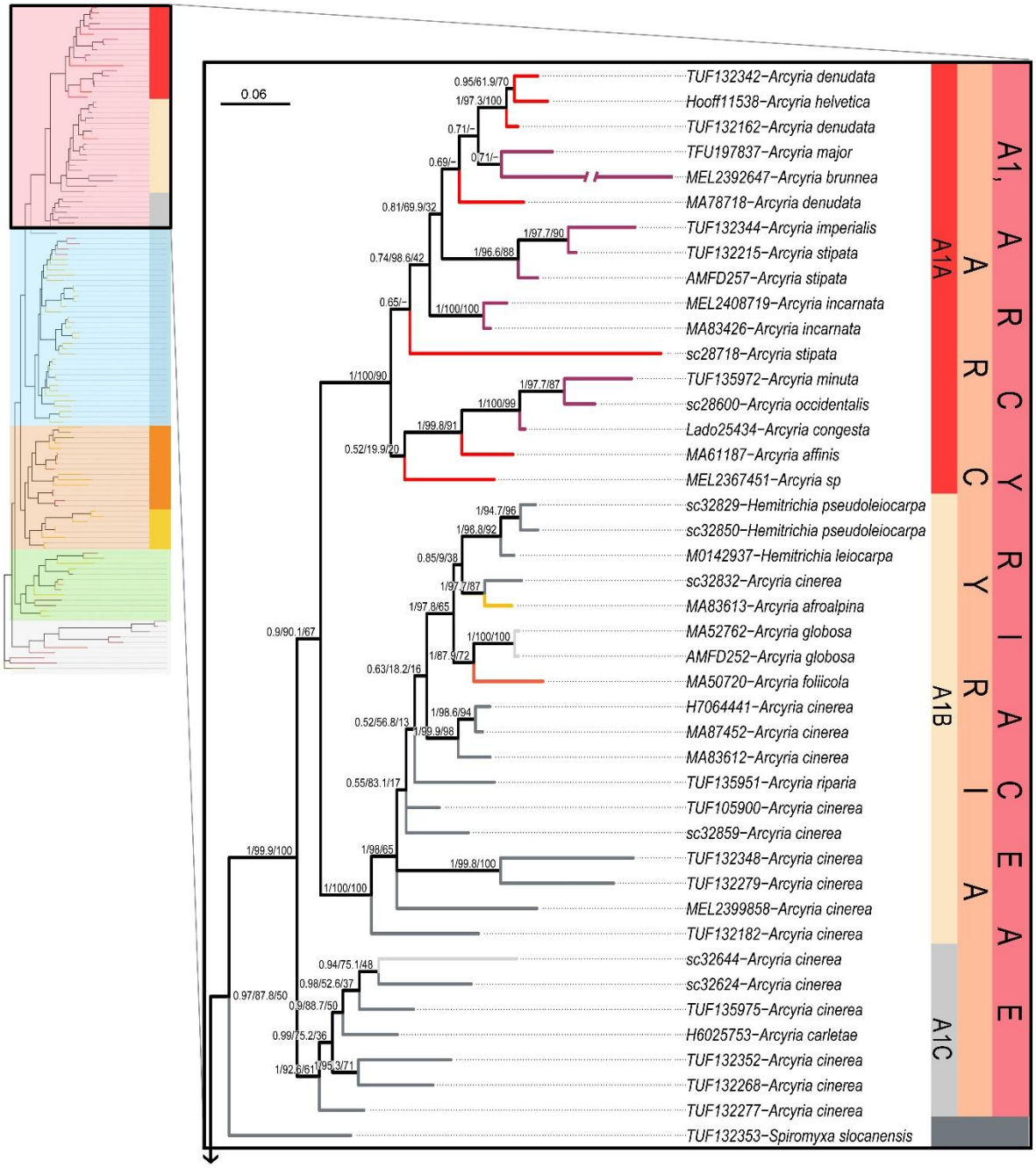
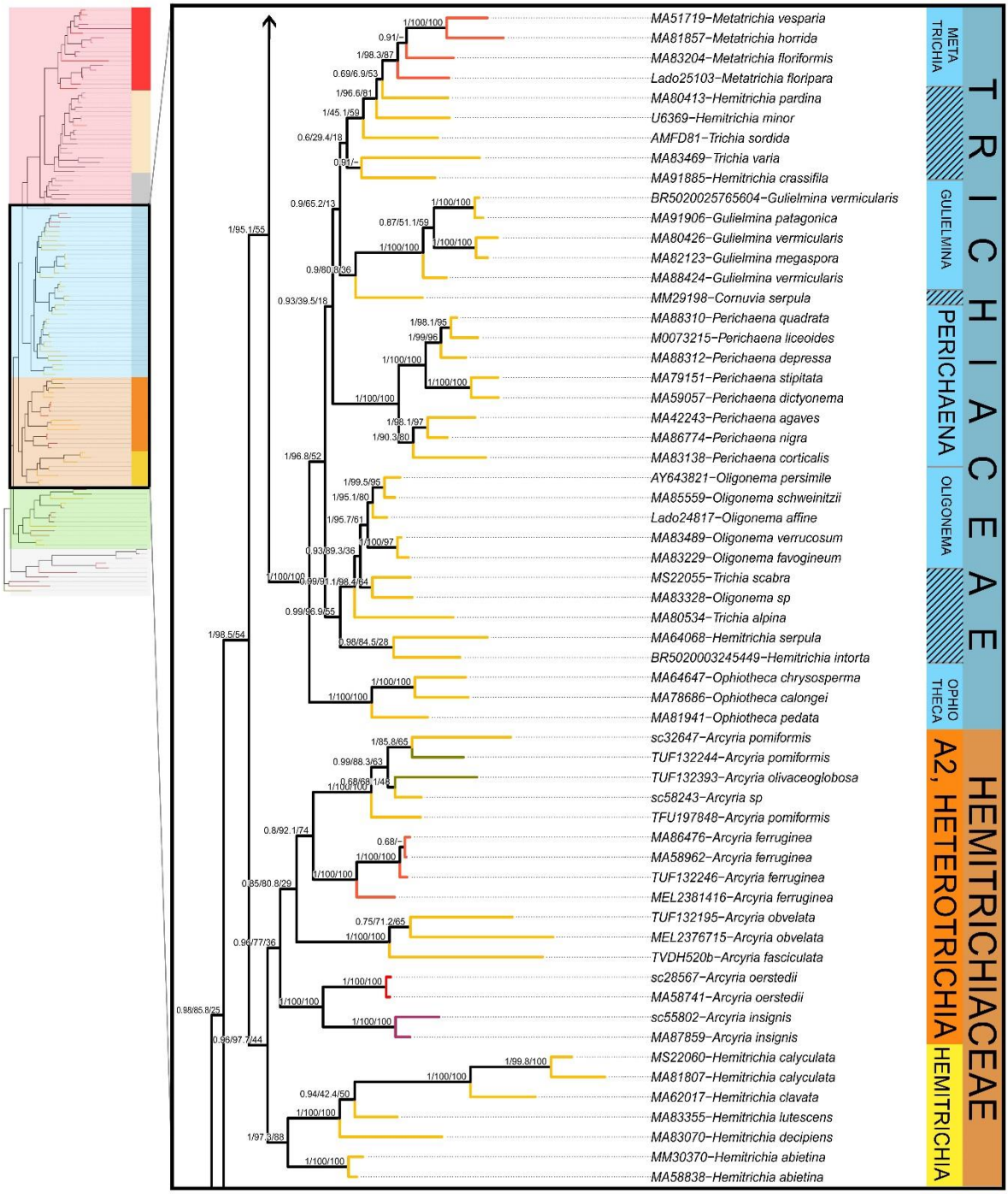

0.06
TUF132342−Arcyria denudata
Hooff11538−Arcyria helvetica
TUF132162−Arcyria denudata
TFU197837−Arcyria major
MEL2392647−Arcyria brunnea
MA78718−Arcyria denudata
TUF132344−Arcyria imperialis
TUF132215−Arcyria stipata
AMFD257−Arcyria stipata
MEL2408719−Arcyria incarnata
MA83426−Arcyria incarnata
sc28718−Arcyria stipata
TUF135972−Arcyria minuta
sc28600−Arcyria occidentalis
Lado25434−Arcyria congesta
MA61187−Arcyria affinis
MEL2367451−Arcyria sp
sc32829−Hemitrichia pseudoleiocarpa
sc32850−Hemitrichia pseudoleiocarpa
M0142937−Hemitrichia leiocarpa
sc32832−Arcyria cinerea
MA83613−Arcyria afroalpina
MA52762−Arcyria globosa
AMFD252−Arcyria globosa
MA50720−Arcyria foliicola
H7064441−Arcyria cinerea
MA87452−Arcyria cinerea
MA83612−Arcyria cinerea
TUF135951−Arcyria riparia
TUF105900−Arcyria cinerea
sc32859−Arcyria cinerea
TUF132348−Arcyria cinerea
TUF132279−Arcyria cinerea
MEL2399858−Arcyria cinerea
TUF132182−Arcyria cinerea
sc32644−Arcyria cinerea
sc32624−Arcyria cinerea
TUF135975−Arcyria cinerea
H6025753−Arcyria carletae
TUF132352−Arcyria cinerea
TUF132268−Arcyria cinerea
TUF132277−Arcyria cinerea
TUF132353−Spiromyxa slocanensis
A1A
A1B
A1C
A1, ARCYRIACEAE
ARCYRIA



Supplementary Figure 1. Three-gene phylogeny of *Trichiales* with the focus on the genus *Arcyria* (final tree, 178 leaves). The dataset was down-sampled to include only one representative sequence per terminal cluster of *Arcyria* s. l. produced in this study added to the alignment of García-Cunchillos *et al.* 2022. Bayesian consensus tree based on concatenated dataset of 18S, *EF-1α* and 17S sequences is shown and branch support values from IQTree analysis are added. Numbers at nodes before and after slash (/) indicate posterior probabilities/SH-aLRT/FBP support values respectively. Identical sequences were excluded from the tree. The colour of branches indicates the prevalent colouration of fruiting bodies. “Spiromyxa” designates a new genus and species *Spiromyxa slocanensis*, described below. Clades, marked here as A1a, A2b and A1c, correspond to the main evolutionary branches of *Arcyriaceae s. s.* (A1), while the clade A2 corresponds to the species which we transfer to the genus *Heterotrichia*.