

Disparate gain ad loss patterns

Supporting Information - S4 Fig - part A

Clade -12, Tylenchida - SSU rDNA

Bayesian inference incl sec struct

10,000,000 generations

Number of taxa: 1,089 + 10

Clade 12B

Beloniolaimidae
Ectoparasites

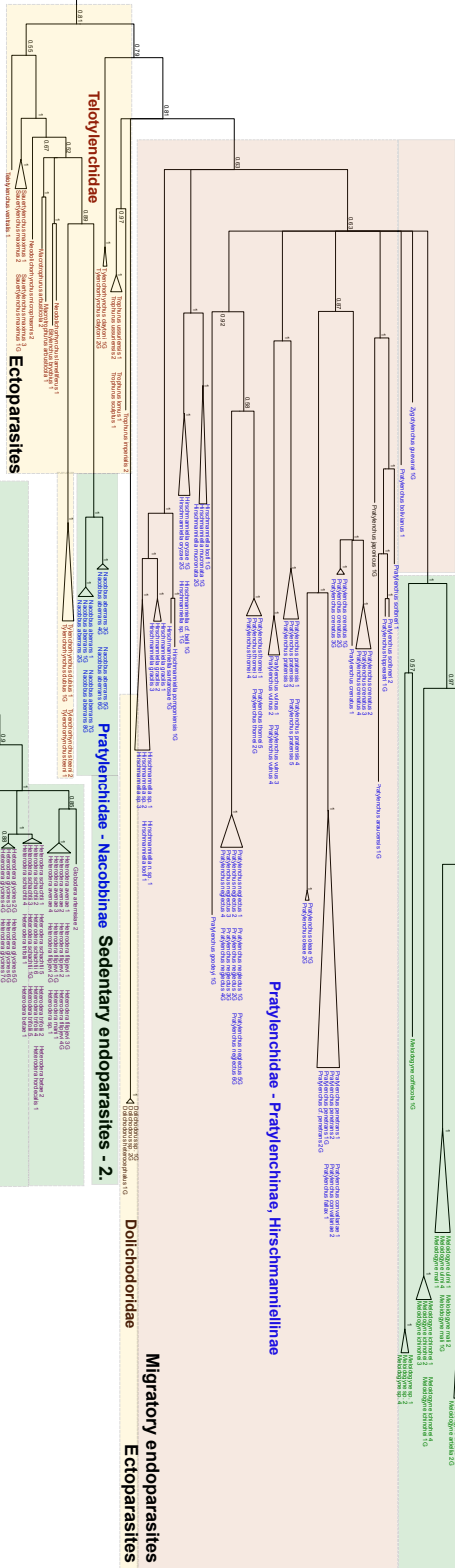
Beloniolaimidae
Ectoparasites

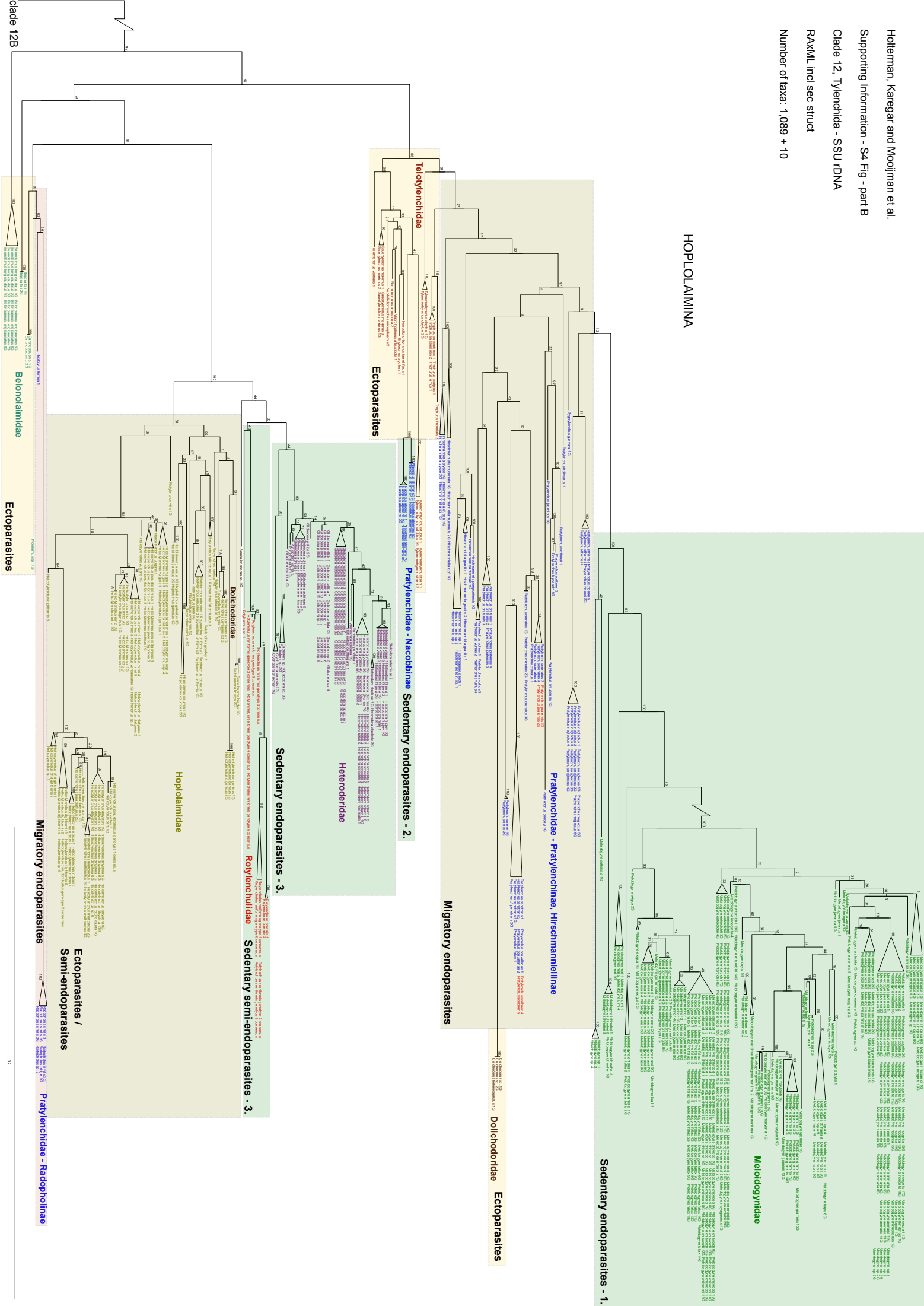
Ectoparasites

Migratory endoparasites
Semi-endoparasites

Ectoparasites /
Semi-endoparasites

Pratylenchidae - Radopholinae





Disparate gain and loss patterns

Clade 12, Tylenchida - SSU rDNA

10,000,000 generations

Phylogenetic tree showing relationships between various plant parasites and endoparasites. The tree is rooted at the bottom with a scale bar of 0.01. Major clades are highlighted in colored boxes:

- Migratory endoparasites** (red box): Includes *Pratylenchidae - Radopholinae* (blue box) and *Pratylenchidae - Meritiniinae* (orange box).
- HOPLOLAIMINA** (green box): Includes *Pratylenchidae - Meritiniinae* (orange box).
- Migratory endoparasites** (red box): Includes *Pratylenchidae - Meritiniinae* (orange box).
- Pratylenchidae - Meritiniinae** (orange box): Includes *Pratylenchidae - Meritiniinae* (orange box).
- Ectoparasites** (yellow box): Includes *Pellenchidae* (purple box).
- Pellenchidae** (purple box): Includes *Pellenchidae* (purple box).
- Ectoparasites, root hair feeders, algal, lichen or moss feeders** (pink box): Includes *Pratylenchidae - Meritiniinae* (orange box).
- facultative or obligate plant parasites (above-ground plant parts) / fungivores** (light blue box): Includes *Anguinidae* (light green box).
- Anguinidae** (light green box): Includes *Anguinidae* (light green box).
- Migratory endoparasites** (red box): Includes *Neotylenchidae* (dark red box).
- Neotylenchidae** (dark red box): Includes *Neotylenchidae* (dark red box).

The tree shows relationships between various genera and species, with bootstrap values indicated at the nodes. The tree is divided into several major groups:

- Migratory endoparasites** (red box): Includes *Pratylenchidae - Radopholinae* (blue box) and *Pratylenchidae - Meritiniinae* (orange box).
- Pratylenchidae - Radopholinae** (blue box): Includes *Pratylenchidae - Radopholinae* (blue box).
- Pratylenchidae - Meritiniinae** (orange box): Includes *Pratylenchidae - Meritiniinae* (orange box).
- Ectoparasites** (yellow box): Includes *Pellenchidae* (purple box).
- Pellenchidae** (purple box): Includes *Pellenchidae* (purple box).
- Ectoparasites, root hair feeders, algal, lichen or moss feeders** (pink box): Includes *Pratylenchidae - Meritiniinae* (orange box).
- facultative or obligate plant parasites (above-ground plant parts) / fungivores** (light blue box): Includes *Anguinidae* (light green box).
- Anguinidae** (light green box): Includes *Anguinidae* (light green box).
- Migratory endoparasites** (red box): Includes *Neotylenchidae* (dark red box).
- Neotylenchidae** (dark red box): Includes *Neotylenchidae* (dark red box).



Clade 12A HOLOCLAIMINA

Ectoparasites

Telotylenchidae - Meritiniinae

Migratory endoparasites

"Pratylenchidae - Radopholinae"

Psilenchidae Ecoparasites, root hair feeders, algal, lichen or moss feeders

Migratory endoparasites

Anguinidae facultative or obligate plant parasites (above-ground plant parts) / fungivores

Neotylenchidae

Neotylenchidae

Insect parasites / sedentary endoparasites - 4.

HEXATYLINA

Parasytylenchidae

Altiomematidae

Ictonchidae

Insect parasites, most members feed on fungi and/or higher plants as well

CRICONEMATINA

Calosidae

Hemicyclophoridae

Criconematidae

Paratylenchidae

Ectoparasites

Sedentary endoparasites - 5.

Sphaeromatidae

Ecphyadophoridae

Tylenchidae

Tylenchidae - Boleodoriinae

Tylenchidae

Tylenchidae

Tylenchidae

Tylenchidae

Tylenchidae

Tylenchidae

Tylenchidae

Tylenchidae

Tylenchidae

Disparate gain and loss patterns

Supporting information S4 Fig - part D

Clade 12, Tylenchida - SSU rDNA

RAXML incl sec struct

Number of taxa: 1,089 + 10 (Fig. 4A, B-2)