

Note on the status of taxa near *Dactylotula* (Tribus Anomologini or Apatetrini)

(Lepidoptera: Gelechiidae)

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In the phylogenetic analysis by Corley et al. (2020), based on short sequence fragments ('barcodes') of the mitochondrial gene *Mt-CO1* (this gene encodes subunit I of cytochrome c oxidase), the genera *Mondeguina*, *Apatetris* and *Dactylotula* each form statistically well-supported monophyletic groups. The genus *Catatinagma* is also a monophyletic group in the analysis, albeit with weaker statistical support. The Australian genus *Epiphthora*, on the other hand, is not monophyletic in the analysis.

The problem here is that the genus *Apatetris* is currently not sufficiently defined. The type species of *Apatetris* Staudinger, 1879 (p. 316) is *Apatetris mirabella* Staudinger, 1879 (p. 317–318), the identity of which is unclear. Until its identity has been clarified, it is impossible to determine whether any other species is congeneric with *Apatetris mirabella* or not: this automatically means that *Apatetris* can currently contain only a single species, namely the type species *Apatetris mirabella*. It is, of course, also impossible to place *Apatetris mirabella* within nomenclaturally younger genera, such as *Catatinagma* Rebel, 1903; moreover, the younger genus would then additionally become a younger synonym of *Apatetris*. This renders the identity of the monophyletic group 'Apatetris' in Corley et al. 2020 unclear: as the analysis did not include the type species of *Apatetris*, this monophyletic group cannot be assigned to the genus *Apatetris*, as the authors correctly note in their discussion. I carried out an analysis similar to that of Corley et al. 2020 using the available 'barcode' sequences, and I also used a representative of the genus *Epidola* to root the tree (Fig. 1).

However, I did not use any sequences from *Epiphthora*, as the analysis by Corley et al. (2020) was already unable to classify them and they may not belong to the phylogenetic group at all. In my analysis, the sequences from *Mondeguina* and *Dactylotula* specimens also form monophyletic groups, with the exception of the *Mondeguina mediterranea* sequence MW378660, which may indicate a misidentification. The sequences from *Catatinagma* and *Metanarsia* specimens form

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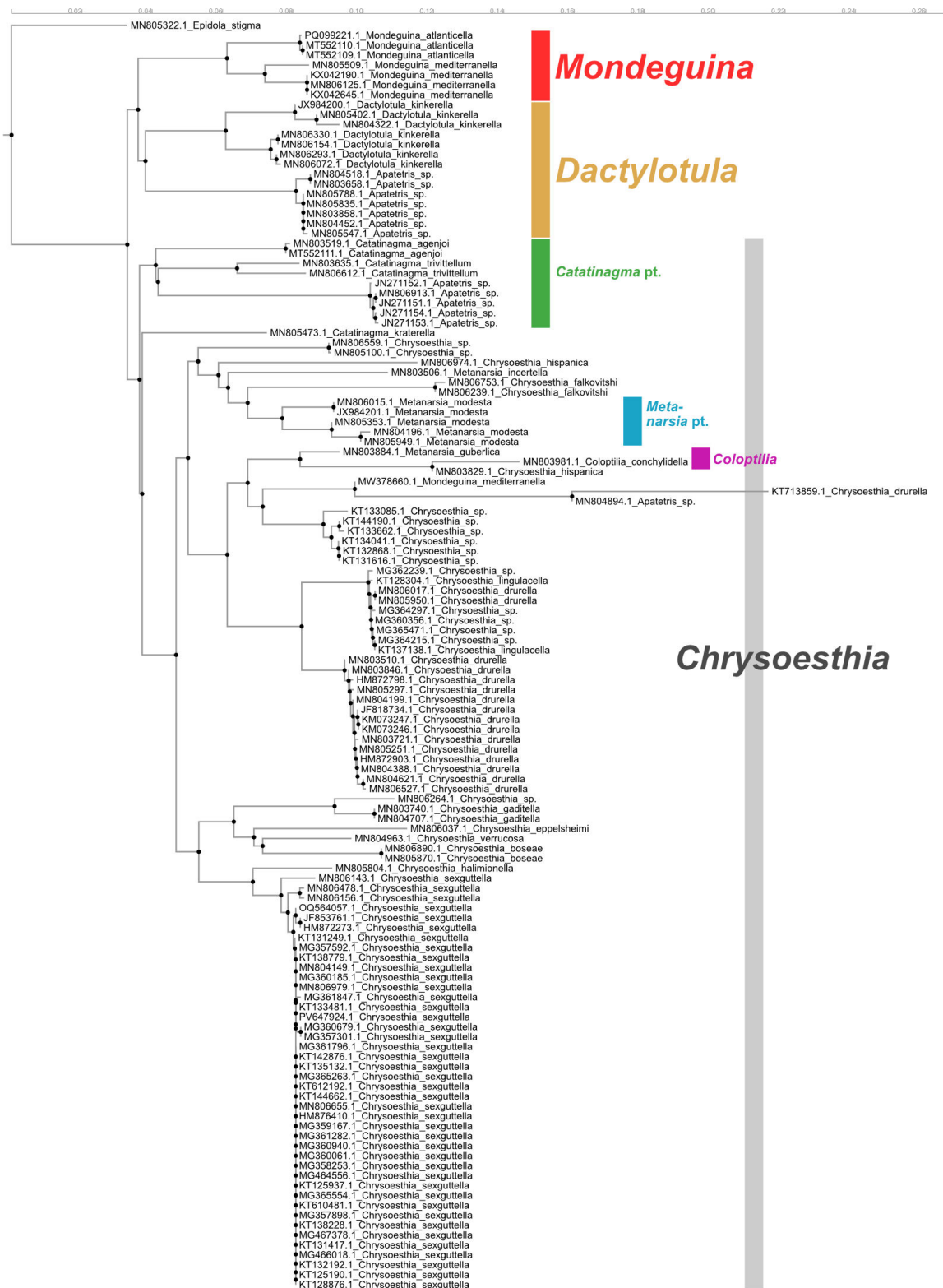


Fig. 1 (legend on next page)

Fig. 1 (on previous page): Phylogenetic tree of sequence fragments of the mitochondrial gene *Mt-COI* from individuals of the genus *Dactylotula* and related taxa. The information content of the sequence fragment (usually less than 700 bp, known as a ‘DNA barcode’) is severely limited due to its short length. However, in closely related species (as in this case), a phylogenetic signal can often still be recovered. For the phylogenetic tree, the genetic distance between the sequence fragments was calculated (the scale at the top indicates the extent of genetic variation). Distance-based methods are only meaningful for DNA sequences that evolve according to the molecular clock; this applies to only a few genes, but is approximately the case for the *Mt-COI* gene. The distance calculations shown are based on a sequence alignment performed using Clustal Omega (Sievers & Higgins 2021; Madeira et al. 2024). The phylogenetic tree was rooted using the species *Epidola stigma*. The letter-number combinations shown in the phylogenetic tree are the accession numbers of the respective sequences in GenBank (Sayers et al. 2022). The species names given in the figure are those used in GenBank.

monophyletic groups only partially; overall, they (along with *Coloptilia*) are subsumed within a monophyletic supergroup that can be regarded as *Chrysoesthia* in the broader sense. The sequences listed in the database simply as “*Apatetris* sp.” do not form a monophyletic group in my analysis, but are scattered throughout the phylogenetic tree. If future work would show that the type species of *Apatetris* falls within the *Chrysoesthia* group, then *Apatetris* would be a junior synonym of *Chrysoesthia*. Should the type species, however, fall within the *Dactylotula* or *Mondeguina* group, then *Dactylotula* or *Mondeguina*, respectively, would become a junior synonym of *Apatetris*.

If we disregard the genera *Oecocecis* Guenee, 1870, *Amblypalpis* Ragonot, 1886, *Anomologa* Meyrick, 1926 and *Lanceoptera* Janse, 1960 (for which there are currently no publicly available ‘barcode’ sequences), the systematics of the tribe Anomologini Meyrick, 1926 or Apatetrini Le Merchant, 1947, in my view, can be summarised as follows:

- (1) Genus inquirendum: *Apatetris* Staudinger, 1879
- (2) Genus *Mondeguina* Corley et Rosete (in Corley, Rosete et Ferreira), 2020
- (3) Genus *Dactylotula* Cockerell, 1888
 - = *Dactylota* Snellen, 1876 (preoccupied homonym)
 - = *Dactylotula* Cockerell, 1888 (replacement name)
 - = *Didactylota* Walsingham, 1892 (replacement name)
 - = *Rotundivalva* Janse, 1951
- (4) Genus *Chrysoesthia* Hübner, 1825
 - = *Microsetia* Stephens, 1829

- = *Chrysia* Bruand d'Uzelle, 1851
- = *Nomia* Clemens, 1860 (preoccupied homonym)
- = *Chrysopora* Clemens, 1860
- = *Nannodia* Heinemann, 1870
- = *Metanarsia* Staudinger, 1871
- = *Calyptrotis* Meyerick, 1891
- = *Colopteryx* Hofmann, 1898 (preoccupied homonym)
- = *Catatinagma* Rebel, 1903
- = *Anaphaula* Walsingham, 1904
- = *Epipararsia* Rebel, 1914
- = *Parametanarsia* Gerasimov, 1930
- = *Coloptilia* Fletcher, 1940 (replacement name)

The taxon *Coloptilia* has been synonymized with *Catatinagma* previously (see Junnilainen & Nupponen 2010).

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