This manuscript addresses the phylogenetic placement of two representatives of the hydrozoan group Aplanuta using a comprehensive taxonomic sampling and set of molecular markers. This work provides robust evidence for the placement of *Margelopsis hartlaubii* and *Margelopsis haeckelii* within Boreohydridae and Corymorphidae, respectively. Additionally, this manuscript re-examines the nomenclature of the two species and provide morphological evidence consistent with their new phylogenetic positions.

Overall, the text is clear although the discussion requires some rephrasing and additional context to support the points addressed in the section. The discussion would benefit from a more structured analysis of the life history traits within the group according to the findings presented in this manuscript.

All the information regarding the data used in this study are clearly provided in the main text, references are properly cited, and the figures and tables clearly show the results.

The use of a comprehensive set of molecular markers to resolve the relationships within Aplanulata is one of the major strengths of this study. The monograph of *Ploctonide* is detailed and sets the ground for future taxonomic work within Aplanulata.

I have three major comments and several minor comments.

The discussion section contains several inferences on the evolutionary scenarios of various traits within Aplanulata. Words such as “appearance” suggest that the trait evolved within the said group. There is no mention of any ancestral character state reconstruction in this manuscript. Whether the authors rely on parsimony or other ancestral state reconstruction approaches, I strongly recommend a figure/analysis that summarizes the evolutionary scenario of the traits mentioned in the discussion section (presence absence of life cycle stages, pelagic vs benthic, apical canal...etc). Since the existence of some life cycle and/or associated traits are unknown, a thorough analysis of the ancestral state would strengthen the discussion section of the manuscript.

The evidence for the invalidity of *M.gibbesii* are a bit unclear. From the discussion it appears that a previous study has challenged the validity of *M.gibbesii* but the species name was maintained due to its location. It is essential to clarify whether the location was the only diagnostic feature of *M.gibbesii*. *Margelopsis* individuals collected on either side of the Atlantic could indeed belong to *M.haeckelii*. It is crucial to indicate whether the collected Margelopsis had *M.gibbesii* diagnostic features (if there is such trait) in order to interpret the p-distances.

The potential discrepancy between the different analyses should be discussed. From the methods, it appears that the maximum likelihood analyses were carried out using either the four markers independently or the concatenated markers/genes. Since the single gene analyses are mentioned in the manuscript they should be discussed in the main text.

Minor comments:

Line 55: “however it usually happens by accident”. Requires a reference.

Line 65-66 : “The systematics and phylogenetic position of Margelopsidae is solely based on insufficient morphological data”. Requires the nature of the morphological data and why they are insufficient.

Line 67: “but their unique for Tubularioidea medusa”. A word is missing.

Line 82: “It is thought that eggs of this species are parthenogenetic, as no male gonads have ever been reliably documented”. Requires a reference.

Line 118-121: The conditions of the lysis need to be specified (amount of samples, sample type, source of the proteinase K, duration of the lysis and temperature of the reaction). Centrifugation conditions for the pelleting of the gDNA.

Line 140: “Illumina NovaSeq 6000 SP flow cell to produce 150-bp paired-end reads”

Line 145: “in” is repeated.

Line 180-182: “Combined of Bayesian and Maximum Likelihood bootstrapping (MLB) analysis of the concatenated dataset recovered a relatively well resolved tree and recovered”. This sentence needs rephrasing. It is unclear what this sentence is meant to say. Maybe “Both the Bayesian inference and maximum likelihood analyses of the concatenated dataset recovered relatively…”?

Line 191: “including the type species Euphysa aurata Forbes, 1848, and the other for Corymorpha”. Font size

Line 206-207: “forms a clade”, “which is nested”

Line 224: “,at sea, ”

Line 226: “In phylogenetic tree E. hexanemalis groups with colonial Eirene spp., inhabiting bottom biotope (Maronna et al., 2016).” The source/nature of the tree needs to be specified at the beginning of the sentence.

Line 226: “The corymorphid hydroid”

Line 229: “because of its supposed free, unattached habit”. Life style would be more fitting than “habit”

Line 234: “The species can reproduce itself asexually by means of transverse fission of the hydrocaulus, and can secrete new periderm if it is torn out of the old one.”. Requires a reference.

Line 251: “for the medusa of”

Line 252: “, which has 4 equally developed tentacles,”

Line 267: “with two whorls of tentacles and a poorly developed”

Line 271-276: If appearance is meant as “acquisition”, a proper ancestral character state reconstruction is required. Otherwise “presence” should be used instead.

Line 286: “XX century”. Number omitted.

Line 285-288 “In course of this concept some genera-names, used in XX century, are currently considered synonyms of Corymorpha: Euphysora, Gotoea, Steenstrupia, Vannuccia having medusae, and Amalthaea, Monocaulus, Lampra having reduced gonophores”. Needs to be clarified.

Line 299: “According to several molecular phylogenies, some”

Line 301: Worms should be cited properly: (WoRMS Editorial Board, 2022) in the main text and “WoRMS Editorial Board, 2022. World Register of Marine Species. Available from http://www.marinespecies.org at VLIZ.” In the reference list.

Line 345-347: “In typical Corymorpha species (such as C. nutans) hydrocauline cavity filled by parenchymatic endoderm with numerous peripheral longitudinal canals.” This sentence does not contain any verb. Some rephrasing is recommended.

Line 352: “The medusa of”

Line 358-359 “Apparently, the small simply arranged polyps of M. haeckelii are close related to the basal state for these clade”. needs to be clarified.

Line 364: “for more species of Corymorpha”

Line 399: “North Atlantic are the same species as”

Figure 1: In the legend, “medusa bud, ot ”

For the pictures of the animals, a scale bar is required.

Figure 2: In the legend, “bootstrap values (ML>70).. Margelopsis haeckelii”. Need to remove a dot.

The asterisks to indicate the location of the collected animals are not on the figure.