

Submission date. 02/01/2026

Associate editor's decision after peer review (11/03/2026).

Dear Dr. Loureiro:

Manuscript ID NI-2026-0001 entitled "Do not be fooled by pigmentation. Integrative taxonomy in the annual fish *Acantholebias* (Atheriniformes: Rivulidae)" which you submitted to the Neotropical Ichthyology, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) have recommended publication, but also suggest some revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript.

To revise your manuscript, log into <https://mc04.manuscriptcentral.com/ni-scielo> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision.

You may also click the below link to start the revision process (or continue the process if you have already started your revision) for your manuscript. If you use the below link you will not be required to login to ScholarOne Manuscripts.

*** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

https://mc04.manuscriptcentral.com/ni-scielo?URL_MASK=83e783cd778d4ba18a9eba163b2e2d91

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using the track changes mode in MS Word or by using bold or colored text. Once the revised manuscript is prepared, upload BOTH versions (the tracked and a clean) and submit them through your Author Center.

When submitting your revised manuscript, you will be able to respond to the comments in the space provided. You can use this space to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please reply POINT TO POINT all the suggestions of the reviewers and be as specific as possible in your response to the comments.

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Because we are trying to facilitate timely publication of manuscripts submitted to the Neotropical Ichthyology, your revised manuscript should be submitted before 11-May-2026. If it is not possible for you to submit your revision by this date, we may have to consider your paper as a new submission.

Once again, thank you for submitting your manuscript to the Neotropical Ichthyology and I look forward to receiving your revision.

Sincerely,

Dr. Paulo Lucinda

Associate Editor, Neotropical Ichthyology
lucinda@uft.edu.br

Anonymous reviewer #1

Recommendation. Minor Revision

Comments.

I recommend acceptance after minor revision. I think this is a well-constructed and well-reasoned species description of two species in a rather diverse group. I have only a few modest comments that could be considered "larger" and multiple small changes. For my larger-scale comments:

I strongly recommend revising the title. The "Do not be fooled by pigmentation:" lead

in isn't entirely concordant with the manuscript. There are pigmentation differences cited as diagnostic for one of the species. I'm fine with a colloquial lead in, but it needs to fit a little better. Maybe something like "It is not always pigmentation:" or "Color pattern may not be the key to species:" something else like that.

Somewhere in the discussion there needs to be some consideration of the effect of using only maternally inherited mitochondrial data. Mitochondrial phylogenies match species phylogenies when there has been enough time for lineage sorting to occur and when hybridization hasn't been occurring. Are both these conditions likely met? What does this mean (if anything) for your conclusions, especially since you discuss hybridization has occurred.

Unless it is not a concern for typesetting with Neotropical Ichthyology, 12 figures is a lot. Figures seven to ten could probably be combined from four figures into two figures. In fact the side by side comparison of having the images in Figures 9 and 10 together in the same figure will allow easier comparison. Also Figure 12 might be combined with Figure 1.

All my other revisions are small scale and are as follows:

p. 1 Lines 49 and 50. Change to "One new species is diagnosed by a combination of chromatic and squamation patterns, and the other is diagnosed by..."

p. 1 Line 57. Change to "between the Lower Uruguay..."

p. 2 Lines 47–51. Change "Alonso et al. (2023), elevated to genus status the subgenera of *Austrolebias* proposed by Costa (2008)." to "Alonso et al. (2023) elevated the subgenera of *Austrolebias* to genera as was initially proposed by Costa (2008)."

p. 2 Lines 51–53. Change "In spite that some species of proposed new genera had incomplete character sampling (i.e. *Acrolebias*, where only morphology was considered in the type species)..." to "Despite the fact that some proposed new genera had incomplete character sampling (i.e., *Acrolebias*, where morphology was considered only in the type species)..."

p. 3 Line 5. Change to "Alonso et al.'s (2023) taxonomy.»

p. 3 second paragraph. For clarity in this paragraph you should use *Au.* and *Ac.* as the abbreviations because both *A.* genera are introduced at the beginning.

p. 3 Lines 25–26. Change to "males, bony support in contact organs in males, and a parasphenoid posterior process that broadens gradually."

p. 3 Line 46. Change "mainly to populations" to "mainly with populations"

p. 3 Line 51. Change "pattern in" to "pattern on"

p. 3 Line 57. Spell out the genus on its first use in a paragraph.

p. 4 Lines 13–17. Change to "Furthermore, in recent studies populations that are morphologically similar to *A. quirogai* (from here on *A. aff. quirogai*) were found upstream in Paso Aérias..."

p. 4 Line 18. Start a new sentence with "This challenges the identity of the species..."

p. 4 Lines 21–34. This section need substantial revision for clarity. It's also a very long sentence.

p. 4 Line 27. Change to "context, the Upper Rio Negro"

p. 4 Lines 39–43. Change to "We checked the identity of these populations using morphological, genetic, and geographic information, interpreting their highly variable chromatic patterns, and added insights about the putative historical events..."

p. 4 Line 46. Change to "two new species in the"

p. 4 Line 50. Change to correspond to normal variation in *A. quirogai*, and confirm that uniformly pigmented males..."

p. 5 Line 5. I thought Neotropical Ichthyology used "Table" not "Tab." In text. Use whatever the standard is.

p. 5 Line 8. Change to "Loureiro and Garcia"

p. 5 Line 9. Change to "Dingerkus and Uhler"

p. 5 Lines 18–19. Change to "D'Anatro and Loureiro"

p. 5 Line 60. I thought Neotropical Ichthyology used "Table" not "Tab." In text. Use whatever the standard is.

- p. 7 Line 8. Change to “uniformly pigmented”
- p. 7 Line 19. What does “different” mean? Does this mean haplotypes from different geographic areas or something else?
- p. 7 Line 30. Change to “The phylogenetic tree”
- p. 8 Line 11. Change “Morphometry” to lower case “morphometry”
- p. 8 Line 14. Change to “associated with head shape”
- p. 8 Line 38. Change to “which are present in the remaining...”
- p. 8 Line 54. Change to “Female pigmentation”
- p. 9 Lines 11–13. Change to “we consider *A. aff. quirogai* and *A. aff. luteoflammulatus* 1 to be two new species of *Acantholebias*.”
- p. 10 Lines 16–20. Change to “pigmentation of the male flank vs. males with vertical bands in all individuals of *A. luteoflammulatus* (except a few individuals...)”.
- p. 10 Line 21. Change to “; abdominal” (remove “an”)
- p. 10 Line 23. Change to “This species also has a lower number...”
- p. 11 Line 15. Change to “first anal-fin ray.” (add the hyphen)
- p. 11 Line 18. Change to “Males with bluish gray”
- p. 11 Line 25. Change to “same color as body”
- p. 11 Line 30. Change to “band light gray, inconspicuous.” (add the comma)
- p. 11 Line 48. Spell out the genus on its first use in a paragraph.
- p. 12 Line 3. Change to “are subject to *Eucalyptus* spp.” (change verb and add period)
- p. 12 Line 5. Change to “subject to unregulated collection”
- p. 12 Line 10. Change to “these reasons we recognize the new species as Critically...”
- p. 12 Line 18. Change to “Specific epithet is a patronym.”
- p. 13 Line 37. Change to “vertical bar on the posterior portion” (add the)
- p. 13 Line 53. I thought Neotropical Ichthyology used “Table” not “Tab.” In text. Use whatever the standard is.
- p. 14 Line 41. Change to “to first anal-fin ray.” (add the hyphen)
- p. 14 Line 43. Change to “Males with bluish gray body”
- p. 15 Line 5. Change to gray, inconspicuous.”
- p. 15 lines 20–22. Change to “is distributed in temporary ponds in the Atlantic...”
- p. 15 Line 28. Change to “associated with flood plains”
- p. 15 Line. 30. Change to “suburban” (one word)
- p. 15 Lines 41–43. Change to “we consider the new species to be considered Critically endangered...”
- p. 15 Line 50. Change to “Specific epithet is a patronym.”
- p. 16 Line 11. Delete line 11. Start the sentence with “Morphological, molecular,”
- p. 16 Lines 16–18. Change to “within the *Austrolebias* genus group”
- p. 16 Lines 21–23 Delete “that could have occurred”
- p. 16 Line 29. Change “inconveniences,” to “difficulties,”
- p. 16 Line 29. Change to “that the combination of single locus...”
- p. 16 Line 36. Change to “have allowed detection of new taxa and populations...”
- p. 16 Lines 41–43. Change to “, which suggests using them with caution”
- p. 16 Line 46. Change to “showed an intraspecific distance”
- p. 17 Line 3. Change to “A high level of differentiation...”
- p. 17 Line 5. Spell out the genus on its first use in a paragraph.
- p. 17 Line 31. Change to “intrinsic such as genomic.”
- p. 17 Lines 31–33. Revise this sentence for clarity.
- p. 17 Lines 43–45. Change to “robust drivers of sexual selection in many fish groups...”
- p. 17 Lines 52–54. Delete “As was already mentioned,” Saying this means you should not be saying something you already said OR you’re assuming the reader has not read the prior paper.
- p. 18 Line 23. Change to “occurrence of great”
- p. 18 Line 25. Change to “this genus could be occurring”
- p. 18 Line 28. Change to “, which has a similar genome size to those...”
- p. 18 Line 35. “Cichlid” should be lower case.

- p. 18 Line 37. Change to “translocations, and alteration of gene regulation...”
 - p. 18 Line 40. Change to “associated with interspecific hybridization”
 - p. 18 Line 44. Change to “dynamics associated with”
 - p. 18 Line 47. Change to “hybridization events also have been documented between the species” (don’t need to say related because are in the same genus, and all living things are related)
 - p. 19 Line 3. Spell out the genus on its first use in a paragraph.
 - p. 19 Line 3. Change to “between the symbiotic” (delete two).
 - p. 19 Line 10. Change to “should be associated with climatic changes”
 - p. 19 Line 21. Change to “The newly described...”
 - p. 19 Line 35. Change to “time of divergence is twice the age of the Pleistocene...”
 - p. 19 Line 37. Change to “area from the last 400K years.”
 - p. 19 Line 50. Change to “is more closely related to”
 - p. 19 Line 53. Change to “of the middle Cebollati river...”
 - pp. 19–20. I’m unclear about what the “funnel” is referencing. Clarify in text.
 - p. 20 Line 21. Change to “also has shown that at least...”
- [Note that this program removed italics.]

Anonymous reviewer #2

Recommendation. Major Revision

Comments.

Dear authors,

The manuscript is well conducted, integrating both morphological and molecular evidence to support the proposed taxa. The species descriptions are adequate, and the geometric morphometric and species delimitation analyses are sound.

Although the overall sequence of the Results section is acceptable, the use of tentative species names prior to their formal description may cause confusion, particularly when linking the new names to the DNA analyses and distribution maps presented earlier in the manuscript. Reordering these sections could help improve the clarity and overall comprehension of the text, because the tentative name can be changed to the new names.

The writing is generally clear, and I have suggested minor corrections to improve clarity and consistency. I noticed that some references highlighted in yellow require an abbreviation.

Please see the attached files for detailed comments.

Author’s Rebuttal Letter (13/05/2026).

Dear Editor,

We much appreciate the reviewers comments and corrections. We made all minor corrections suggested. Further, as suggested by R1 we changed the title of the manuscript, we included a comment in the discussion about mitochondrial markers limitations in the context of this manuscript, and reduced the number of figures as suggested. This reduction was also made in a way to contemplate R2 suggestion to reorder the Results section for more clarity. This was done by always mentioning species in the same order as presented in the introduction. Also we moved the distribution map as the last figure (with corrected species names in the legend), we fused both figures of males and females about pigmentation patterns, and also fused in one figure the photos of the type specimens of the two new species. We hope these changes improve the manuscript clarity and extension.

Thanks a lot for your attention.

Sincerely

Marcelo Loureiro

Associate editor's decision after peer review (06/07/2026).

Dear Dr. Loureiro:

It is a pleasure to accept your manuscript entitled "The uniform, the banded, and the polymorphic. Integrative taxonomy in the annual fish *Acantholebias* (Atheriniformes: Rivulidae)" in its current form for publication in the Neotropical Ichthyology.

Congratulations for the acceptance of your article, and be aware on the following topics:

1. Publication Fee

NI will charge a publication fee if none of the co-authors is an active SBI member. This measure is essential to strengthen SBI and thus ensure the continuity of our journal, scientific society, and biannual meetings. SBI is not limited to Brazilians but is open to anyone interested in freshwater and marine Neotropical fishes. More details on SBI are available at <https://www.sbi.bio.br/>. Please email tesouraria.sbi@gmail.com to confirm whether any of your co-authors is a current SBI member and to activate your SBI membership if needed. Otherwise, if you will cover the publication fee of R\$1.000, please inform us at the same email. For authors outside Brazil, the fee will be converted to US dollars based on the official exchange rate on the date of payment. The only exceptions to this fee are invited articles.

2. Science Communication and Social Media

NI actively promotes published articles to both academic colleagues and the general public, including science journalists. To support this, we create social media posts and require images and/or videos of fish related to your work. If your article does not include such images, please send a photo of a representative fish species, preferably alive in its natural habitat. If you do not have your own photo, you may provide a link to an online image, along with the source, author, and, if applicable, authorization for its use. We also publish video summaries of articles in Portuguese on our Instagram (@neoichth). We ask you to designate one author to record a short video using a mobile phone, following the attached instructions. The video should include visual materials (photos, graphics) and a script for subtitles to enhance accessibility. Please email the completed material to our Social Media Editor, Igor Souto-Santos, at icass.uftrj@gmail.com within 30 days.

Additionally, if your article is taxonomic in nature and has been submitted to Zoobank, it is your responsibility to update the manuscript's status on Zoobank once it has been published.

All of the above information and materials are mandatory for the publication of your article, including the scientific dissemination component, which is crucial in the current climate of science denial and misinformation. If you have any questions, please feel free to contact us at neoichth@nupelia.uem.br.

Please send an e-mail to neoichth@nupelia.uem.br within five working days to let us know you are aware of all the important points mentioned above.

Thank you for your fine contribution. On behalf of the Editors of the Neotropical Ichthyology, we look forward to your continued contributions to the Journal.

Sincerely,

Dr. Paulo Lucinda

Associate Editor, Neotropical Ichthyology
lucinda@uft.edu.br

Neotropical Ichthyology



This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

Distributed under Creative Commons CC-BY 4.0

© 2026 The Authors.
Diversity and Distributions Published by SBI



Official Journal of the
Sociedade Brasileira de Ictiologia

HOW TO CITE THIS ARTICLE

- **Duarte A, Loureiro M, Ríos N, Serra W, Bessonart J, García G.** The uniform, the banded, and the polymorphic: an integrative taxonomy in the annual fish *Acantholebias* (Atheriniformes: Rivulidae). Neotrop Ichthyol. 2026; 24(3):e260001. <https://doi.org/10.1590/1982-0224-2026-0001>