

Revise the taxonomy of the Estrildidae

Background:

Estrildidae is a family of some 140 species of small finches that occur naturally in tropical areas of the Old World and in Australasia. We recognize twelve species of estrildid finch, all of which have been introduced, as established in the NACC area. The current linear sequence and generic assignments (Chesser et al. 2020) for these species are:

Lavender Waxbill *Estrilda caerulescens*
Orange-cheeked Waxbill *Estrilda melpoda*
Black-rumped Waxbill *Estrilda troglodytes*
Common Waxbill *Estrilda astrild*
Red Avadavat *Amandava amandava*
Bronze Mannikin *Spermestes cucullata*
Indian Silverbill *Euodice malabarica*
African Silverbill *Euodice cantans*
Java Sparrow *Lonchura oryzivora*
Scaly-breasted Munia *Lonchura punctulata*
Tricolored Munia *Lonchura malacca*
Chestnut Munia *Lonchura atricapilla*

New Information:

Olsson and Alström (2020) produced a dated multi-locus phylogeny (screenshot below, with species in our area highlighted in red) of the Estrildidae using 2 mtDNA and 3 nuclear markers from 103 species (70% of all species) and a mtDNA-only phylogeny with an additional 14 species (80% of all species). The multi-locus phylogeny was generally well supported and produced a very different linear sequence from that adopted in Chesser et al. (2019). Many unsampled species are considered subspecies by some authors, and the phylogeny includes all but one of the species in our area (*Lonchura malacca*). However, *Lonchura atricapilla* (which was sampled) was long considered conspecific with *L. malacca* by most authors until the publication of Restall (1996), and still is by some (Dickinson and Christidis 2014), and is almost certainly closely related, evidently hybridizing in parts of the eastern Indian peninsula (Rasmussen and Anderton 2005; but see Restall in SACC #368, which incorrectly states the apparent hybrids are in the AMNH, when the ones PCR has examined are in BMNH, as stated in Rasmussen and Anderton 2005).

The mtDNA-only phylogeny in Olsson and Alström (2020) was largely in agreement with the multi-locus phylogeny and was mostly used to place samples from GenBank that were not sampled in the multi-locus phylogeny. The taxa with topological disagreements between the two phylogenies, as well as the mtDNA-only samples, are all extralimital to our area and thus do not affect this proposal.

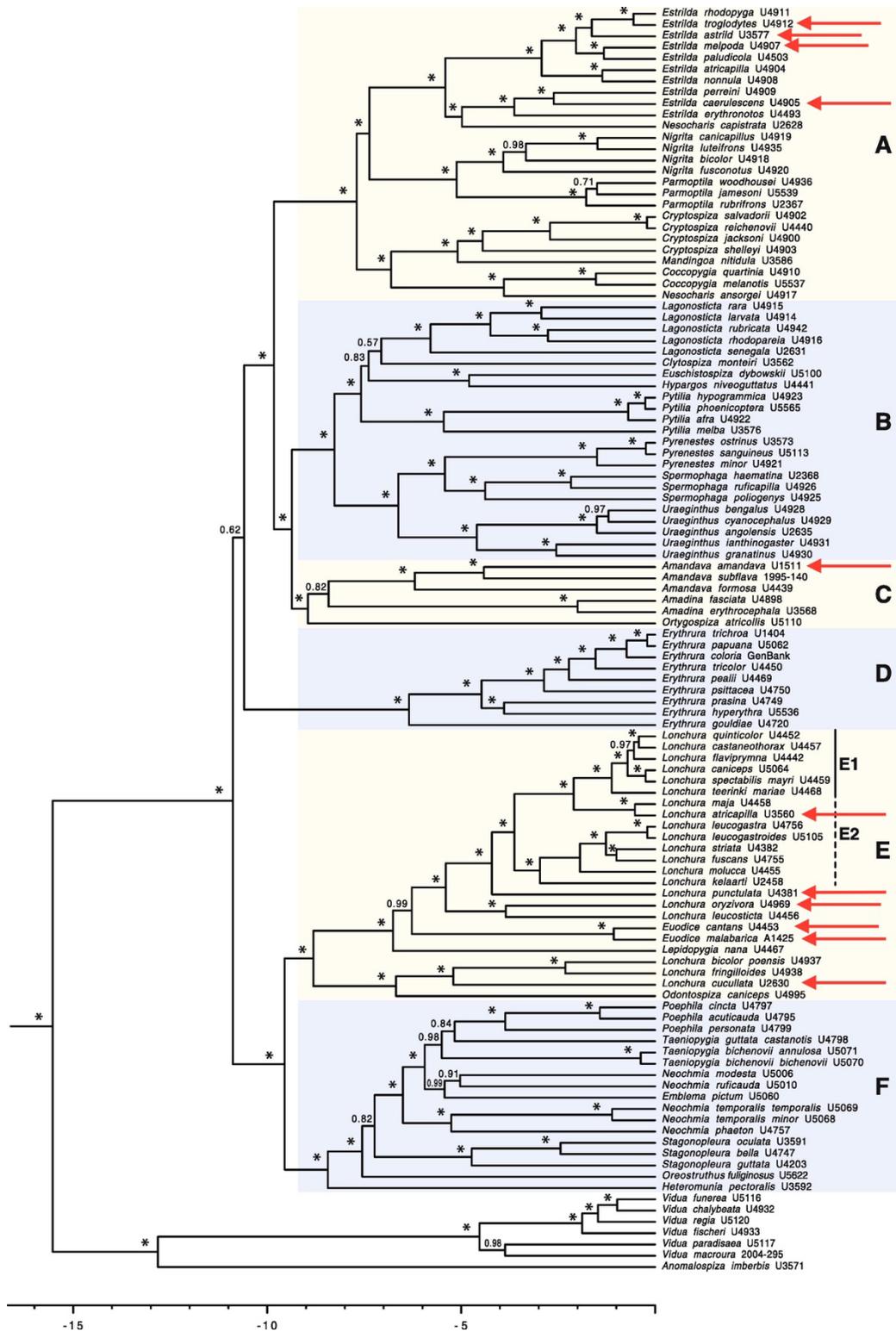


Fig. 1 from Olsson and Alström (2020). Phylogeny of Estrildidae inferred by BEAST based on sequences of the mitochondrial genes cytochrome *b* and ND2, and the nuclear introns fib5, G3P, myoglobin, ODC, and TGF. Red arrows indicate species present in the NACC area. One species in our area, *Lonchura malacca*, was not sampled but is closely related to *L. atricapilla*.

Olsson and Alström (2020) found non-monophyly at the genus level and deep divergences within recognized genera. They recommend generic reassignments to rectify the genus-level paraphyly and for divergent groups greater than ~4 million years old. All relationships described here received high support. Two cases are relevant to the species in our area:

Lonchura: The generic revisions of taxa in *Lonchura* Sykes, 1832; *Spermestes* Swainson, 1837; and *Euodice* Reichenbach, 1863 were considered by the committee in 2014 (proposal 2014-B-12). That proposal was based on more limited taxon sampling and less well-supported trees, but led to the splitting of *Spermestes* and *Euodice* from *Lonchura*, and the merging of *Padda* Reichenbach, 1850 into *Lonchura*. Most of those conclusions are supported by the data in Olsson and Alström (2020), except a previously hypothesized sister relationship between *Lonchura oryzivora* and *L. punctulata* (Arnaiz-Villena et al. 2009). These genera, along with extralimital monotypic genera *Lepidopygia* and *Odonospiza* (both sometimes subsumed in *Lonchura*), all form clade E. Although one option would be to place these genera in an expanded *Lonchura*, this would make the genus old (9 Ma) and quite morphologically diverse among Estrildidae. Olsson and Alström (2020) recommend recognizing *Spermestes*, *Euodice*, *Lepidopygia*, and *Odonospiza*, and also resurrecting *Padda* for the two morphologically distinctive species *oryzivora* and *fuscata* (the latter not sampled, but sister species according to Stryjewski 2015) and *Mayrimunia* Wolters, 1949 for the extralimital *leucosticta* and *tristissima* (the latter not sampled, but sister species according to Stryjewski 2015). In Olsson and Alström (2020), *oryzivora* is sister to *leucosticta*, and these are in turn sister to core *Lonchura*. Splitting *Padda* and *Mayrimunia* from *Lonchura* thus rests on the age of the clade (~5.5 Ma from core *Lonchura*) and the morphological distinctiveness of these species. The two species of *Padda* are relatively large and have prominent white cheek patches. The two species of *Mayrimunia* have contrasting pale buff rumps and streaked heads that are lacking in core *Lonchura*, and are vocally divergent, but are otherwise similar to *Lonchura* in size, shape, and color.

Estrilda: The Gray-headed Oliveback, *Nesocharis capistrata*, is embedded within *Estrilda*, and is sister to a clade of three predominantly gray-bodied species (*caerulescens*, *perreini*, and the unsampled *thomensis*) and two black-masked species (*erythronotos* and the unsampled *charmosyna*). This clade is sister to the remainder of *Estrilda*. Olsson and Alström (2020) recommend resurrecting *Glaucestrilda* Roberts, 1922 for the gray-bodied *Estrilda*, which for our area would change *Estrilda caerulescens* to *Glaucestrilda caerulescens*, as has already been done in Gill et al. (2020). The two other species of *Nesocharis* (including the type species) fall elsewhere in the phylogeny, and Olsson and Alström (2020) recommend resurrecting *Delacourella* Wolters, 1949 for *capistrata* and *Brunhilda* Reichenbach, 1862 for the two black-masked species, both recommendations also already enacted in Gill et al. (2020). The split between the proposed *Glaucestrilda* and *Brunhilda* is fairly shallow (~4 Ma), but the two clades do differ in morphology (largely gray-bodied vs pinkish-brown-bodied with black masks). An argument could be made for considering this a single genus, in which case *Brunhilda* has priority.

Effect on AOS-CLC area:

Following the recommendations below would lead to a new taxonomic arrangement and linear sequence, as follows:

Bronze Mannikin *Spermestes cucullata*
African Silverbill *Euodice cantans*
Indian Silverbill *Euodice malabarica*
Java Sparrow *Padda oryzivora*
Scaly-breasted Munia *Lonchura punctulata*
Tricolored Munia *Lonchura malacca*
Chestnut Munia *Lonchura atricapilla*
Red Avadavat *Amandava amandava*
Lavender Waxbill *Glaucetrilda caerulescens*
Orange-cheeked Waxbill *Estrilda melpoda*
Common Waxbill *Estrilda astrild*
Black-rumped Waxbill *Estrilda troglodytes*

There is a final issue related to the spelling of *Estrilda* [*Glaucetrilda*] *caerulescens*. According to a recent paper by David and Dickinson (2016), the specific epithet must be spelled *coerulescens*, as it is to be considered the original spelling after correction of the ligature, as verified by magnification. This has been adopted by del Hoyo and Collar (2016), but not by Gill et al. (2020) or A. Peterson of zoonomen.net. Other names affected by the proposed change have already been considered and voted down by SACC (#716) in favor of stability, given issues such as mistakes, apparent randomness, difficulties of interpretation of intent, differing fonts, and an opinion that if all such changes were adopted consistently, we would have to start referring to Linnaeus' "*Systema Naturae*"! Therefore, established usage can be invoked here to retain the spelling *caerulescens*. Note also that the same nomenclatural issue applies to *Geranoospiza caerulescens*, but that species was not voted on in SACC #716. (Thanks to David Donsker for information.)

Recommendation:

Votes are required on the following issues:

- a) Adopt the new linear sequence
- b) Transfer *oryzivora* to *Padda*
- c) Transfer *caerulescens* to *Glaucetrilda*
- d) Revert to the original spelling *coerulescens*

We recommend YES votes on a) adopting the new sequence, b) transferring *oryzivora* to *Padda*, and c) transferring *caerulescens* to *Glaucetrilda*. However, we recommend voting NO on d) reverting to the spelling *coerulescens* for *Glaucetrilda* [*Estrilda*] *caerulescens*.

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