Splits, lumps and shuffles

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This series focuses on recent taxonomic proposals—be they entirely new species, splits, lumps or reorganisations—that are likely to be of greatest interest to birders. The second instalment summarises papers relating to..... Get your lists out!

Two Resplendent Quetzals?

The Resplendent Quetzal *Pharomachrus mocinno* is perhaps the most celebrated Mesoamerican bird —two subspecies are currently recognised based on morphometric differences: *P. m. costaricensis* which includes those populations in Costa Rica and Panama, and *P. m. mocinno* which occurs from Mexico to El Salvador and Nicaragua. A new study by Sofía Solórzano and Ken Oyama[22] used both morphometric and molecular attributes to assess the taxonomic status of these two subspecies. Their analyses indicated the presence of two different morphometric and genetic groups that corresponded to the recognised subspecies, and individuals clustered according to their respective subspecies. The authors observe that the genetic divergence (close to 2%) between quetzal subspecies is similar to that described for other independent bird species and therefore propose that *P. mocinno* be divided into two species-level taxa: northern *P. mocinno* and southern *P. costaricensis*. Perhaps this represents a good example to test Joe Tobias's *et al*. new species limits criteria: that the two subspecies do not differ vocally may be a significant impediment to the widespread acceptance of this proposed split.

Another change in Trogon species limits

In a proposal accepted by the South American Classification Committee (SACC), Kevin Zimmer[26] suggested that the Amazonian subspecies of Violaceous Trogon *Trogon violaceus ramonianus/crissalis* should be split as a distinct species 'Amazonian Trogon'. This proposal follows the publication of genetic data by DaCosta & Klicka[7] indicating that Gartered Trogon *Trogon caligatus* is basal to a group that includes Amazonian *T. violaceus*, Blue-crowned *T. curucui* and Surucua Trogons *T. surrucura* (and that Amazonian *violaceus* may be paraphyletic with respect to the latter two species). In addition to the strong genetic and plumage data supporting this split (which are as strong as for splitting *ramonianus/crissalis* from *violaceus*), Kevin Zimmer observes that the vocal distinctions between *ramonianus/crissalis* and *violaceus* are greater and more marked than between *caligatus* and *violaceus* (although this has not been demonstrated quantitatively). Both *caligatus* and *ramonianus* were historically treated as full species (e.g. Cory[6]), before being lumped without justification by Peters[17] , which means that 'splitting out' the *ramonianus* group based on the genetic analysis and vocal differences would have the effect of restoring the historic plumage-based taxonomy and maintain consistency with the recent restoration of Gartered Trogon to species-level status. This decision makes biogeographic sense given that it splits a Guianan subspecies from a widespread, southern and western Amazonian subspecies in parallel with many other recently recognised splits such as Black-spotted Barbet *Capito niger* versus the *auratus* group and Guianan *Notharchus macrorhynchos* versus White-necked Puffbirds *N. hyperrhynchus/paraensis*.

Pseudasthenes: a new ovenbird genus....

The genus *Asthenes* currently contains 22 species of canasteros restricted to open areas in Andean and southern South American temperate and subtropical regions. However, the genus is extremely heterogeneous in terms of behaviour, ecology and nest architecture, which suggest that it may not be monophyletic. A phylogeny of the Furnariidae by Irestedt *et al*.[12], which included two species of *Asthenes* provided the first genetic

evidence of lack of monophyly in *Asthenes*. This paper indicated that Cactus Canastero *A. cactorum* is sister to the *Pseudoseisura* cacholotes, whilst Line-fronted Canastero *A. urubambensis* formed a clade with Itatiaia Spinetail *Oreophylax moreirae* and the *Schizoeaca* thistletails. Later, Gonzalez & Wink's[11] paper investigating the phylogeny of the Synallaxinae included three *Asthenes* and found that *A. cactorum* and Dusky-tailed Canastero *A. humicola* formed a clade that was sister to *Pseudoseisura*, whereas *A. urubambensis* formed a clade with *Schizoeaca* and *Oreophylax*. In order to try and answer this question, Elizabeth Derryberry *et al*.[8] conducted a new phylogenetic analysis of the family Furnariidae. Their results indicated that the genus *Asthenes* is polyphyletic and consists of two groups that are not sister taxa. Thus, they described *Pseudasthenes*, a new genus of ovenbird, for four species, namely Patagonian Canastero *P. patagonica*, Steinbach's Canastero *P. steinbachi*, *P. humicola* and *P. cactorum*.

White-throated Barbtail revisited

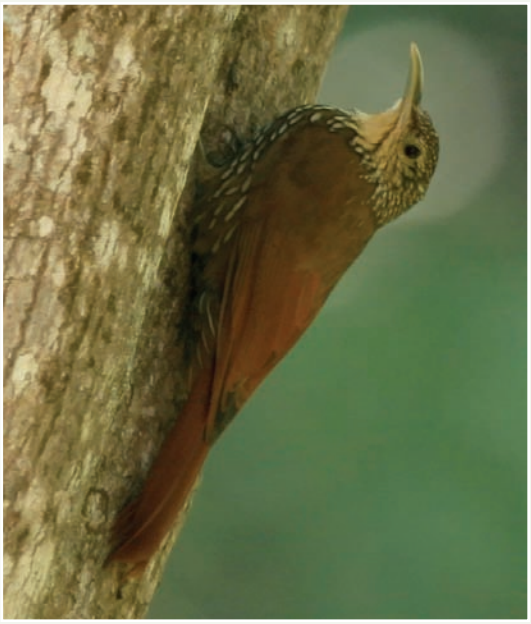
White-throated Barbtail *Premnoplex tatei* is a poorly known furnariid endemic to the north-eastern mountains of Venezuela - the Serranía of Turimiquire and the Paria Peninsula, where it is considered threatened by conversion of forest to agricultural land. It is isolated from the only other species in its genus, Spotted Barbtail *P. brunnescens*, which is widely distributed from Costa Rica to Bolivia (including the Coastal Cordillera in northern Venezuela). Despite being considered specifically distinct from its more widespread congener, in terms of plumage and morphology the differences between *P. tatei* and *P. brunnescens* are less than between many furnariid taxa currently ranked as subspecies. However, Nacho Areta[2] recently documented significant differences in both habitat use and vocal behaviour between these two species, which suggested that the specific status of *P. tatei* be maintained. To resolve this question, Jorge Pérez-Emán *et al*.[16] decided to reinvestigate its taxonomic status and phylogenetic relationships. Using mitochondrial and nuclear DNA sequences they not unexpectedly found *P. tatei* to be the sister species of *P. brunnescens*, but more interestingly they found that the genetic divergence between the two species is large compared to that within other genera of the Furnariidae. This hints at the possibility of other overlooked species-level taxa endemic to the mountains of north-east Venezuela which may be potential 'old splits' from closely related forms either in the Coastal Cordillera or the Pantepui Region - as is also the case in Paria Whitestart *Myioborus pariae*.

A new genus for Spot-throated Woodcreeper

Deconychura contains two woodcreeper species: Long-tailed Woodcreeper *D. longicauda* and Spot-throated Woodcreeper *D. stictolaema*. Long-tailed Woodcreeper comprises seven recognised subspecies occurring throughout Amazonia and disjunctly from northern Colombia north to Honduras. Spot-throated Woodcreeper comprises three subspecies and is restricted to Amazonia, where it is a relatively unobtrusive resident of *terra firme* forest. These two species were originally placed in different genera by Pelzeln[15] who assigned *D. longicauda* to *Dendrocincla* and *D. stictolaema* to *Sittasomus*. A molecular analysis by Elizabeth Derryberry *et al*.[9] determined that *D. longicauda* and *D. stictolaema* are not sister taxa, and that *D. stictolaema* is sister to a clade composed of *D. longicauda*, the six species in the genus *Dendrocincla* and Olivaceous Woodcreeper *Sittasomus griseicapillus*. This left two taxonomic options to address the polyphyly of *Deconychura,* the first of which - merging *Dendrocincla, Sittasomus* and *Deconychura* into a single expanded genus would result in a clade far more heterogeneous than any other genus in the Dendrocolaptidae. This left the team only one option, erecting a new genus for *D. stictolaema* –*Certhiasomus*– taken from the Greek *certhia* 'treecreeper' and *soma* 'body', reflecting the similarity between this species and the treecreepers Certhiidae.

Spot-crowned Woodcreeper may be multiple species

Spot-crowned Woodcreeper *Lepidocolaptes affinis* is a common resident of humid moist forest in the highlands, of Mesoamerica, distributed from Mexico to western Panama. Despite exhibiting low morphological variation, there are three currently recognised subspecies: *L. a. lignicida* in north-east Mexico; *L. a. affinis* on both slopes of Middle America from east and south Mexico to northern Nicaragua; and *L. a. neglectus* in the mountains of Costa Rica and western Panama. Enrique Arbeláez-Cortés *et al*.[1] examined genetic variation in *L. affinis* by analyzing mitochondrial DNA sequences obtained from individuals sampled across the species' range. They found that the mtDNA sequences revealed lower levels of genetic diversity compared to other montane Neotropical



Top left: Amazonian Trogon *Trogon ramonianus* has been split from Violaecous Trogon T. violaceus (Joe Tobias/ www.neomorphus.com)

Top right: Resplendent Quetzal *Pharomachrus mocinno* one of the world's most beautiful birds may actually be two species! (Hadoram Shirihai/Birds of the world: a photographic handbook)

Right: A Spot-crowned Woodcreeper *Lepidocolaptes affinis* of the nominate form; the Costa Rican population may constitute a separate species (Hadoram Shirihai/ Birds of the world: a photographic handbook)

birds. Genetic differentiation of the Costa Rican lineage was found to be consistent with taxonomy and coincided with a demographic bottleneck. The mean genetic differentiation between *L. a. affinis* and *L. a. neglectus* of 1.8% is comparable to the 1.7% difference between Wagler's Woodcreeper *L. wagleri* and Scaled Woodcreeper *L. squamatus*, suggesting that Costa Rican populations represent a distinct cryptic species (however most authorities don't recognise *wagleri* at species level) and warrants further morphological and vocal research. The Tamaulipan form *L. a. lignicida* should be the focus of future molecular research too given its morphological distinctness from the two other forms which are not readily distinguished except in long series.

A new genus for Greater Scythebill: from the people who brought you *Certhiasomus*!

Greater Scythebill *Campylorhamphus pucherani* is something of an exception among the *Campylorhamphus* scythebills. The remaining four species form a somewhat homogenous group, inhabiting humid to seasonal tropical forests and lower montane forest mostly below 2,000 m, from northern Argentina to Costa Rica, whilst the larger

Clockwise from top left:

Steinbach's Canastero *Pseudasthenes steinbachi* formerly Asthenes, now placed in the new genus *Pseudasthenes* along with three other canasteros (Hadoram Shirihai/Birds of the world: a photographic handbook)

Spotted Bamboowren *Psilorhamphus guttatus*, weird, but still a tapaculo! (Hadoram Shirihai/Birds of the world: a photographic handbook)

The Olive-crowned Crescentchest *Melanopareia maximiliani* is now placed in the Melanopareiidae along with all the other crescentchests (Joe Tobias/www.neomorphus.com)

and shorter-billed *pucherani* is restricted to upper montane forest, where it occurs in the Andes of Colombia, Ecuador and Peru. Santiago Claramunt *et al.*[5] investigated the phylogenetic relationships of *pucherani* using DNA and morphological characters (from the skeleton, the integument and the musculature) to assess whether its current taxonomic treatment is acceptable. They found that despite the broad similarity in structure between *pucherani* and the rest of the group the latter species differs in other ways too including its elongated toes and claws, which may represent adaptations for climbing moss-covered trees of the cloud forest. The molecular phylogeny indicated that *C. pucherani* is not part of *Campylorhamphus* and is instead sister to Scimitar-billed Woodcreeper *Drymornis bridgesii*, nestled in a clade that also contains *Lepidocolaptes*. As with *Certhiasomus*, they demonstrated that the inclusion of *C. pucherani* in *Drymornis* creates an excessively heterogeneous genus, and as no generic name is available for *C. pucherani*, they propose the new genus *Drymotoxeres*. The name is taken from the Greek drymos (woods) and toxeres (furnished with a bow) which reflect the bird's choice of habitat and its thin bow-shaped bill.

New insights into the taxonomic position of *Psilorhamphus* and *Melanopareia*

Barely a month goes by in evolutionary journals without at least one paper exploring tapaculo phylogenetics. Most tapaculos share a number of internal and external characteristics that define the family taxonomically – these include operculate nostrils, a tracheophone syrinx, a curved humerus and a four-notched sternum. However, the genera containing the four species of *Melanopareia* crescentchests and the monotypic genus *Psilorhamphus* (Spotted Bamboowren) are somewhat exceptional. *Melanopareia* differ from other tapaculos by their rather slender build and boldly patterned plumage, and by sharing a semi-concealed white dorsal patch with various true antbirds (Thamnophilidae). Spotted Bamboowren is certainly an oddity with its long, slender bill, long tail, and relatively weak feet making it considerably different from large-footed

terrestrial tapaculos. Per Ericson *et al*.[10] used molecular sequence data to explore the systematic relationships of these two exceptional tapaculo groups and found that although *Psilorhamphus* nestled well within the Rhinocryptidae, *Melanopareia* falls well outside the clade, requiring the erection of a new family, which the authors have named the Melanopareiidae.

A new tapaculo from Minas Gerais, Brazil

To add to the four new species of *Scytalopus* tapaculo recently described from eastern Brazil, Bret Whitney and colleagues[25] now describe a fifth: *Scytalopus petrophilus* sp. nov. or Rock Tapaculo. This new taxon is known from the southern section of the Espinhaço Range and nearby areas in Minas Gerais, Brazil between about 900 and 2,100 m elevation. It is found in a quite broad range of habitat types from campos rupestres (open, rocky shrub areas) high in the mountains to taller forest to second-growth in semi-deciduous woodland. Rock Tapaculo is distinguished from other members of the complex by differences in its morphology and vocalizations, although the authors observe that '*S. petrophilus show[s] varying degrees of overlap in all characters with at least one other member of the group, but on average and considered in combination with contact calls, vocal repertoires of all species are diagnostic*'. The authors do however consider the species' short, sharp *pzeen* contact call to be diagnostic of this new species. Preliminary genetic profiling apparently places this species within the Brasilia Tapaculo *S. novacapitalis* complex, joining that species, Planalto Tapaculo *S. pachecoi* , and the recently described Diamantina Tapaculo *S. diamantinensis.* The Rock Tapaculos of the Espinhaço Range were first discovered in 1989 and originally identified as Brasilia Tapaculos given their similarity to that species. Later Raposo *et al*. [18] and Raposo and Kirwan[19], identified this form as Mouse-colored Tapaculo *S. speluncae* but Giovanni Maurício *et al.*[14], argued in a different interpretation of the same evidence, that the new species cannot be assigned to *Scytalopus speluncae.* In the latter paper by way of a convoluted piece of detective work involving the type of *speluncae* the authors indicate that *S. notorious* should be regarded a junior-synonym of *S. speluncae.* However, it seems very unlikely that this will be the last word in the taxonomy of this group.

White-bellied Warbler isn't a valid species

The Golden-crowned Warbler *Basileuterus culicivorus* complex has long been something of a taxonomic minefield, both concerning the relationships among the two recognised species *B. culicivorus* and White-bellied Warbler *B. hypoleucus*, and whether *B. culicivorus* can be considered a single species. *Basileuterus hypoleucus* occurs in the interior of Brazil and Paraguay, and differs from *B. culicivorus* in having white rather than yellow underparts. White-bellied Warbler is currently split by both the American Ornithologists' Union (AOU) and the Brazilian Ornithological Records Committee (CBRO) although other sources, for example Sick[20], considered it to be conspecific with Golden-crowned Warbler. This conclusion has been backed by previous studies e.g. Silva[21], documenting extensive interbreeding between the two taxa and similar playback response when songs of both taxa are played. In order to address these key questions, Sibelle Vilaça and Fabrício Santos[24] explored the phylogenetic relationships and biogeographic history of these species from Mexico to Argentina using mtDNA, a nuclear intron and microsatellites. They found that *B. hypoleucus* sequences did not form a monophyletic clade, and were more closely related to *B. culicivorus* from Brazil and Paraguay. Given that the two 'species' do not meet the criteria of any species concept—they are not separate lineages, they are not reproductively isolated, they recognise each other's vocalisations and do not display reciprocal monophyly—the authors conclude that the two taxa should be lumped into a single species *B. culicivorus*. Time to reach for the rubber...

Relationships of 'cinnamon' seedeaters?

Seedeaters of the genus *Sporophila* provide one of the greatest identification and taxonomic challenges to ornithologists in South America with low levels of morphological and molecular differentiation between many species. The absolute number of species in the groups is uncertain, given questions over the validity of some taxa as Tumaco *S. insulata*and Hooded *S. melanops* seedeaters. A new poorly done paper by Leonardo Campagna *et al*.[3] analysed DNA barcodes from 11 *Sporophila* species that are smaller than the other members of the genus and characterised by cinnamon-based plumage colour patterns. These 11 species partition into two clades—a

southern one containing species from south of the Amazon—Capped *S. bouvreuil*, Chestnut *S. cinnamomea*, Rufous-rumped *S. hypochroma*, Tawny-bellied *S. hypoxantha*, Black-bellied *S. melanogaster*, Marsh *S. palustris*, Dark-throated *S. ruficollis* and Narosky's Seedeeaters *S. zelichi*, and a northern clade containing Chestnut-bellied *S. castaneiventris* and Ruddy-breasted Seedeaters *S. minuta*. The southern species showed higher intraspecific and lower interspecific divergence than other Argentine birds revealed by a previous DNA bar-coding study (Kerr *et al.*[13]). These results indicate the presence of incomplete lineage sorting and/or gene flow between different species of *Sporophila*, and moreover the first instance of an inseparable (by barcoding) group of Neotropical birds.

Worthen's Sparrow is sister to Brewer's not Field Sparrow

With a current range of just 25 km^2 on the Mexican Plateau, and a declining population of <120 individuals, Worthen's Sparrow *Spizella wortheni* is one of the most endangered birds in the Americas. It has generally been assumed to be the sister taxon of the Field Sparrow *Spizella pusilla* although this assumption has never been tested using modern molecular phylogenetic techniques. Ricardo Canales-del Castillo *et al.* [4] explored this species' evolutionary relationships by analysing six mitochondrial genes from all members of the genus *Spizella*. Their results indicate that, despite the superficial similarity to Field Sparrow, Worthen's is actually sister to Brewer's Sparrow *S breweri*. The authors suggest that the similarity might be due to convergence owing to similar habitat preferences, but equally sexual selection may be at work.

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White-bellied Warbler *Basileuterus hypoleucus* is now lumped back into Golden-crowned Warbler *B. culicivorus* (right) given that it does not meet the criteria of any species concept (Hadoram Shirihai/Birds of the world: a photographic handbook)

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