Splits, lumps and shuffles

Alexander C. Lees

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. This latest instalment includes papers relating to a stunning new species of storm petrel, a barrage of rail, woodpecker and tyrannulet splits, insights into some duck, parrot and parrotlet relationships, the to-be-expected furnariid splits, lumps and shuffles (note however not an antbird or tapaculo in sight) and more analyses of old favourites such a Common Bush Tanagers and Rufous-naped Wrens. Get your lists out!

A new storm petrel from Chile

The saga of the uniquely-patterned storm petrels first seen on ferry crossings in the Puerto Montt and Chacao channel area (crossing to the Chiloé Archipelago), Chile, has finally ended with the formal description of a new species. First seen in the field as long ago as 1983, it wasn't until the publication of a series of images (O'Keeffe *et al*. 2009) that the wider birding public became aware of this undescribed taxon. However, all-the-while, two old specimens (later designated as paratypes) had been languishing in the Museo Argentino de Ciencias Naturales misidentified as Wilson's Storm Petrels *Oceanites oceanicus*. After a series of expeditions to Chile, Harrison *et al.* (2013) named the new species Pincoya Storm-Petrel *Oceanites pincoyae* after a character from Chilotan (Chiloé Archipelago) mythology. This new taxon is a very distinctive beast, with bold white ulnar bars, extensive white panels to the underwing, and white on the lower belly and vent. It differs from all other *Oceanites* storm petrels in showing white outer vanes on the outer two pairs of tail feathers. Pincoya Storm Petrel also differs from congeners in its foraging ecology. For example, the authors coined the term "mouse-runs" for the feeding action of running across the water's surface with feet half-submerged and with wings folded or tucked closely to the sides of their body.

Divergence in Cinnamon Teals

There are four subspecies of Cinnamon Teal *Anas cyanoptera* recognised from South America; *tropica* from north-western Colombia, *borreroi* from the eastern Andes of Colombia, *orinomus* from the Andes of Peru to northern Chile and *cyanoptera* occurring from southern Peru and southern Brazil to Tierra del Fuego. Wilson *et al.* (2013) investigated patterns of genetic and phenotypic divergence between the small-bodied lowland *A. c. cyanoptera* and the larger bodied highland *A. c. orinomus* which inhabits hypoxic (low oxygen) Andean water bodies. The subspecies *orinomus* is significantly larger with significant frequency differences in a single α-hemoglobin amino acid polymorphism (adaptions both to the cold and to low oxygen environments). Their analyses indicated that colonisation progressed from lowland to highland regions, and that subsequent to divergence gene flow has been asymmetric from the highlands into the lowlands. The authors do not allude to taxonomy but the obvious implication is that there is very little gene-flow between these two taxa…

Clapper and King Rails are paraphyletic and hide multiple species-level taxa

The taxonomic history of the Clapper *Rallus longirostris* and King Rails *R. elegans* is rich and complex, a conundrum owing to their relatively weak morphological differentiation, the difficulty of judging the status of many allopatric populations, and further compounded by a zone of secondary contact and hybridisation in the United States. Maley & Brumfield (2013) confronted this challenge with mitochondrial and next-generation sequencing (of nuclear genes) to infer phylogenetic relationships in this complex of 24 (!) taxa. Their results indicated that the complex is composed of three distinct biogeographic groups (all represented in the Neotropical region) inhabiting:

(1) eastern North America and the Caribbean, (2) South America, and (3) western North America, including Mexico. They found mean levels of mitochondrial and nuclear divergence to be relatively low (<2%) both within and between the species. Critically, they found *R. elegans* to be paraphyletic—birds of the highlands of Mexico are sister to *R. longirostris* of California, thus either splits or lumps were in order. Likewise, *R. elegans* of eastern North America and Cuba was shown to be sister to *R. longirostris* from eastern North America and the Caribbean. With this paraphyly demonstrated and knowing that two members of the complex are in extensive secondary contact in eastern North America and Cuba, but without fusion, they proposed splitting the complex into five species. The first of these is the small, dull-breasted, robust-billed 'Mangrove Rail' *Rallus longirostris* (including subspecies *phelpsi*) of South America and adjacent islands (occurring as its name suggests in mangrove). The second is 'Mexican Rail' *R. tenuirostris* of highland freshwater marshes in Mexico, which is large with a bright rufous vent and diffuse flank banding. Next is 'Ridgway's Rail' *R. obsoletus* including the subspecies *levipes*, *beldingi*, *yumanensis*, *rhizophorae* and *nayaritensis* all of which are small bodied with bright rufous breasts and occur in saltmarshes. Fourth is the King Rail *R. elegans*, comprising *R. e. elegans* and *R. e. ramsdeni*, both of which are large, rufous-breasted and breed in freshwater marshes in eastern North America and Cuba. Finally there is the Clapper Rail *R. crepitans* including the extralimital *R. l. crepitans, waynei*, *scotti*, *insularum*, and *saturatus* in addition to the subspecies *pallidus*, *grossi*, *belizensis*, *leucophaeus*, *coryi* from Caribbean and Yucatan, including *R. l. caribaeus*. The breast colour on these latte birds varies from very dull, silvery grey to dull rufous and they are intermediate in size and breed in saline habitats from the southern USA to the Yucatan Peninsula.

Vocal data supports species status for Purple-crowned Quail-Dove

Sapphire Quail-Dove *Geotrygon saphirina* has long been the subject of taxonomic wrangles, and is currently treated by SACC (Remsen *et al.* 2012) as comprising three subspecies, the trans-Andean *purpurata,* the cis-Andean nominate *saphirina* on the Amazonian slope of the Eastern Andes and the (doubtfully diagnosable?) *rothschildi* of the Marcapata Valley in Peru. Several authorities (e.g. Ridgely & Greenfield 2001) have treated *purpurata* as a separate species—Purple-crowned Quail-Dove, based on differences and its disjunct range. This split was not adopted by SACC because of a lack of vocal data—enter Donegan & Salaman (2012), who recently carried out an analysis of vocal variation in this group to satisfy this demand. They found statistically significant differences in length of the main note in songs of the two taxa, with that of *G. saphirina* being longer than that of *G. s. purpurata*. The authors considered these differences to be significant in the context that songs generally appear to be stereotypical within pigeons and may reflect anatomical differences. Applying the scoring methodology of Tobias *et al.* (2010) *purpurata* gets at least eight points (without considering biometrics), taking it over the seven recommended for species rank of allopatric populations. They go on to highlight the relatively precarious conservation status of *purpurata*—a Chocó endemic—and propose its listing as Endangered on the IUCN Red List.

Breaking-up *Aratinga*

The parakeet genus *Aratinga* comprises 21 species that occur throughout the Neotropics. Using morphological and plumage characters, Ridgway (1916) originally placed the species in four genera: *Aratinga*, *Eupsittula*, *Nandayus*, and *Thectocercus*. This *status quo* was maintaned until Peters (1937) showed up and lumped all but Nanday Parakeet *Nandayus nenday* into *Aratinga* with no justificatory rationale. This latter arrangement remained largely unquestioned until Ribas & Miyaki (2004) found White-eyed Parakeet *A. leucophthalma* to be only distantly related to other *Aratinga* and that *N. nenday* was embedded within sampled *Aratinga* species. Remsen *et al.* (2013) carried out a review of the available evidence and suggested a new taxonomic arrangement re-instating these old Ridgway-era genera with six species placed in *Aratinga* (including *nenday*), five species in *Eupsittula,* Blue-crowned Parakeet *(acuticaudatus*) alone in *Thectocercus* and nine species in *Psittacara* (including *leucopthalmus*).

Diversification in *Forpus* parrotlets

The parrotlets of the genus *Forpus* comprise seven currently recognised species and 19 subspecies widely distributed across the Neotropics. They exhibit extensive intraspecific phenotypic diversity (hence the high subspecies diversity) but remain poorly studied taxonomically. Smith *et al.* (2013)

Facing page

Pincoya Storm Petrel *Oceanites pincoyae* (top three), Seno Reloncavi, Chile, February 2011 (Peter Harrison MBE)

Cinnamon Teal *Anas c. cyanoptera* (bottom left), Bahía Blanca, Buenos Aires, Argentina, September 2009 (James Lowen / www.pbase.com/james_lowen)

Mangrove Rail *Rallus l. longirostris* (bottom right), Bragança, Pará, Brazil, May 2013 (Nárgila Moura)

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Sapphire Quail-dove *Geotrygon s. saphirina*, Yasuní National Park, Orellana Province, Ecuador, June 2007 (Scott Olmstead)

Sapphire Quail-Dove *Geotrygon saphirina purpurata*, San Jorge de Milpe Eco-Lodge, Pichincha Province, Ecuador, February 2011 (Ian Maton / www.albertanaturephotography.com)

White-eyed Parakeet *Aratinga leucophthalmus*, Chapada dos Guiramaes, Mato Grosso, Brazil, November 2006 (Hadoram Shirihai / Photographic handbook of the birds of the world)

Golden-green Woodpecker *Piculus chrysochloros polyzonus*, Sento Sé, Bahia, Brazil, August 2009 (Ciro Albano)

Golden-green Woodpecker *Piculus chrysochloros hypochryseus*, Manoa, Pando, Bolivia, May 2005 (Joe Tobias / Oxford University)

recently examined patterns of diversification in *Forpus*, specifically testing how using either biological species or statistically inferred species impacted upon diversification rates and inferences regarding biogeographic breaks and timing of speciation events. They found that by using only data for biological species they inferred a declining rate of diversification over time, whilst a model of constant diversification was the best fit for statistically inferred species or subspecies. Examining divergence times amongst currently-recognised biological species indicated old speciation events across major geographic and river barriers. This in contrast to models considering all diversity in the genus that indicated both the role of old divergence across biogeographical barriers and recent divergences potentially attributed to Pleistocene climatic changes, highlighting the role of sampling bias in the sometimes conflicting models of the temporal origins of Neotropical birds. Many of the currently recognised subspecies, in addition to 13 of 15 other lineages were deemed to have high speciation probabilities and the authors suspect that current diversity in this genus is underrepresented….

Golden-green Woodpecker systematics

The Golden-green Woodpecker *Piculus chrysochloros* currently comprises nine subspecies ranging from Argentina to Panama, occurring in a variety of different arborescent habitats. Del-Rio *et al.* (2013) recently completed a morphological and morphometric analysis of all members of this species to review their validity and taxonomic rank. They provided evidence for recognition of six unambiguous taxonomic units (phylogenetic species) *Piculus xanthochloros* from north-western South America; *Piculus capistratus* from northern Amazonia west to the Rio Branco; *Piculus laemostictus*, from southern Amazonia; *Piculus chrysochloros* from the Cerrado, Caatinga and Chaco biomes; *Piculus paraensis* from the Belém Center of Endemism (north-eastern Brazilian Amazonia); and *Piculus polyzonus* from the Atlantic Forest. *P. paraensis* has all but disappeared: it has been missed by all recent surveys (*cf.* Lees *et al.* 2012) and is already considered to be threatened with extinction on the Pará State red list (SEMA 2007). Del-Rio *et al.* (2013) also highlight the existence of an additional undescribed form from the Tapajós-Tocantins interfluve and demonstrate the invalidity of *P. c. aurosus*, *P. guianensis*, and *P. hypochryseus* as junior synonyms of *P. xanthochloros*, *P. capistratus*, and *P. laemostictus* respectively. Although the authors highlight these taxa only as phylogenetic species (not necessarily satisfying the criteria of the biological species concept) the team did collect *P. chrysochloros* and *P. laemostictus* sympatrically (but not syntopically) in the eastern Brazilian Amazon at Santana do Araguaia, Pará. There *chrysochloros* occupied Cerrado *sensu stricto*, whilst *P. laemostictus* occurs in *terra firme* rainforest, suggesting a role of habitat in separating these taxa.

A new softtail from Venezuela

Discoveries of 'outright' new species, rather than splits, are increasingly becoming restricted to ever-remoter localities such as isolated pre-Andean mountain ranges, remote Amazonian 'mini-interfluvia' and other difficult-to-access areas. The southern portions of the Orinoco Delta are accessible only by boat so the discovery there of a new species of softtail by Steve Hilty, David Ascanio and Andrew Whittaker in seasonally-flooded forest in late October 2004 may have not come as a total surprise. Nearly a decade later, this new species has been formerly named *Thripophaga amacurensis,* the Delta Amacuro Softtail by Hilty *et al.* (2013). Like the Orinoco Softtail *T. cherriei* from the upper Río Orinoco (about 1000 km upriver) and the Striated Softtail *T. macroura* of south-eastern Brazil the Delta Amacuro Softtail has a restricted geographic range and is superficially similar to these former species, but differing in vocal, plumage, and morphometric characteristics (intermediate in size, more heavily streaked with a different song). The new species is restricted to mature, seasonally flooded forest along streams and rivers in the vicinity of the Brazo Imataca (a closed loop branch of the Río Grande) and is assumed to have a very small range, although much of this is currently assumed to escape the threat of habitat conversion for the time being.

Lumping earthcreepers

Buff-breasted Earthcreeper *Upucerthia validirostris* is an endemic of western Argentina and is closely allied to the polytypic Plain-breasted Earthcreeper *U. jelskii* (comprising subspecies *jelskii*, *pallida*, *dabbenei*, *saturata*, and *rufescens*) which range from northern Peru to north-western Argentina and with which it has been considered conspecific. Given historical taxonomic disagreements over the ranking of taxa in this complex, Areta and Pearman (2013) undertook an

assessment of species limits and clinal variation of the *jelskii* group comparing differences in morphology and vocalisations coupled with playback trials. They found a north-south morphocline involving an increase in plumage rustiness, and gradual changes in bill, wing and tail length linking *jelskii* to *validirostris*. The cline linking *jelskii* and *pallida* was found to be gradual (over c. 1800 km) whilst that between *pallida* and *validirostris* was steep, occurring over just 80 km. Songs and calls of the three taxa were structurally indistinguishable (and from the single available recorded song of *saturata*) and playback responses were equally invariable. Thus the authors argue for treatment of *validirostris* as a single species comprising three subspecies. These are as follows: (1) *validirostris* in the south including *dabbenei* and *rufescens* (2) *jelskii* in the centre and north including *pallida* and (3) *saturata* in northern central Peru.

More Furnariid rearrangements

Claramunt *et al.* (2013) have recently investigated phylogenetic relationships (using mtDNA and nuclear DNA) amongst foliage-gleaners of the genera *Automolus*, *Hyloctistes*, *Hylocryptus*, and *Clibanornis*. This lab work revealed a number of problems and inconsistencies with current taxonomy. The most important of which were (1) *Automolus* is not monophyletic, as Ruddy Foliage-gleaner *A. rubiginosus* and Santa Marta Foliage-gleaner *A. rufipectus* are more closely related to *Hylocryptus* (Henna-hooded and Chestnut-capped Foliage-gleaners) and *Clibanornis* (Canebrake Groundcreeper) and because *Hyloctistes* (Striped Woodhaunter) is nested within the main *Automolus* clade; (2) the two *Hylocryptus*—Henna-hooded *H. erythrocephalus* and Chestnut-capped Foliage-gleaners *H. rectirostris* are not sister species, the former forming part of the *A. rubiginosus* complex, whereas the latter is sister to Canebreak Groundcreeper *Clibanornis dendrocolaptoides*; and (3) Olive-backed Foliage-gleaner *A. infuscatus* and Ruddy Foliage-gleaner *A. rubiginosus* were not found to be monophyletic, thus fingering the need for taxonomic review. Tentatively they suggest that *A. infuscatus* may consist of two species: a) *A. infuscatus* (including *purusianus*) from western Amazonia and b) *A. cervicalis* (including *badius*) occurring north of the Amazon on the Guiana Shield. The also go on to describe a new subgenus, *Cryptomolus*, for *Automolus rufipileatus* and *A. melanopezus*, which in addition to shared morphological characteristics are also associated with stands of woody canes such as *Guadua* and *Gynerium*.

More cryptic *Zimmerius* tyrannulets

Five years ago Rheindt *et al.* (2008) published a phylogeny based on mtDNA of six previously recognised *Zimmerius* tyrannulets and encountered a high level of unexpected cryptic diversity that led to a number of splits and shuffles. Rheindt *et al.* (2013) recently revisited the *Zimmerius* phylogeny, undertaking a complete DNA (for a mitochondrial and a nuclear locus) sampling of all the tyrannulets (nine species) in the genus. Perhaps unsurprisingly, given their earlier discoveries with a restricted set of species, they found *Zimmerius* to be characterised by multiple DNA polyphyly and anticipate a future doubling in the number of species-level taxa. Some questions remained over some sampled taxa for which insufficient molecular or vocal data were available but in some cases the authors stuck their necks out to suggest splits. For instance, for Paltry Tyrannulet *Z. vilissimus* they proposed that subspecies *parvus*, of Honduras south to north-western Colombia, should be split as 'Mistletoe Tyrannulet' *Z. parvus*, and suggest the name 'Venezuelan Tyrannulet' *Z. petersi* for the taxon occurring in coastal Venezuela.

Rufous-naped Wrens again

Four to six subspecies of Rufous-naped Wrens *Campylorhynchus rufinucha* inhabit tropical dry forest areas from Mexico to north-western Costa Rica and have featured in *Neotropical Birding* as recently as 2010 (see Lees 2010 for a summary of the 2009 phylogenetic study by Vázquez-Miranda *et al.*). Now that the genetic component of variation within this group has been well-defined, Sosa-López *et al*. (2012a) examined the next piece of the puzzle: by analysing recordings from throughout the species' range, they investigated the effects of historical isolation on song structure to try and determine whether genetic differences or climatic conditions explain observed patterns of vocal variation. They found that most geographic variation in wren songs was attributable to differences between the *rufinucha*, *humilis*, and *capistratus* group and that these differences reflect variation in genetic structure; differences driven by historical isolation due to physical barriers (Vázquez-Miranda *et al.* 2009). This vocal variation might be the result of several factors such as (1) cultural drift in song structure (2) genetic

Clockwise from top left

Delta Amacuro Softtail *Thripophaga amacurensis* (top two), Caño Acoima, Delta Amacuro, Venezuela, December 2004 (David Ascanio)

Plain-breasted Earthcreeper *Upucerthia jelskii pallidai*, Santa Victoria, Jujuy, Argentina, August 2009 (James Lowen / www.pbase.com/james_lowen)

Buff-breasted Earthcreeper *Upucerthia validirostris*, Cuesta del Obispo, Salta, Argentina, April 2007 (James Lowen, www.pbase.com/james_lowen)

Chestnut-capped Foliage-gleaner *Hylocryptus rectirostris*, Pirapora, Minas Gerais, Brazil, November 2006 (Hadoram Shirihai / Photographic handbook of the birds of the world)

Ruddy Foliage-gleaner *Automolus rubiginosus*, Sierra de Atoyac, Guerrero, Mexico, April 2007 (Hadoram Shirihai / Photographic handbook of the birds of the world)

Clockwise from top left

Canebreak Groundcreeper *Clibanornis dendrocolaptoides*, Curitiba, Paraná, Brazil, December 2012 (Marco Cruz)

Paltry Tyrannulet *Zimmerius vilissimus*, Cerro Jefe, Panama, May 2012 (Hadoram Shirihai / Photographic handbook of the birds of the world)

Rufous-collared Sparrow *Zonotrichia capensis hypoleuca*, Otamendi, Buenos Aires, Argentina, May 2008 (James Lowen / www.pbase.com/james_lowen)

Common Bush Tanager *Chlorospingus ophthalmicus bolivianus*, Tunquini, La Paz, Bolivia, January 2005 (Joe Tobias / Oxford University)

Common Bush Tanager *Chlorospingus ophthalmicus argentinus*, Tiraxi, Jujuy, Argentina, July 2008 (James Lowen / www.pbase.com/james_lowen)

drift in features related to song production; or (3) natural selection acting on features that influence songs, such as beak size. It seems likely that the three 'evolutionary significant units' now verified by two independent studies might soon be the subject of taxonomic upgrades.

Origins of intraspecific diversity in Rufous-collared Sparrows

The Rufous-collared Sparrow *Zonotrichia capensis*, is one of the most widely-distributed and familiar birds in the Neotropics, occurring from Chiapas, Mexico (10°N) to Tierra del Fuego, Argentina and Chile (55°S). Obviously it was only a matter of time before such an obvious polytypic target for a phylogenetic study would get 'the test-tube treatment', and this challenge fell to Lougheed *et al.* (2013). Rufous-collared Sparrows are habitat generalists, 25 subspecies occupying almost all habitats except closed-canopy rainforest and geographically isolated from the four congeneric *Zonotrichia* sparrows in temperate North America. The Lougheed team sequenced DNA from 92 Sparrows from across the species' range (Central and South America) combined with six additional molecular markers (both nuclear and mitochondrial) for a subset of individuals with divergent control region haplotypes. They found three lineages: one including Central America, the Dominican Republic, and north-western South America; one encompassing the Dominican Republic, Mount Roraima (Venezuela) and La Paz (Bolivia) south to Tierra del Fuego, Argentina; and a third, spanning eastern Argentina and Brazil (although their sampling in Brazil was quite weak). Their phylogenetic analyses suggest that the first mentioned clade is sister to the remaining two and that diversification of the three lineages occurred rapidly during the Pleistocene. As a recurring theme in some studies of polyphyletic open-country species, they found that the species' mitochondrial phylogeographic structure did not reflect subspecific taxonomy (i.e. morphological variation) and concluded that this phenotypic diversity represented recent responses to local conditions overlying deeper patterns of lineage diversity. Maybe a job for next-generation sequencing…

Common Bush Tanager songs and species-limits

The Common Bush Tanager *Chlorospingus ophthalmicus* harbours 27 subspecies disjunctly distributed in fragmented cloud forest patches from southern Mexico to north-western Argentina. It has previously featured in these pages on account of previous studies demonstrating restricted gene flow and substantial morphological variation between currently recognized subspecies (e.g. Weir *et al.* 2008). Sosa-López *et al.* (2013b) investigated patterns of geographic variation in the characteristics of the songs of five subspecies of Common Bush Tanagers in Mesoamerica to see if songs vary geographically and congruently with phenotype and genotypes. They found that both *albifrons* and *regionalis* had unique songs that differed significantly from the remaining subspecies, whilst songs of *ophthalmicus*, *dwighti*, and *postocularis* lacked vocal divergence despite previous discoveries of restricted gene flow and substantial morphological variation between them, suggesting a degree of evolutionary conservatism for vocal traits.

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