The nest of the Ash-breasted Tit-tyrant *(Anairetes alpinus)*

El nido del Cachudito Pechiceniza *(Anairetes alpinus)*

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Abstract

The Ash-breasted Tit-Tyrant *(Anairetes alpinus)* is a range-restricted flycatcher (Tyrannidae) inhabiting the high Andes of Peru, Bolivia, and Argentina. I provide the first description of nest architecture for this species based on a nest encountered in southern Peru. The nest was a deep, compact cup of moss, thickly but loosely lined with feathers and built 1.4 m above the ground in a hanging epiphyte clump. It was similar in architecture and means of support to the nests of other *Anairetes*, all of which also share an internal lining of feathers.

Key words: *Anairetes alpinus,* Andes, diet, nest architecture, parental care, Peru, *Polylepis, Tyrannidae.*

Resumen

El Cachudito Pechiceniza *(Anairetes alpinus)* es una atrapamoscas (Tyrannidae) de distribución restringida que habita las alturas de los Andes de Peru, Bolivia, y Argentina. Yo describo, por la primera vez la arquitectura del nido para esta especie, basada en un nido encontrado en el sur de Peru. El nido era una copa compacta y profunda, tejida externamente de musgos y con el interior bastante relleno de plumas. El nido era ubicado en una masa de epifitas, 1.4 m sobre el suelo. La arquitectura y modo de fijación fueron muy parecidos a los nidos de otras especies de *Anairetes*, con los que también comparten un forro interno de plumas.

Palabras clave: *Anairetes alpinus,* Andes, dieta, arquitectura del nido, cuidado parental, Peru, *Polylepis, Tyrannidae.*

The genus *Anairetes* consists of 6-8 small flycatchers, the reproductive habits of which are poorly known (Fitzpatrick 2004, Remsen *et al.* 2013). The intrageneric relationships and generic affinities of this group have long been debated, with members being placed, at various times, in the genera *Spizitornis*, *Culicivora*, *Yanacea*, *Uromyias*, and *Euscarthmus* (*e.g.,* Cory & Hellmayr 1927, Zimmer 1940, Lanyon 1988, Ridgely & Greenfield 2001; summarized in Fitzpatrick 2004). Two species have only recently been returned to the genus *Uromyias* (DuBay & Witt 2012, Remsen *et al.* 2013), but are discussed here as part of *Anairetes sensu lato*.

The Ash-breasted Tit-Tyrant *(A. alpinus*) was originally described in the monotypic genus *Yanacea* (Carriker 1933), but is currently considered closely related to the more widely distributed and better known Yellow-billed Tit-Tyrant *A. flavirostris* (Fitzpatrick 2004, Remsen *et al.* 2012), largely based on the molecular data of Sibley & Monroe (1990), Roy *et al.* (1999), and DuBay & Witt (2012).

The Ash-breasted Tit-Tyrant is a range-restricted species found in the high (3700-4600 m) Andes of Peru and Bolivia, with small, scattered populations inhabiting increasingly fragmented *Polylepis-Gynoxys* woodlands (Fitzpatrick 2004). Like many of its congeners, almost nothing is known of its reproductive biology. Here I describe a nest found in Peru and provide brief observations on parental care and comparisons with the nests of related species.

On 15 November 2011 I found a nest of Ash-breasted Tit-Tyrant with two mid-aged nestlings at Abra Málaga, Department of Cuzco, Peru (13° 08'S, 72°19'W; 4100 m). Habitat in the area con-

sists of small (< 15 ha) patches of forest dominated by *Polylepis* (Rosaceae) and *Gynoxys* (Asteraceae) trees, generally less than 6 m tall.

I watched and photographed two adults provisioning their young from 1145 to 1230 h. Of the 7 food deliveries during this time, all consisted of multiple small (< 1.5 cm) prey items (Fig. 1).

Adults foraged 10 to *ca.* 30 m from the nest, sally-gleaning small insects from foliage, making long, directed flights back to the nest. Prey appeared to consist of soft-bodied flies (Nematocera) and hairless, green and brown lepidopteran larvae (at least some Geometridae and Noctuidae). The adults were bold around the nest, arriving to feed while I was standing only 2-3 m away in unconcealed positions. In one instance both adults were perched on the rim of the nest simultaneously, and one adult settled to brood after feeding, allowing me to approach to within 1 m before flushing.

The nest was a deep, open cup built into a hanging clump of vines and epiphytes (Fig. 2), 1.4 m above the ground in a 5.5 m tall *Polylepis* tree. It was situated such that it was well supported from the base by the crossing of ca. 5-6 thin vines, each extending upwards and partially supporting the nest laterally. The nest was composed externally

Figure 1. Adult Ash-breasted Tit-Tyrant *(Anairetes alpinus)* with prey items to deliver to its nestlings, 15 November 2011, Abra Málaga, Department of Cuzco, Peru.

Figure 2. Nest of Ash-breasted Tit-Tyrant *(Anairetes alpinus),* 15 November 2011, Abra Málaga, Department of Cuzco, Peru. The thick feather lining is just visible in the round hole just above center.

of tightly compacted moss and had a thick lining of feathers. It rested upon, and within, the supporting vines, and none of the nest material was wrapped or otherwise attached to the supports.

This aspect of construction is not readily apparent from the photographs provided (Figs. 2-3), as naturally-growing moss on the supporting vines helped to obscure the nest and create the misleading impression that it is loosely built and well-attached to surrounding supports. Externally the nest was 9.5 cm wide by 10.5 cm tall. Internally the chamber was 4.5 cm wide and 5.5 cm deep.

The two nestlings weighed 11.1 and 10.9 g. Both were partially feathered with contour feathers on all tracts having already broken their sheaths (Fig. 4). Long, white natal down-plumes remained, especially on the head and cervical region. Similarly, rectrices and both primary and secondary flight feathers were beginning to emerge from their sheaths. The second nestling (Fig. 4) appeared at least one day ahead of its sibling in this regard, with 8-11 mm of exposed feather compared to

Figure 3. Interior of the nest of Ash-breasted Tit-Tyrant *(Anairetes alpinus)* with two nestlings hidden by the dense lining of feathers, 15 November 2011, Abra Málaga, Department of Cuzco, Peru.

Figure 4. Mid-aged nestling of Ash-breasted Tit-Tyrant *(Anairetes alpinus),* 15 November 2011, Abra Málaga, Department of Cuzco, Peru.

only 2-3 mm of exposed feather on the primaries of the heavier nestling. Based on my experience with other tyrannid nestlings, this suggests that hatching was asynchronous. Their legs and bills were dusky pink, with the lower mandibles being noticeably paler. Their mouth linings were orange and rictal flanges were bright yellow.

The depth of the internal nest cup, combined with the copious and loosely packed lining of feathers made the nestlings almost completely invisible, even when inspecting the nest from close range (Fig. 3). Indeed, even while being fed (Fig. 5), the bright, conspicuously colored nestling gapes were barely visible from any perspective, with the presumed exception of the attending adult's. The nestlings remained motionless when I inspected the interior of the nest with my fingers, a behavior which may additionally help them avoid detection. Additional images of this nest, with associated nestlings and adults, have been archived with the Colaboraciones Americanas Sobre Aves project and are available at the following URL: http://avesamericanas.lifedesks.org/pages/344.

With the description of the nest of Ash-breasted Tit-Tyrant, only three of the eight members of the genus have completely unknown nesting biologies. The nest and eggs of Black-crested Tit-Tyrant (*A. nigrocristatus)*, Unstreaked Tit-Tyrant (*Uromyia agraphia*), and Pied-crested Tit-Tyrant (*A. reguloides*) remain undescribed. The nesting of Agile Tit-Tyrant *(U. agilis)* is known only from one nest found in northeastern Ecuador, but the eggs remain undescribed (Bonier *et al.* 2008). The nest and eggs of the endemic Juan Fernández Tit-Tyrant (*A. fernandezianus)* were only recently described based on observations at several nests (Hahn 2006). The relatively well studied Tufted Tit-Tyrant *(A. parulus)* has multiple descriptions of its nest and eggs scattered throughout the literature (Taczanowski 1884, Sclater 1888, Oates & Reid 1903, Hellmayr 1932, Lazo & Anabalon 1992, Willson *et al.* 2005), but there have apparently been no detailed studies of its reproductive habits. The nesting of Yellow-breasted Tit-Tyrant *(A. flavirostris)* is known from a few basic nest descriptions, and also from several studies examining nesting success and other aspects of its reproductive biology (Narosky & Salvador 1998; Mezquida 2000, 2002; de la Peña 2001; Mezquida & Marone 2001, 2003).

The nest descriptions cited in the previous paragraph provide enough data to make some preliminary comparisons of nest architecture within the

Figure 5. Adult Ash-breasted Tit-Tyrant *(Anairetes alpinus)* feeding two nestlings, 15 November 2011, Abra Málaga, Department of Cuzco, Peru.

genus. All described *Anairetes* nests are deep, open cups, most closely matching the "high cup/ fork" nest-type described by Simon & Pacheco (2005). Species vary somewhat, however, in the materials used for the external portion of the nest. Not surprisingly, each species seems to prefer materials which make their nests cryptic within their preferred nesting habitat (*e.g.*, dry materials in arid habitats, fresh materials in more humid regions).

Three aspects of nest architecture are strongly conserved. Materials in the external portion of *Anairetes* nests are tightly woven and bound together, with nests described by various authors as "compact" or "neat," and all described nests apparently lack loose tails of material or copious decorative additions to the outside. Not all descriptions are explicit in describing nest attachment, but from most it can be inferred that nests are placed, with little or no attachment or binding to the supporting substrate. These two aspects of nest architecture are, admittedly, somewhat subjective and variable, but I suggest that both may be informative characters for the genus. Thirdly, the internal cups of all described nests of *Anairetes* are deeper than they are wide, and abundantly lined with feathers. Undoubtedly these aspects provide thermal insulation and protect eggs and nestlings from inclement weather. As described above, however, and based on personal experience with nests of Tufted Tit-Tyrant *(A. parulus),* I believe these features may additionally be important in camouflaging the nestlings, at least until they are too large to remain hidden within the cup.

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Literature Cited

BONIER, F., P. R. MARTIN, & I. T. MOORE. 2008. First description of the nest and young of the Agile Tit-Tyrant *(Uromyias agilis)*. Ornitología Neotropical 19:117-122.

CARRIKER, M. A., JR. 1933. Descriptions of new birds from Peru, with notes on other little-known species. Proceedings of the Academy of Natural Sciences of Philadelphia 85:1-38.

CORY, C. B., & C. E. HELLMAYR. 1927. Catalogue of birds of the Americas and the adjacent islands. Part V. Tyrannidae. Field Museum of Natural History Publication, Zoological Series 242:370-379.

DE LA PEÑA, M. R. 2001. Nidificacion de algunas especies de aves en el este de la provincia de Catamarca, Argentina. Hornero 16: 17-21.

DUBAY, S. G., & C. C. WITT. 2012. An improved phylogeny of the Andean tit-tyrants (Aves, Tyrannidae): more characters trump sophisticated analyses. Molecular Phylogenetics & Evolution 64:285-296.

FITZPATRICK, J. W. 2004. Genus *Myiarchus.* Pp. 431-441 *in* del Hoyo J., Elliott A. &D. A. Christie (eds). Handbook of the Birds of the World. Volume 9: Cotingas to pipits and wagtails. Lynx Edicions, Barcelona.

HAHN, I. 2006. First reproductive records and nest sites of the endemic Juan Fernández Tit-tyrant *Anairetes fernandezianus* (Philippi, 1857) (Aves: Passeriformes: Tyrannidae) from Robinson Crusoe Island, Chile. Zoologische Abhandlungen (Dresden) 55:177-190.

HELLMAYR, C. E. 1932.The birds of Chile. Field Museum of Natural History, Chicago, IL, U.S.A.

MEZQUIDA, E. T. 2000. Ecologia reproductiva de un ensamble de aves del desierto del Monte Central, Argentina. PhD Dissertation, Universidad Autónoma de Madrid, Madrid, Spain.

MEZQUIDA, E. T. 2002. Nidificación de ocho especies de Tyrannidae en la Reserva Ñacuñán, Mendoza, Argentina. Hornero 17:31-40.

MEZQUIDA, E. T., & L. MARONE.2001. Factors affecting nesting success of a bird assembly in the central Monte Desert, Argentina. Journal of Avian Biology 32:287-296.

MEZQUIDA, E. T., &L. MARONE. 2003. Are results of artificial nest experiments a valid indicator of success of natural nests? Wilson Bulletin 115:270-276.

NAROSKY, T., & S. SALVADOR. 1998.Nidificación de las aves argentinas, Tyrannidae. Asociación Ornitológica del Plata, Buenos Aires, Argentina.

LANYON, W. E. 1988. A phylogeny of the flatbill and tody-tyrant assemblage of tyrant flycatchers. American Museum Novitates 2923:1-41.

LAZO, I., & J. J. ANABALON. 1992. Dinámica reproductiva de un conjunto de aves Passeriformes de la sabana de espinos de Chile central. Ornitología Neotropical 3:57-64.

OATES, E. W., & S. G. REID. 1903. Catalogue of the collection of birds' eggs in the British Museum (Natural History). Volume 3: Carinatae (Psittaciformes-Passeriformes). British Museum of Natural History, London, U. K.

REMSEN JR., J. V., C. D. CADENA, A. JARAMILLO, M. NORES, J. F. PACHECO, J. PÉREZ-EMÁN, M. B. ROBBINS, T. S. SCHULENBERG, F. G. STILES, D. F. STOTZ, & K. J. ZIMMER. 2013. A classification of the bird species of South America. American Ornithologists' Union. http://www.museum.lsu.edu/~Remsen/SACCBaseline.html (accessed 10 April 2013).

RIDGELY R. S., & P. J. GREENFIELD. 2001. The birds of Ecuador. Cornell University Press, Ithaca, NY, USA.

ROY, M. S., J. C. TORRES-MURA, & F. HERTEL.1999. Molecular phylogeny and evolutionary history of the Tit-Tyrants (Aves: Tyrannidae). Molecular Phylogenetics and Evolution 11: 67-76.

SCLATER, P. L. 1888. Argentine ornithology: A descriptive catalogue of the birds of the Argentine Republic. Taylor & Francis, London, U. K. 208

SIBLEY, C. G., & B. L. MONROE, JR. 1990. Distribution and taxonomy of birds of the World. Yale University Press, New Haven, CT, USA.

SIMON, J. E. & S. PACHECO. 2005. On the standardization of nest descriptions of neotropical birds. Revista Brasileira de Ornitologia 13:143-154.

TACZANOWSKI, L. 1884.Ornithologie du Pérou. R. Friedländer & Sohn, Berlin, Germany.

WILLSON, M. F., T. L. D. SANTO, K. E. SIEVIING, &J. J. ARMESTO. 2005. Nest success of open-cup nesting birds in Chilean rainforest. Boletín Chileno de Ornitología 11:11-17.

ZIMMER, J. T. 1940. Studies of Peruvian birds 35, Notes on the genera *Phylloscartes, Euscarthmus, Pseudocolopteryx, Tachuris, Spizitornis, Yanacea, Uromyias, Stigmatura, Serpophaga*, and *Mecocerculus*. American Museum Novitates 1095:1-19.

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