

## THE NEST AND EGGS OF THE CINEREOUS MOURNER (*LANIOCERA HYPOPYRRA*)

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**ABSTRACT.**—We present the first account of nesting biology for the Neotropical suboscine genus *Laniocera* by describing the nest and eggs of the Cinereous Mourner (*L. hypopyrra*) based on observations made in the Peruvian Amazon during 2001. The cup-shaped nest was in mature floodplain forest among the branches of an epiphytic fern in a small tree 1.8 m above the ground, and contained two buffy eggs with chocolate brown blotches and spots. These observations demonstrate that *Laniocera* is not a cavity nester, supporting its removal from the myiarchine flycatchers and previous suggestions of a close relationship to the genus *Schiffornis*. Received 12 December 2002, accepted 12 March 2003.

The tyrannoid genus *Laniocera* includes two Neotropical lowland forest species, the Speckled Mourner (*L. rufescens*), found from southeastern Mexico to northwestern Ecuador, and the Cinereous Mourner (*L. hypopyrra*), found throughout Amazonia and in the Atlantic forests of Brazil (Ridgely and Tudor 1994). Based on a variety of morphological characters, *Laniocera* is placed within the monophyletic *Schiffornis* group, an assemblage of uncertain systematic affinities that also includes the genera *Schiffornis*, *Laniisoma*, *Iodopleura*, *Xenopsaris*, and *Pachyramphus* (Prum and Lanyon 1989). In addition to Prum and Lanyon's (1989) morphological study, two different analyses of DNA sequences with incomplete taxon sampling (both lacking *Laniocera*) have supported the monophyly of the *Schiffornis* group, expanding it to include *Tityra* (Prum et al. 2000, Johansson et al. 2002).

Prum and Lanyon (1989) pointed out that despite insufficient information, it is apparent that the genera in the *Schiffornis* group are very diverse behaviorally and ecologically, and represent an impressive radiation in breeding systems, parental care, nest construction, and habitat. This would make this group particularly interesting for inclusion in comparative studies on the evolution of alternative reproductive behaviors and life history strategies in birds (Bennett and Owens 2002). However, this has not been possible because

the natural history of many of the species in the assemblage remains very poorly known. Particularly, the nests of two of the genera (*Laniocera* and *Laniisoma*) have not been described previously.

Based on observations made in a lowland rainforest site in the Peruvian Amazon, here we present the first data on nesting biology for the genus *Laniocera* by describing the nest and eggs of the Cinereous Mourner (*L. hypopyrra*). Since nesting biology can be informative about phylogenetic relationships in birds (Sheldon and Winkler 1999, Zyskowski and Prum 1999), we compare the nest and eggs of *L. hypopyrra* with those of other genera in the *Schiffornis* group, and of other suboscines with which *Laniocera* had been grouped in the past.

### STUDY SITE

We made our observations at Cocha Cashu Biological Station, an area of undisturbed lowland forest located in the meander belt of the Manu River in Manu National Park, Dep. Madre de Dios, southeastern Peru (11° 54' S, 71° 18' W; about 400 m elevation). The station encompasses a variety of vegetation types; our observations took place in mature floodplain forest, which occupies the greater part of the meander belt (Terborgh 1983). This habitat is characterized by multiple strata including a 25- to 30-m tall canopy broken by emergent trees of 50–60 m height. Palms are common and diverse both in the canopy and understory. The understory is relatively open and composed especially of plants in the Rubiaceae, Melastomataceae, Nyctaginaceae, and Myrsinaceae. The ground is covered by *Tectaria incisa* ferns, which are replaced by

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FIG. 1. Nest of the Cinereous Mourner (*Laniocera hypopyrra*) found at Cocha Cashu Biological Station, Peruvian Amazon, 30 September 2001. Photograph by Gustavo A. Londoño.

*Heliconia* spp. in places where there is standing water. Most of the approximately 200 cm of annual rain falls between November and May; monthly rainfall from June through October typically is <10 cm (Terborgh 1990).

Within the study area, the Cinereous Mourner is restricted mostly to the mature phase of the primary successional gradient that results from the river's dynamics (Robinson and Terborgh 1997), but singing males also can be found in earlier successional vegetation (GAL unpubl. data). The species is relatively rare at Cocha Cashu, occurring at low densities of 1–2 individuals per 100 ha in the floodplain forest (Robinson and Terborgh 1997, Terborgh et al. 1990).

#### NEST DESCRIPTION

An active nest of the Cinereous Mourner was found by J. Tobias in mature floodplain



FIG. 2. Eggs of the Cinereous Mourner (*Laniocera hypopyrra*) found at Cocha Cashu Biological Station, Peruvian Amazon, 30 September 2001. Photograph by Gustavo A. Londoño.

forest on 29 September 2001, a time of the year of generalized breeding activity at Cocha Cashu (Terborgh et al. 1990). The nest was in a small tree (about 4 m tall and 2.4 cm dbh) located in a relatively open area with little vegetation cover in the understory and no tall, woody plants within 2 m. The nest, an unlined bulky cup made of dry leaves, was constructed among the branches of an epiphytic fern which was attached to the tree's trunk 1.8 m above the ground (Fig. 1). The nest dimensions were: depth 74 mm, inner cup diameter 94 × 98 mm, and outer diameter 100 × 160 mm. The walls of the upper part of the nest were very thin, consisting of a single layer of leaves. When found, the nest contained two buff eggs with somewhat longitudinally elongated chocolate brown blotches with underlying light brown markings concentrated on the wider end, and small brown spots scattered throughout (Fig. 2). The eggs measured 28 × 21.5 mm and 28 × 22 mm; each weighed 6.25 g.

Our observations of the nest were limited because it was located far from the station. During two visits we observed only one individual attending the nest. Based on the presumed lek mating system of the species (Prum and Lanyon 1989) and female-only incubation in other behaviorally known members of the *Schiffornis* clade (Skutch 1969), this bird likely was a female, but this could not be confirmed due to the lack of sexual dimorphism. The incubating bird(s) clearly showed the characteristic cinnamon rufous spots in the

wings, which distinguish the Cinereous Mourner from otherwise similar species that occur in the study area (i.e., Screaming Piha *Lipaugus vociferans* and Grayish Mourner *Rhytipterna simplex*). Both eggs disappeared from the nest by 6 October, probably due to predation.

#### DISCUSSION

The systematic position of *Laniocera* has been uncertain; the genus has been placed variously in the Cotingidae, Pipridae, and Tyrannidae (Prum and Lanyon 1989). Based on morphological features of the nasal capsule and the syrinx, Lanyon (1985) concluded that *Laniocera* is not a near relative of *Myiarchus* flycatchers as had been suggested by Ames (1971), and recommended removing it from the subfamily Tyranninae. However, some uncertainty has remained regarding the affinities of *Laniocera* to the flycatchers (see Ridgely and Tudor 1994, Ridgely and Greenfield 2001). An additional shared derived trait defining the myiarchine flycatchers is that they obligatorily nest in tree cavities (Lanyon 1985); thus, Ridgely and Tudor (1994) suggested that nesting information for *Laniocera* would be of interest to help establish its relationships. Our observations show that *Laniocera* is not a cavity nester like the myiarchines, and thus give further support for its removal from the group.

At a higher level, the systematic position of *Laniocera* and its near relatives (i.e., the *Schiffornis* group) within the superfamily Tyrannoidea is unclear, and they are listed as *Incertae sedis* by the American Ornithologists' Union (1998). Prum et al. (2000) suggested that the *Schiffornis* group, including *Tityra*, should be considered a subfamily (Tityrinae) of the Cotingidae, a suggestion tentatively accepted by the South American Checklist Committee of the American Ornithologists' Union as of March 2003, with a final decision awaiting further evidence (J. V. Remsen pers. comm.). Nests and eggs of *Laniocera* and other members of the *Schiffornis* group (Prum and Lanyon 1989, see below) are not unlike those of many Cotingidae, which build simple open cup or saucer-shaped nests and lay buff, khaki, or olive eggs with spots and blotches of darker browns, sepia, and/or ashy violet colors (Snow 1982).

Within the *Schiffornis* group, three morphological synapomorphies support the placement of *Laniocera* and *Laniisoma* as sister taxa, and two more suggest *Schiffornis* is sister to the *Laniisoma-Laniocera* clade (Prum and Lanyon 1989). Somewhat different relationships are suggested by the molecular phylogeny of Prum et al. (2000), but the conflicting nodes are not well supported and are unstable to different character weighting schemes. Within the clade, the bulky open cup nest of the Cinereous Mourner contrasts with the globular nests with side or bottom entrance of *Pachyramphus* (Skutch 1969), the small and tidy cups of cobwebs and fungus fibers of *Iodopleura* (Snow 1982), the loose nests placed in tree cavities of *Tityra* (Skutch 1969), and the compact open cups of fine dry grasses, fibers, and spider webs of *Xenopsaris* (Smith 1971, Di Giacomo and Leiberman 2000). Conversely, the nest is quite similar to that of the Thrush-like *Schiffornis* (*Schiffornis turdinus*), which builds a large, bulky cup of dry leaves and leaf skeletons lined with dark rhizomorphs in the crotch of a tree or in a clump of vegetation against a tree trunk within 2 m from the ground (Skutch 1969, Stiles and Skutch 1989). Moreover, the color and pattern of the eggs of *S. turdinus* (pale buffy with blotches and roundish spots of black and dark brown or black and pale lilac concentrated around the wider end; Skutch 1969) fit well with our observations for *Laniocera hypopyrra*. However, eggs of other tyrannoids not immediately related to the *Schiffornis* group (e.g., *Rupicola*, some *Tyrannus*) have similar color patterns, whereas eggs of other putative members of the group (*Iodopleura*, *Xenopsaris*) are different, which suggests this character cannot always be used reliably to establish relationships. Notwithstanding, assuming that the similarities in nest shape, placement, and materials reflect homology, these argue for a close relationship between *Laniocera* and *Schiffornis*, supporting the hypothesis proposed by Prum and Lanyon (1989) based on morphological data. Nests of other taxa that belong in this clade (*Laniisoma*, *Laniocera rufescens*, *Schiffornis major*, and *S. virescens*) remain undescribed, but these appear to share with *Laniocera hypopyrra* and *Schiffornis turdinus* a derived polygynous mating system in which males sing in loose, small leks and are

emancipated from parental care (Prum and Lanyon 1989, Stiles and Skutch 1989).

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#### LITERATURE CITED

- AMERICAN ORNITHOLOGISTS' UNION. 1998. Check-list of North American Birds, 7th ed. American Ornithologists' Union, Washington, D.C.
- AMES, P. L. 1971. The morphology of the syrinx in passerine birds. *Bull. Peabody Mus. Nat. Hist.* 37: 1–194.
- BENNETT, P. M. AND I. P. F. OWENS. 2002. Evolutionary ecology of birds: life histories, mating systems, and extinction. Oxford Univ. Press, Oxford, United Kingdom.
- DI GIACOMO, A. G. AND J. LEIBERMAN. 2000. Description of the nestling of *Xenopsaris albinucha*. *Hornero* 15:129–130.
- JOHANSSON, U. S., M. IRESTEDT, T. J. PARSONS, AND P. G. P. ERICSON. 2002. Basal phylogeny of the Tyrannoidea based on comparisons of cytochrome *b* and exons of nuclear *c-myc* and RAG-1 genes. *Auk* 119:984–995.
- LANYON, W. E. 1985. A phylogeny of the myiarchine flycatchers. *Ornithol. Monogr.* 36:361–380.
- PRUM, R. O. AND W. E. LANYON. 1989. Monophyly and phylogeny of the *Schiffornis* group (Tyrannoidea). *Condor* 91:444–461.
- PRUM, R. O., N. H. RICE, J. A. MOBLEY, AND W. W. DIMMICK. 2000. A preliminary phylogenetic hypothesis for the cotingas (Cotingidae) based on mitochondrial DNA. *Auk* 117:236–241.
- RIDGELY, R. S. AND P. J. GREENFIELD. 2001. The birds of Ecuador, vol. 1: status, distribution, and taxonomy. Cornell Univ. Press, Ithaca, New York.
- RIDGELY, R. S. AND G. TUDOR. 1994. The birds of South America, vol. 2: the suboscine passerines. Univ. of Texas Press, Austin.
- ROBINSON, S. K. AND J. TERBORGH. 1997. Bird community dynamics along primary successional gradients of an Amazonian whitewater river. *Ornithol. Monogr.* 48:641–672.
- SHELDON, F. H. AND D. W. WINKLER. 1999. Nest architecture and avian systematics. *Auk* 116:875–877.
- SKUTCH, A. F. 1969. Life histories of Central American birds, III. *Pac. Coast Avifauna* 35:1–580.
- SMITH, W. J. 1971. Behavioral characteristics of serpophaginine tyrannids. *Condor* 73:259–286.
- SNOW, D. W. 1982. The cotingas. Cornell Univ. Press, Ithaca, New York.
- STILES, F. G. AND A. F. SKUTCH. 1989. A guide to the birds of Costa Rica. Cornell Univ. Press, Ithaca, New York.
- TERBORGH, J. 1983. Five new world primates: a study in comparative ecology. Princeton Univ. Press, Princeton, New Jersey.
- TERBORGH, J. 1990. An overview of research at Cocha Cashu Biological Station. Pp. 48–59 in *Four Neotropical rainforests* (A. H. Gentry, Ed.). Yale Univ. Press, New Haven, Connecticut.
- TERBORGH, J., S. K. ROBINSON, T. A. PARKER, III, C. A. MUNN, AND N. PIERPONT. 1990. Structure and organization of an Amazonian forest bird community. *Ecol. Monogr.* 60:213–238.
- ZYSKOWSKI, K. AND R. O. PRUM. 1999. Phylogenetic analysis of the nest architecture of Neotropical ovenbirds (Furnariidae). *Auk* 116:891–911.