

Two unrelated species of birds (*Myiopsitta monachus*; Psittacidae and *Coryphistera alaudina*; Furnariidae) simultaneously building the same nest in the Paraguayan Chaco

Dos especies de aves no emparentadas (*Myiopsitta monachus*; Psittacidae y *Coryphistera alaudina*; Furnariidae) construyen simultáneamente el mismo nido en el Chaco paraguayo

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The Monk Parakeet (*Myiopsitta monachus*, Psittacidae) is a widespread, sociable, parakeet that constructs conspicuous, communal, stick nests (Short 1975). Nests may be several meters in diameter, containing various separate nest chambers with entrances from the side and below and may be utilized by several pairs of parakeets at any one time (Juniper & Parr 1998). In the Paraguayan dry Chaco, where the species is abundant, nests are built of spiny twigs such as *Celtis* sp. (Ulmaceae). Forshaw (1989) notes that, in addition to providing a defense against predators, a preference for thorny sticks may help the components to bind together more solidly. Nests are a common sight on electricity posts and the few larger tree species that occur in the area e.g. *Aspidosperma quebracho-blanco* (Apocynaceae) and *Chorisia insignis* (Bombacaceae) (Ratzlaff 2004). Individual trees may contain various nests that are added to continuously (Burger & Gochfeld 2005), and on occasion such nests may become so large that they break the branches of the trees that sustain them (de la Peña 2010).

The Lark-like Brushrunner (*Coryphistera alaudina*, Furnariidae) is a common and conspicuous, semi-terrestrial Chaco resident that lives in family groups in brushy woodlands (Short 1975, Areta & Bodrati 2007). This species builds large, globular, stick nests (30-50 x 30-35 cm) exposed in high trees, with the entrance on the upper side (de la Peña 2010). The natural history of this species was described in detail by Areta & Bodrati (2007).

Thorny twigs are utilized by many species of Furnariidae in the Chaco (Vaurie 1980, Narosky *et al.* 1983). The exposed locations selected by some of these birds seem to advertise the presence of the nests, but protection is enhanced by selecting locations in tall trees, thorny cacti or otherwise inaccessible places (Vaurie 1980). Additionally, such nests may hang or incorporate false or elongated entrance tunnels making access to the nest chambers more difficult for potential predators (Vaurie 1980, Zykowski & Prum 1999).

Nest sharing (two species simultaneously inhabiting the same active nest), nest association (the close proximity of nests of two species) and nest reuse (utilizing an abandoned or usurped nest of another species) have been widely documented in South American birds (Lindell 1996, Oniki & Willis 2003, Burger & Gochfeld 2005, Nores 2009). In this note we document what is, to our knowledge, the first observation of two unrelated bird species simultaneously adding material to the same nest platform at an early stage of construction.

Observations took place on 11th September 2012 at Parque Nacional Teniente Agripino Enciso (Boquerón department, northern Paraguay). The study area consists of a clearing surrounded by low, arid thorn forest typical of the dry Chaco (Short 1975). The birds were observed for four hours (11 am to 3 pm) with 10 x 40 Minox binoculars by the authors. Detailed notes and photographs of observed behaviors were taken.

The beginnings of a bowl-shaped nest platform (approximately 40 x 30 cm) were located on an outer branch of a large *Chorisia insignis* tree, adjacent to the accommodation block at the park headquarters. The tree already contained two other medium-sized parakeet nests, and an adjacent tree contained a large nest of Brown Cacholote (*Pseudoseisura lophotes*), all constructed from similar thorny twigs. The ground below and around these nests was littered with twigs that presumably had fallen

from these constructions or were rejected by their occupants.

An adult *Myiopsitta* was observed to repeatedly depart some distance from the platform and return with thorny twigs. These were incorporated into the lower part of the construction by the birds. At the same time, at least three individuals of *Coryphistera* were observed collecting sticks from the ground in the area around the nest tree and flying up to the same nest platform on the upper side carrying a stick. On most occasions, birds entered into the nest out of sight of the observer, departing shortly after incorporating the stick into the nest. On two occasions birds were observed incorporating sticks into the outer part of the structure, confirming that they were involved in nest-building. When not actively nest building, both species were observed loafing on or near the nest platform, without apparent antagonism (Fig 1).



Figure 1. *Coryphistera* and *Myiopsitta* loafing without antagonism in the area of the nest platform (Photo Paul Smith).

Avian species documented as associated with *Myiopsitta* nests in their native range include representatives of diverse families e.g. Ciconiidae (Burger & Gochfeld 2005), Anatidae (Dabbene 1918, Friedman 1927, Port & Brewer 2004), Falconidae (De Lucca 1984, Martella & Bucher 1984, Forshaw 1989), Columbidae (Nores 2009), Cuculidae (Martella *et al.* 1985), Tyrannidae (Martella *et al.* 1985), Passeridae (P. Smith 2012 pers.obs.) and Icteridae (Martella *et al.* 1985).

Though nest chambers of parakeets may be occupied (Port & Brewer 2004) or even sequestered (Martella & Bucher 1984) by associating species, in some cases of nest sharing with larger bird species, it is the parakeet that uses the existing platform and not vice versa. A strong link between parakeet nests and *Jabiru mycteria* was noted by Burger & Gochfeld (2005), with the parakeets adding material to the base of the existing stork nests. Similar behavior was documented in a feral parakeet population in Florida (USA) where nesting material was added to an Osprey (*Pandion haliaetus*) platform (Pranty 2009). Such plasticity in nesting habits has been mooted as a potential factor in the success of *Myiopsitta* as a feral bird (Pranty 2009).

Areta & Bodrati (2007) noted that all material for construction of at least one of their *Coryphistera* study nests was collected within 25 m of the nest site. *Myiopsitta* continually adds material to enlarge nests that are maintained as roost sites throughout the year (Nores 2009) and as a result, a super-abundance of fallen twigs accumulates below. Because of the considerable amount of material required to construct their bulky nests, species such as *Coryphistera*, which are unable to break large twigs directly from trees, may arguably benefit from locating their nests close to those of *Myiopsitta*.

This is the first documented direct association between *Myiopsitta* and *Coryphistera*. How the collaboration may have been initiated however is a matter for speculation. Whilst *Myiopsitta* has been observed to vigorously defend its nest against intruders (Port & Brewer 2004,

Nores 2009), Areta & Bodrati (2007) noted that *Coryphistera* is a non-aggressive species that tolerates the presence of diverse species in the area around their nests, including potential predators. It may thus be hypothesized that the parakeets have utilized a platform established by *Coryphistera* in a desirable location of a tree already occupied by *Myiopsitta* nests as a base for the construction of a new nest.

When nesting in trees, *Myiopsitta* shows a preference for taller trees with wider trunk diameters. Nest site selection characteristics that can be attributed to an improved structural security (nests in wider trees tend to fall down less often), weather constraints (avoidance of strong winds) and predator avoidance (Burger & Gochfeld 2005). Whilst high winds are a common occurrence in the study area, the habitat characteristics of the dry Chaco means that the number of tall trees with wide trunks is limited, and hence suitable nest sites in trees may be in short supply. Bearing in mind the bulky nests that are built by the species, it may be hypothesized that *Coryphistera* shares these site selection criteria, thereby augmenting the probability of suitable sites for each species being in close proximity to each other.

Apart from the preference for similar building materials, certain aspects of the nest architecture make these two species potentially compatible in a nest-sharing scenario. The entrances to *Myiopsitta* nests are located in the lower part of the nest (Juniper & Parr 1998), and their nests are constructed first by establishing a roof and then adding material to the underside of the structure (Burger & Gochfeld 2005). In *Coryphistera* the entrance to the nest is on the upperside (de la Peña 2010), hence the nest is constructed first by establishing a base and then adding material to the sides to build the walls upwards, passing through a stage in which it resembles a large bowl (Areta & Bodrati 2007). During our observations, both species were working in opposite directions without coming into direct contact with each other and hence avoiding disputes.

In the Brazilian Pantanal, Burger & Gochfeld (2005) noted nests of *Myiopsitta* as sometimes forming part of the nest of the Grey-crested Cacholote (*Pseudoseisura unirufa*), another Furnariid that builds a large stick nest (Zykowski & Prum 1999). However, the authors did not detail the building process of those nests. There are no previous reports of *Coryphistera* nest sharing with any other species, and though the observation of nests incorporating those of *Pseudoseisura unirufa* may be considered an analogous situation in a related species, this is apparently the first reported observation of two species of birds simultaneously adding material to the same nest platform.

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