The nest of Buff-throated Purpletuft Iodopleura pipra leucopygia

Authors: Crozariol, Marco Aurélio, and Teixeira, Dante Martins

Source: Bulletin of the British Ornithologists' Club, 144(4) : 445-450

Published By: British Ornithologists' Club

URL: https://doi.org/10.25226/bboc.v144i4.2024.a7

The nest of Buff-throated Purpletuft *Iodopleura pipra leucopygia*

by Marco Aurélio Crozariol & Dante Martins Teixeira

Received 27 May 2024; revised 28 September 2024; published 4 December 2024

http://zoobank.org/urn:lsid:zoobank.org:pub:6D276334-26F0-4A83-BCB0-DE9E31F207F7

Summary.—Collected in Alagoas, north-east Brazil, in 1984, the sole nest of *Iodopleura pipra leucopygia* (Buff-throated Purpletuft) was not described at the time due to its being misidentified as belonging to White-browed Purpletuft *I. isabellae*. However, it was collected and deposited at the Museu Nacional, Universidade Federal do Rio de Janeiro, and its measurements and construction materials are described here. For the first time, the use of spider webs in the nest of Buff-throated Purpletuft *I. pipra* is indicated, and comparison with the few available descriptions of nests of congeners reveals that only this species is currently known to use lichens and bryophytes. The nest description presented here is the most detailed for any species of the genus *Iodopleura*.

Endemic to Brazil, Buff-throated Purpletuft *Iodopleura pipra* inhabits the Atlantic Forest and is globally threatened (BirdLife International 2023, Snow *et al*. 2024). Two subspecies are generally recognised: *I. p. pipra* (Lesson, 1831), which occurs from Paraná to Bahia, and *I. p. leucopygia* Salvin, 1885, confined to the Pernambuco Centre of Endemism (PCE), between Alagoas and Paraíba (Collar *et al*. 1992, Snow *et al*. 2024), although not all authors accept this delineation of their ranges, e.g., Dickinson & Christidis (2014) indicated a much wider distribution for *leucopygia*, extending south to north-east Minas Gerais and southern Bahia. Kirwan & Green (2011), however, suggested that the morphological evidence for recognising two subspecies is subject to some doubt (G. M. Kirwan *in litt*. 2024).

Although there are some descriptions of this species' nest (Willis & Oniki 1988, Mendonça & Gonzaga 2000, Whittaker & Kirwan 2008), all of them are from south-east Brazil, principally São Paulo and Rio de Janeiro, and pertain to *I. p. pipra*. The only nest found in the PCE was mentioned by Teixeira *et al*. (1987), who merely indicated that it agreed with the description of the nest of White-browed Purpletuft *I. isabellae* by Sick (1979). However, the nest was collected and deposited in the Museu Nacional (MN/Nest-52412), Universidade Federal do Rio de Janeiro. It is formally described here, 40 years after it was collected.

The nest (Fig. 1) was collected at Pedra Branca (09°15'S, 35°50'W), in the municipality of Murici, Alagoas, at 1,800 m, on 12 May 1984, two days after it was found (Teixeira *et al*. 1987). Initially thought to belong to White-browed Purpletuft *I. isabellae*, the authors subsequently corrected their error, indicating that they had rediscovered *I. p. leucopygia*, then known only from its two syntypes, erroneously believed to come from Guyana (Teixeira *et al*. 1990) and held in the Natural History Museum, Tring (Warren & Harrison 1971). Snow (1982: 41) was first to realise that these specimens are more likely to have originated in eastern Brazil, and that most specimens from the latter country supplied by the same dealer, H. Whitely Sr., might emanate from Bahia (although this likely reflects their point of shipment, rather than original locality; G. M. Kirwan *in litt*. 2024). Due to the original misidentification as *I. isabellae*, Teixeira *et al*. (1987) compared the nest only with the description of the latter

ISSN-2513-9894 (Online)

Figure 1. Nest of Buff-throated Purpletuft *Iodopleura pipra leucopygia* deposited in the Museu Nacional/UFRJ (MN/Nest-52412). Top: compared to the size of a female (MN 36379), which measured 10.5 cm (© Hipólito D. Xavier). Bottom: view of the nest from above (© Claydson P. de Assis)

species by Sick (1979), as noted by Whittaker & Kirwan (2008). As a result, the first formal description of the nest of *I. pipra* was by Willis & Oniki (1988).

The Alagoas nest was sited 15 m above ground and supported at the base, saddled in a horizontal fork. From above, the nest was oval-shaped with an external diameter of 47.65 × 38.67 mm and an internal diameter of 21.47 × 17.77 mm. Its external height varied according to the supporting branch, measuring 9.44 mm on one side, 3.86 mm on the other and, at a point where the material hugs the supporting branch, it measured 20 mm, as the material extends below it. The internal height was just 7.74 mm. The nest was sited exactly where the branch forked, being supported by three branches with diameters of 23.0, 22.5 and 17.25 mm. The nest wall was 8.2 mm thick on one side and 9.0 mm on the other.

Identification of the material used to construct the nest is not straightforward and it was not noted on the label whether the material was still alive or if it was already completely dry when collected. Externally, there are leafy foliose lichens and shrubby fruticose lichens, which were probably alive when the nest was active, as well as small pieces of dry leaves.

ISSN-2513-9894 (Online)

Figure 2. Nest of White-browed Purpletuft *Iodopleura isabellae* collected and reported by Sick (1979) and deposited in the Museu Paraense Emílio Goeldi, Belém (MPEG.NIO 055). Top: compared to the size of a female (MPEG 057196), which measured 12.3 cm. Bottom: from above, showing its oval shape and the supporting branch visible through the egg chamber (Marco A. Crozariol)

Lichens, when alive, should cover a greater surface area of the nest, and their colours are also lost after drying in a museum collection. The outermost layer conceals the material inside the construction, although the latter appears to be principally rootlets, thin leaf rachis and, especially, black filaments of (presumably) *Marasmius* sp. fungi, with fewer lichens and leaf fragments. It would be necessary to cut open the nest to discover if there is any other type of material different from that visible externally and internally, however it appears quite uniform in its construction, other than the greater use of lichens and leaf fragments on the outer wall. Due to its age, it is not easy to see spider webs in the nest, but they are

ISSN-2513-9894 (Online)

present and are probably the principal material binding the nest together and fixing it to the supporting branch.

The nest described here, as well as that by Mendonça & Gonzaga (2000), can be classified as the 'low cup/fork' type (Simon & Pacheco 2005). Although measurements were not presented, Whittaker & Kirwan (2008) also indicated this classification for the nests they observed. It is important to highlight, however, that the nest described here was in a horizontal fork, a category not included in the system proposed by Simon & Pacheco (2005). Previously described nests of *I. pipra* were placed either on single branches or in forks involving up to four branches (Willis & Oniki 1988, Whittaker & Kirwan 2008), some not horizontal (Mendonça & Gonzaga 2000, Whittaker & Kirwan 2008). The same is true for the other species of *Iodopleura* (Sick 1979, Whittaker & Kirwan 2008, Ingels & Vinot 2010).

Only one prior description for *I. pipra* indicates the size of the nest, 25 mm in external diameter and 6 mm internal height, after the nestling fledged (Mendonça & Gonzaga 2000). Because nests are always high above ground, 10–25 m (Kirwan & Green 2011), acquiring measurements is difficult. The only measured nest, from Rio de Janeiro and belonging to *I. p. pipra*, is even smaller than that described here, which was carefully preserved in a box and does not appear to have undergone any changes in its size as a result. The description here is the most complete for any *Iodopleura*. The unique nest described for Dusky Purpletuft *I. fusca* included only an estimate of its size (Ingels & Vinot 2010), as in the nests of *I. isabellae* reported by Whittaker & Kirwan (2008). The sole exception is the nest of *I. isabellae* described by Sick (1979) which was collected and deposited at the Museu Paraense Emílio Goeldi, Belém (MPEG.NIO 055), where MAC examined it in March 2023. According to Sick (1979), this nest, which is also oval when viewed from above, measured 34 × 30 mm (external diameter), 10 and 13 mm (external height), *c*.10 mm (internal height) and had walls 3 and 5 mm thick at the rim (and thicker basally). Sick (1979) did not mention its internal diameter, which MAC measured as 38.0 × 28.5 mm. Like the Alagoas nest, the material in Sick's nest hugs the sides of the supporting branch, which was 20 mm in diameter (Sick 1979). Given that *I. pipra* measures 8.7–10.5 cm (Kirwan & Green 2011), the Alagoas nest's external diameter (average 4.3 cm) represents 40.1–49.4% of the bird's total length, while for *I. isabellae*, which is 11–13 cm (Kirwan & Green 2011), its nest is even smaller (2.5 cm; Sick 1979), or just *c*.18.5–22.7% of the bird's length.

Nest materials were previously also described, for the most part, based on field observations (Willis & Oniki 1988, Whittaker & Kirwan 2008). Willis & Oniki (1988) mentioned that 'nests were whitish, like the barely smaller twigs, but [with] slightly darker blotches – probably lichens', whilst Mendonça & Gonzaga (2000) confirmed that the nest is covered externally with lichens and mainly bryophytes, as well as plant fibres and *Marasmius* sp., all well bound together. Although no description clearly indicates that the bird uses live lichens, observations made by G. M. Kirwan in Ubatuba, São Paulo, of a nest under construction confirmed that the 'female collected fresh lichens' (Whittaker & Kirwan 2008). Lichens help both to camouflage the nest and 'mimic' the bird's plumage (Willis & Oniki 1988, Kirwan & Green 2011). Use of spider webs is indicated here for the first time for *I. pipra*. The nest of *I. isabellae* contains abundant spider webs (Sick 1979, Whittaker & Kirwan 2008), extending along the supporting branch up to 9 cm from the nest itself (Sick 1979). *I. fusca* also appears to use spider webs in nest construction (Ingels & Vinot 2010). *I. isabellae* has been observed using excrement in nest building (Whittaker & Kirwan 2008), which we did not identify in the Alagoas nest, if it is present. Sick (1979) also noted the use of *Marasmius* sp. in the nest of *I. isabellae*, especially internally. However, he drew attention to the possibility that this nest was not finished, as it lacked a lining, especially as it is

ISSN-2513-9894 (Online)

possible to see the supporting branch through the egg chamber (Fig. 2). Based on our nest of *I. p. leucopygia*, there is no difference in the material used in the egg chamber.

Although *Iodopleura* nests are considered to be generally similar (Teixeira *et al*. 1987, Ingels & Vinot 2010), more detailed descriptions are needed. For example, there is no mention of the use of lichens for *I. fusca* or *I. isabellae*, although based on fig. 1 in Ingels & Vinot (2010) the nest of the first-named species may also contain them. The most complete description for *I. isabellae* (Sick 1979) may have involved an unfinished nest, as only the outer part contains spider webs. Sick (1979) mentioned that the construction materials were being analysed for future publication, but we have found only the mention of Cyanophyceae and Chlorophyceae algae in his subsequent works (Sick 1997: 657). These two families of algae occur in lichens (Büdel & Henssen 1983, Sanders & Masumoto 2021). Photographs of *I. isabellae* nests available on the WikiAves (2023) website (WA5056199, WA3428908, WA3412443) are pale grey externally and possibly lack lichens, in general agreement with Sick's (1979) description. Therefore, the use of lichens and bryophytes in nests is currently confirmed only for *I. pipra*.

Nests in collections are an important resource (Russell *et al*. 2013) and we recommend that (where possible) nests of this genus be collected and deposited in museums after the nestling leaves, to enable more detailed studies. Measurements and characteristics of the fresh nest should be noted on labels, permitting more robust future analyses and descriptions.

We provide the first formal description of the nest of the PCE population of *I. pipra*, providing an important addition to knowledge of this population and the genus *Iodopleura* in general.

Acknowledgements

MAC is grateful to the Fundação Cearense de Apoio ao Desenvolvimento Científico e Tecnológico (FUNCAP) for a research grant (n° 08340856/2023). We also thank Claydson Assis, Aline Ariela Passos and Hipólito Xavier for photos and information regarding the specimens in Museu Nacional/UFRJ and Guy Kirwan for his corrections and suggestions on the submitted manuscript.

References:

BirdLife International. 2023. *Iodopleura pipra*. IUCN Red List of Threatened Species 2023: e.T22700818A223485774 (accessed December 2023).

Büdel, B. & Henssen, A. 1983. *Chroococcidiopsis* (Cyanophyceae), a phycobiont in the lichen family Lichinaceae. *Phycologia* 22: 367–375.

Collar, N. J., Gonzaga, L. P., Krabbe, N., Madroño Nieto, A., Naranjo, L. C., Parker, T. A. & Wege, D. C. 1992. *Threatened birds of the Americas: the ICBP/IUCN Red Data book*. International Council for Bird Preservation, Cambridge, UK.

Dickinson, E. C. & Christidis, L. (eds.) 2014. *The Howard and Moore complete checklist of the birds of the world*, vol. 2. Fourth edn. Aves Press, Eastbourne.

Ingels, J. & Vinot, A. 2010. First nest of Dusky Purpletuft *Iodopleura fusca*, from French Guiana. *Bull. Brit. Orn. Cl*. 130: 71–72.

Kirwan, G. M. & Green, G. 2011. *Cotingas and manakins*. Christopher Helm, London.

Mendonça, E. C. & Gonzaga, L. P. 2000. Nidificação de *Iodopleura pipra* (Cotingidae) em Angra dos Reis, Rio de Janeiro. Pp. 172–173 *in* VIII Congreso Brasileiro de Ornitologia, Florianópolis.

Russell, D. G. D., Hansell, M. & Reilly, M. 2013. Bird nests in museum collections: a rich resource for research. *Avian Biol. Res*. 6: 178–182.

Sanders, W. B. & Masumoto, H. 2021. Lichen algae: the photosynthetic partners in lichen symbioses. *Lichenologist* 53: 347–393.

Sick, H. 1979. Zur Nistweise der Cotingidae *Iodopleura* und *Xipholena*. *J. Orn*. 120: 73–77.

Sick, H. 1997. *Ornitologia brasileira*. Ed. Nova Fronteira, Rio de Janeiro.

Simon, J. E. & Pacheco, S. 2005. On the standardization of nest descriptions of Neotropical birds. *Rev. Bras. Orn*. 13: 143–154.

Snow, D. W. 1982. *The cotingas, bellbirds, umbrellabirds and their allies*. Trustees of the Brit. Mus. (Nat. Hist.), London, UK.

ISSN-2513-9894 (Online)

Snow, D., Sharpe, C. J., Mlodinow, S. G., Pyle, P. & Kirwan, G. M. 2024. Buff-throated Purpletuft (*Iodopleura pipra*), version 1.1. *In* Keeney, B. K. (ed.) *Birds of the world*. Cornell Lab of Ornithology, Ithaca, NY. https://doi.org/10.2173/bow.butpur1.01.1 (accessed September 2024).

Teixeira, D. M., Nacinovic, J. B. & Pontual, F. B. 1987. Notes on some birds of northeastern Brazil (2). *Bull. Brit. Orn. Cl.* 107: 151–157.

Teixeira, D. M., Luigi, G. & Almeida, A. C. C. 1990. A redescoberta de *Iodopleura pipra leucopygia* (Salvin, 1885) no nordeste do Brasil (Passeriformes, Cotingidae). P. 179 *in* Resumos, XVII Congreso Brasileiro de Zoologia, Londrina.

Warren, R. L. M. & Harrison, C. J. O. 1971. *Type-specimens of birds in the British Museum (Natural History)*, vol. 2. Trustees of the Brit. Mus. (Nat. Hist.), London.

Whittaker, A. & Kirwan, G. M. 2008. Natural history data for the canopy-dwelling purpletufts *Iodopleura* (Cotingidae), and first documentation of Dusky Purpletuft *I. fusca* for Brazil. *Bull. Brit. Orn. Cl*. 128: 28–35.

WikiAves. 2023. Anambezinho, *Iodopleura pipra*. www.wikiaves.com.br/wiki/anambezinho (accessed December 2023).

Willis, E. O. & Oniki, Y. 1988. Winter nesting of *Iodopleura pipra* (Lesson, 1831) (Aves, Cotingidae) in southeastern Brazil. *Rev. Brasil. Biol*. 48: 161–167.

Address: Marco Aurélio Crozariol, Setor de Ornitologia, Museu de História Natural do Ceará Prof. Dias da Rocha, Campus Experimental de Educação Ambiental e Ecologia/UECE, Rua Divino Salvador, 225, Centro, Pacoti, CE 62770-000, Brazil; and Setor de Ornitologia, Dpto. de Vertebrados, Museu Nacional da Universidade Federal do Rio de Janeiro, Quinta da Boa Vista S/N, São Cristóvão, Rio de Janeiro, RJ 20940-040, Brazil, e-mail: marcocrozariol@gmail.com. Dante Martins Teixeira, Setor de Ornitologia, Dpto. de Vertebrados, Museu Nacional da Universidade Federal do Rio de Janeiro, Quinta da Boa Vista S/N, São Cristóvão, Rio de Janeiro, RJ 20940-040, Brazil.

ISSN-2513-9894 (Online)