

**POLYDESMIDAN MILLIPEDE USED IN SELF-ANOINTING BY A
STRONG-BILLED WOODCREEPER (*XIPHOCOLAPTES
PROMEROPIRHYNCUS*) FROM BELIZE**

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Trepatroncos gigante (*Xiphocolaptes promeropirhyncus*) se unta con un miriápodo polidésmidido de Belice.

Key words: Strong-billed Woodcreeper, *Xiphocolaptes promeropirhyncus*, millipede, Polydesmida, self-anointing.

Many birds are known, under natural conditions, to wipe themselves with ants, fruits or other scent-laden materials (see Simmons 1966). This behavior, often called "anting," whether ants are used or not, generally is thought to transfer to the plumage substances that deter ectoparasites (Simmons 1966) or pathogenic microbes (Ehrlich *et al.* 1986). We report here on a Strong-billed Woodcreeper (*Xiphocolaptes promeropirhyncus*, Dendrocolapidae) from Belize self-anointing with a millipede of the order Polydesmida. This is the first confirmation of a polydesmidan millipede used for this purpose.

On the morning of 17 July, 1997, we observed a Strong-billed Woodcreeper at the edge of a forest at Chan Chich Lodge, near Gallon Jug, Belize. Most records of this species in Belize are from this area, which is char-

acterized by tall forest (Russell 1964). The bird grasped in its bill a flat, bright orange millipede (25–30 mm long), rubbed it against its plumage for several minutes, and then swallowed it. Millipedes of this species were common in the area at the time. The size, shape, and color of the millipede permit confident identification of it as a member of the genus *Aceratophallus* (Rhacodesmidae, Polydesmida), which is represented by four known species in adjoining Guatemala and Yucatan, but is previously unreported from Belize (Hoffman 1999).

The use of millipedes in self-anointing by birds has been reported for the Little Shrike-thrush (*Colluricincla megarhyncha parvula*) in Australia (Sedgwick 1946), the Black-throated Shrikebill (*Clytorhynchus nigrogularis*) (Clunie 1974) and the Jungle Mynah (*Acridotheres fuscus*) (Clunie 1976) in the Fiji Islands, the European Robin (*Erithacus rubecula*) in England

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(Thomas 1982, Eyles 1983, Cramp 1988, Harrup 1992), and the Grey-winged (*Psophia crepitans*) and the Pale-winged (*P. leucoptera*) trumpeters in northern South America (Sherman 1996). M. Théry (pers. com.) observed the Grey-winged trumpeter in French Guiana anoint with millipedes, primarily *Iulus* sp. Millipedes previously reported as those used in self-anointing are *Glomeris* sp. (Thomas 1982), *Iulus* sp. (Cramp 1988), *Tachypodoiulus niger* (Harrup 1992) (all by the European Robin), and *Trigoniulus lumbricinus* (Clunie 1976) (by the Jungle Mynah). Millipedes of the genera *Iulus*, *Tachypodoiulus*, and *Trigoniulus* are in the orders Julida or Spirobolida, which are among the "quinone millipedes," so named because the defensive secretions of their segmental glands consist chiefly of benzoquinones (Eisner *et al.* 1978). Millipedes of the genus *Glomeris* (order Glomerida) secrete toxic quinazolinone alkaloids (Eisner *et al.* 1978).

Polydesmidan millipedes, by contrast, typically secrete hydrogen cyanide, benzaldehyde, and, in some cases, benzoyl cyanide, among other compounds (Eisner *et al.* 1978); they are not known to discharge either benzoquinones or alkaloids. Therefore, our observation on the use of a polydesmidan millipede in anointing suggests that, if the function of wiping millipedes against the plumage is indeed that of appropriating exogenous natural products, birds may use a wider array of compounds from these myriapods than has previously been indicated. Sherman (1996) reported that trumpeters self-anoint with a millipede that was believed to exude hydrogen cyanide, although the species was not identified. Polydesmidan millipedes may be used for this purpose more commonly than is generally appreciated.

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