

NOTA

PREDATION BY *CORALLUS ANNULATUS* (BOIDAE) ON *RHYNCHONYCTERIS NASO* (EMBALLONURIDAE) IN A LOWLAND TROPICAL WET FOREST, COSTA RICA

TODD R. LEWIS

Westfield, 4 Worgret Road, Wareham, Dorset, BH20 4PJ, United Kingdom.

ecolewis@gmail.com

DARRYN J. NASH

60 West Road, Spondon, Derby DE21 7AB. United Kingdom.

darrynnash@hotmail.com

PAUL B. C. GRANT

4901 Cherry Tree Bend, Victoria, British Columbia, V8Y 1S1, Canada.

Corallus annulatus (Northern Annulated Tree-boa) is a little-studied tropical Boid occurring disjunctively throughout Central America and tropical South America in mostly lowland tropical moist and wet forests (Holdridge, 1967; Stafford & Henderson, 1996; Smith & Acevedo, 1997; Henderson *et al.*, 2001). Prior to this report and to the best of our knowledge, small rodents were the only documented prey for wild specimens of *C. annulatus* (Henderson *et al.*, 1995).

Caño Palma Biological Station is situated on the northeast coast of Costa Rica approximately 8 km north of Tortuguero. *C. annulatus* has previously been recorded from *Manicaria* forest at Caño Palma (Myers, 1990; Burger, 2001).

On 12th January 2002 and 15th July 2003 we found two separate *C. annulatus* specimens with *Rhynchonycteris naso* (Proboscis bat) in their stomachs. In the first instance an anerythristic co-

loured juvenile female *C. annulatus* (270 mm TL / 180 mm SVL) was discovered in the roofing rafters at Caño Palma's boat dock (Fig. 1.0). *Rhynchonycteris naso* were regularly observed roosting beneath the dock in groups of between three and eight individuals (Fig 1.1) several nights before we found the snake. We discovered, without the need for regurgitation by palpation, typical shapes of bat morphology and deduced that it was possible that the snake had eaten a *R. naso*. On the second occasion we observed an orange / taupe coloured adult male *C. annulatus* (584 mm TL / 512 mm SVL) swallowing a *R. naso* in the crown of a *Manicaria saccifera* palm, approximately 200 m along a riparian section of the Biological Station's forest. *Rhynchonycteris naso* are an abundant insectivorous bat found throughout most tropical lowlands from southern Mexico through to the northern half of South America (Sorin, 1999). They are a small bat ranging from 35 to 41 mm in forearm length and typically weigh around 4 g. Both *C. annulatus* and *R. naso* are closely associated with trees near rivers and streams and single species roost sites for *R. naso* are almost exclusively found close to water (Goodwin, 1946; Goodwin & Greenhall, 1961; Carter *et al.*, 1966; Plumpton & Jones, 1992; Stafford & Henderson, 1996).

To the best of our knowledge these are the first recorded instances of *C. annulatus* predating on *R. naso*. Previous studies have identified hawks (*Buteo* spp.), falcons (*Falco* spp.) and egrets (*Leucophoyx* spp.) as significant predators of *R. naso* (Husson, 1962; Sander-son, 1941). The Orb spider *Argiope savignyi* (Araneidae) has also been recorded as a predator (Timm & Losilla, 2007). Predation on bats by Boids is well recorded in the tropics, most of which are recorded at the bats' roosting site; *Epicrates cenchrus cenchrus* (Boidae) (Rain-



Fig. 1.0. Anerythristic *Corallus annulatus* with (possible) *Rhynchonycteris naso* meal (Photo: Paul B. C. Grant).



Fig. 1.1. *Rhynchonycteris naso* roosting under Caño Palma Biological Station boat dock (Photo: Paul B. C. Grant).

bow Boa) fed on *Carollia perspicillata* (Phyllostomidae) (Lemke, 1978), *Epicrates anguilifer* (Boidae) (Cuban Boa) predated *Phyllonycteris poeyi* (Phyllostomidae) (Hardy, 1957) and *Epicrates inornatus* (Boidae) (Puerto Rican Boa) ate *Monophyllus redmani* (Phyllostomidae) and *Brachyphylla cavernarum* (Phyllostomidae) (Rodríguez, 1984). The more thoroughly studied *Corallus hortulanus* (Boidae) (Amazon Tree Boa) is known to adopt a sit-and-wait strategy as well as actively snatching bats from the air (Henderson, 2002; Barnett *et al.*, 2007). Given that both the *C. annulatus* and the *R. naso* are primarily nocturnal it is suggested that, on both occasions, the tree-boas adopted a snatching strategy.

We thank The Canadian Organization for Tropical Education and Rainforest Conservation (COTERC) for permission to study at Caño Palma Biological Station and Xavier Guevara of The Ministerio de Recursos Naturales Energía y Minas (MINAE) for permits to study the forest.

REFERENCES

- BARNETT, A. A.; V. SCHIEL & A. DEVENY. 2007. Predation of a bat by a juvenile Amazon Tree Boa (*Corallus hortulanus*: Boidae), in Jaú National Park, Brazil. *The Herpetological Bulletin* 100: 35-37.
- BURGER, R. M. 2001. The herpetofauna of Caño Palma Biological Station, Tortuguero, Costa Rica. *Bulletin of the Chicago Herpetological Society* 36 (12): 243-253.
- CARTER, D. C.; R. H. PINE & W. B. DAVIS. 1966. Notes on the Middle American bats. *The Southwestern Naturalist* 11: 488-499.
- GOODWIN, G. G. 1946. Mammals of Honduras. *Bulletin of the American Museum of Natural History* 79: 107-195.
- GOODWIN, G. G. & A. M. GREENHALL. 1961. A review of the bats of Trinidad and Tobago. *Bulletin of the American Museum of Natural History* 122: 187-302.
- HARDY, J. D. 1957. Bat predation by the Cuban Boa, *Epicrates anguilifer* Bibron. *Copeia* 1957: 151-152.
- HENDERSON, R. W.; T. W. P. MICUCCI; G. PUERTO & R. W. BOURGEOIS. 1995. Ecological correlates and patterns in the distribution of neotropical boines (Serpentes: Boidae): a preliminary assessment. *Herpetological Natural History* 3: 15-27.
- HENDERSON, R. W.; M. HÖGGREN; W. W. LAMAR & L. W. PORRAS. 2001. Distribution and variation in the treeboa *Corallus annulatus* (Serpentes: Boidae). *Studies on Neotropical Fauna and Environment* 36: 39-47.
- HENDERSON, R. W. 2002. *Neotropical Tree-boas: natural history of the Corallus hortulanus complex*. Krieger Publishing Company, Malabar.
- HOLDRIDGE, L. R. 1967. *Life zone ecology (2nd Edition)*. Tropical Science Center, San José, Costa Rica.
- HUSSON, A. M. 1962. The bats of Suriname. *Zoologische Verhandelingen, Rijksmuseum van Natuurlijke Historie Leiden* 58: 1-282.
- LEMKE, T. O. 1978. Predation upon bats by *Epicrates cenchria cenchris* in Colombia. *Herpetological Review* 9: 47.
- MYERS, R. L. 1990. Palm swamps. *Ecosystems of the World* 15: Forested Wetlands. (Ed by A E Lugo, M Brinson & S Brown), pp. 267-278, Elsevier, Oxford.
- PLUMPTON, D. L. & J. K. JONES. 1992. *Rhynchonycteris naso*. *Mammalian Species* 413: 1-5.
- RODRIGUEZ, G. A. 1984. Bat predation by the Puerto Rican boa, *Epicrates inornatus*. *Copeia* 1984: 219-220.
- SANDERSON, I. T. 1941. *Living treasure*. Viking Press, New York.

- SMITH, E. N. & M. E. ACEVEDO. 1997. The northernmost distribution of *Corallus annulatus* (Boidae), with comments on its natural history. *Southwestern Naturalist* 42: 347-349.
- SORIN, A. 1999. *Rhynchonycteris naso* (On-line), Animal Diversity Web. Accessed February 23, 2009 at http://animaldiversity.ummz.umich.edu/site/accounts/information/Rhynchonycteris_naso.html.
- STAFFORD, P. J. & R. W. HENDERSON. 1996. *Kaleidoscopic tree-boas: the genus Corallus of tropical America*. Krieger Publishing Company, Malabar.
- TIMM, R. M. & M. LOSILLA. 2007. Orb-weaving spider, *Argiope savignyi* (Araneidae), predation on the Proboscis bat *Rhynchonycteris naso* (Emballonuridae). *Caribbean Journal of Science*, 43 (2), 282-284.