

- LILLELEHT, L. AND V. MAAVARA. 1978. Starlings rub their feathers with ants. *Eesti Loodus* 21:535-536.
- MONROE, A., M. S. CHADHA, J. MEINWALD, AND T. EISNER. 1962. Defense mechanisms of arthropods. VI. *Para*-benzoquinones in the secretion of five species of millipedes. *Ann. Entomol. Soc. Amer.* 55:261-262.
- POST, W. AND M. M. BROWNE. 1982. Active anting by the Yellow-shouldered Blackbird. *Wilson. Bull.* 94:89-90.
- POTTER, E. F. 1970. Anting in wild birds, its frequency and probable purpose. *Auk* 87: 692-713.
- AND D. C. HAUSER. 1974. Relationship of anting and sunbathing to molting in wild birds. *Auk* 91:537-563.
- PUGH, G. J. F. 1972. The contamination of birds' feathers by fungi. *Ibis* 114:172-177.
- AND M. D. EVANS. 1970. Keratinophilic fungi associated with birds. II. Physiological studies. *Trans. Br. Mycol. Soc.* 54:241-250.
- SANDERS, J. D. 1981. Anting by two blackbirds and a jay. *J. Gloucs. Nat. Soc.* 32:103-104.
- SCHILDKNECHT, H. AND K. KOOB. 1971. Myrmicacin, das erste Insekten-Herbizid. *Ang. Chem.* 83:110.
- SIMMONS, K. E. L. 1982. Anting by a mistle thrush (with notes on blackbirds and other thrushes). *Bristol Ornithol.* 15:166-167.
- SUGIHARA, G. AND K. HESTON. 1981. Field notes on winter flocks of the Ocellated Turkey (*Agriocharis ocellata*). *Auk* 98:396-398.
- WHYTE, I. J. 1981. Anting in blue-eared glossy starlings. *Ostrich* 52:185.

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Nest predation of Plumbeous Ibis by Capuchin Monkeys and Greater Black Hawk.—The Plumbeous Ibis or "Curicaca" (*Harpiprion caeruleus*) is a neotropical species patchily distributed from Tucumán in Argentina north to Mato Grosso in Brazil, Paraguay and Central Bolivia (Meyer de Schauensee 1970). It is uncommon and little known, but information on its general ecology and behavior is available (Belton 1984, Sick 1985, Cintra 1986). In the Pantanal region of Mato Grosso, along the Transpantaneira Highway (about 56°55'W, 17°16'S), I have found this species to be fairly common and I located some nests which contained from eggs to young near fledging (up to three per nest) in August-September. This may indicate two consecutive clutches per year. Unlike other ibises, the Curicacas do not nest in colonies, nests being constructed more commonly on the horizontal limbs of huge fig trees (4 of the 5 nests), I found from 8 to 20 m high. The nest is made of twigs, resembling that of the Wood Stork (*Mycteria americana*).

In the early morning of 5 September 1987, while I followed a group of three capuchin monkeys (*Cebus apella*) in a forested area near the Transpantaneira Highway, one of the monkeys located an ibis' nest about 15 m high on a leafless tree. The monkey climbed to the nest, and immediately was faced by the brooding ibis. The sitting bird threatened the monkey with its half-open bill and uttered harsh cries, trying to strike as the monkey came closer. At each of the bird's attacks the monkey hit it on the head with one hand, managing

to approach and grasp one egg from under the bird as it retreated after such a blow. While the ibis and this monkey engaged in this fighting, a second monkey approached from behind the bird and took an egg from within the nest, almost at the same time the first monkey succeeded in stealing the other egg. Both monkeys moved to lower branches and sucked the eggs, dropping the empty shells and moving away. The bird kept on the nest all the time the monkeys were nearby, screaming.

On 1 September 1988, I found an ibis sitting in a nest, about 20 m high on a limb of a fig tree by a swamp. The following day, at about 16:00 p.m. the screaming of the bird called my attention, and I found an immature Greater Black Hawk (*Buteogallus urubitinga*) on the ibis' nest. One parent ibis was screaming on a branch immediately below, the anterior portion of its body and wings lowered, its bill half-open and pointing at the hawk, its neck, body and tail feathers bristled. The hawk picked up one of the eggs with its bill and dropped it in the nest. The ibis flew to the nest, landed on the edge, and tried to strike the hawk with its bill. The hawk defended itself with one of its talons, and with two strikes made the ibis withdraw to a lower limb. The hawk clumsily picked up the two eggs one at a time dropping them several times and eventually managed to break the shells and ingest the contents. In the meantime, the ibis hopped from one branch to another, screaming and grooming itself.

The defensive behavior of the Plumbeous Ibis at its nest does not seem to be effective against large and aggressive nest-robbers such as monkeys and large hawks but could deter smaller or weaker predators such as opossums, jays, and vultures. This aggressive behavior may also serve to discourage a less motivated predator. Plumbeous Ibises protest strongly against human beings near the nest by screaming, flying only when people are too close. This contrasts with the behavior of the colonial White Ibis (*Eudocimus albus*) that may depart readily from humans and seems more timid toward predators (Bent 1926).

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LITERATURE CITED

- BELTON, W. 1984. Birds of Rio Grande do Sul, Brazil. Part 1. Bull. Am. Mus. Nat. Hist. 178(4):369–636.
- BENT, A. C. 1926. Life histories of North American marsh birds. Smith. U.S.N.M. Bull. 135.
- CINTRA, R. 1986. Nidificação e crescimento de filhote de Curicaca, *Harpiprion caeruleus* (Aves, Threskiornithidae) no Pantanal Matogrossense. Resumos do XIV Congresso Brasileiro de Zoologia, SBZ, Cuiabá.
- MEYER DE SCHAUENSEE, R. 1970. A guide to the birds of South America. Livingstone Pub. Co., Wynnewood, Pennsylvania.
- SICK, H. 1985. Ornitologia Brasileira: uma introdução. Ed. UnB, Brasília.

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