

## THE SHORT-TAILED NIGHTHAWK IS A TREE NESTER

GILLES SEUTIN<sup>1</sup>

Smithsonian Tropical Research Institute  
Apartado postal 2072  
Balboa, Panamá

MARK LETZER

24 Warren Manor Court  
Cockeysville, Maryland 21030, USA

**Abstract.**—A nest of the Short-tailed Nighthawk, *Lurocalis semitorquatus noctivagus*, was found in Panama. It was located on a 15-cm diameter, horizontal branch in an *Erythrina fusca* tree, 6 m above ground. The tree was growing on the side of a pond in semi-open habitat, close to old second-growth, lowland forest. The nestling period was at least 24 d. The nest was similar to that recently described for *L. s. nattereri*, confirming that unlike any other Caprimulgidae, this nighthawk is an arboreal nester. The validity of previous accounts of ground nesting by the species is questioned, and the finding is discussed in the context of the uncertain taxonomy of the Short-tailed Nighthawk complex, and of the evolution of ground nesting in Caprimulgiformes.

### LUROCALIS SEMITORQUATUS ANIDA EN ÁRBOLES

**Sinopsis.**—Un nido del Añapero colicorto, *Lurocalis semitorquatus noctivagus*, fue encontrado en Panamá. Estaba ubicado sobre una rama horizontal de 15 cm de diámetro, en un árbol de *Erythrina fusca*, 6 m de altura. El árbol estaba creciendo al lado de un estanque en un área semi abierta, cerca de un bosque secundario de tierras bajas. El pichón permanece en el nido por lo menos 24 días. El nido fue similar al recientemente descrito para *L. s. nattereri*, confirmando que a diferencia de otros Caprimulgidae, este tapacamino es arboreo. Nosotros ponemos en duda la validez de encuentros previos de anidamiento en el suelo para la especie, y discutimos nuestro hallazgo en el contexto de la taxonomía incierta del complejo del Añapero colicorto, y del anidamiento en el suelo entre los Caprimulgiformes.

Although the Short-tailed Nighthawk, *Lurocalis semitorquatus*, is probably not rare through most of its range, this species is seldom seen and virtually nothing is known of its habits. Here, we provide the first description of an arboreal nest of *L. semitorquatus noctivagus*, which is similar to that of *L. semitorquatus nattereri*. We discuss this finding in the context of the uncertain taxonomy of the Short-tailed Nighthawk complex, and of the evolution of ground nesting in Caprimulgiformes.

### FIELD OBSERVATIONS

The nest of a Short-tailed Nighthawk of the subspecies *noctivagus* was found at Gamboa, Panamá (9°08'N, 79°42'W). On 1 Feb. 1993, ML saw an adult sitting on a large horizontal branch of an *Erythrina fusca* tree. On 4,7,11 and 14 February, GS observed a bird roosting at exactly the same place on that limb, suggesting that it was nesting there. The 14 m high nesting tree was the penultimate tree of a row of 10–15 m tall *Ery-*

<sup>1</sup> Mailing address: Smithsonian Tropical Research Institute, Unit 0948, A.P.O. AA 34002-0948, USA.

*thrina fusca*, *Spondias mombin* and *Cecropia* sp., which ended at a large human-made clearing and was bordered on one side by a paved road and on the other by a large pond. Overall, the habitat was relatively open, lowland second-growth, but was within 250 m of the limits of Parque Soberanía, an extensive tract of dense, old, second-growth lowland forest. The 15 cm diameter horizontal portion of the branch on which the bird was brooding was 6 m above ground (Fig. 1A). The branch was the lowest one of the tree crown and protruded by about 8 m from the main trunk; the nest was approximately 5 m from the trunk. The brooding bird was sitting close to the point where the branch forked on the horizontal plane into two smaller branches; a lip-like ridge connecting the two arms created a wider area where the bird sat (Fig. 1B). On 11 March, GS saw a small downy head emerging from the breast feathers of the attending adult. The nestling's eyes were open, its head and neck were uniformly medium gray, and its bill was black. Thereafter, a single nestling and a brooding adult were seen on several occasions until the end of March. On 3 April, GS photographed the nestling as it stood alone on the nesting branch (Fig. 1B). From a nearby tree it was possible to see that the egg had been incubated in a small ill-defined natural depression on the upper surface of the branch, just before it split. There was no sign of nesting material in or around the depression. The next day K. Kaufman (pers. comm.) found the nesting branch unoccupied. Thus, the nestling period for this individual was at least 24 d (11 March–3 April), which is significantly longer than the 16–20 d range for other caprimulgids (Perrins and Middleton 1985).

#### DISCUSSION

The nest of another subspecies of the Short-tailed Nighthawk, *L. semitorquatus nattereri*, has been described recently (Straneck et al. 1987). The three nests these authors had found were located on large horizontal branches of forest trees, 10–18 m above ground. Their observations provided the first evidence of arboreal nesting by a Caprimulgidae. As with all other caprimulgids, the single egg, as observed in the nest that could be inspected closely, was laid directly on the substrate with no lining or other construction material involved. Thus, the nests of *L. semitorquatus nattereri* found by Straneck et al. (1987) closely resemble that of *L. semitorquatus noctivagus* described above, although the latter was located lower in a tree found in relatively more open habitat.

Apart from the report of Straneck et al. (1987), three descriptions of *L. semitorquatus* nests are available in the literature. Straneck et al. (1987) suggested that the nests of *L. semitorquatus nattereri* described by Fiebrig (1921) and by Bertoni (1923) were misassigned to the Short-tailed Nighthawk because they did not correspond to the nests they themselves described for the same subspecies, and because Bertoni (1926) himself expressed doubts about his assignment of the nest he found to the species. Herklots (1961) provided the third description, stating that *L. semitorquatus semitorquatus* in Trinidad is a ground nester. This statement is



FIGURE 1. A. The tree (*Erythrina fusca*) in which a nest of *Lurocalis semitorquatus noctivagus* was located. B. The nesting branch on which the nestling (1 d before fledging) is sitting. On both panels, the arrow indicates the position of the nest.



FIGURE 1. Continued.

based on Herklots's observation of a bird incubating on the ground a single egg, much smaller in size ( $23.5 \times 16$  mm) than the one Straneck et al. (1987) measured ( $37 \times 25$  mm). The subspecies *semitorquatus* and *noctivagus* are thought to be more closely related to one another than either one is to *nattereri* (e.g., American Ornithologists' Union 1983, Griswold 1936, Meyer de Schauensee 1966). The fact that both *noctivagus* and *nattereri* are arboreal nesters, that the egg measured by Herklots (1961) was definitely small for a caprimulgid (Fig. 2), and that the habitat in which the Trinidad nest was found (simply described as savannah) is quite atypical for the species, suggest that Herklots might have misassigned the nest he found to *L. semitorquatus*. Until new evidence to the contrary becomes available, the Short-tailed Nighthawk *sensu largo* should be considered as an arboreal nester. Unconfirmed differences in the breeding habits of some subspecies should not be considered in the debate over the recognition of some forms as distinct species (see American Ornithologists' Union 1983, Fjeldså and Krabbe 1990, Meyer de Schauensee 1966).

One observation that was not discussed by Straneck et al. (1987) in their report of *L. semitorquatus nattereri* breeding is the description of three eggs provided by Schönwetter (1960–1967). These eggs were closer in size ( $31.2\text{--}32.3 \times 22.0\text{--}24.0$  mm) to that measured by Straneck et al.

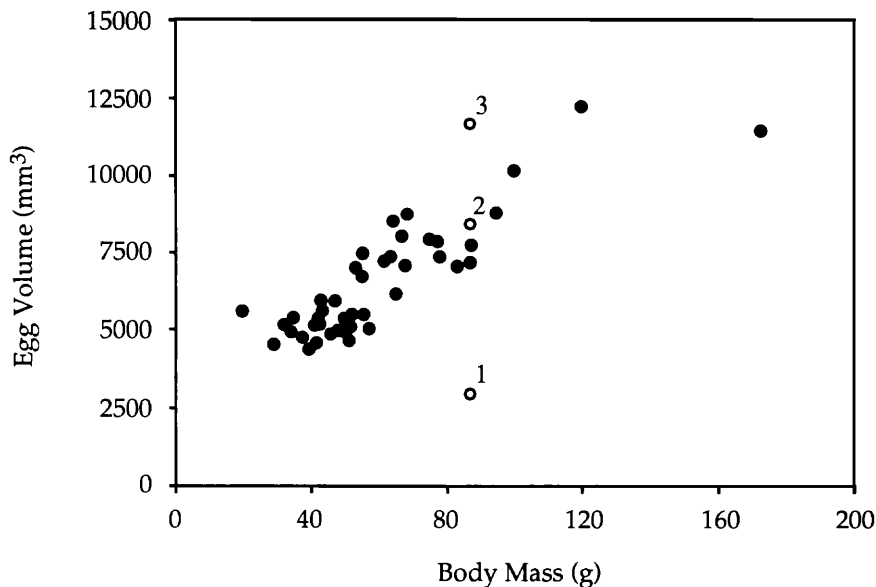


FIGURE 2. Relationship between body mass and egg volume in caprimulgid species. Each filled dot represents one species (as presented in Dunning 1993). Open dots represent *Lurocalis semitorquatus* position in this allometric space based on egg measurements provided by: 1 = Herklots (1961); 2 = Schönwetter (1960–1967); and 3 = Straneck et al. (1987). Male body masses (from Dunning 1993) were used whenever given separately from female masses because they are typically based on larger sample size and are independent of laying condition. Egg volumes ( $V$ ) were estimated using Hoyt's (1979) formula:  $V = 0.51 \times LB^2$ ;  $L$  (egg length) and  $B$  (maximum breadth) were taken from Schönwetter (1960–1967), matching geographic origin of mass and egg measurements whenever possible.

than to the one described by Herklots (1961), and have precisely the volume expected for a nighthawk the size of *L. semitorquatus nattereri* (Fig. 2). Still, we question Schönwetter's report for two reasons. Firstly, he described white unmarked eggs, whereas Straneck et al. observed a white egg speckled with brown and gray. Secondly, although Schönwetter rarely provided information on nest location or substrate in his Handbuch, we are confident that he would have recognized the significance of tree nesting by a nighthawk, had it been known to him, and that he would have reported it. It is also possible that the eggs Schönwetter reported upon were collected without nest data.

Sibley and Ahlquist (1990) have proposed that the eared-nightjars (family Eurostopodidae) and the typical nighthawks and nightjars (family Caprimulgidae) are relatively distantly related and, together, form a monophyletic group, the parvorder Caprimulgida, part of the suborder Caprimulgi. Apart from members of the parvorder Caprimulgida and the cave nesting Oilbird (*Steatornis caripensis*, parvorder Steatornithida), all

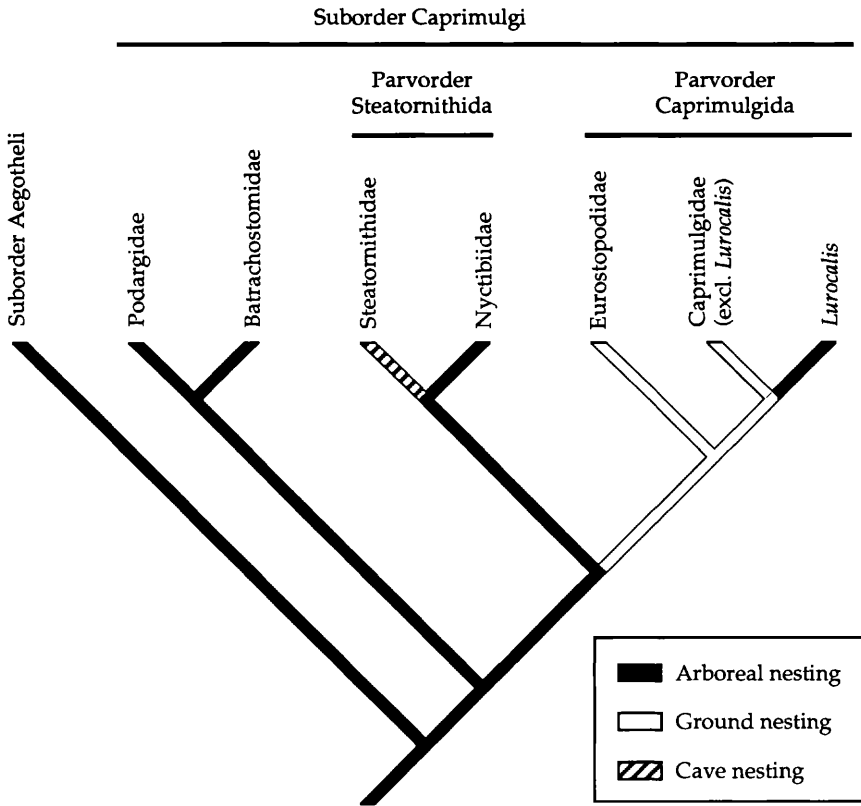


FIGURE 3. Analysis of nesting substrate preferences in Caprimulgi. The phylogenetic relationships presented and the nomenclature are those proposed by Sibley and Ahlquist (1990).

species in Sibley and Ahlquist's suborder Caprimulgi (i.e., frogmouths, potoos) and its sister-suborder Aegotheli (i.e., owlet-nightjars) are arboreal nesters (Fig. 3). Thus, arboreal nesting seems to be the primitive condition in Caprimulgi, and ground nesting a derived condition shared by all Caprimulgida but *Lurocalis*. In this context, *Lurocalis*'s habit of nesting in trees is apparently a derived condition (although a reversal to the ancestral state) within Caprimulga (Fig. 3). Consequently, this behavioral particularity is not informative of the position of *Lurocalis* within the family Caprimulgidae.

Analyzing nighthawks' breeding in a phylogenetic context, as we have done above, reveals the apparently limited flexibility of nest substrate selection within caprimulgiform families. This trend seems to be typical of non-passerine birds, where whole families often share a single type of nest (e.g., holes in trees, excavations in the ground, ground-surface nests,

arboreal nests). In comparison, several passerine and a few non-passerine families comprise species with diverse nest substrate characteristics. In the most extreme cases, ground and arboreal nesters are found within a single species (e.g., *Zenaidra* sp., *Asio otus*, *Empidonax* sp., *Toxostoma rufum*, *Melospiza melodia*).

The nest of *Lurocalis semitorquatus* remained unknown until recently, probably as a consequence of the species unexpected habit, for a caprimulgid, of being an arboreal nester.

#### ACKNOWLEDGMENTS

GS was supported in Panama by a post-doctoral fellowship of the Natural Sciences and Engineering Research Council of Canada. We thank D. Engleman, L. Engleman and K. Kaufmann for sharing their observations and G. Adler for identifying the nesting tree. We appreciated D. Engleman's comments on an earlier draft of the manuscript.

#### LITERATURE CITED

- AMERICAN ORNITHOLOGISTS' UNION. 1983. Check-list of North American birds. 6th ed. American Ornithologists' Union, Washington, D.C. 877 pp.
- BERTONI, A. DE W. 1923. Notas Zoológicas. II. Observaciones ornitológicas. Rev. Soc. Cient. Parag. 1.
- . 1926. Apuntes ornitológicos. Hornero 3:396–401.
- DUNNING, J. B., JR. (Ed.). 1993. CRC handbook of avian body masses. CRC Press, Boca Raton, Florida. 371 pp.
- FIEBRIG, C. 1921. Algunos datos sobre aves del Paraguay. Hornero 2:205–213.
- FJELDSÅ, J., AND N. KRABBE. 1990. Birds of the high Andes. Zool. Mus., Univ. Copenhagen, Copenhagen, Denmark. 876 pp.
- GRISWOLD, J.A. 1936. A new subspecies of *Lurocalis* from Panama. Proc. New England Zool. Club 15:101–103.
- HERKLOTS, G. A. C. 1961. The birds of Trinidad and Tobago. Collins, London, United Kingdom. 287 pp.
- HOYT, D. F. 1979. Practical methods of estimating volume and fresh weight of bird eggs. Auk 96:73–77.
- MEYER DE SCHAUENSEE, R. 1966. The species of birds of South America and their distribution. Acad. Nat. Sci., Philadelphia, Pennsylvania. 577 pp.
- PERRINS, C. M. AND A. L. A. MIDDLETON. 1985. The encyclopedia of birds. Facts on File Publ., New York, New York. 445 pp.
- SCHÖNWETTER, M. 1960–1967. Handbuch der oologie. Band 1. Akademie Verlag, Berlin, Germany. 928 pp.
- SIBLEY, C. G., AND J. E. AHLQUIST. 1990. Phylogeny and classification of birds: a study in molecular evolution. Yale Univ. Press, New Haven, Connecticut. 976 pp.
- STRANECK, R., R. RIDGELY, M. RUMBOLL, AND J. HERRERA. 1987. El nido del Atajacamino castaño *Lurocalis nattereri* (Temminck) (Aves, Caprimulgidae). Comunicaciones del Museo Argentino de Ciencias Naturales «Bernardino Rivadavia» 4:133–136.

Received 26 Oct. 1993; accepted 7 Mar. 1994.