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Wilson Bull., 105(1), 1993, pp. 190–193

Male-male nesting behavior in Hooded Warblers.—Intrasexual pairing by males has not been reported in natural populations of monogamous birds. Here I report a case of a male Hooded Warbler (*Wilsonia citrina*) that paired with color-banded males in two successive years and exhibited female behavior at the nest.

On 10 May 1988 at the Smithsonian Environmental Research Center, 12 km SSW of Annapolis, Maryland (38°53′N, 76°33′W), I saw an unbanded Hooded Warbler with male plumage land on a nest. It carried dead grass fibers in its bill and added them to the nest. It then sat on the nest, raised up, switched positions and sat again. This was repeated several times as it shaped the nest cup. The nest was within the territory of a banded male (X) which had engaged in territorial singing in the same area the previous summer.

With the exception of Prothonotary Warblers (*Protonotaria citrea*), nest building by male wood-warblers is infrequent, and males do not contribute to incubation or brooding (Kendeigh 1952, Morse 1989). Verner and Willson (1969) report two literature citations of male Hooded Warblers building nests and three records of their incubating. Hooded Warblers,

however, are unusual in that females exhibit delayed plumage maturation. The plumage of juvenile females contains virtually no black, whereas the extent of black on adult females is highly variable and can approach that of males (Morton 1989). Therefore, observations of melanistic females could be erroneously ascribed to males (Morse 1989). Because this bird was building a nest in the center of another male's territory, I believed the bird to be a female with very male-like plumage. The bird's sex, however, was later verified to be male (see below).

On 17 May, an unbanded male (presumably the same) was sitting on the nest, apparently incubating. Due to the density and size of the rose patch containing the nest, its contents were not observed. During the next ten days the unbanded male was seen repeatedly on the nest, occasionally leaving to feed for 5–15 min and returning to sit for another 20–25 min. No female was ever seen in the territory. Male X typically sang nearby while the unbanded male sat on the nest: no aggression was observed between them. X was never seen incubating. Early on 29 May, male X landed on the nest, fed the incubating male, and returned to foraging nearby. On 31 May, X flew to the nest with a cranefly (Tipulidae) and fed nestlings heard chirping. The origin of the nest contents is unknown. Hooded Warbler chicks may have been present due to intraspecific brood parasitism by a neighboring female. Because Brown-headed Cowbirds (*Molothrus ater*) may lay eggs in empty nests (Sealy 1992), it is possible that the young were cowbirds. On 3 June, I saw both adults fly to the nest carrying craneflies. Later that day I netted and banded the unbanded male (Y) as it returned to the nest with food. It did not have a developed cloacal protuberance or brood patch. Males banded at the study site have longer unflattened wing chords ($\bar{x} \pm SD = 66.1 \pm 1.6$ mm, $N = 44$) than females (62.6 ± 1.4, $N = 22$) and are heavier (10.9 ± 0.7 g, $N = 41$) than females (10.4 ± 0.8, $N = 17$). The wing chord (67 cm) and weight (12.3 g) of Y were within the size range of a large male. Its plumage was completely male-like: it had a complete black hood, including the chin. When male X was recaptured four days later, he had a well developed cloacal protuberance. By 5 June the nest had been depredated. Male X remained on his territory the rest of the summer; however, Y was not seen in X's territory again in 1988. On 7 June, Y was seen foraging in the territory of another male (Z), 500 m from the nest site described above.

In 1989 male X returned to the same territory and mated with a female with a moderate amount of black on her head (class "2," sensu Lynch et al. 1985). On 10 June 1989, I recaptured Y in a territory adjacent to that of X. He had a slightly developed cloacal protuberance. It is unlikely that he had been singing in the area because it was censused 3–4 times per week and he had not been detected. On 6 July, I saw Y sitting on a nest in the territory of male Z (the territory where he was seen after the nest failure the previous year). Male Z had held this territory since at least 1987 and consistently sang and defended the territory through 1991. The nest Y sat on contained one large Brown-headed Cowbird nestling, a small Hooded Warbler nestling, and one Hooded Warbler egg. Male Z returned with food, Y took part of it, and they both fed the young. During the next four days Y regularly was seen incubating/brooding, whereas most food was delivered by Z. Once I observed Z feed Y but not the chicks. In daily censuses, I never saw a female in the territory. On 10 July, the nest was depredated. Y was not seen in this territory for the rest of the year.

Y returned again in 1990. On 23 May 1990, I saw him in the territory of his 1988 mate (X), who also returned and mated with a non-melanistic female. Y flew to within 15 m of his 1988 nest location. This time, however, he sang a few times. Y had never previously been heard singing. His song was abnormal, as it was abbreviated and had an unusual syntax. When I recaptured Y in a territory adjacent to that of X on 13 June, he had a well-developed cloacal protuberance. A laparotomy on 3 July revealed a cream-colored testis in breeding condition on the left side. The bird was collected two weeks later by which time the testes

had regressed somewhat. Both testes were light cream color and appeared normal. The right was approximately 3 × 2 mm, the left was 3.5 × 2.5 mm. Examination of histological cross sections of the testes revealed normal spermatocytes (R. Montali, pers. comm.). No ovarian tissue was present. In all aspects of its anatomy, the bird was a male.

Contradictory to Y's status as a male, all his behavior observed during 1988 and 1989 was categorically female; e.g., nest building, incubating and brooding young, but not singing or engaging in territorial defense. The cause of Y's female behavior remains unknown. Although the behavior of male Y was atypical, both of his "mates" exhibited normal male behavior: singing, feeding mates on the nest, and not incubating or brooding (Morse 1989). Because of their behavior and because a female was never seen at the nests, it is clear that while tending to eggs laid by an unknown female, these males were functioning similar to normal heterosexual pairs, with male Y demonstrating typically female behavior.

The reason males that were previously or subsequently members of typical heterosexual pairs mated with male Y may be related to the variability of female plumage. Because female plumage in Hooded Warblers can approach that of males, sexual recognition may be based on behavioral cues when the plumage and behavior appear contradictory. Collias and Jahn (1959), Dilger (1960), and Burley (1981) all emphasized importance of behavior to sexual recognition in monomorphic species. Therefore, if melanistic adult females are acceptable to males, then a male exhibiting typically female behavior might be chosen as a mate by an otherwise heterosexual male.

Acknowledgments.—I thank M. Foster for performing the laparotomy, R. Montali of the National Zoological Park for verifying the condition of the gonads, T. Parsons for his help at the Smithsonian Laboratory of Molecular Systematics, and H. Wimer for preparing the histological slides. M. Hayes, S. Robinson, B. Stutchbury, and two anonymous reviewers commented on drafts of the manuscript. This study was funded by a Smithsonian Graduate Student Fellowship.

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Wilson Bull., 105(1), 1993, pp. 193–194

Olive-sided Flycatchers in southeastern Brazil.—The Olive-sided Flycatcher (*Contopus borealis*) winters principally in the highlands of Central America and the Andes, with occasional birds in the lowlands to Amazonian Brazil (A.O.U. Checklist of North American Birds, 6th edition, 1983, plus observations of Willis and Stotz near Manaus and of Stotz, 10 Oct. 1987, at Colonia Apiau, Roraima, 2°39′N, 61°12′W). On 27 Nov. 1983, Snow saw an Olive-sided Flycatcher at the Boracéia Biological Station (23°38′S, 45°51′W) of the Univ. São Paulo, at 850 m elevation in the Serra do Mar of São Paulo State, southeastern Brazil. On 10 Nov. 1987, Stotz encountered possibly the same bird at the station, and on 5 Jan. 1991 he found a bird about 4 km away. Willis encountered a bird at a forest overlook at 800 m (24°17′S, 48°26′W) near Intervales, in cloud forests of the similar coastal range of the Serra do Paranapiacaba, on 14 Feb. and 3–4 March 1987. Parker found two separate birds at 1200 and 1400 m in Itatiaia National Park, Serra da Mantiqueira, in neighboring Rio de Janeiro State (30 Nov.–2 Dec. 1986 and 30 Nov., respectively). Willis and students encountered another bird atop a small eucalyptus line in a forested valley just east of the Serra do Mar on 16 March 1990 (Ubatuba Agricultural Experiment Station, 100 m, 23°25′S, 45°08′W). On 18 March, yet another was located in the next valley, 5 km northeast, atop cecropias of a cocoa plantation with forest canopy (Fazenda Capricornio, 100 m, 23°23′S, 45°05′W). Like the other birds encountered, these called "pip pip pip" frequently and sallied conspicuously from the tops of exposed branches at forest edges or over mountain escarpments.

São Paulo and Rio de Janeiro have been well studied ornithologically since the early 1900s. Collectors such as von Ihering, the Garbes, the Limas, Pinto, Sick, A. Olalla, and E. Dente have worked in the region. While the reclusive Veery (*Catharus fuscescens*) winters regularly in small numbers but had not been recorded until Willis and Y. Oniki found it in 1982, one wonders if a reasonably conspicuous bird like *C. borealis* could have been overlooked. Perhaps a wintering population has developed recently. If so, deforestation in central-western Brazil may have provided the forest clearings the species favors, allowing it to spread eastward. Parker saw one on 30 Oct. 1989 near Alta Floresta, northern Mato Grosso. With further deforestation, the species may disappear once again because of lack of winter habitat, as Marshall (Condor 90:359–382, 1988) has suggested for Californian individuals wintering in excessively deforested Central America. Alternatively, recent spread of Africanized honeybees (*Apis mellifera*) around the Amazon may have helped it move to southeastern Brazil, as it is reported to eat them (Beal, U.S. Dept. Agr. Surv. Bull. 47, 1912).

It may be, however, that low numbers of this and other northern migrants have always wintered in southeastern Brazil but were overlooked until observations increased recently. Other species recently found in southeastern Brazil include a Swainson's Thrush (*C. ustulatus*) Dente collected 1 Feb. 1974 near Boracéia (MZUSP collection, identified as the subspecies *C. u. swainsoni* by Stotz), Blackburnian Warbler (*Dendroica fusca*; Parker et al., Am. Birds 37:274, 1983), and Cerulean Warbler (*D. cerulea*; D. A. Scott and M. deL. Brooke. The endangered avifauna of southeastern Brazil: a report on the BOU/WWF expeditions