

FIGURE. 1. Adult male Marabou Stork showing attachment of bill-tag. Note the flat-sided mandibles (32 cm long in this individual). Photograph by N. A. Din.

The effective life of the tags themselves is likely to be several years but mine became detached after 9-18 months because the wire corroded. This problem could, presumably, be overcome by using wire of thicker gauge or a resistant alloy such as stainless steel.

I am grateful to Makerere University, Kampala, for financial support, and to members of the B.T.O. for their comments on the manuscript.

## LITERATURE CITED

AKESTER, A. R., D. E. POMEROY, AND M. J. PURTON. 1973. Subcutaneous air pouches in the marabou stork (Leptoptilos crumeniferus). J. Zool., Lond., **170:** 493-9.

Houston, D. C. 1974. Food searching in griffon vultures. E. Afr. Wildl. J., **12:** 63-77.

Kahl, M. P. 1966a. Comparative ethology of the Ciconiidae. 1. The marabou stork, Leptoptilos crumeniferus (Lesson). Behaviour, 27: 76-106.

- 1966b. A contribution to the ecology and reproductive biology of the Marabou Stork (Leptoptilos crumeniferus) in East Africa. J. Zool., Lond. **148**: 289-311.

Pomerov, D. T. 1973. The distribution and abundance of marabou storks in Uganda. E. Afr. Wildl. J., 11: 227-40.

Uganda. E. Afr. Wildl. J., 11: 227-40.

POMEROY, D. T., AND M. H. WOODFORD, 1975. Drug immobilization of marabou storks. J. Wildl Manage. In press.

- Derek E. Pomeroy, Department of Zoology, Kenyatta University College, Nairobi, Kenya. Received 7 December 1974, accepted 11 August 1975.

Banding and recapture of wintering warblers in Haiti.—Two seasons were spent netting birds and banding migratory species in Haiti, a country in which the avifauna has been poorly studied. The netting periods were 2 - 10 January 1974 and 22 December 1974 - 12 January 1975. The banding stations were on the north slope of mountains 8 km S. W. of Miragoâne (18° 21' N, 73°

TABLE 1.

Wintering warblers banded and recaptured in Haiti

Common Yellowthroat         15 (35%)         25 (36%)         17 (37%)         24 (41%)         4           Palm Warbler         8 (19%)         14 (20%)         3 (7%)         3 (5%)         1           Black-throated Blue Warbler         6 (14%)         6 (9%)         7 (15%)         10 (17%)         1           Cape May Warbler         5 (12%)         7 (10%)         10 (22%)         10 (17%)         1           Ovenbird Sciences tigrina         4 (9%)         12 (17%)         6 (13%)         9 (15%)         1           American Redstart         2 (5%)         2 (3%)         2 (3%)         9 (15%)         9 (15%)           Sclophaga ruticilla         1 (2%)         1 (2%)         2 (4%)         2 (3%)         9 (15%)           Black-and-white Warbler         1 (2%)         1 (2%)         2 (4%)         2 (3%)         Paraila warder           Prairie Warbler         1 (2%)         1 (2%)         1 (2%)         1 (2%)         1 (2%)           Paraila Warbler         Paraila Warbler         Paraila warder itscolor         1 (2%)         2 (4%)         2 (3%)         Paraila Warbler           Parula americana         46         59         6         6         6         6         6         6         6	Species	1974 Season Number banded Tot	$rac{ ext{eason}}{ ext{Total}}$ captures	1974-1975 Season Number banded Total	5 Season Total captures	Number recaptured from previous season
8 (19%)       14 (20%)       3 (7%)       3 (5%)         Warbler       6 (14%)       6 (9%)       7 (15%)       10 (17%)         us       4 (9%)       12 (17%)       6 (13%)       9 (15%)         us       2 (5%)       2 (3%)       9 (15%)         er       1 (2%)       1 (2%)       2 (4%)       2 (3%)         arbler       1 (2%)       1 (2%)       1 (2%)       1 (2%)         43       69       46       59	Common Yellowthroat	15 (35%)	25 (36%)	17 (37%)	24 (41%)	4
$\begin{array}{llllllllllllllllllllllllllllllllllll$	Palm Warbler	8 (19%)	14 (20%)	3 (7%)	3 (5%)	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Black-throated Blue Warbler	6 (14%)	6 ( 9%)	7 (15%)	10 (17%)	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Cape May Warbler Dendroica tigrina	5 (12%)	7 (10%)	10 (22%)	10 (17%)	
ter $2 (5\%)$ $2 (3\%)$ ter $1 (2\%)$ $1 (2\%)$ $1 (2\%)$ $2 (4\%)$ $2 (3\%)$ arbler $1 (2\%)$ $1 (2\%)$ $1 (2\%)$ $1 (2\%)$ $1 (2\%)$ $1 (2\%)$ $1 (2\%)$ $1 (2\%)$ $1 (2\%)$ $1 (2\%)$	Ovenbird Seiurus aurocapillus	4 ( 9%)	12 (17%)	6 (13%)	9 (15%)	
er $1(2\%)$ $1(2\%)$ $2(4\%)$ $2(3\%)$ arbler $1(2\%)$ $1(2\%)$ $1(2\%)$ $1(2\%)$ $1(2\%)$ $1(2\%)$ $1(2\%)$ $1(2\%)$ $1(2\%)$	American Redstart Setophaga ruticilla	2 ( 5%)	2 ( 3%)			
arbler $1 (2\%)$ $1 (2\%)$ $2 (4\%)$ $2 (3\%)$	Worm-eating Warbler	1 ( 2%)	1 (2%)			
. $1 (2\%) \qquad 1 (2\%) \qquad \qquad 1 (2\%) \qquad \qquad 1 (2\%) \qquad \qquad 1 (2\%) \qquad \qquad$	Black-and-white Warbler Mniotilla varia	1 ( 2%)	1 ( 2%)	2 ( 4%)	2~(~3%)	
1 (2%)   1 (2%) $43   69   46   59$	Prairie Warbler Dendroica discolor	1 ( 2%)	1 ( 2%)			
43 69 46 59	Parula Warbler Parula americana			1 ( 2%)	1 ( 2%)	
	Total.	43	69	46	59	9

00' W, at 650 m) in the Department du Sud. All birds were captured with mist nets and migrants were banded with U.S. Fish and Wildlife Service bands.

Six of the birds banded in January 1974 were recaptured the following winter (four male Common Yellowthroats, Geothlypis trichas; one female Black-throated Blue Warbler, Dendroica caerulescens; one unsexed Palm Warbler, D. palmarum. These birds were all in a group of 43 migrants caught in nets set on a dry hillside between two brushy areas. During the period 22 December 1974 - 6 January 1975, 36 migrants were netted and banded at a station in a more moist brushy area 100 m from the station used the previous year. During this period and at this site no birds banded the previous season were recaptured. Between 7 January and 12 January 1975 the nets were shifted to the location used the previous banding season and of the 16 migrants netted, six were recaptures from the previous season (see above). This indicates a notable tendency for wintering birds to return to a specific site.

Of the 13 Black-throated Blue Warblers banded over both seasons, 12 were females. This preponderance of females agrees with the report of Wetmore and Swales (U.S. Nat. Mus., Bull. 155: 1-483, 1931) and Wetmore and Lincoln (Proc. U.S. Nat. Mus., 82: 1-68, 1933) that most of the birds of this species they collected in the mountains of Haiti were females. In field trips to lower habitats in the Miragoane region I saw more males than females of this species, an observation that suggests different habitat utilization by the two sexes in their winter range. Lack and Lack (Living Bird, 11; 129-153, 1972), in their study of wintering warblers in Jamaica, did not report sexual segregation of this species, although they did report the species as more common at middle elevations and in montane forests. The sex ratios of other warblers banded at my stations were equal.

A Worm-eating warbler (*Helmitheros vermivorus*) was banded on 4 January 1974. This is an unusual warbler in Hispaniola, the first record of this species on the island being one collected in the Dominican Republic by Schwartz and Klinikowski (*Notulae Naturae*, 376: 1-16, 1965). Numbers of the various species banded are indicated in the table below.

This research was supported by the American Philosophical Society, The National Geographic Society and the generosity of Mr. and Mrs. A. G. Butterfield.—Charles A. Woods, Department of Zoology, University of Vermont, Burlington, Vermont 05401. Received 25 March 1975, accepted 23 July 1975.

Effects of neck-collars on the reproduction of Snow Geese.—Plexiglas neck-bands were placed on 1,225 Snow Geese (Chen caerulescens) during the winters of 1969-1970 and 1970-1971 at Sabine National Wildlife Refuge in southwestern Louisiana to study family behavior and movement (see D. A. Smithey, "Social Organization, Behavior, and Movement of Blue and Snow Geese Wintering in Louisiana," M. S. Thesis, La. State Univ., Baton Rouge, 1970). Also, 12,314 Snow Geese were neck-banded with aluminum neck-collars by J. P. Prevett ("McConnell River Goose Studies, 1969–1970: Neckbanded Snow. Blue, and Small Canada Geese," Mimeogr. Rept., 1969. 9 p) in the McConnell River area of Canada between 1966 and 1969 to study family behavior and age-dependent breeding biology of the Snow Goose. Both types of neckbands were coded, provided permanent marking, and allowed identification of individual birds. However, there was some concern over the possibility that neck bands interfere with reproduction because C. J. Lensink (J. Wildl. Manage. 32: 418, 1968) reported that neck bands significantly retarded reproduction in Black Brant (Branta nigricans).

Snow Geese were closely observed during a 6-day period in December, 1973, from a tower overlooking a grit site on Sabine NWR. The Snow Goose productivity was apparently high; 32.8% of the geese utilizing the site were juveniles. This figure was considerably above the 6.9% young observed using the site the previous year. (J. J. Lynch, "1972 Productivity and Mortality Among Geese, Swans, and Brant," U.S. Fish and Wildlife Service, Lafayette, La., 1973, 10 p). During the 6-day period 29 neck-banded Snow Geese were observed, 26 were banded at Sabine Refuge and 3 at the McConnell River area. Eleven different family groups were observed; these contained a neck-banded adult goose and one to three young. Nine of the families contained an individual banded with a Plexiglas collar, and the other two families carried the aluminum collar. No