

## PROTHONOTARY WARBLERS CROSS THE GULF OF MEXICO TOGETHER

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Abstract.—Field observations of “marked” Prothonotary Warblers (*Protonotaria citrea*) suggest that monospecific groups of trans-Gulf migrants depart from the same location, maintain contact while flying at night, and form a homogeneous flock the next morning over the northern Gulf of Mexico.

### INDIVIDUOS DE *PROTONOTARIA CITREA* CRUZAN JUNTOS EL GOLFO DE MEXICO

Sinopsis.—Observaciones de campo de individuos de *Protonotaria citrea* marcados con colorantes en la cabeza, permiten sugerir que grupos monoespecíficos de migrantes que cruzan el Golfo de Mexico parten de una misma localidad. Durante la noche las aves mantienen contacto mientras vuelan, y al llegar la mañana forman grupos homogéneos en la parte norte del golfo.

Radar and direct visual observations indicate that passerines aloft at night migrate singly (Balcomb 1977, Bruderer 1971, Gauthreaux 1971, Hebrard 1971), whereas waterfowl and shorebirds typically remain in flocks during nocturnal migration (Beason 1978, Richardson 1978). Although most passerine trans-Gulf migrants are flying in compact, sometimes single-species flocks when they arrive on the northern Gulf coast, the flocks form at dawn over the Gulf of Mexico (Gauthreaux 1971, 1972; cf. Gehring 1963). On occasions when migrants continued to arrive over the northern Gulf coast near sunset and later, Gauthreaux (1972) observed the breakup of flocks characteristic of daytime migration.

I report two unusual events consistent with the possibility that long-distance, passerine migrants maintain social contact with one another during migration. Monospecific groups of birds are sometimes captured in the same mist-net at the same time of day following spring trans-Gulf migration (Moore, pers. obs.), which is indicative of flocking behavior during stopover. On 29 Mar. 1987 and 5 Apr. 1988, while working on East Ship Island (30°10'N, 88°40'W), a barrier island lying 14 km off the Mississippi Gulf coast, several Prothonotary Warblers (*Protonotaria citrea*) were captured ( $n = 7$  and  $n = 4$ , respectively) in the same mist-net at the same time of day and the forehead of each bird was covered with a thin crust of reddish-orange material. The material was later identified as dried residue from oranges. Other than these two occasions, I have never observed “marked” neotropical migrants on East Ship Island ( $n = 6405$  passerine migrants mist-netted 1988 and 1989) nor at a second study site in Cameron Parish, Louisiana ( $n = 6782$  birds mist-netted 1987 and 1988).

Prothonotary Warblers are nocturnal migrants who undoubtedly ini-

tiated trans-Gulf flight shortly after sunset (see Gauthreaux 1971, Lowery 1951). Because these birds had just arrived following a trans-Gulf flight, the orange residue was evidence of feeding behavior prior to departure. During work with neotropical migrants in Central America, Edward Mills and Tom Rogers (pers. comm.) observed Prothonotary Warblers foraging in orange groves and feeding on insects attracted to oranges that had been "sliced" open by parrots and were lying on the ground. Individuals seen in the vicinity of orange groves often had a reddish-orange tinge on their foreheads. The coincidence of several "marked" Prothonotary Warblers stopping at the same site and being caught in the same location at the same time is circumstantial evidence that the birds initiated trans-Gulf migration together and flew in the same direction at the same speed over a featureless landscape at night. The birds were in close enough contact to form a homogeneous flock as they approached East Ship Island the next morning.

The two observations reported here imply that nocturnal migrants influence each other's orientation behavior (see Hamilton 1967, Wallraff 1978). Nocturnal migrants are known to call at night and do so more frequently under cloudy conditions and during pre-dawn hours (see Gauthreaux 1972, Graber 1968). Calling by migrants aloft may help to maintain social contact at night and facilitate flock formation at dawn. Flocking may provide feeding and anti-predator advantages for migratory birds during stopover in unfamiliar habitat (see Pulliam and Millikan 1982). Moreover, speculation that passerine migrants may form pair-bonds prior to arrival on the breeding grounds has suffered from the belief that migrants fly singly at night, which would make it difficult for pairs to remain together (see Greenberg and Gradwohl 1980).

#### ACKNOWLEDGMENTS

Field research with neotropical migrants has been supported by the U.S. Department of Interior (National Park Service), National Geographic Society, the State of Mississippi Heritage Program, and the University of Southern Mississippi. Special thanks to A. Kuenzi, E. Mills, T. Rogers, T. Simons, and volunteers too numerous to mention, who contribute generously to the field work.

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Received 3 Feb. 1989; accepted 9 Sep. 1989.

## ASSOCIATION OF FIELD ORNITHOLOGISTS

### ANNUAL MEETING 21–24 MARCH 1991

(Tentative Schedule)

<b>21 March</b>	Arrival; Council meeting; reception
<b>22 March</b>	0700 Local field trips
	0915 Welcome
	0930 Symposium: Avian Conservation: the Problem and Solutions
	1200 Lunch
	1300 Symposium: Avian Conservation: the Problem and Solutions (continued)
	1700 Reception
	1800 Symposium Banquet
<b>23 March</b>	0700 Local field trips
	0900 Symposium: Professional in Ornithology
	1100 AFO business meeting
	1200 Lunch
	1300 Contributed paper sessions
	1700 Poster paper session and reception
	1900 Banquet
	2100 COSO String Quartet: An Evening of Avian Chamber Music
<b>24 March</b>	Field trips

If you have thoughts or suggestions, contact the **program chair**:

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