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## BARN SWALLOWS NESTING IN THE INTERIOR OF THE FLORIDA PANHANDLE

HENRY M. STEVENSON

On 2 July 1977 in a road culvert at Lake Seminole (Woodruff Reservoir), Jackson County, Florida (9.6 km N of Sneads), I found a Barn Swallow (*Hirundo rustica*) nest containing three small nestlings. The nest, on a vertical wall 2.1 m above the water, was attached on each side to, and partly supported by, colonial nests of the organ-pipe wasp (*Trypoxylon politum*). No horizontal or oblique surface was available. Nearby rudiments of two other swallow nests were in contact with other nests of these "dirt daubers" and indicated either that Barn Swallows had nested there in one or two previous years or that their earlier attempts at nest-building in 1977 were unsuccessful. The latter interpretation might explain the rather late date of an occupied nest. The three young were still in the nest when I photographed it on 11 July (Fig. 1). This nesting record is the first for the interior of the Florida Panhandle and is of interest because of the recent range extension of two populations of Barn Swallows in the Southeast as outlined below.

Nesting Barn Swallows first invaded Florida by moving eastward along the Gulf Coast. This southern population is presumed to be the one that had begun nesting on the Alabama coast by 1940 (Burleigh 1941) and near Pensacola, Florida, by 1946 (Weston 1965). Not until 1970, however, did Barn Swallows begin nesting near Apalachicola — about 250 km farther east (Ogden 1970). Only two years later the vanguard had jumped another 250 km southeastward to nest at Paynes Prairie, near Gainesville (Alachua Co.) (Ogden 1972), and two pairs nested near the Atlantic Coast of St. Johns County in 1976 (Ogden 1976).

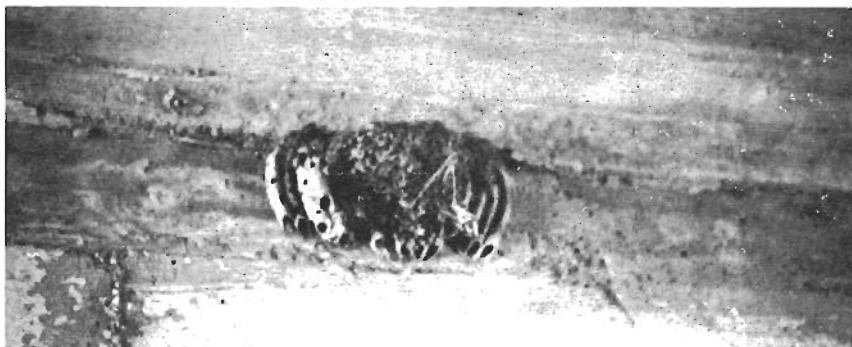


Fig. 1. Barn Swallow nest partly supported by nests of the organ-pipe wasp, Jackson County, Florida, 11 July 1977.

Over the same period of years a northern population of Barn Swallows was expanding its breeding range southward. At the time the coastal population first nested in Florida (1946), the northern birds bred only in the northwestern corner of Alabama. By the early 1960's this population had spread eastward across the northern tier of counties (Imhof 1962). By 1966 it had reached Birmingham, and individuals were seen in June much farther south (Stewart 1966). By 1973 these northern birds were nesting in northern Washington County, 100 km N of Mobile, and by 1974 they nested at that latitude as far east as Georgiana (Kennedy 1974, Reid 1975) — a southward expansion of 210 km.

In the summer of 1977 (Imhof, pers. comm.), Barn Swallow nests were found as far south in Alabama as Escambia and northern Baldwin counties, the latter sites being within 40 km of the nearest nesting sites of the coastal population at Cochrane Causeway over Mobile Bay. Thus the breeding range of the species in that state now includes all but four counties in the southeastern corner (Imhof, in litt.).

A similar southward invasion of northern Barn Swallows has taken place in Georgia. In the 1950's Burleigh (1958) considered the species a rare breeder in the northern portions and mentioned a much earlier nesting record on the coast. Nesting in north Georgia was not confirmed, however, until a nest was found in a barn on Lookout Mountain in 1957 (Stevenson 1957). Recently the species has expanded southward to the Upper Coastal Plain of Georgia (Patterson 1976), the Georgia coast (Schreck 1977), and close to the Florida line at the east end of the Jim Woodruff Dam, Decatur County, in 1975 and 1976 (Knight 1977) — less than 15 km from the site of the nest I found. It nested near Thomasville in May 1977 (Watt and Crawford, in press). Thus, my nesting record of the Barn Swallow in the interior of the Florida Panhandle may be the first nesting record of northern Barn Swallows in Florida.

Observers agree that Barn Swallows in the Deep South nest more frequently in culverts or under concrete bridges — usually over water (see Jackson and Burchfield 1975) — than in barns. And in some areas of the Deep South I have found Barn Swallows nesting near wooden buildings but never in them. One possible advantage to nesting in culverts or under bridges might be avoidance of the critically high egg temperatures that could occur in southern barns. The critical maximum temperature for eggs of the domestic fowl (*Gallus*) is about 40° to 41° C (104°-106° F) (Drent 1975: 352). As the normal internal egg temperature of the Barn Swallow (35.3° C) is lower than that of the domestic fowl (37°-38° C) (Drent 1975: 338), it seems likely that the swallow would also have a lower critical maximum egg temperature. It was suggested (Knight 1977) that the failure of this species to raise young in

two nests placed just below the metal roof of a boat slip at the Lake Seminole dam in 1976 "might be [due to] extreme heat." In his study of bats in a barn near Thomasville, Georgia, Wilson Baker obtained one air temperature reading of about 38° (100° F).

At the site of the culvert nest in Jackson County, Florida, I obtained temperature readings in the shade of a bush just outside the culvert on 11 July, both just before entering the culvert and just after exiting about 30 minutes later. The two readings were 33.3° C (92° F) and, with an increased cloud cover, 32.3° C (90° F). Between the times of these readings the same thermometer was hung on the culvert wall near the swallows' nest, where it soon registered 30.5° C (86.5° F). I believe that this temperature factor has been important in the nesting success of the Barn Swallow in the southern part of its range.

I am grateful to Michael Hubbard, of Florida A. & M. University, for identifying the species of wasp.

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