

RANGE EXPANSION AND HABITS OF THE

BARN SWALLOW IN ALABAMA

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At the time of settlement of the United States, there apparently was only one area in the country uninhabited by the Barn Swallow (Hirundo rustica), and that was the Southeast then principally a wooded area of virgin forests. Even later when Dr. Arthur H. Howell wrote his Birds of Alabama published in 1924 (containing data through 1921), there had been only one known nesting record, that being an 1892 nest under a bridge at Tusculumbia in the Tennessee Valley (FWM). However, as many changes brought by man, such as clearing of fields and construction of barns, bridges and highways, have created habitat and nesting sites favored by the Barn Swallow, it has gradually increased its presence in the state and may now be said to be in somewhat of a population explosion. By the time of Alabama Birds by Thomas A. Imhof in 1962 (containing data through August, 1961, with its second edition due to be published in the fall of 1976), the birds had become at least locally common in the Tennessee Valley and DeKalb County in the Appalachians at the northeast corner of the state. The population in those areas has grown so that the Barn Swallow is now a reasonably common bird in the Tennessee Valley, being regularly observed on all breeding bird routes conducted there under auspices of the U. S. Fish and Wildlife Service.

A colony has also been established on the Gulf Coast at Fort Morgan since at least 1940 (Burleigh, T.D., Auk 58:261-62 (1941), with approximately 250 birds observed in early July, 1952 (CWS)). However, except for two early July observations--one in Cullman County in the Mountain Region (a pair on July 3, 1946, at St. Bernard College (TAI)) and one in Lee County at the Southern limit of the Piedmont (another pair on July 4, 1951, south of Opelika (HGG)), no birds had been noted during the breeding season in the intervening area.

The Barn Swallow is virtually a 100% beneficial bird. Its diet is from 40 to 50% flies, with the remainder gnats, some mosquitoes, beetles (including the cotton boll weevil), wasps, ants, true bugs (Hemiptera--stink bugs, plant lice and leaf hoppers), moths and a few grasshoppers, dragonflies and the like. See Imhof, op. cit.:365; Bent, Arthur Cleveland, Life Histories of North American Birds, Bull. No. 179, U.S. Nat'l Museum:439 (1942). The quantity of insects consumed in rearing a brood of Barn Swallows is truly phenomenal! Detailed observations of the number of trips by parent birds to their nest gave a minimum estimate of consumption of over 118,000 flies to feed two nestings of 5 young each (not counting insects consumed by the adults). Davis, Russell E., "Food Requirements of Barn Swallow Nestlings," Inland Bird Banding News, 40(2):63 (1969). It is no wonder then that farmers report that insects of such varieties, especially flies, show a marked reduction in numbers when a colony of Barn Swallows is present around their barns. Thus, it is a pleasure, not only for bird observers but for all beneficiaries of the habits of such a bird, to welcome an increasing breeding population of the Barn Swallow to Alabama.

Documentation in this article of expansion of the range of this swallow in Alabama and observation of its habits through banding and otherwise cover primarily the period 1968 through 1975. In this connection, it will be noted that many of the initial observations of its spread into new areas have occurred

in connection with running of the breeding bird surveys, a credit to their value not only in documenting trends in relative abundance but also in detecting changes in distributional status. Names of observers, identified by initials, appear at the end of this article.

Expansion Southward through Mountain Region

During the last half of the '60's, the Barn Swallow began expanding its range southward from the Tennessee Valley through the Mountain Region of Alabama. Apparently it found bridges and culverts, many new ones having been constructed under the Interstate Highway Program, to its liking and is building in and under them more than in barns. In 1969, for example, there were swallows at about every stream crossing (21 of 24 bridges) on Interstate I-59 from DeKalb to Jefferson Counties (TAI, JMI). The first nesting evidence in Jefferson County (which is in the Mountain Region in the center of the state) came with development of a colony at Cedar Valley Farm near Leeds. That colony has grown from apparently 3 nests in 1966 to 13-14 nests in 1968-70 to 22 nests (of which 17 were active) in 1974 (MG&TMN, R et al.). A good-sized colony was also found in 1967 northeast of Birmingham in St. Clair County near I-59 and has been active ever since (RH). The next year (1968), nests were found at the Copeland Ferry Bridge over the Warrior River in Walker County just west of Birmingham; and in 1969 two nests were located just over the county line in Eastern Tuscaloosa County (TAI, JMI). Farther west, reports from breeding bird surveys show nesting in Fayette and Lamar Counties, the latter being in the northward swing of the Upper Coastal Plain as it reaches the border of Mississippi (DCH). By 1972, very few suitable areas north of Birmingham were unoccupied. Imhof, "The Season, Summer 1972," Alabama Birdlife, 20(3-4):13 (1972); American Birds, 26(5):868 (1972).

The first nest in the city limits of Birmingham was located in 1969 at a bridge over a small creek near the airport (GCC). Later, in 1971, where an expressway crosses a stream in the suburbs adjacent to the southern city limits, nesting evidence in the form of birds circling around under the highway structure was found, but not until 1975 were active nestings located--2 nests under an approach ramp, one with three nestlings on June 29 (R).

Expansion Southward in Coastal Plain

The first observations during the breeding season south of the Mountain Region were in 1966 when one bird was reported on a breeding bird survey in Southern Marengo County (REW) and two birds were seen over a small pond in Eastern Wilcox County (R&E).

The Colony at Cedar Valley Farm was the southernmost sizable colony (excluding the Gulf Coast) until one was located in Perry County east of Sprott; it had 5 nests in 1968 (TAI, EBS, R&E) and grew to 18 nests in 1971 and a high of 28 in 1972 (R). However, on the basis of observed nesting activity and number of birds in flight, it is estimated that perhaps only 50% of the nests at that colony have been active in recent years. The number of observed nests at a colony can also decrease from year to year (even though the colony itself does not) because of washing down of nests over the winter and spring. The swallows also found the Marion Fish Hatchery in Perry County to be to their liking. The first nesting was noted there in 1968 (R), and the colony increased to 14 nests in 1974-75 (R&P) with over 55 birds observed in the Marion-Sprott general area on July 3, 1970 (JRB, R) and 75-80 at and near the hatchery on June 17, 1971 (R&E). This area near the northern edge of Alabama's central prairie belt is attractive to the swallows as

indicated by the increase in nestings along the Hale-Perry County Breeding Bird Survey Route north of Marion from 1 stop with 2 nests in 1970 to 3 stops with 23 nests in 1974 and 4 stops with 19 nests in 1975 (R&E).

In 1969, a small colony was discovered in Sumter County on the Mississippi line at Noxubee Creek near Gainesville (5 nests under a bridge and 9 adults in flight on May 17--AKB, BAS). By 1971, the birds had expanded their range southward to a belt extending across the state from Choctaw County (south of Sumter) eastward through Marengo (three active sites in the prairie region in the northern part of the county with an additional site located in the next year--R&E), Perry (see above) and Lowndes (see below) Counties to Elmore County (pair in flight on June 6 but no nest discovered--R&E). The first nest in Montgomery County was located the following year in a culvert under the southwest Montgomery Bypass and remained active until washed down in 1975 (R,E&P). Not much activity has occurred farther east; but on breeding bird surveys in June, pairs were found at different stops in Chambers County in the Piedmont region in 1967 (HS) and later in 1973 (FFL), and 3 birds were noted at one stop in Macon County in the eastern part of the Coastal Plain in both 1973 and 1974 (JL&RTD).

The two largest southernmost colonies (north of the Gulf Coast) apparently began in 1973--one (the farthest south) just north of Millry in Northern Washington County near the Mississippi line, and the other near Letohatchee at Interstate I-65 in Lowndes County in the central part of the state. First observation of the swallows at Millry was a group of over 20 birds, some gathering mud for nests, in June, 1973 (P). The colony grew to 18 nests in 1974 and 32 nests (26 of which were considered active) in 1975 with 47 young and 41 eggs observed on June 2 (P, TLW). Approximately 30 adult birds were counted in flight on visits to the colony in each year. It is quite possible the Millry Colony represents a spread into Alabama of swallows from Mississippi, since during the years 1972-75 new nesting sites have been found all along the Alabama-Mississippi state line. These have extended from near Ward in Southern Sumter County (first nesting in 1973, increasing to 9 nests at 2 sites in 1975 with 16 birds in flight--R&E) through Choctaw County (six locations of which the largest known colony is in the south-central part of the county at Bogalusa Creek (5 nests and 8 birds in flight in 1975--R&E)) to Millry.

The other--and now largest--of these two colonies is the one near Letohatchee. It was first noted in 1973 with 5 nests and 7 adults in flight (R&E), growing to 39 nests and approximately 40 birds in flight in 1974 (P&R) and 43 nests (at least 23 of which were considered active) and 50 birds in flight in 1975 with 40 young and 37 eggs counted on June 16 (P, TLW). Lowndes County, which lies in the prairie region with many stream crossings, appears to provide one of the most attractive habitats for Barn Swallows in the state. In 1969, the first nest in the county was discovered 10 miles west of Lowndesboro, a small colony at that site increasing to 3 nests in 1973 and 1974. In the former year, 4 active sites were located in the county (R&E), increasing to 7 in 1974 (P&R) of which the second largest is at Big Swamp Creek (14 nests and 17 birds in flight in 1974--R&P).

While the Letohatchee site is the largest colony in the central part of the state, nesting has been found farther south along Interstate I-65 into Butler County where a nest was found with 2 adults in flight north of Georgiana in 1974 (P,E&R) and 2 active nests with 5 adults in flight in 1975 (R&E). Thus, the southward expansion in Central Alabama is now at approximately the same latitude as that on the Mississippi line, although there the southernmost point is the sizable colony at Millry. It is also of interest to note that presumably

unmated birds have been found south of the southern fringe of the existing range, single birds having been observed in June on breeding bird surveys in Southeast Butler County in 1972 (P, WRM) and in Southeast Crenshaw County in 1974 (WRM, P).

Although not the southernmost, but of interest because constituting somewhat of an arc between the central and western parts of the state, are the first known nestings for Wilcox and Clarke Counties. The Wilcox site is near Camden--a nesting pair being found on the Monroe-Wilcox County Breeding Bird Survey in 1974, and the same nest with 3 birds being observed at the same and one other stop in 1975 (R&E). The Clarke County site is south of Thomasville in the northern part of the county where a small colony of 3 nests with several birds in flight were found in 1974 (HBT, E, P et al), increasing to 4 nests with 6 adults in flight in 1975 (P, TLW).

The bridges and culverts under I-65 were investigated farther south into Conecuh County in 1975, but no swallows or nesting evidence was located (R). The year 1975 may, thus, be regarded as a year of consolidation of gains since no nestings farther south were found but populations at all southernmost sites were increasing.

Expansion Northward

As previously mentioned, there has been a colony at Ft. Morgan for over three decades. That colony, however, has markedly decreased since the '50's (TAI, P) and may have been dispersing. In 1963, the first breeding evidence was noted on the Cochrane Causeway at the north end of Mobile Bay (three pairs nesting in June-July near the eastern end of the causeway--PFC); and the swallows have apparently bred there since that time (JLD et al.). Eastward from Ft. Morgan, in 1971 a pair was observed feeding young on June 27 at the Perdido Pass Bridge at Alabama Point (LEH-- see Alabama Birdlife 19(3):32 (1971); American Birds 25(5):838 (1971)), and birds have been observed there every summer since then (VDH, P). Westward, in 1975 the first nest in Mobile County was found under a bridge at Coden on Mississippi Sound (REH).

Nearby in Northwest Florida, the first known nesting was found on June 23, 1946, near Pensacola; and there has been a small colony (initially 3-4 nestings) at Fort Pickens on Santa Rosa Island, also near Pensacola, since prior to 1951. Another colony of similar size developed nearby and to the east in 1954, and subsequently there have been a few nestings short distances inland from the coast. Weston, Francis M., Survey of Birdlife of Northwestern Florida, Bull. No. 5, Tall Timbers Research Station (1965). The coastal range has now been extended eastward to Panama City. American Birds 28(5):914 (1974) (supplemented as to Alabama data in 29(1):73 (1975)).

The coastal breeding population in Alabama is now only 75 miles from the nearest breeding colony at Millry. Imhof, "The Season, Summer-Fall 1973," Alabama Birdlife 21(3-4):5 (1973). Doubtless in some future year--probably in less than a decade--the two breeding ranges will meet, but where is naturally open to conjecture. At first glance at the map, one might guess the "golden spike" will be driven near the confluence of the Alabama and Tombigbee Rivers. However, since that area is largely pine forests and bottomland hardwoods--not the most preferred habitat for Barn Swallows--a more likely prediction is that the northern breeding range will be extended southward to the Gulf in Northwest Florida meeting the coastal colony there. During the time of expansion, because of the adaptation of the swallows to nesting in culverts under the interstates, the southernmost nests may well be along

I-65 until it reaches the forests adjacent to the Tensaw bottomlands. It is also possible the swallows could proceed southward in southern Mississippi and come eastward along the Gulf Coast across the more open areas of Mobile and Baldwin Counties.

Banding

Because of the proximity to Birmingham of the Cedar Valley Farm Colony near Leeds, banding of young was conducted there in the years 1968-70; and it is believed all young were banded (except one not considered of bandable age at the time the operations were conducted). Some of the adults were also banded and, because of the amount of equipment seemingly required, the group became known as the Cedar Valley Farm Expeditionary Force. After 1968, banding of adults was handled basically at night by first leaving the barn lights on and closing all doors and windows while setting up nets outside, and then opening the door by the nets and reversing the lighting so that the barn was dark and the lights were on outside to attract the flying birds as they were flushed out of the barn door. Participants in the program rigged up an ingenious two and sometimes three-level net, which, when carried across the field, looked like a giant banner. Back-up nets were also sometimes placed across the barn door; but the main net was so well in place, with its lower edge held down by rocks and its upper edge tied to the loft door, that no birds went through.

Our experience is that banding of nestlings should be handled between 8 to 12 days after hatching (9 to 11 days being preferable and 13 possible). In younger birds, it is difficult to handle the banding because of the small size of the baby bird and its tarsi. In the case of older birds, difficulty would be encountered in keeping them in the nest after removal for banding. One precaution that could be taken in the case of older nestlings would be to conduct banding only in a structure such as a barn and at night so that the effect of lights in the barn and none outside plus closing all possible openings might be used to keep the young inside. Then, if the young do fly out of the nest, it should be easier to catch and replace them although the writer definitely does not recommend attempting to band any nestlings over 12 days old.

Banding does not appear to have any adverse effect on the nestlings at all; and, to compensate for the inconvenience, we dusted the nests lightly with an insect powder (Bee Brand). In addition, when one of the brood was smaller than the rest, he was replaced in the front position in the nest in hopes that he would fare well at the next feeding. Whether or not this procedure aided his survival, we can report that no bird so placed was lost.

Total birds banded during the three-year period were as follows:

<u>Year</u>	<u>Nestlings</u>	<u>Adults (including returns)</u>
1968	37	4
1969	83	17 (2 returns)
1970	<u>83</u>	12 (7 returns)
	203	

While nestlings were not systematically banded in subsequent years, adults were banded in nighttime operations in 1971, 1973 and 1974--in 1971, 11 birds with 5 returns; in 1973, 14 birds with 3 returns; and in 1974, 15 birds with 5 returns. According to the literature, Barn Swallows have a strong instinct to return to the same places of nesting, which is indicated by the following table

showing number of returns, including one female that returned through the full seven-year period 1968-1974 (being netted six times) and two birds that returned for six years (each being netted four times):

<u>Number of Birds and Sex</u>	<u>Time Span of Recaptures</u>	<u>Years Covered</u>	<u>No. of Times Netted</u>
1 female	1968-74	7	6
1 female	1968-73	6	4
1 male	1969-74	6	4
1 female	1969-71	3	3
1 female	1968-69	2	2
2 males, 1 female	1969-70	2	2
1 male, 1 female	1970-71	2	2
1 male, 2 females	1973-74	2	2

Notwithstanding the persistency of returns of the adults, no banded nestlings have been recovered at the same site; and this is similar to reports of experience in other banding operations farther north. However, there was one recovery, approximately 100 miles northwest of the original banding site, where a female banded as a nestling on June 22, 1970 (HHW) was recovered and released in a netting operation at a breeding colony under a bridge over "Mud Creek" in Franklin County on May 21, 1973, three years later (P). Harriett H. Wright, "Banded Barn Swallow Nestling Recovered," Inland Bird Banding News, 46:62 (1974); Alabama Birdlife 21(3-4):10 (1973); American Birds 27(5):881 (1973). Nesting evidence in the general area of Cedar Valley Farm has, nevertheless, been observed at a nearby barn and at a stream crossing several miles away. Unfortunately, it has not yet been possible to conduct netting operations at those sites; but since nesting at them took place after establishment of the colony at Cedar Valley Farm, they could well be the product of Cedar Valley Farm nestlings. It is hoped future banding operations may be able to investigate that hypothesis.

In addition to Cedar Valley Farm, banding has been conducted for two years at Millry (15 adults in 1974, and 28 adults and 15 nestlings in 1975) and for one year at Letohatchee (27 adults and 42 nestlings in 1975) (P, TLW). The procedure used there for banding the adults was to place mist nets as close as possible to the openings under the bridges or at the ends of the culverts.

Nesting Success

It might be expected that Barn Swallows should have a high degree of nesting success because their nests are protected from most common predators. Such success is indicated by the following table, in which a successful nesting is considered one where 50% or more of the eggs hatched:

<u>Year</u>	<u>No. of Nestings</u>	<u>Successful</u>	<u>Unsuccessful</u>
1968	14	9	5
1969	24	19	5
1970	21	20	1

There have been some unexplained developments, but most of the unhatched eggs are thought to have been sterile. We had a mystery nest in 1969 where the number of eggs observed ranged from 5 down to 1, back up to 5, then to 9 and then back to 5. None hatched. Consequently, that nest accounted for three of the five unsuccessful nestings that year. Our best guess is that the parent birds built too many layers of mud and, thus, successful incubation never took place.

Because of the fragile nature of young birds of altricial species and the number of hazards that beset growing nestlings, it seems remarkable that in all of the nestings referred to above there were only a very few nestlings lost. The causes were strictly chance factors or of unknown source, but one should probably be noted. In a shed where one of the first nestings occurred in 1968, the nest was very close to a metal roof; and, whereas all of the five young in the first nesting survived, all four nestlings in the second clutch succumbed during the last of June. It is speculated that because the nest was so close to the metal roof, excessive heat as the summer progressed may have been the factor. Only three other nestlings turned up missing each year, resulting in a total success factor of 204 of 217 nestlings (94%).

Nestings and Clutch Size

According to current literature, Austin, Dr. Oliver L., Jr., Birds of the World, pp. 216-18 (1961), older pairs nest first and are often, thus, the only birds with multiple nestings, and the younger birds nest 1-2 weeks later. In 1968, 5 of the 9 nests were used twice; in 1969, 9 of 14; and in 1970, 8 of 14. Although none of the nestlings returned to the colony, doubtless some young birds did join it to increase its size. The question is, consequently, posed regarding what was the source of this "new blood." However, as far as the Cedar Valley Farm Colony is concerned, that question is unresolved.

As to clutch size, 13 nestings in 1968 (1 nesting was abandoned before laying completed) averaged 4.5 eggs; the 24 nestings in 1969, 4.7 eggs; and the 21 in 1970, just under 5. We have noted, however, that the second nestings were, more often than not, one egg less than the first and only one time was the second clutch more. Further, in the cases of the single nesters (presumably the younger birds), the clutch size was usually, although not always, one egg less than the first and earlier nestings of the older birds. Those nestings in the Coastal Plain that could be sufficiently observed show a similar clutch size of 4-5 eggs.

Fledging Time

Since members of the swallow family are primarily birds "of the air," spending most of their time flying and catching insects, they have small and weak feet. As a consequence, they must remain in the nest longer than other species. Fledging time is stated in Austin, *ibid.*, to be approximately 23-25 days. While it was not possible to conduct daily observations at the Cedar Valley Farm Colony, our estimates of the time the young left the nest from the time they hatched averaged 19-20 days, the same figures holding true for all three years. Virtually no differences were noted between first and second nestings and between those and single nestings.

Detailed observations of single Barn Swallow nests have been made by Dr. Harold B. Wood in the Allegheny Mountains of Pennsylvania, "Observations at a Barn Swallow's Nest," Wilson Bull. (June 1973), Bird-Banding 8:31 (Jan. 1937), and by Wendell P. Smith in Vermont, "Some Observations on the Nesting Habits of the Barn Swallow," Auk 50:414 (1933), and "Further Notes on the Nesting of the

Barn Swallow," Auk 54:65 (1937). Fledging time for the broods there described averaged 18-19 days. It is speculated, therefore, that the longer averages for fledging time may be due to inclusion of nestings in areas where the food supply is not as plentiful or possibly nestings of other races since the bird is holarctic, inhabiting both Eurasia and North America.

Sexual Differences and Breast Coloration

Sexing of birds banded was done by observation of the presence or not of a brood patch. In Barn Swallows, the males do not have a brood patch, Austin, ibid.; and some of the females banded were carrying eggs. We did, however, have the anomalous situation of having one bird changing sex between 1970 and 1971, having a brood patch in the first year and none in the second. While it is possible that this is an error on the part of our team, a more plausible explanation might be that hatching year birds of both sexes have non-vascular brood patches due to incomplete ventral feathering.

Initial speculation was that sex might be determined also by breast coloration, the darker birds being thought to be males and the lighter females. However, this proved not to be the case, and in four instances the same bird netted in earlier years had a lighter breast than when netted again later. (At Cedar Valley Farm, one female first netted in 1968 and subsequently caught five times changed from light to dark between 1973 and 1974 when at least 7 years old.) It, thus, appears that darker breast coloration comes with age, possibly the darker color coming sooner for the males. The same seems true with completeness of the neck band. A hypothesis has been advanced that light-breasted Barn Swallows may form a sub-species found in the southern parts of the Gulf States. See note in American Birds 28(5):914 (1974). However, the above experience at the colonies at Millry (see American Birds 29(5):994 (1975)) and at Cedar Valley Farm indicates that breast coloration of the same birds changes with age; and birds with both light-colored (over 50% of those banded at Cedar Valley Farm) and dark-colored breasts have been found at both colonies.

Arrival and Departure

Arrivals at the Cedar Valley Farm Colony seem consistently to occur around the latter part of March (MCM) with the last observations at the farm being in August, usually the first part of the month (MCM, R). The first hatchings in the years 1968 to 1970 were in early May on the 6th, 11th and 2nd, respectively; and first hatchings of the second broods were on June 30 in 1968 and 1969 and on June 17 in 1970. The last birds banded, being those of bandable age described above, were in the latter part of July in the same years on the 19th, 26th and 23rd, respectively (except that a special situation occurred in 1970 where one nesting was extremely late and the birds banded in that nesting, which consisted of 4 young, were banded on August 10). The nestings described by Wood and Smith, ibid., are naturally considerably later because of the more northern sites.

Comparable Expansions and Relative Abundance

In the last decade, we have noted a large expansion of the Barn Swallow in Alabama--both in extension of its range (southward from the Tennessee Valley and to some degree northward from the established colony at Fort Morgan) as well as in the size of the colonies themselves and number of birds found throughout the state. Similar range expansion has occurred in both Mississippi and Louisiana where there are also coastal breeding populations. See American Birds 28(5):914

(1974) (supplemented 29(1):73 (1975)). In our neighboring states to the East, the Barn Swallow has become established as a breeding resident in Eastern North Carolina and has been extending its breeding range southward in Georgia (now nesting in the Columbus, Georgia, area (LAW)). American Birds 27(5):859 (1973), 28(5):891 (1974), 29(5):959 (1975). In Alabama, available data shows the number of breeding bird survey routes on which Barn Swallows have been found increased from 10 of 40 routes in 1966 to 20 of 36 routes in 1974 (with a high of 24 in 1973). Similarly, the number of birds per route increased from 4.8 in 1966 to 10.5 in 1974. This beneficial bird is, thus, taking a much more important and a welcomed place in the avifauna of Alabama and nearby states.

The writer wishes to thank, for their time, efforts and cooperation that made the collection of this data possible, the members of the Cedar Valley Farm Expeditionary Force, especially the banders Michael L. Bierly (who also conceived the idea for the project), Andrew K. Bates (AKB), Richard J. Kittinger, James V. Peavy, Jr. (P) and Harriett H. Wright (now Findlay)(HHW), the owners of the farm, Mary C. and Thomas M. McClellan, III (MC&TMM), and other members of the group, Helen H. and Ronald D. Kittinger, John Lester, W. Roger Maner (WRM), Lee N. Peavy, my wife Elberta G. Reid (E), and Jo Susenbach (now Kittinger). Special credit is also due Thomas A. Imhof (TAI), author of Alabama Birds, who collected much of the data reflected in this article, and Mr. Peavy and Ted L. Weems (TLW), who handled the banding operations at Millry and Letohatchee. Observations by the writer are noted (R); and, in addition to those named above, credit is also due the following whose observations are indicated by their initials: J. Russell Bailey, Jr. (JRB), Birmingham Audubon Society (BAS), Greg C. Carlisle (GCC), P. Fairly Chandler (PFC), Fr. J. L. Dorn (JLD), Dr. Julian L. & Rosemary T. Dusi (JL&RTD), Dr. Henry G. Good (HGG), Richard E. Hayward, Jr. (REH), Leroy E. Healy (LEH), Dr. Dan C. Holliman (DCH), Verda D. Horne (VDH), Ruth Howell (RH), John M. Imhof (JMI), Florence F. Lynn (FFL), F. W. McCormack (FWM), Dr. Eugene B. Sledge (EBS), Hazel Steward (HS), Dr. C. William Summerour (CWS), Helen B. Thigpen (HBT), Robert E. Waters (REW), and L. A. Wells (LAW).

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SPRING MEETING ANNOUNCEMENT

The 1976 AOS spring meeting will be held April 9-11 on Dauphin Island. The schedule of events will be similar to those of previous meetings on the island. Headquarters will be the Alabama Department of Conservation Marine Sciences Laboratory. Registration periods will be 6:30-7:30 p.m. on Friday the 9th and 8-10 a.m. Saturday the 10th. There will be an informal gathering after registration Friday evening at the Marine Lab. The banquet Saturday evening at 7:30 p.m. will be a seafood buffet at the Community Center, \$4.00 per person. The speaker for the evening will be Dr. Tom Rogers of the University of Alabama. Field trips will originate at the Marine Lab and will include 6:30 a.m. tours of the Shell Mounds both Saturday and Sunday and trips through the Audubon Sanctuary at 2:00 p.m. Saturday and 9:00 a.m. Sunday. Officers and directors of the society will meet at the Marina restaurant at 12:00 noon Saturday, and a list of species observed during the meeting will be compiled at 12:00 noon Sunday at the Shell Mounds. A complete schedule of events will be available at registration. The spring meeting is the high point of AOS activities each year and is timed to coincide with the arrival of the spring migrants. We hope you will join us.