

ON THE STATUS OF THE ATLANTIC LEATHERBACK
TURTLE, *DERMOCHELYS CORIACEA CORIACEA*,
AS A VISITANT TO FLORIDA NESTING
BEACHES, WITH NATURAL
HISTORY NOTES ¹

DAVID K. CALDWELL ²

United States Fish and Wildlife Service

Carr (1952: 451) reported the first reliable record of the nesting of the Atlantic leatherback turtle, *Dermochelys coriacea coriacea* (Linnaeus), on North American mainland beaches during the past 100 years. Since that record, a second (Caldwell, Carr, and Hellier, 1956: 279) and a third (Allen and Neill, 1957: 144) have been published. In noting their second nesting record, Caldwell, Carr, and Hellier (1956: 283) remarked that each year a few nesting leatherbacks were reported to conservation agents in South Florida. These reports were of interest because biologists have always believed that the Atlantic leatherback is a rare and irregular visitor to North American beaches, if indeed it nests here at all.

New records, made available through the alert cooperation of Robert S. Pfister, James R. Pearce, and Rolland C. Byrd, agents for the Florida State Board of Conservation, now show that this turtle, while nesting rarely in Florida in comparison with the Atlantic loggerhead turtle, *Caretta caretta caretta* (Linnaeus), actually emerges regularly to nest on the beaches of the south Atlantic coast of Florida. There are 11 such records for 1957. A summary of these and the earlier records is presented in Table 1.

In addition to the nesting records, a few related natural history notes were made available.

Apparently the only instance in which the number of eggs deposited by a leatherback nesting in Florida was known is that cited by Carr (1952: 451) in which the turtle nesting at Flagler Beach (Table 1) was reported to have laid 80 eggs. Agent Pearce reported that the turtle shown in Table 1 as laying on May 30 had

¹ Field work supported in part by National Science Foundation Grant G-1684 (University of Florida—Principal Investigator, Archie Carr).

² Fishery Research Biologist, South Atlantic Fishery Investigations, Brunswick, Georgia (At the time of this study, Research Assistant, University of Florida, for the above grant).

TABLE 1. SUMMARY OF RECENTLY OBSERVED NESTING ACTIVITY OF THE ATLANTIC LEATHERBACK
TURTLE, *DERMOCHELYS C. CORIACEA*, IN FLORIDA

Date	Locality	Nature of Observation	Authority
June 6, 1947	Flagler Beach, Flagler Co.	Nesting turtle	Carr, 1952
Summer, ca. 1954	Ft. Pierce, St. Lucie Co.	Nesting turtle	Pfister, this paper
ca. July 15, 1955	Hutchinson's Island, Martin Co.	Track	Caldwell, Carr, and Hellier, 1956
July, 1955	Miami Beach, Dade Co.	Hatchlings on beach	Allen and Neill, 1957
ca. July 26, 1956	Hutchinson's Island, Martin Co.	Nesting turtle	Pfister, this paper
ca. April 15, 1957	Ft. Pierce, St. Lucie Co.	Track	Pfister, this paper
ca. April 15, 1957	Ft. Pierce, St. Lucie Co.	Track	Pfister, this paper
April 30, 1957	St. Lucie Co.	Track	Pfister, this paper
May 6 or 7, 1957	St. Lucie Co.	Nesting turtle	Pfister, this paper
May 17, 1957	Hutchinson's Island, Martin Co. (6½ mi. S. of Ft. Pierce Inlet)	Nesting turtle (Carcass)	Caldwell and Hellier, this paper
May 22, 1957	Hutchinson's Island, Martin Co. (4 mi. S. of Ft. Pierce Inlet)	Nesting turtle (est. 800 lbs.)	Pfister, this paper
May 27, 1957	Jupiter Island, Martin Co.	Track	Caldwell and Hellier, this paper
May 30, 1957	Jupiter Island, Martin Co.	Nesting turtle	Pearce, this paper
June 8, 1957	Indian River Co.	Track	Pfister, this paper
June 11, 1957	Juno Beach, Palm Beach Co.	Nesting turtle	Pearce, this paper
July 10, 1957	Juno Beach, Palm Beach Co.	Nesting turtle	Pearce, this paper

deposited 127 eggs in a three-foot-deep nest. He said the carapace of this individual measured 6 feet two inches in length, and that she was 7 feet 8 inches in overall length, including head. The turtle was found turned on her back (presumably by poachers) at 2 A.M., and so must not have crawled much later than midnight, since her nest had been completed. One hundred of the eggs from this nest were transferred to the Martin-county-operated House of Refuge Historical Museum on Hutchinson's Island opposite Jensen Beach and reburied there. On the morning of August 4, 66 days later, 20 turtles hatched from the nest, and on the next day 5 more were found alive when the site was dug out. The remaining 75 eggs had spoiled. This low percentage of hatch was probably due to the handling of the eggs and perhaps to unnatural conditions of reburial. Despite this, the information gained from the operation is of particular significance since it gives for the first time an indication of the time required for eggs of the Atlantic leatherback to hatch. Of the turtles that hatched, six were retained by the House of Refuge, three were given to the Bay Wood Smoked Fishery at Ft. Pierce, and 16 were presented to the Miami Seaquarium. Pfister reports that all of those kept at the House of Refuge died very quickly, and that the ones given to the Bay Wood Smoked Fishery fed well on kingfish, *Scomberomorus cavalla* (Cuvier), roe, and algae, until they escaped their crawl about the 25th of August, some 21 days after hatching. Of those sent to the Miami Seaquarium, Craig Phillips, Curator, wrote as follows:

" . . . baby *Dermochelys* lived for some time, the final one dying while I was on vacation from Oct. 1 to Oct. 15, 1957. Several days after their arrival on August 9, all were feeding voluntarily on ground clam and squid. On Aug. 10 I force-fed them their first meal of clam, which they soon learned to take without hesitation. After a couple of weeks they were eating chopped fish as well, and despite their growth, they continued to die one after another.

"I kept them in four ten-gallon glass tanks with two baby loggerheads in each tank with the trunkbacks [leatherbacks] in hopes that the readily-feeding loggerheads would create a psychological atmosphere favorable to the trunkbacks. Whether this did or not I cannot say, but at least they all fed fairly well within a short time.

"Their manner of feeding was rather odd. Compared with the loggerheads, their movements were stiff and mechanical. They seemed to have trouble submerging to the bottom of the tank, so at feeding time (once a day) I lowered the water to about two inches so that they could reach the food without having to submerge. Feeding was accomplished by rapid opening and closings of the jaws accompanied by sidewise jerkings of the head. They seldom appeared to approach the food deliberately, but it appeared as rather a hit-or-miss proposition with them. The jaws were capable of opening to a remarkable extent for a turtle.

"They kept a constant beating with their flippers, never ceasing to bump the glass with their snouts except while feeding or during rare periods of rest. Several developed sore snouts, but I cleared this up with penicillin ointment in time.

"When slightly over a week old, they appeared to begin to lose the granular scales which covered the body, head, and flippers. [see Carr, 1952: 447; Caldwell, Carr, and Hellier, 1956: 280.] These scales gradually rubbed off in patches, and at the time I at first thought that they were developing some kind of fungus skin disease. As the scales rubbed off, the underlying skin bore a faint imprint of the scales and was a lighter, grayer, color than before the moult. Meanwhile, the color pattern became more intensified, the whitish stripes [Caldwell, Carr, and Hellier, 1956: 280] showing even whiter as they grew."

Agent Pearce, who reported the nesting record for June 11 (Table 1), said this turtle laid 129 eggs, about 20 of which were of irregular size. The occurrence of off-sized eggs in Atlantic leatherbacks was reported by Gosse (1851: 306—record repeated by Carr, 1952: 452) and illustrated by Caldwell, Carr, and Hellier (1956: 282). The proportions of "normal-sized" to "abnormal-sized" eggs from this nest are almost identical with those reported for a clutch of eggs for this race of turtle in Trinidad (Caldwell, Carr, and Hellier, 1956: 282) and for the Pacific leatherback, *Dermochelys coriacea schlegelii* (Garman)—see Carr (1952: 460).

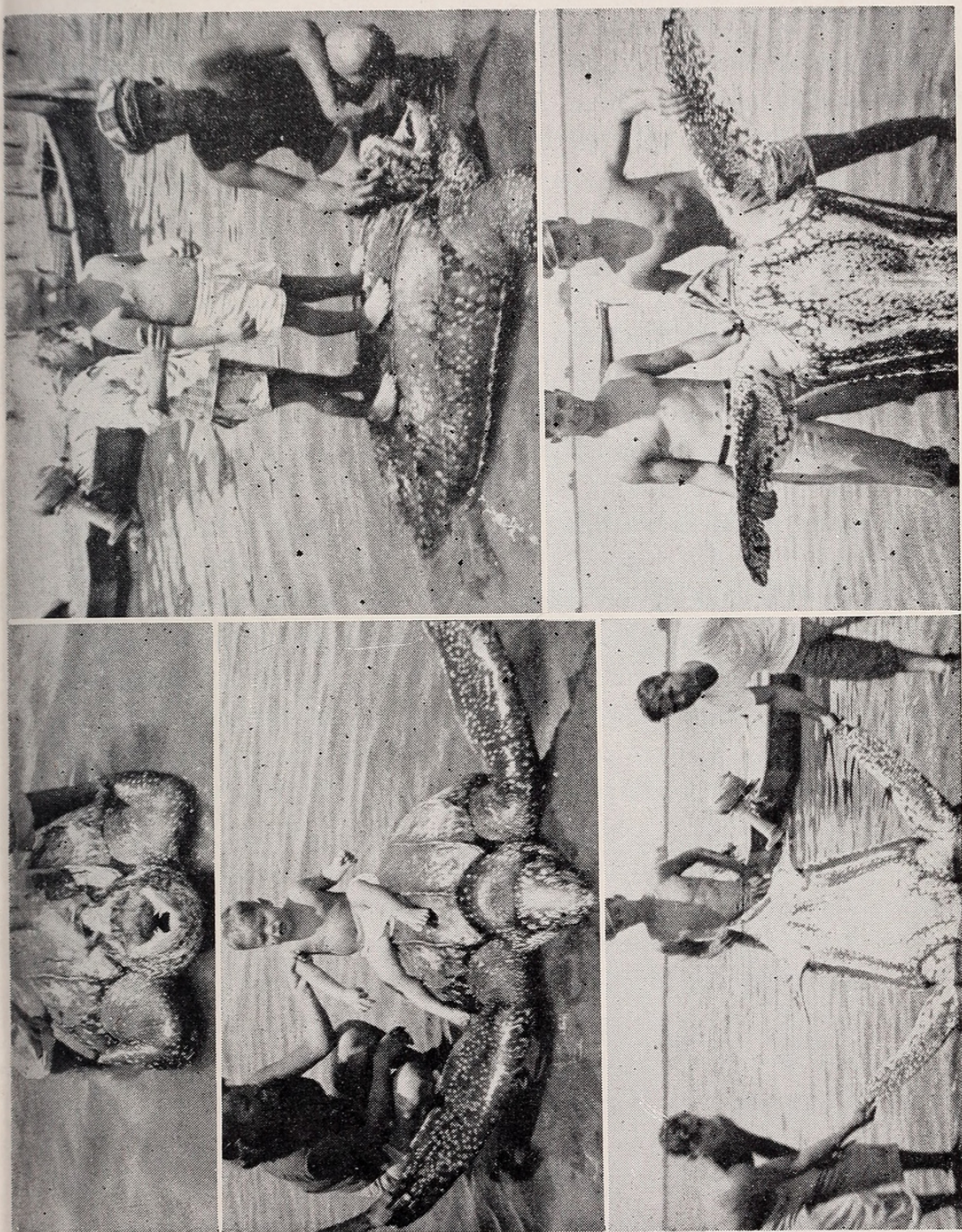


Figure 1. *Dermochelys coriacea coriacea* (Linnaeus), young, approximately three to four feet in carapace length, shot in the Indian River, Indian River County, Florida, in the summer of 1954.

Pearce's turtle, the carapace of which was 5 feet 3 inches long and three feet one inch wide, nested early in the evening—about 7 P.M.

The turtle nesting at Juno Beach on July 10 (Table 1) had a carapace length of 6 feet 7 inches and width of 3 feet one inch. Laying early in the evening (about 8 P.M.), it deposited 144 eggs. The eggs from this and the June 11th nesting were removed to the House of Refuge, but all failed to hatch.

Carr (1952: 448) notes that the Atlantic leatherback is frequently reported in Chesapeake and other inshore bays of the northern coast of North America, despite the usual association of the species with an offshore habitat. He suggested that this shoreward movement may in part be influenced by the increasing chill of the water in these northward extralimital parts of the turtle's range. It is therefore of interest to note that in the summer of 1954 a leatherback was shot in the Indian River (a long bay or lagoon protected by an outer string of barrier islands), Indian River County, on the lower Atlantic coast in Florida. In this case, being summer in the sub-tropics, when the water both inshore and offshore would be quite warm, the seeking of warm water temperatures was apparently not an influencing factor for the presence of the turtle inshore. Although no measurements were taken, snapshots furnished Pfister (Figure 1) show that the turtle was small—perhaps no more than four feet in carapace length, and probably nearer three. The ventral (plastral) coloration of this individual is very similar to that of the hatchling illustrated by Caldwell, Carr, and Hellier (1956: 280), except that the ventral surfaces of the flippers are considerably lighter in the older specimen. The carapace and dorsal surfaces of the flippers, however, are randomly marked with light spots, rather than having the light coloration following only the carapace ridges and trailing edges of the flippers as in the hatchling noted above. Apparently the spots are gradually lost with increase in age and size (Carr, 1952: 447). These appear to be the first published photographs showing the coloration of an Atlantic leatherback of this size.

It is a pleasure to acknowledge the excellent cooperation afforded the sea turtle studies by the Florida State Board of Conservation, and especially by its agents Pfister, Pearce, and Byrd. Craig Phillips, Curator at the Miami Seaquarium, was most generous in allowing me to include his comments on the hatchlings

sent him. I also wish to thank Archie Carr, of the University of Florida, and William W. Anderson, Frederick H. Berry, and Jack W. Gehringer, of the United States Fish and Wildlife Service at Brunswick, Georgia, for their comments regarding the manuscript. Thomas R. Hellier, Jr., now of the University of Texas, spent many hours "turtle watching" with me, and without his help some of these records would not have been reported.

LITERATURE CITED

ALLEN, E. ROSS, and WILFRED T. NEILL

1957. Another record of the Atlantic Leatherback, *Dermochelys c. coriacea*, nesting on the Florida coast. *Copeia*, 1957 (2): 143-144.

CALDWELL, DAVID K., ARCHIE CARR, and THOMAS R. HELLIER, JR.

1956. A nest of the Atlantic Leatherback turtle, *Dermochelys coriacea coriacea* (Linnaeus), on the Atlantic coast of Florida, with a summary of American nesting records. *Quart. Journ. Fla. Acad. Sci.*, 18 (4): 279-284.

CARR, ARCHIE

1952. *Handbook of Turtles*. Comstock Publishing Associates, a division of Cornell University Press, Ithaca, New York, pp. xv + 542.

GOSSE, P. H.

1851. *A Naturalist's Sojourn in Jamaica*. Longman, London, pp. xxiv + 508.



Caldwell, David

K.

↑

. 1958. "On the status of the Atlantic leatherback turtle, *Dermochelys coriacea coriacea*, as a visitant to Florida nesting beaches, with natural history notes." *Quarterly journal of the Florida Academy of Sciences* 21, 285–291.

View This Item Online: <https://www.biodiversitylibrary.org/item/129616>

Permalink: <https://www.biodiversitylibrary.org/partpdf/91768>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Biodiversity Heritage Library

Copyright & Reuse

Copyright Status: In Copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.