

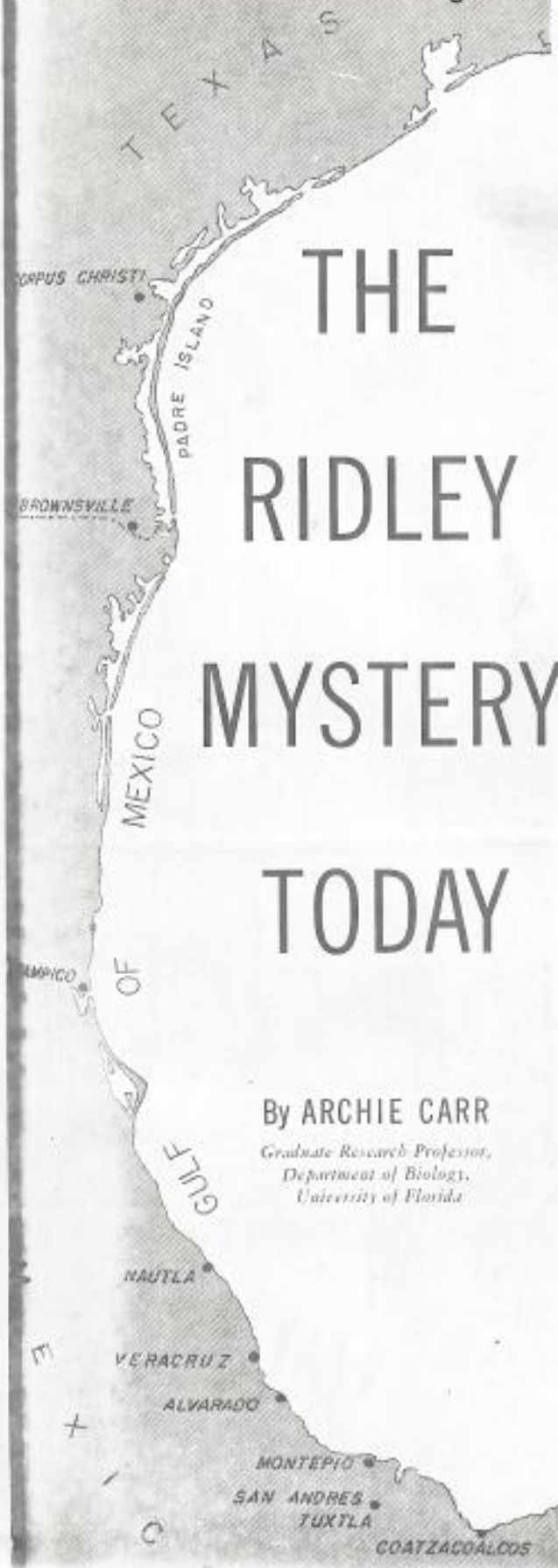
LIBRARY OF
GEORGE H. BALAZS

1961

THE RIDLEY MYSTERY TODAY

By ARCHIE CARR

Graduate Research Professor,
Department of Biology,
University of Florida



WHEN I WROTE "The Riddle of the Ridley" several years ago,¹ it seemed to me that the mystery this sea turtle's breeding habits would have to wait for its solution until somebody stumbled on masses of Ridelys ganged up in an overlooked place, perversely carrying out their sex rites in secret. But instead of coming in a burst of light the answer is just trickling in as time goes by. We finally know for sure that Ridelys come in two sexes. We know how big they are when they start to breed and what the hatchling looks like. Places where Ridelys go sparingly ashore to nest have been found along the Gulf coast in Veracruz, so we know they are able, at least occasionally, to reproduce their kind. The mystery has dwindled, and what remains to be done is fill in gaps and clear up stray uncertainties, and above all to learn how the skimpy nesting that goes on, in the only places it's known to go on at all, could furnish all the Ridelys that turn up in Florida and along the Atlantic coast, and on down the Gulf Stream in the British Isles.

During August and September, 1960, I made a sea turtle reconnaissance on the Pacific Coast of Mexico, travelling with my family by car from the level of Hermosillo down through Sonora and Sinaloa to San Blas in Nayarit. Partly, the trip was just an effort to learn something about the poorly known sea turtle fauna there. But a more special aim was to broaden my acquaintance with the Pacific Ridley, in the hope that this might help me understand its elusive relative in the Atlantic and Gulf of Mexico. In both ways the trip turned out to be a worth while venture, and its aftermath brought oddly coincidental developments, as I shall tell.²

It is 650 miles from Kino Bay down the coast to San Blas, part of the way along the eastern shore of the Gulf of California, part along beaches of the open Pacific. In all this territory the only turtles I found regularly were the Green (*Chelonia*) and the Ridley (*Lepidochelys*). The Trunkback and Hawksbill were known to the

¹ "The Riddle of the Ridley," by Archie Carr, *Animal Kingdom*, September-October, 1955.

² Field work partly supported by a National Science Foundation Grant—G-10717.

LIBRARY OF
GEORGE H. BALAZS



those of two *golfinas* (Ridleys) he had found nesting two weeks before when his oxen had strayed on the beach.

An observer making an aerial survey of these beaches would get the impression that they are almost completely devoid of nesting activity. The Ridley is so relatively little and light, and the sand of these shores so loose and flaky, that

Left — Side view of a mature female Atlantic Ridley from St. Petersburg, Florida, largest Dr. Carr has seen. It weighed 93 lbs. Right — Mature male Pacific Ridley. Rough patches on the shell are red algae.

Photos by the author



people, but evidently only as stragglers. Nobody seemed to know the Loggerhead at all. The only breeding resident — more probably, a periodic migratory visitor — is the Ridley. Here and there I heard rumors of nesting by other sea turtles, but whenever these stories could be run down they proved to involve confused terminology or localities, or to be completely irresponsible. At Kino Bay, the Green Turtle was abundant, but the fine ocean beach that runs for miles from Puerto Kino to the craggy promontory at Kino Nuevo was strangely unmarked by trails, and nobody there knew anything at all of sea turtle nesting.

Our northernmost nesting observations were made in the Mazatlan area. From there southward all sections of the shore are evidently visited by nesting Ridelys each year. Their coming out is oddly thinspread, though. Nowhere is there traffic to compare with that at rookeries of the Loggerhead and Green Turtle. At Los Serritos, a few miles north of Mazatlan, at the peak of the season and with moon and tide just as the egg hunters said they ought to be to fill ovigerous turtles with hankering for land, only four turtles nested in three nights on 2½ miles of beach. At Sabalo, between Los Serritos and town, none nested on a mile of shore during the same time. On a mile and a half of beach near San Blas, three turtles nested in three nights; and at Matanchen near the same city, one mile yielded one nest on one night. At a place called Tamborito, just north of Teacapan, a careful search over a mile of high ocean beach that the people told me was a good place for turtles showed no trace of turtles at all. At the one house nearby the farmer told me the only tracks he had seen recently were

tracks may disappear completely during the day following the emergence of the turtle. A track count made from the air, or even afoot, will usually log only trails from the night before; while at rookeries of the other sea turtles an accumulation of all tracks made since the last heavy rain may be seen. Even taking this into consideration,



Left — The Atlantic Ridley on the right flattening of the

however, what I saw in Sinaloa and Nayarit seemed to indicate that nesting activity there is very thinly spread.

A tendency to solitary nesting may be the rule for the Ridley throughout its vast geographic range. During the height of the breeding season in Costa Rica, for instance, a female that my wife and I found on August 10, 1957 (11 P.M.), was the only sign of nesting on two miles of beach between San Isidro and Carizal (near Punta Arenas). In Guatemala, although Ridley eggs were common in the markets during early September, 1959, and although people at the port

of San Jo beaches by and a half Bogert and Ridelys w south of A of it. The the people the discar amount of this, and t nesting is c During numbers o seen by c Guaymas

courtship: 200 miles (August 2 copulating tween 8 ar but for mi turtles I h the second more abun individual miles offsl turtles we risen to 1

I found
ven had

of these
they are
ity. The
and the
cy, that

Atlantic Ridley
Dr. Carr has
male Pacific
red algae.

the day
A track
ill usu-
n while
cumula-
y rain
eration,



Nicarag
here is

the rule
graphic
season
y wife
P.M.),
iles of
(near
Ridley
g early
he port



of San José told me the turtles often nested on beaches by the town. I saw no tracks in a mile and a half there on September 9. When Charles Bogert and I visited the Guerrero coast in 1952, Ridelys were nesting both at Playa Encantada south of Acapulco and at Pie de la Cuesta north of it. There were eggs in the *cantinas*, and since the people were killing all turtles that emerged, the discarded shells gave a rough idea of the amount of nesting going on. Such evidence as this, and the local consensus seem to show that nesting is everywhere scant and scattered.

During early August, 1960, I heard that large numbers of mated pairs of sea turtles were being seen by commercial and sports fishermen off Coaymas and Mazatlan. Hoping to observe

Left — The Atlantic Ridley shown above, for comparison of its silhouette with that of the Pacific Ridley on the right. The latter shows a characteristic flattening of the high, middle part of the shell.

Photos by the author

courtship and mating, I made two cruises — some 200 miles in all — off Mazatlan. On the first trip (August 22) three pairs of Ridelys were seen copulating, and single turtles were abundant between 8 and 15 miles out — not massed in schools, but for miles at a time more numerous than sea turtles I have seen anywhere else offshore. On the second cruise (August 26) turtles were even more abundant. In one section about 60 different individuals were sighted between 12 and 20 miles offshore in two hours' cruising. All these turtles were alone, however, evidently having risen to breathe while feeding. It is hard to

reconcile this concentration of sexually mature Ridelys offshore with the feeble show of nesting activity on the beaches.

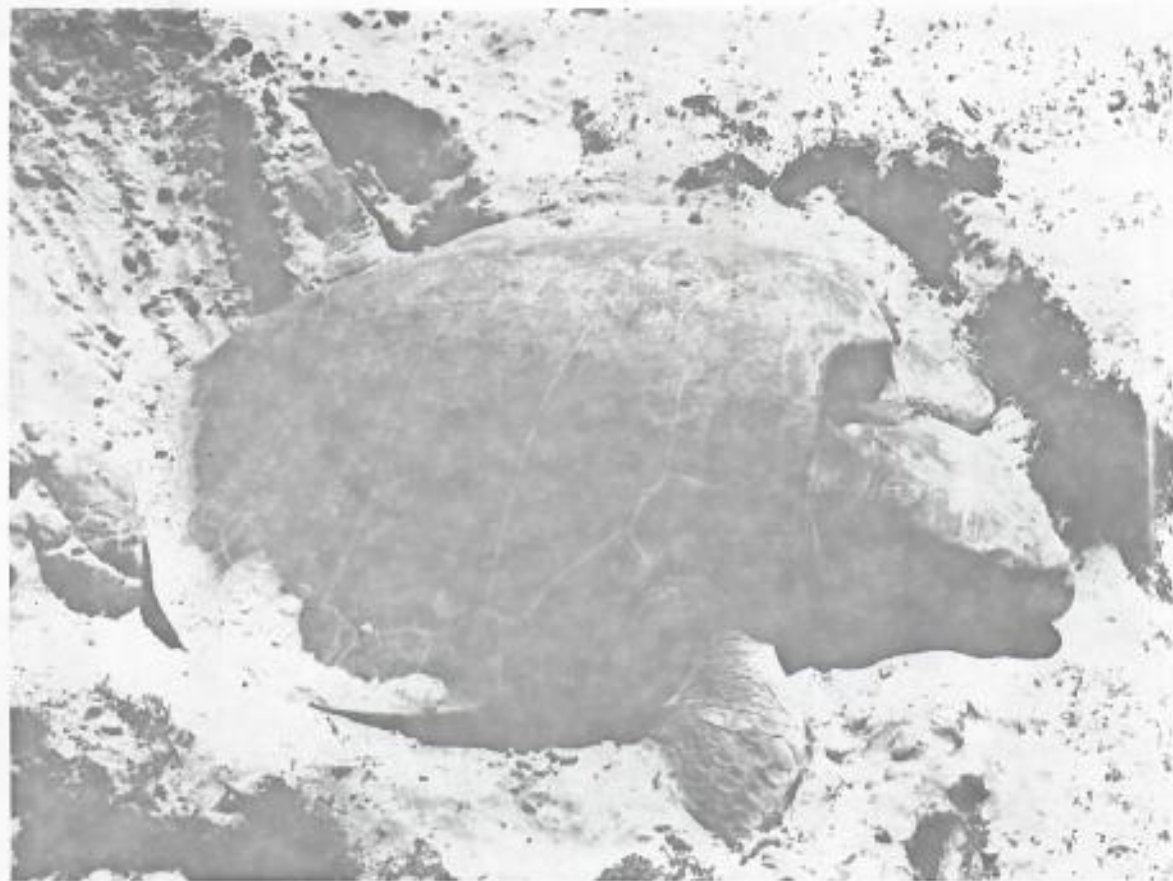
Most of these turtles were easily approached and hauled aboard with a long-handled gaff hook. The back half of the shell of several of them was dull red, as if bloody from an injury. I have often seen female Green Turtles at mating time bleeding from wounds made by the long grappling nails of the male and thought the red Ridelys might have been injured this way. We caught one of them and found the color to be caused by encrusting red algae.

Stomach contents of the Atlantic Ridley are usually found to consist of crabs. Two Mazatlan turtles taken respectively 10 and 14 miles offshore had eaten nothing but tiny shrimp which packed the gut to distension. The average body length of the shrimp was only about an inch, and when I expressed surprise that a big-jawed Ridley should be able to feed itself on such tiny,



agile prey the fishermen told me that the turtles eat, not shrimp, but *lana* (moss — filamentous algae?) in which the shrimp are thickly entangled. I doubt that. Except for a few brown filaments that seemed to me only broken-off shrimp antennae, there was nothing plant-like in the stomachs at all — only hundreds of the little shrimp, all of which had been swallowed whole.

Part of the mystery that has surrounded the breeding habits of the Atlantic Ridley may merely be a result of its disinclination to congregate in big gatherings at nesting time. I formerly dis-



carded this idea because it seemed to imply that Ridelys were simply being overlooked in the rookeries of the other species. With all the attention these nesting grounds were getting this seemed unlikely. Now, however, an accumulation of stray facts shows that Ridelys nest regularly if scatteringly, along a section of the coast of the Gulf of Mexico hardly used at all by other species, from Montepio, abreast of the Tuxtlas in Veracruz to Padre Island, Texas.

When a recent summary of information on the Ridley question was published, evidence of nesting in three localities in Veracruz (Anton Lizardo, Nautla and the Alvarado area) was available. Widespread verbal reports of nesting by the *loro* or *cotorra* (as the Ridley is called along the Gulf in Mexico) at Montepio were mentioned. Later, during May, 1958, my friend Leonard Giovannoli visited Montepio at what, according to local word, should have been the height of the nesting season. He found there almost precisely

what I had found the year before at Anton Lizardo, 100 miles to the northward: the remains of two females freshly killed while nesting, few other tracks on the beach, and the local people so scared by recent threats of turtle-law enforcement that little could be learned from them.

When these nesting records began to turn up in Veracruz my attention was turned to Padre Island—the long narrow sliver of an offshore bar that runs from Corpus Christi to Brownsville, Texas—as a place that ought to be explored for Ridley nesting. Preliminary inquiry among local fishermen there was discouraging. People who appeared to know the coast well were sure that no turtles nested on the island. But in 1959 Mr. Kay Eoff of Brownsville, a graduate student at the University of Florida, found a man who travelled the coast extensively in a beach buggy, and who said that once in a while he saw turtle tracks there. In September, 1960, after fruitlessly canvassing people along the Padre Island

beach, I
female Ric
Port Isabe
These rept
than I has
Learning t

shrimp bo
and showe
quite fami
called it *le*
and said i
about and
ing close
They said
were foun

On my
knocked n
my attenti
Society's
logica, vol
looked by
Jesse R. L.
Ridley ne
phoned M
He kindly
with phot
tion, and

beach, I came upon the shells of five mature female *Ridleys* displayed for sale in a gift shop in Port Isabel at the southern end of the island. These represented more mature Atlantic *Ridleys* than I had seen in all my years of searching. Learning that they had been caught by Mexican

Laurence found not one nesting *Ridley*, but two, on trips two years apart, as detailed below.

(1) June 3, 1948, Padre Island, Big Shell Banks, 6/10 mile south of Old Harbor Pass, which is 25 miles southwest (along Padre Island Beach) of Gulf Beach Park. The latter is 23

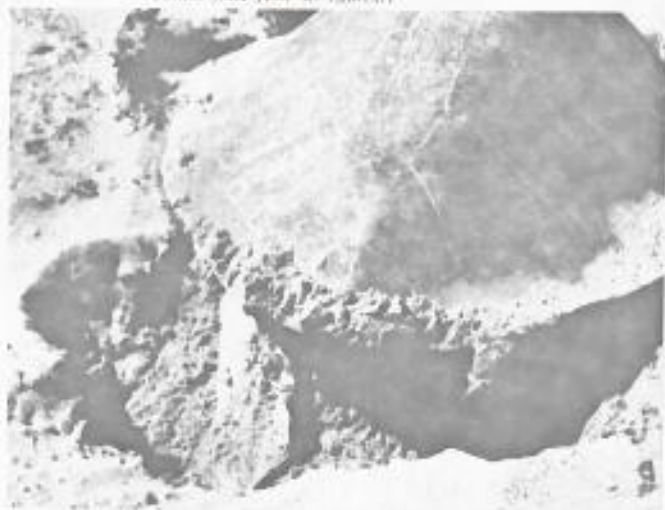


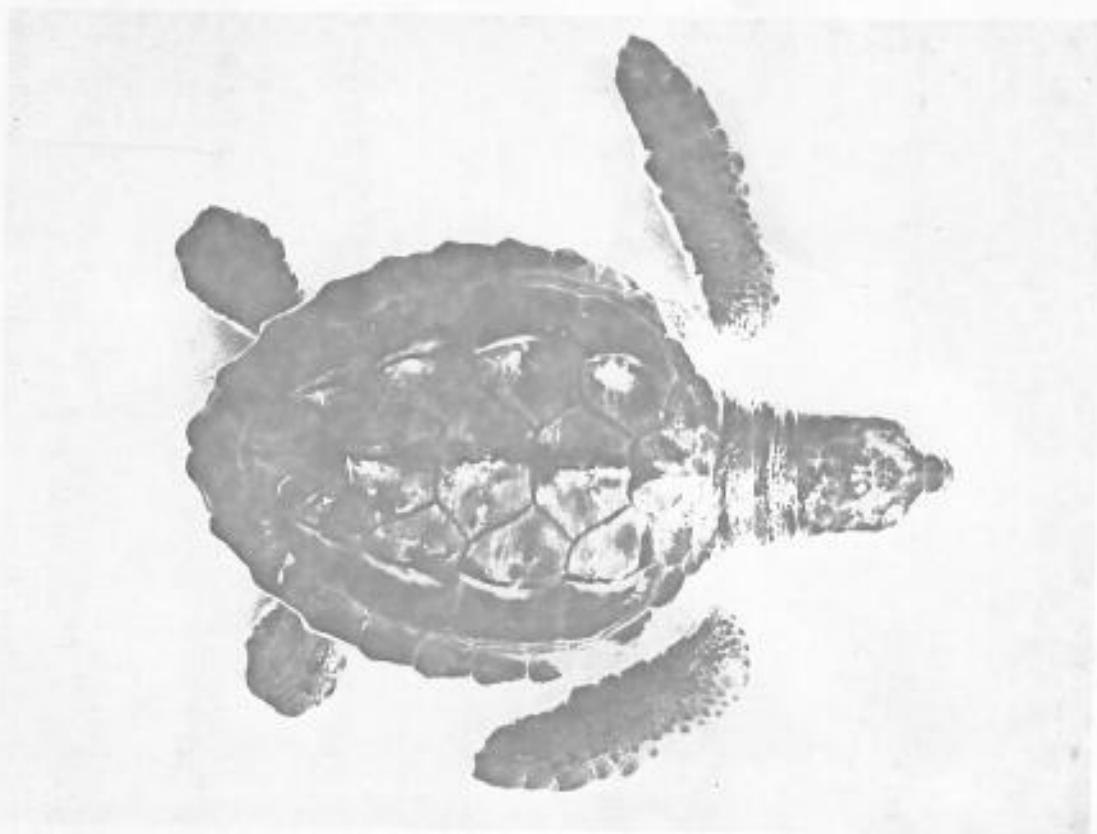
shrimp boats, I went down to the shrimp docks and showed the shells to the crews. They seemed quite familiar with the kind of turtle represented, called it *Jora* or *cotorna*, as they do in Veracruz, and said it was the only common species thereabouts and that they usually caught it when trawling close inshore in spring and early summer. They said that when butchered the turtles often were found to have shelled eggs in them.

On my return to Florida Mr. Larry Ogren knocked my feet out from under me by calling my attention to one of the New York Zoological Society's papers (Werler, John E., 1951, *Zoologica*, vol. 36, n. 3, pp. 37-48), completely overlooked by me, telling of the observing by Mr. Jesse B. Laurence of Corpus Christi, Texas, of a *Ridley* nesting on Padre Island. I at once telephoned Mr. Laurence, who is County Engineer. He kindly looked up the pertinent data, together with photographs substantiating the identification, and sent them to me. It turns out that Mr.

These photographs of a *Ridley* nesting on Padre Island, Texas, were made by Jesse B. Laurence of Corpus Christi and are the first ever made of the Atlantic *Ridley's* egg-laying.

Photos from Jesse B. Laurence





Eggs from the nest of the Atlantic Ridley discovered on Padre Island were dug up and incubated on two occasions, and a total of seven hatched after 58-62 days. This is one of them.

Photo from Jerry R. Laurence

miles southeast (down Mustang Island Beach) of Port Aransas Pass. A turtle weighing about 80 pounds laid about 100 eggs in a hole some 6 to 8 inches in diameter, 15 inches deep, and "belled out" at bottom, located 50 yards above high tide. Eighteen eggs, dug up and incubated in a bucket of sand, after 58 days produced two little turtles. A photograph of one of these, clearly a Ridley, was reproduced in a newspaper account, a clipping of which Mr. Laurence sent me. This is the first published record of nesting by the Atlantic Ridley.

(2) May 23, 1950. Padre Island, 22 miles south of Gulf Beach Park (see above), "about a mile inside Little Shell Banks." A turtle weighing about 100 pounds laid about 100 eggs, of which 27 were taken to Corpus Christi and put in a basket of sand. Five of those hatched, begin-

ning July 25 (after 62 days). Mr. Laurence's excellent pictures of the nesting turtle are the first ever made.

The trips on which the above observations were recorded were made by jeep, from Corpus Christi, for the purpose of gathering data for a proposed road from Port Aransas to Port Isabel. No other turtles or tracks were seen. The most surprising feature of Mr. Laurence's observations was that both turtles were found nesting in the daytime, an occurrence extremely infrequent among other species. Of hundreds of nesting turtles I have seen, none has been on the beach earlier than twilight or later than gray dawn.

It now seems reasonable to offer as partial explanation of the durability of the "Ridley mystery" these factors: (1) scattered nesting emergences, with no rookeries formed; (2) lightly cut emergence trails, easily obliterated by natural causes; (3) a nesting range comprising little-visited, and in some cases, almost inaccessible, shores, such as Padre Island and parts of the Gulf Coast of Mexico; (4) nesting by daylight.

RA
O

BE KIND TO
OOKIE!

Please don't throw anything into
Ookie, the Walrus, is a baby
now better than to swallow
and other objects. They could

