



(Photograph by Margaret H. Balazs)

The Riddle of the Ridley

By ARCHIE CARR

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Dr. Archie Carr is one of the foremost turtle experts of the United States and for eighteen years he has puzzled over the genesis of the sea turtle commonly known as the Ridley. Some of his herpetological associates, indeed, aver that the Ridley has become an obsession with him, and delight in proposing ingenious explanations of the origin of the creature. Nothing, however, equals the ingenuity of the Ridley itself, for its method of generation and even its place of origin have eluded not only Dr. Carr for eighteen years, but professional turtle hunters for far longer than that.

Dr. Carr is Professor of Biology at the University of Florida. "The Riddle of the Ridley" is a condensed chapter from his forthcoming book, "The Windward Road," to be published by Knopf early in 1956.¹

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THE TWELVE-FOOT POLE flew a high arc and struck true over the skidding shadow. It plunged quarter-down and stopped short against the hard shell of the turtle. Then it fell free and floated to the top.

"Missed him," I said. I should have known better. It was Jonah Thompson who threw the iron.

But how does anyone hit a target like that? The bow of the little launch was bucking and shying in a cross-channel chop. A gusty breeze kept throwing the surface of the bay into crowds of tight wrinkles that raced by and shot back the light in confused reflections. The water was milky white to start with, and the turtle was thirty feet out and a yard down and dodging like a rabbit. It was like trying to hit a scared pig from the bed of a truck lurching across a plowed field. Only the pig would be out in plain view while the turtle was a dim blur in the water.

"He's carrying the iron," Jonah said. Then I saw the line snaking out of the bucket in the bow. "How do you do it?" I said.

"I'm sixty-five and I started early. It's worse with green turtles; they run like a seagull. This here's a ridley."

He clawed in the pole with a boat hook. He took up the smoothly paying line and slowly closed both hands on it. The tension pulled us around a few points, and then a flipper broke water fifty feet out in front. Very carefully Jonah began to take in line, and the boat and the surfaced turtle drew together. When the gap closed he handed the tight line to his boy and deftly dropped a loop of rope over one of the flailing

Ridleys ought to like this beach at Tortuguero on the Caribbean coast of Costa Rica, but they don't nest there. (Below) An Atlantic Ridley, caught in the Hudson, sleeps on the bottom of its aquarium.

ley. That was how the great ridley mystery began for me.

It is the sea that holds the great mysteries. There is still much to be learned in the land, to be sure, but it is the third dimension of the oceans that hides the answers to broad elemental problems of natural history. Somewhere out there young salmon lose themselves, and the Pribilof seals go there when they leave the rocks where they were born. Through chance concordance of cryptic forces, the Red Tide brews up and sporadically drifts in to the rich littoral of Florida, killing thousands of fishes, sending the tourists scurrying to flee the stink, and then sweeping away again, unchecked and uncomprehended. As long as man has had the wit to wonder, he must have puzzled over the new eels in his pasture pond; and being told they come from the sea where their parents went to spawn them is as preposterous as some theory of astrophysics. When J. L. B. Smith found a coelacanth fish fifteen years ago, it was a living fossil, as stirring a discovery to a biologist, and quite as great a probing of the past, as finding a dinosaur would be. Who can trace the way of the great blue marlin or of Rhineodon, the whale shark, or tell anything worth hearing about the oarfish or the giant squid, or even say for sure where the homely mullet spawns its millions or where the gleaming hordes of tarpon come from?

And who can tell what the ridley is?

It was eighteen years ago when Jonah Thompson pulled in that first ridley out at Sand Key in Florida Bay. I was there because of a letter from my friend Stew Springer, who is a gifted naturalist, versed in all sorts of seacraft. He was running a shark fishery at Islamorada on the upper Florida Keys at the time. He wrote to me to complain about a kind of turtle his fishermen brought in for shark bait. It was an evil-natured turtle, he said, flat and gray, with a big head and short, broad shell. Unlike the docile greens, which lie for weeks back down on a ship's deck, or the formidable but philosophic loggerheads, this species made an unceasing, even dangerous, boatfellow. It snapped and fought, Stew said, from the moment it fell over the gunwale, biting the air and slapping its feet till it burned itself out from rage and frustration. The people on the keys called it ridley, and Stew said he could not even find the



flippers. Then he heaved, and the turtle slid over the gunwale and fell back down on deck, where it scraped and thrashed for purchase on the smooth planks.

"Stay clear of him," Jonah said. "He's mad. Ridleys is always mad."

I poked a rope end at the turtle's face. It seized the knot and crunched and then flew into a long frenzy of flopping and pounding about the deck.

"You can't keep a ridley on its back. Only a few hours. They're crazy. They break their backs."

That was how I got to know the Atlantic Rid-

name — much less any information on it — in any of the books.

Neither could I. From the description I decided that Stew must be talking about a species that was first described some sixty years ago as *Lepidochelys kempi*, the specific name being taken from that of Richard Kemp of Key West, who sent the type specimen to Samuel Garman at the Museum of Comparative Zoology at Harvard. Practically nothing was known about the natural history of Kemp's turtle. Most people were unable to distinguish it from the loggerhead, and many even doubted that there really was such a thing. A scattering of herpetologists had published records of its occurrence or comments on its osteology, but the great majority of reptile students had never even seen one and the general attitude was that Kemp's turtle was a somehow inferior, if not altogether spurious form, not worthy of scholarly sweat. But Stew had a different opinion, and I had great respect for his perspicacity; I decided to go down and see his botheaded sea turtle in the flesh. I suppose that one reason for my steadfast affection for ridleys is the memory of that trip to the Keys.

Jonah Thompson could handle an iron better than any man of any color I ever saw. He knew weather and water and fish and, what was most important of all, he knew turtles.

And so, when he contemplated the irate ridley he had just pulled up on deck and said: "Some say these ridleys is crossbreeds," I took notice and urged him on.

"We don't know where they lay," he said. "All the rest come up on the beaches one time or other, but you never see the ridleys there. We all say they are made when a loggerhead pairs with a green."

It bothered me that the ridley should be such a distinctive and original-looking creature, with his traits his own and nothing about him that seemed intermediate between the other species. A mule is clearly a mixture of the ass that sired him and the mare that bore him, but a ridley is his own kind of animal. I nodded over Jonah Thompson's theory, but I resolved then to get the straight of it somehow.

As I said, that was a long time ago, and I have made very little progress. Indeed, the ridley mys-

tery has grown rather than shrunk, and I am farther from a solution than I seemed then. The answer is so elusive that I have come to regard the ridley as the most mysterious air-breathing animal in North America.

First of all, there is the unimportant but vexing question of the creature's name. Ridley! What kind of name is it anyway, and where did it come from? I've traced it all along the coast from Fernandina to Key West and out to Pensacola and people only look vague or grieved when I ask about the name. To most people it's like asking why they call a mackerel a mackerel, or a dog a dog. Once in a while I run into somebody who knows the ridley as "mulatto" or "bastard" or "mule turtle," in reference to its supposed hybrid origin; but most places the name is ridley, and not a soul knows why. Maybe one out of a couple of dozen fishermen pronounce it "ridler"; and it may be that this form represents an earlier stage in the etymology of the term, but it seems impossible to confirm this. Anyway, compared to other things we don't know about the ridley, the question of its name is a bagatelle; and our ignorance here is exasperating, but not necessarily demoralizing.

A more unsettling eccentricity is the animal's range — the territory in which it has been found to occur. All the other sea turtles — trunkback, green, loggerhead, and hawksbill — occupy pretty much the same area, each being found in the Atlantic, the Caribbean, the Pacific, and the Indian Ocean. Moreover, while the representative of each of these species in the Indo-Pacific is isolated by land or by great expanses of cold water from its counterpart in the Atlantic-Caribbean, the populations are remarkably similar. In fact, if you go to Colon, on the Caribbean side of Panama, and catch a green turtle, haul him across the Isthmus to Panama City, and compare him point for point with a green from the Pacific, you have to look very close indeed to see any difference at all. It is the same with a great number of other marine animals, both vertebrate and invertebrate, on the two sides of the Isthmus; they are separated by thousands of miles of alien territory but they nevertheless show very little of the divergence that such isolation usually brings. This is especially striking when you consider that the emergence of the isthmus that cut off the

Caribbean animals from their eastern Pacific kin took place at least thirty million years ago.

The ridley partly fits this pattern; that is, there is an Atlantic ridley and a very similar one in the eastern Pacific. They are numerous only in the warmer parts of their ranges, and are apparently not in contact around the tips of either Cape Horn or the Cape of Good Hope, except perhaps as occasional, current borne flotsam. But here the orthodoxy of the ridley stops. For some utterly unaccountable reason it is not found in the Bahamas or Bermuda, where all the rest are, or have been, abundant; and most peculiar of all, it is absent from the Caribbeans.

It is not a simple matter to get a clear picture of the range of the ridley. You don't just go out and catch sea turtles on an afternoon collecting trip, and there are no really good sea-turtle collections in any of the world's museums.

Counting specimens I have begged or bought from fishermen or seen being butchered in fish houses, and the collections of the Museum of Comparative Zoology, the American Museum of Natural History, and the British Museum, I have managed to look at about a hundred ridleys in eighteen years. Add to what these show the small amount of information that has been published and the carefully sifted oral reports of fishermen, and there is still not a great deal to work with. But it is enough to give the outlines of the ridley story, and to show that it is a strange one.

There are two centers of abundance of ridleys: the Gulf coast of Florida from the Suwannee Delta to Florida Bay and the east coast from about St. Augustine to Melbourne. On the east coast, ridleys are best known by trawlers who work some distance off shore, perhaps indicating that even this far south the animals are being swept northward by the Florida Current—the headwaters of the Gulf Stream. I know a fisherman at Canaveral who claims to have caught a thousand ridleys during twenty years of fishing there. On the Gulf coast they are taken along with the green turtles that support the small turtle fisheries there, and are frequently sold with the greens to buyers who never know the difference. They are caught in nets set across small channels among the flats, and like the young greens, they appear to be at home there. A single setting of a net will sometimes yield two or three

of each species, while loggerheads are almost never taken.

Outside of Florida, ridleys occur all along the Gulf coast to Texas. At the Mexican border our information peters out; nobody knows what happens to the range of the ridley from there on. The few published articles on Mexican sea turtles mention the other four kinds, but not the ridley. On the Atlantic coast it seems to me that the distribution of the ridley is no true "range" in the zoo-geographic sense — an expanse of territory that an animal occupies or voluntarily moves across — but is a one-way, passive dispersal by the Florida Current and the Gulf Stream; an exodus with no return. Expatriate ridleys drift with the current with little more control over their ultimate fate than the plankton there. The ones near the edges may be able to move out into the coastal waters, reach shore and live there more or less conveniently; but those deep within the stream go on. Where the Florida Current picks up its supply of ridley is not known, for reasons that I shall reveal presently; but there can be little doubt that it is the northward sweep of the current just off the eastern shore that accounts for the occurrence in North Carolina and New York Harbor and Martha's Vineyard. Little as we know about ridleys, we can be sure they are not born in those places. They are carried there.

And they do not stop in Massachusetts. The Gulf Stream goes on, and they go with it. How they are amusing themselves all this time is hard to say, but they ride the great global drift out into the cold North Atlantic, where it travels its new easterly course at a reduced speed but glides on over the tail of the Grand Banks, pushes aside the arctic icebergs, and splits at last against western Europe, making it barely possible for human beings to stand the English climate, and stranding ridleys on such shores as Ireland, Cornwall, the Scilly Isles, southern France, and the Azores.

The range of the ridley, thus, is not an expanse of ocean or a strip of shore. Mostly it is the Gulf Stream. Ridleys are part of a vast planetary swirl that starts when the equatorial current and the easterly trades push water through the Yucatán Channel and pile it up in the Gulf of Mexico. The surface there rises six to eighteen inches higher than the Atlantic level and breeds the head that drives warm water clockwise around

the eastern Gulf and nozzles it out through the Straits of Florida as the Florida Current. This soon meets the Antilles Current, and the two now form the "Gulf Stream" in the new strict sense, and this moves northward with an initial speed of about three knots. Somewhere along the line ridleys are fed into this system, to drift downstream to England through three thousand slow miles.

It would be wrong to give the impression that ridleys are of common occurrence in Europe. I recently looked at six English ridleys in the collection of the British Museum, which is the best sea-turtle collection in the world, and those six represent all the European specimens in that museum. They may represent half of all the English ridleys that have fallen into the hands of naturalists. Ridleys, and sea turtles of all kinds, are very rare in European waters. But even so, I wonder how many ridleys had to begin the voyage in America for each of the six that lodged at last in the British Museum!

Two features of the British waifs must be of some sort of significance in the cryptic life history of the animal: they are all small—none over eight inches long and one only four—and they have all washed up during the months from October to December. I suppose the small size merely means that baby turtles are swept away more easily than big ones; but the meaning of the seasonal occurrence of the strandings is unexplained.

If we suppose that the point of injection of ridleys into the Gulf Stream system is somewhere about the tip of the Florida peninsula—and the slim evidence that seems to support this assumption will come out shortly—then the trip to Europe might take as much as a year or even more. It seems unlikely that even a turtle could survive this period with no food at all. So, even though the ridley is characteristically a bottom feeder—a crusher of crabs and mollusks—we must conclude that it finds some sort of fare in the Gulf Stream.

It must have occurred to you some time back that the sensible way to go about finding out where ridleys get into the Gulf Stream would be to locate the beaches where the young hatch out. That makes sense, certainly. The only trouble is, the beaches can't be found.

In fact, I can't find any evidence that ridleys breed at all, by any of the accepted methods. I am still just about where Jonah Thompson's folk theory left me. As far as I can determine, nobody ever saw a pair of ridleys courting or copulating. People are constantly catching and butchering sea turtles and looking about inside them for eggs, but no female ridley has ever turned up pregnant—not even with the bead-like, yellow eggs that other female turtles carry for most of every year. No ridley has ever been seen on a nesting beach, and no hatchling has been found. The smallest ridley known is a four-inch specimen that washed up in England. This one was at least several months old. A newly hatched one should be little more than an inch long, because the loggerhead, a turtle two or three times the size of the ridley at maturity, is only slightly more than an inch long at birth. Not only that, all hatchling turtles have a soft umbilical scar, marking the place where they were attached to the yolk in the egg; and at the tip of the snout there is a sharp spine called an egg tooth that the little turtle uses in freeing itself from the shell. Turtles retain these signs of infancy for several weeks after hatching. No little ridley has ever been seen with them.

When Kemp sent the ridley to Harvard in 1880 he said: "We know that they come out on the beach to lay in the months of December, January and February, but cannot tell how often or how many eggs." I don't think he knew any such thing. When I made my first visit to Springer's shark camp on the keys, I went armed with this observation; and since it seemed a bizarre reversal of the usual nesting schedule, I went to some effort to authenticate it. I had no success at all. I talked with people who knew ridleys all the way from Homestead to Key West and none had ever heard of a turtle nesting in the winter-time or had seen a ridley nest or egg or baby at any time. Since then I have heard the same story from something over 160 of the most knowledgeable fishermen I could find between Cape Hatteras and the mouth of the Mississippi. I have dissected every mature ridley I could get and have cross-questioned the men who slaughter turtles for the market, and I have begun to feel the real weight of the enigma.

When the turtlers and fishermen are pressed to

account for the facts of the case, they tell three different stories. Most of them agree with Jonah Thompson that the creature does no breeding on its own but is produced when two other species hybridize. The comment of an old pod at St. Lucie Inlet was the sort of thing you hear:

"This yer ridley don't raise. He's a bastard, a crossbreed you get when a loggerhead mounts a green—and a loggerhead will mount anything down to a stick of wood when he's in season. This yer ridley don't have no young 'uns. He's at the end of the line, like a mule."

A minority among the people I talk to say that ridleys breed all right—bound to; everything does; but they do it somewhere 'way off, outside our field of responsibility. On some remote shore of the Caribbean, maybe, where they have yet to be observed by sapient man. Sapient gringo, anyway.

This kind of talk used to reassure me. It was something to fall back on when the thought of a parentless, childless animal weighed me down. It was no disgrace not knowing where the brute



ATLANTIC LOGGERHEAD TURTLE

Caretta caretta caretta

(Photograph from Zoological Society of Philadelphia)



ATLANTIC GREEN TURTLE

Chelonia mydas mydas



ATLANTIC LEATHERBACK TURTLE

Dermochelys coriacea coriacea

ATLANTIC RIDLEY TURTLE

Lepidochelys olivacea kempii



ATLANTIC HAWKSBILL TURTLE

Eretmochelys imbricata imbricata



breed if it happened in some far corner of the Caribbean. The Caribbean is a big place, and I knew its shore only in a couple of spots. Ridleys were unknown in those spots, but this proved nothing at all.

Imagine my state of mind, then, when I had completed a carefully spaced series of visits all the way around the Caribbean and had found no sign either of ridleys or of people who knew them, anywhere in a dozen countries and islands. I went out with turtle-hunters and looked at turtles in crawls, and at shells on trash heaps, and at stuffed turtles on museum shelves. I walked some of the finest turtle beaches in the hemisphere. I saw a lot of things, but no ridleys. Everywhere I went the people knew four kinds of sea turtles, and none of them was the ridley.

This was a body blow. It threw the whole problem back into the Gulf of Mexico — into my lap. My ignorance became embarrassing again.

The third explanation I commonly hear is the opinion of a still smaller group that the ridley is out there each June laying, along with the other species, in the same places and at the same time. I have heard this seriously proposed by responsible parties five times. That is, five times people named definite stretches of beach on which they believed ridleys laid. Four of these stories fizzled out under cross-questioning, proving to have been based either on pure hearsay or on erroneous identification of the turtle involved. In one case only, the battering system of interrogation I have developed through the years was unable to find the weakness in a man's claim that he had seen a ridley lay on a certain beach; and we parted at deadlock — he clinging to his memory of one lone ridley in moonlight twenty-five years old, and I sure without any proof at all that he was off his rocker.

I will admit that there is a slight possibility that each June ridleys lumber up at first full moon and dig their nests on the shoulders of State Road A1A, like the loggerheads; but I rest no easier for it.

That, then, is the riddle of the ridley: a big, edible shore-water beast, abundant and well known to everybody along the east-Gulf littoral and around the tip of Florida, is swept up the Atlantic coast by the Florida Current and the Gulf Stream, through some whimsey never



▲ A Pacific Ridley lays eggs—these photographs are proof of it. In the picture at the right, about half a clutch has been laid, 1 to 4 eggs at a time.

crossing to the eastern side of the current and being unknown in the Bahamas and in Bermuda. The drifting migrants trickle out of the stream into coastal waters as far north as Massachusetts, straggle across to Europe, and very rarely stick with the deflected drift as far as the Azores and probably farther. Nowhere in this vast territory has any hint of reproductive activity been seen.

What do you make of it? I used to think the solution would one day fall into my lap, but I believe this no longer. It will have to be worked for, and the campaign will require drive and imagination and patience. It will probably resolve itself into a systematic ransacking of ideas and places on a purely trial-and-error basis. It will not be settled on week-end field trips, and there is nothing to take into the laboratory. The solution will very likely turn out to be absurdly simple and obvious, once we get hold of it; but meantime it is a tough and nagging mystery.

While waiting for something else to happen, it is interesting, if not really profitable, to take stock of the information at hand and see what can be done with it. Most of the laws of science, as we call them, have started out as theories; and theories are just figments of a disciplined imagination — until they can be proved. The scientific way to formulate a theory is to examine every possible explanation for your facts that presents itself, however outrageous it may seem at the

time. Some of the craziest notions turn out to be the best.

In the case of the ridley mystery, then, we have to weigh without bias all the trial solutions

at hand, whether conceived by unlettered men-haden hands or by sadistic colleagues, or by my own troubled mind. We must list these and evaluate each in its turn and then make an objective choice; and this will then be the current, tentative answer to the riddle of the ridleys. It will probably be wrong, but it will be the best we can do.

Of all the explanations that suggest themselves, the simplest is that the ridley just doesn't reproduce, but arises by spontaneous generation. This is the most direct answer, in view of what we know, and in olden times it would have been accepted as the only reasonable solution. But nowadays biologists are pretty insistent that everything alive must have at least one parent, and this sets limits to our imagination.

As a variant of the above, we might toy with this idea, which has been suggested to me independently by several acquaintances, some of



Its eyes water copiously while the eggs are dropping into the nest, and the head lies prone against the sand.

Like other sea turtles, the Pacific Ridley simply covers her nest and returns to the sea. Presumably the Atlantic Ridley does the same thing. But where? ◆

(Photograph by Margaret Haskin)



whom at least are perfectly sane. May not the ridley once have been able to reproduce its kind, but have suddenly lost the ability — have become sterile through some sudden racial mishap? In such a case, the ridleys we see today would be the last members of a line on its way toward extinction. It is hard to put your finger on the defect in this effort, but it seems a bit fey and irresponsible. Quite frankly, I get no real comfort out of the notion and mention it at all only to be scientific.

We just about have to start from the assumption that the animal breeds — somehow, somewhere. It must be, then, that it is the place or the manner of the breeding that bewilders. There must be something about where or how little ridleys come about that it is just a bit beyond the scope of our imagining.

Maybe, for instance, this turtle lays no eggs, but bears its young alive, on the high seas, as a sea snake does. It is certainly conceivable, and it excuses our failure to find nests and eggs ashore. But don't forget the lack of pregnant females. You have to get just as pregnant to bear live young as to lay eggs. And not only that, an eggless turtle is too far out of character. Turtles are unwaveringly conservative. A live-bearing turtle would be almost as exciting as an egg-laying dog. No matter where they live — on dry land, in fresh water, or in the sea — all known turtles inflexibly dig holes and lay white-shelled eggs in them; and they have been doing this since the Cretaceous.

Suppose, then, that the ridley abides by the conventions of its kind and lays eggs, but lays them in the water — lays buoyant eggs so far from land that the young stop being young before we ever get to see them. If the laying place is very far away, maybe it takes the females a long time to get there, and we see them only when they are not carrying eggs. This is a variation of the preceding theory and a slight improvement on it, but is unacceptable on the same grounds. It just seems like too much of an innovation for a turtle suddenly to make, after fifty million years of making hardly any innovations at all. Besides, prolonged wetting with salt water kills the embryos in the eggs of other reptiles and other sea turtles, and we would have to propose a brand-new and very ingenious kind of egg for our theoretical pelagic ridley.

Perhaps, instead of a strange way of breeding, it is a strange *time* of breeding that has thrown us off. Maybe the laying season is very short or very oddly scheduled and restricted in time. Maybe they lay only on New Year's Eve or Twelfth Night, or on the shortest night or coldest night of the year. All the other Atlantic sea turtles have a laying season of several weeks in late spring and early summer; but the ridley may lay in midwinter when turtlehunters are doing something else. Why not? Well, mainly because it again brings us up against the failure of the females to turn up pregnant. And not only that, even in the dead of winter there is traffic on most Florida beaches — people driving, hotrodding, surf fishing, courting, catching coquinas, even swimming. It is impossible to believe that winter turtle tracks, or tracks laid at any time however unlikely, could simply have escaped notice. This was Kemp's theory, you remember, but I think he was just repeating idle talk.

Next we might try the possibility that the ridleys in the United States originate somewhere else and either migrate into the Gulf of Mexico or are carried there by currents. This looks good at first, because there are the currents to do the job — currents that could, and almost surely do, bring ridleys clear across the Atlantic from Africa to the Antilles and very probably into the Gulf of Mexico. But if you look closely at the foreign ridley colonies that could lose turtles into these currents, you see that the ridley population in the Gulf could not possibly be derived this way. In the first place the Gulf form is too abundant to qualify as an accumulation of accidental waifs; and even more conclusive, there is a simple but constant difference between the ridleys in the Gulf and those in West Africa and on the Pacific coast of South America, which are the only stocks adjacent to the currents that bring foreign drift into Florida waters. All extra-Floridian ridleys everywhere in the world have two to six more scales in the upper shell than our Gulf ridley does. If we suppose that all those in the Gulf were brought in by the Equatorial Current, then we have to believe that each of them stopped over somewhere along the way and had its shell remodeled. It is possible that an occasional Gulf ridley does come into American waters on the Equatorial Current; but if so it is surely one

that began its voyage three years before when it was swept away by the Florida Current and survived the world-wide circuit to return at last to its native waters. Any African ridley that turned up in the Gulf would be easily recognized as such. There is, thus, little point in looking to the ocean currents for a solution to the puzzle.

Why not just take it easy and accept the popular notion that the ridley is a hybrid after all, and, like many hybrids, sterile? This is what most of the fishermen and turtlehunters believe, as I have said, and you can even read it in the *Riverside Natural History*. Mostly the responsibility for furnishing us with ridleys is laid to a loggerhead father and a green-turtle mother, but sometimes you hear the sexes switched. A few say the *mésalliance* involves a loggerhead and a hawksbill, and rarely you may be told that it is a hawksbill and a green.

This is where the pressure is, and where my skepticism has lost me friends and made me out, in the eyes of men I respected, a plain damn fool. Nearly everything we know, and everything we don't know, about this animal makes it easy to say it is a half-breed, with no more personal continuity than a medieval choirboy, or a mule.

As I have said before, there are also ridleys in the Pacific. And in the Pacific the males chase the females about, and catch them, and they mate, and the females go ashore and dig holes in the sand and lay round, white eggs in them. The eggs hatch and release baby ridleys with egg teeth and umbilical scars, like any other new turtle.

Now, what earthly sense would it make for the ridley to be a hybrid in one part of his range and a separate species in another—to do his own breeding at Acapulco but rely on other kinds of turtles to do it for him at Tampa? It is a distressing thought. In fact, it is untenable.

As I have pointed out, the Atlantic and Pacific ridleys are separated by a great deal of territory and are not exactly alike. But they are very nearly alike, and far more like each other than like any other kind of turtle. In fact, the only differences I have been able to make out are the extra scales on the shell of the Pacific form and sometimes a slightly greener color; and maybe a few trifling disparities in proportions. Certainly nothing that would lead a person with bat brains to believe

that a ridley begot one of them and a loggerhead the other.

The problem would be simple if we didn't know about the Pacific ridley. My friends around the fish houses don't know about the Pacific ridley. They are at peace. I am not. It's what a Ph.D. in biology gets you. . . . The ridley breeds, like anybody else.

The same objections that make the hybrid idea unsatisfactory seem also to throw out the possibility that the ridley is some sort of sport—an occasional freak occurring among normal offspring of one of the other kinds of turtles, the loggerhead, for instance. Here again the almost identical Pacific ridley, with its orthodox breeding habits, stares us in the face and makes the sport theory seem just a shade too easy. It is possible, but only very feebly so.

Now, what can be said to the people who suggest that the nests have just been overlooked—that ridleys nest right along with the other turtles, at the same time and in the same places, and have simply escaped notice by a person competent to distinguish between them and the other species?

Well, as far as I'm concerned those are fighting words. Maybe my own hundreds of hours of unproductive beach-walking, and those of my zoological friends and correspondents, are not a valid test. But how about the lifetimes spent without seeing ridleys by professionals like Joe Saklin and Tony Lowe and Paco Ortega, and by the band of my consultants among the illegal east-coast turtle-hunters? These men spend three months of every year patrolling the beaches in turtle buggies—cut-down cars with oversized tires—dodging the far-spaced conservation officers and turning turtles by the yearly hundreds. They have always done this and they keep doing it at growing risk—slowly growing risk—because a few commercial bakers have learned what Savannah and Charleston housewives always knew about the keeping qualities turtle eggs give cakes, and will pay fantastic prices for them, and because the shoddier jooks and barbecue joints along the Dixie Highway like to cut their fifty-cent-a-pound hamburger meat with twenty-five-cent loggerhead. These men don't hunt turtles for fun. They are tough and practical. I know a game warden whom they threw into the sea

just to show how tough they are. They know their business. They know ridleys and know the beaches and what goes on there during the long summer nights, and it is wonderful what goes on there, but it is not the nesting of ridleys. All these men have told me that ridleys never come ashore. By not moralizing on their ways, I have made friends among these poachers, and if a ridley ever comes up on one of the good mainland beaches in the turtle season, I bet I hear about it within hours.

But suppose she should not come ashore on one of the good turtle beaches. There is a lot of coast between Tampico and Beaufort, and there are still some unpatrolled, unbathed segments of shore not even shown as sand on maps. And as long as this is true, we can never be sure but that we have missed what we were after simply because we have not looked in the right place. Till every one of the unsearched beaches has been walked with ridleys in mind we can never be sure they do not nest on some rarely visited little island or cluster of keys or short, broken strand somewhere on the coast of the southeastern United States.

This, I believe, is the theory we must choose. It best fits the known facts and introduces the fewest wild assumptions. It is distasteful, because it proposes the laborious ransacking of every scrap of sand along hundreds of miles of coast. It seems unlikely, because no other turtle anywhere is so fanatically finicky in choosing a breeding ground as this explanation would imply. But the ridley has shown its disregard for tradition in other ways, remember. In spite of the drawbacks, this hypothesis seems the best of the lot.

So I guess we must go looking for a small, isolated stretch of shore as the answer to the ridley mystery. It must be some improbable place right under our noses. Cape Sable may occur to you, or Dry Tortugas, but it will not be so easy as that. People have been turning turtles on those shores for too many years. I believe it can't be any of the good turtle territory on the east coast — the strip from Palm Beach up to Melbourne: it is too well known, too continuously visited. It is not Sanibel or Bonita Beach or Naples, and it almost surely is none of the islands along the bend of the Panhandle. It barely might be outside Florida — one of the Sea Islands of Georgia or

South Carolina, or some place the Mexicans have somehow missed between Vera Cruz and Brownsville. But I doubt this; and I doubt that it is anywhere in all the island chain from Grand Bahama to Turks and Caicos.

As long as we believed the zoologists who kept quoting one another about there being ridleys in the Caribbean, we could just say, well, hell, the ridley must breed down there somewhere. But now there's no comfort there, for me at least. In all the poking about that I'm going to tell you of in chapters to come, the ridley mystery was right there with me. Stirred up as I may seem over other matters — over the green turtles I was mainly after down there, over the endless odd detours and distractions I relate — the one most exciting thing I found in all my wandering was no ridleys in the Caribbean.

What remains to be done, then, is slow, piecemeal searching. And before I look anywhere else I am going back to Florida Bay — to the shallow, island-set sea between the cape and the upper keys. There are dozens of little islands there like Sandy Key, and they have been little visited by naturalists with eyes open for ridley sign. The shores there are mostly mangrove thickets, where no turtle could nest; but in some the mangrove fringe is broken by sand: and while the strips of beach are short and narrow, they may be all the ridley needs. The bay is handy to both the Florida Current, which must be the agent that feeds the waifs into the Gulf Stream, and to the coastal waters of the peninsula of Florida, where ridleys are more abundant than anywhere else. It is at least possible that the natural secretiveness of sea-turtle hatchlings keeps baby ridleys out of sight, and that some local, seasonal migration of the egg-heavy females hides them from view. All this seems unlikely, but it is the most possible solution at hand.

So I guess I should have stayed on there in the bay to look for the answer, where Jonah Thompson threw the iron so long ago. Perhaps all the Atlantic ridleys everywhere come from down there where the first one was, in the hot, white water with the sea cows and bonefish and the last crocodiles. Maybe the long questing will come full circle there on some first full moon of summer, and the riddle of the ridley will end where it began.