

Unedited manuscript submitted to GEO.

LIFE AND DEATH IN OAXACA

Peter C.M. Pritchard

Every morning, well before dawn, the little boats set out. Each has two men in it, one sitting near the front and the other at the back to run the big outboard motor. They leave the marvelously picturesque little bay of Puerto Angel, skirt the spectacular rocks guarding the entrance to the bay, and move swiftly westwards along the tropical Pacific coastline of Mexico's Oaxaca state. The air is cold, but the wine-dark sea is warm as blood. Within an hour or so, the blackness of night passes, and the sun begins to illuminate the land. The coastal vegetation and topography, rugged and cactus-strewn on close inspection, look surprisingly soft at dawn from the sea. Tier upon tier of rolling, forest-clad hills reach off into the interior, recalling the seventeenth-century pastoral effect of a Conestable landscape. By now the sea looks deep, pure, unpolluted blue. Within another hour the destination is reached. The shoreline now is no longer rocky, but is edged by the sandy beach called Escobilla, several miles long. And the object of the expedition starts to come into view. Turtles!

The turtles in Oaxaca are Lepidochelys olivacea, known in English as the olive or Pacific ridley and in Mexico as gallina or Gulf-dweller because they are also found in the Gulf of California. The gulfine is a world-wide tropical species that for unknown ecological reasons reaches spectacular concentrations in just a few parts of the world. Almost all of these locations are along mainland shores of the East Pacific, specifically in Mexico and Costa Rica. The animals gather from thousands of miles of coastline to nest during the later months of the year. Characteristically, the nesting is synchronous; the turtles gather offshore in an ever-increasing herd, move steadily closer to the beach, and when some invisible magic wand is waved they come ashore by the tens of thousands to nest in a bugaly spectacular phenomenon known as an arribada.

Escobilla is one of these beaches where the turtles nest. Around August the turtles move into the adjacent waters, and they spend the morning hours floating passively on the surface, with their steeply humped shells reaching well above the water and thus visible from some distance.

When the boats reach the turtle-laden waters, the monotony of the journey is quickly transformed into near-frantic activity. The front man in the boat, the turtle catcher, strips down to swimsuit - or, more often, brightly colored

undershorts - and attaches a long string to his wrist, the other end of which is attached to the boat. He stands as high as he can and when he sees a turtle, gestures and points vigorously. The motorist responds, gunning high revs, and races the boat alongside the drowsy turtle. Too late, the turtle sees the threat. Its lungs are full of air, and it cannot expel it quickly. Before it can dive, the catcher has leapt on it, grasped it by the sides of the shell, and swum alongside the boat. The 40 kilogram animal is unconsciously hauled over the gunwale and dumped upside down in the middle of the boat. The process is repeated. Time and time again, the sequence recurs: high revs, jump, splash, and the catcher surfaces with a feebly protesting turtle in hand. The pile of helpless reptiles builds up. Soon the quota of forty turtles is reached. Not till then are the hard-working turtles likely to take a break and have a simple late breakfast. Meanwhile the turtles remain, wedged at whatever angle they fell, occasionally beating a doleful tattoo on their breastplates with their flippers, or giving soulful sighs as the increasing sun beats on them.

The boat does not go right back to Puerto Angel. Instead, it stops short at a little landing place known as San Augustinito. Many turtle boats, each quota-laden, converge on this place each day. Hundreds of turtles are quickly unloaded, each on the shoulders of a brawny fisherman. They are carried up a ramp, and dumped over a low wall onto a concrete floor.

What happens next depends upon the equipment available. At times the turtles are killed with captive-bolt slaughterhouse guns, but with the amount of use the guns receive they soon break down, and parts are not available. I am told too that such weapons heat up too much in use; after twenty or so shots, they get too hot to hold. Even for a gun, killing can be too much, too fast. At other times a regular .22 caliber pistol is used. But usually the turtles are killed by hand. The first time I was there, as I watched the turtles being unloaded, I heard heavy thunks and bashing noises proceeding from the partially enclosed slaughter area. Young Mexicans - they looked like teenagers - were bashing the turtles to death with heavy iron bars. It took multiple hits to kill each turtle. The turtles' skull is thin, but under the bony roof lies a layer of muscle; the brain lies in a separate bony chamber, much deeper in the head. Sometimes turtles with the crown of their head seemingly completely smashed continue to live, and only die when a worker notices them and grinds the end of the iron bar deeper into the gaping head. As each turtle's skull was caved in, its eyes closed, its throat bulged out, and its hind flippers would stiffen and straighten until the hind part of the shell was raised high off the ground. Then, blood pouring, the turtle was

dumped in a pile in a corner of the area. On a busy day, the pile occupies most of the floor, many turtles deep.

A small conveyor belt conveyed the dead turtles to another chamber, where they were grabbed by willing hands, laid on their backs, and deftly laid open with knives of unbelievable sharpness. The real tragedy of the operation then became apparent. Practically every one of the turtles was an egg-bearing female; the hundred or more eggs in each turtle seemed to take up as much room as the rest of the viscera combined.

The turtles were quickly flashed out. Once removed from the shell, each turtle was reduced to two bloody chunks that were suspended from hooks, one consisting of the foreflippers and head, together with various organs including the still-beating heart, while the other consisted of the hind flippers and tail. More workers removed the skin from each piece, then separated the meat. Within minutes, the turtle had been separated into all its constituent parts.

I learned that the leather was the most valuable part of the turtle, and provided the economic driving-force for the operation. This was salted and sent to Mexico City for tanning. The meat was packaged and frozen. The bones and shell are ground up for fertilizer. The eggs are stripped from the oviducts, washed off, and incubated in styrofoam boxes; but not more than about twenty percent of them hatch.

Many questions crowd into the mind. Why does the government allow it? Who is getting rich from the slaughter of the turtles? Are they wiping out the species? Are there any limits on the take? Where do the products go? How long have they been doing this? All these questions can be answered, but to gain any real insight into the operation, it is vital to comprehend the background, personality, and drive of the man behind it, Antonio Suarez.

Nominally, the turtles are caught by fishing cooperatives and are sold to a company known as PIOSA (Pequeñas Industrias de Oaxaca, Sociedad Anonima - i.e. Oaxaca Fisheries Inc.), but the industrial plant and the whole commercial operation are the brain children of Suarez, the owner of PIOSA.

Antonio Suarez is a Spaniard. He has an aristocratic, moneyed background, and his family, although with diversified interests including Spanish coal and iron mines, have for generations been in the business of handling and marketing fine skins and hides. He is a man of taste and culture; his house in Mexico City is decorated with magnificent pieces of art, both modern and traditional, as well

as fine Persian rugs and elegant furniture.

In appearance, Suarez is of medium height, with very erect bearing, generally slender in build though he is liable to put on weight during his trips back to Spain. His complexion is ruddy, with heavy beetle brows and tight, controlled brown eyes. His hair is receding, and definitely thin on top. His teeth are expensively rebuilt, I believe following an automobile accident that left him with a long scar under his chin. His speech is fast, pouring, hissing Castilian; he rarely attempts to speak English, though he probably follows English conversation much better than he would be prepared to admit. His surprisingly thin, white areas contrast strikingly with his rubicund features. Someone who was asked to guess his age would suggest late forties or fifty; but he is just thirty-seven. He has a powerful ego, though the cocky self-confidence I saw on my first encounter with him seems since to have given way to a somewhat more reflective, worried, and less self-assured nature. He is a brilliant, animated raconteur, and has a great deal of charm, to which neither men nor women are immune. He has great intelligence, and I must confess that I not only enjoy his company, but find debate with him over economic arguments, biological odds for turtle populations, and other topics most stimulating. He has a somewhat satanic look, especially when he smiles, and would be perfectly cast as the villain in a Victorian melodrama. Philosophically, he is inclined towards the mystical, though not to the extent of shaking his down-to-earth capitalist instincts. He was very thoughtful when he discovered that I came from Ovidelo, Florida, while he was born in Ovidelo, Spain, and asked for some time that perhaps fate had brought us together. Similarly, I heard him reflecting sinisterly one day that it was cosa curiosa - a curious thing - how accident or misfortune happened to people who crossed him. I asked him if the happenings that befell his enemies were caused by the hand of God or the hand of Suarez. He grinned somewhat malevolently and said, "la mano del diablo" - the hand of the devil.

Suarez is able to make jokes at his own expense. He enjoys telling people about his non-existent grandchildren, and his audience, assuming him to be much older than his thirty-seven years, accepts everything he says. I thought the basic sadness of his chosen way of life must have crossed his mind when we were driving together along the coast road in Colima, when I stopped to pick up a land turtle crossing the road. Suarez said: "Peter, when you come by, the turtles come out to see you. When I come, they run and hide."

On the other hand, Suarez sometimes is unsure of the proper response when others make jokes at his expense. One of his favorite arguments is conservation by exploitation - give something cash value, and there will be money available to pay for the management program and conservation of the species. As he and I gazed with admiration on the magnificent Tree of Tule not far from Oaxaca City, I suggested to him that perhaps he could develop a plan to save the Tree by industrializing it. He gave a lame grin, and finally added that if there were more of them, that might indeed be the way to go.

Suarez first came to Mexico in 1966 to attend the wedding of his future wife's sister in the city of Oaxaca. While there, he made the acquaintance of the Governor of the State of Oaxaca. He went back two months later to develop this relationship, and at the time met the Chief of Police. By chance, he was shown a live ridley turtle, the first sea turtle he had ever seen, and learned that there was a new and growing market for turtle skins in New York and elsewhere. His interest was immediately stimulated because of his family background in milk farms and other animal skins, and on his return to Europe he learned that the demand for turtle skins was unmet and essentially unlimited. Thus began Suarez' involvement in the turtle business that led, in the course of the next decade, to his responsibility for the slaughter of about one million adult sea turtles - a record unequalled in the history of the world, and one which, together with his interests in various family business concerns, made him an extremely wealthy man.

To be fair to Suarez, he did not exactly invent the killing of turtles in Mexico, or even in Oaxaca. When he came to further develop his plans for his turtle skin industry in coastal Oaxaca, he was struck by the ignominious way in which the turtles were killed just for their skins, the meat, shell, and all other parts being simply thrown away or buried. The skins were exported raw, pickled in salt, to be tanned (and the major profits realized) in the importing nation.

Suarez decided that this industry had to be put on a sounder footing. He made proposals for "proper industrialization" and "total utilization" of the resource to the Fisheries Department, who, realizing that they had no real control over what went on in these remote and dangerous parts of the Pacific Coast, gave him the go-ahead to proceed. Suarez thus defends his presence, saying that without him, turtles would be killed without any kind of control, and the eggs would similarly be ransacked wantonly. With him, quotas are set

on the take of turtles, and the tax per head on turtles caught finances the establishment of armed beach patrols to ensure the safety of the eggs.

It sounds good. It can sound very good to naive individuals who watch one of the incredibly slick movies that PROSA has sponsored. Suarez has persuaded all the necessary authorities that what he is doing is a Good Thing. In fact he has covered his political bases with masterful skill. The Governor of Oaxaca, the Director of Fisheries, and even the Archbishop and the President, are good friends of his. He also married into one of the oldest and most influential families in Oaxaca, in a ceremony in the famous gilded church of Santa Domingo. Similarly, Rodrigo Moya, the Editor of Tecnica Pesquera, a widely-circulated Mexican fisheries journal, is a friend of Suarez; and his not-so-subtle influence has caused the evolution of that magazine from one that championed the cause of the turtle in ways that conservationists found highly laudable in the late 1960's, to a shrill lobbying and editorializing vehicle for the turtle industry, labelling the huge quotas - which it considers to be too low in many cases - as a manifestation of 'rational exploitation', and condemning as 'polemical' the voices of opponents, who are dismissed as 'international hippies'. Tecnica Pesquera has even been guilty of identifying turtles in Mexico as 'un recurso recuperado' - a recovered or restored resource - while even Suarez admits that turtle populations in Mexico have been diminishing during the last fifteen years.

In the face of influence of this type, it is not surprising that concerned individuals have made little headway in their attempts to lobby the Mexican authorities to reduce their take of turtles. It is easy to label the Fisheries Department as weak or corrupt in its ready accession to every whim of Suarez, and its allowing him to set the quotas on the catch of turtles, which they rubber stamp despite the protests of the Department's biologists. But such a dismissal of the Department would be over-simplistic. On the Pacific Coast of Mexico, federal law is not held in high esteem, especially when it denies impoverished people access to resources that they feel are theirs. Moreover, unacceptable regulations are not really complained about, they are ignored, and the Fisheries inspectors who cannot be bought off with a few nests of turtle eggs run a real risk to their lives. The Department is therefore relieved that Suarez is prepared to take his investment and his presence down to the Pacific Coast and bring a little order out of chaos, even if the result is still

a capture rate that is greatly in excess of what biologists consider to be an acceptable level. It takes someone of Suarez' powerful personality, intelligence and drive to set himself as the chilongo, the toughest, most macho guy on the block, even to survive; and, by establishing a guaranteed market and a variety of support services, to establish himself in the minds of the cooperativistas as someone they need as much as he needs them.

Nevertheless, it is not as simple as that. And it is worth mentioning that in Mexico the Fisheries Department's capitulation to Suarez is not entirely justified. If it really put its mind to it, egg taking could be stopped at Escobilla, and the illegal take of turtles could be brought under control if enforcement personnel of sufficient vigor and integrity could be put on the job. Mexico has relatively few highways leading into the remote coastal regions, and spot checks of trucks for eggs and turtle products would not be an unprecedented proposal. At Rancho Nuevo, on the Gulf coast, poaching of the Kemp's ridley has now been almost entirely stopped simply because Fisheries decided that it was willing to make a major effort for this extremely rare species, even though the local people have a pronounced appetite for both turtle eggs and turtle meat.

Mexico also argues that it needs the revenue generated by the high prices paid for tanned turtle skins in Italy, France, Spain, and Japan. This argument may have had past and even present validity, but the recent oil discoveries made in Mexico will outweigh by a factor of a thousandfold the export revenues to be gained from turtle skins.

Suarez has only recently become aware of any of the biological realities of sea turtles, and claims that he has been the focus of attacks not only from fishermen who want to catch more turtles, but from conservationists who want fewer to be caught. In fact this is only partially true; some of the cooperatives have been complaining, not just privately but in the press, about the numbers of turtles being taken for Suarez, and at least two were opposed to the catch of turtles in Oaxaca during the breeding season. Moreover, the egg traffic is not well controlled, though Suarez' management plan is based on protection of the eggs, to augment recruitment of young turtles and thus justify a higher catch of adults. The marlines are often reluctant to do any real clean-up on huveros - egg collectors - on the beach at Escobilla; on a recent occasion they declined to go out on an enforcement mission on the

excuse that their flashlight was not working - and declined the offer of a flashlight by an American biologist present as an observer. Thus, the eggs are sold more or less openly in almost every campesino in the coastal villages.

Moreover, Suarez' claim that his role was the bringing of order to an uncontrolled exploitation situation is belied by his new interest in Costa Rica. Suarez appeared at the 1979 meeting of the parties to the Convention on Trade in Endangered Species in San Juan, Costa Rica, at which time he began to express interest in the still enormous breeding populations of olive ridleys on the Pacific coast of Costa Rica. Most cynics assumed that he was now realizing the imminent commercial extinction of the ridley in Oaxaca and was looking for pastures new, leaving the wreckage of a collapsed resource behind him. However, he is much too clever a man to propose anything so gross as commercial exploitation of a turtle population that nests largely in a National Park and has not been subject to the kind of unplanned exploitation that Suarez found in Oaxaca. Arguments of bringing order out of chaos would not apply here. Instead, he harped at length upon the habit of local villagers of bringing their pigs down to the turtle beaches after an arrabado, to feed on the turtle eggs that they could dig up almost anywhere - a habit that seems wasteful, but that, because of the extensive nest destruction by later-nesting turtles that would otherwise occur, is probably of no significance to the survival of the species. Suarez has started to talk about hatching the eggsthat the pigs now eat, and perhaps at some distant time, harvesting the turtles that would result from this increased recruitment. But, of course, nothing could be further from his mind than doing such exploitation now or even soon. Instead, he proposes to donate to Costa Rica a turtle research laboratory that could establish the population parameters and dynamics before any exploitation starts.

Sounds good. The problem is that turtle biologists have been trying to work out the population dynamics of sea turtles for several decades, and they have signally failed to come to any real conclusions. Even the maturation time for the green turtle - the best known species - remains in great doubt, and the dynamics of the olive ridley, that disappears after the hatchlings enter the sea and does not reappear until maturity is reached, are the least known of all. Moreover, a biological station in Oaxaca, opened by PLOSA with great fanfare two or three years ago, has not produced a single scrap of

biological information. It was purely a public relations gesture that, having been milked of all possible value in that capacity, was handed over to the Fisheries Department in late 1979. Meanwhile, Fisheries has expressed little interest in the facility, which today stands as a collection of usually empty tanks and a few pet hawkbills, young ridleys, and crocodiles - one of Suarez' new interests. The elaborate breeding tank, with an artificial beach along one side and facilities for separating and re-introducing male and female turtles, stands empty except for a few inches of hypersaline water, in which two crocodiles bask disconsolately in the sun.

It does not take a very doubting disposition to question Suarez' motives in Costa Rica, and to postulate a scenario where the establishment of an essentially derelict research station and the prevention of local villagers being allowed to take their pigs to the beach would be quickly followed by massive 'industrialization' of the Pacific Costa Rican turtle population. At present, Costa Rica being a signatory to the Endangered Species Trade Convention, export of ridley products for commercial purposes would not be legal. However, Ecuador openly exports massive volumes of ridley products despite being a founder member of the Convention, and Costa Rica, more conscientious about international agreements but subject to the same commercial pressures, came perilously close to taking sea turtles off their list in 1979.

In the course of the last year, I have met with Suarez three times and engaged in an in-depth discourse about his operation. This series of encounters was the result of efforts by a team from the Arizona-Sonora Desert Museum - Richard Felger, Carlos Nagel and Kim Clifton - who have been engaged in a major World Wildlife Fund project on turtle conservation in Pacific Mexico, and who were responsible for the predictions of extinction of the populations that resulted in the United States classification of the Mexican Pacific green and ridley populations as endangered. Most sea turtle conservationists had dismissed Suarez as unreachably, dangerous, and to be avoided at all costs. However, the Arizona team has courageously decided that the most constructive approach to someone with whom one has fundamental disagreements is to meet, talk, and to try to understand each other's perspectives. This method also happens to be more productive of results than the 'cold-shoulder' approach.

In the course of these meetings, Suarez suggested to us that he would be prepared to finance an observer at Escobilla throughout the season, to provide

an impartial witness to the continuing existence of the great nesting arribadas. This we have done: Tim Diabugh and Angela McGehee, both of the University of Central Florida and veterans of the Rancho Nuevo Keep's ridley turtle patrol program, between them covered the beach during the 1979 nesting season.

Suarez also proposed that he host a meeting of turtle conservationists of our choosing in Oaxaca at a time that he hoped would coincide with an arribada at Escobilla. This invitation we also accepted.

The meeting took place in September 1979, and Suarez spared no expense in keeping the group well fed and watered. Diversions were laid on, including visits to the ruins of Monte Alban, the church of Santo Domingo, and the great Tree of Tule. But while enjoyable, the trip was no junket. We inspected all aspects of the turtle operation, and engaged in many hours of serious discussion, constantly hitting Suarez with the non-negotiability of the biological characteristics of the turtles, and urging him to reduce his capture before it was too late. Suarez answered with many of the arguments presented elsewhere in this article, but clearly showing respect for the opinions he was hearing, and it is our hope that in the long run he may start to espouse them himself. There was no question that he found the sessions draining as well as enlightening, but his prodigious energy saw him through the week despite his having returned from Spain only a day before, and having no night with more than 3 or 4 hours sleep during the week of the meeting.

On the first day after our arrival at Puerto Angel, Suarez took us to see the laboratory. The tanks for the young turtles that had until recently been exposed to the full equatorial sun were now shaded, but otherwise the party was not greatly depressed. The place seemed nearly derelict. The conveyance of the facility to the government had taken place only a couple of weeks before, and neither PIQSA nor the Fisheries Department seemed to be doing much with it. We all asked ourselves why Suarez was going to at the expense of entertaining and debating with us, since his continued operation was in no way dependant upon our approval, and the things we saw at Puerto Angel and San Augustinillo were hardly calculated to make us feel any better about him anyway. The only conclusion we could reach was that our opinions did indeed mean something to him; that he thought we could be dissuaded from an excessively critical posture by an 'open door' policy, with a chance to have all our questions answered; and that he was sincere when he said that the worst legacy he could

leave his beloved seven-year old daughter would be the knowledge that her father had wiped out the turtles - a concern of his, quite frequently expressed, that we played up to with gusto.

After the visit to the laboratory, Suarez had arranged a demonstration at the slaughterhouse. This was a somewhat orchestrated performance, designed to show us the techniques by which the turtles were killed and processed, without exposing us to the mass death scene that took place there each morning. This part of the tour also took place after dark - I suspect because he hoped that we would not take photographs. He was somewhat disturbed when at least three members of the party took out flashguns and dutifully recorded all stages of the bloody operation.

Turtles awaiting slaughter were kept in a large concrete pool. This pool was an innovation not present on my previous visit, two years before. The slaughterhouse had been carefully washed down, and everything was looking clean and nice. A group of employees had been requested to stay on and show their skills, and were standing by looking willing and ready in their laundered, unbloodstained tee-shirts and shorts.

Two turtles were pulled out of the tank. They were placed head downwards on a curious sloping table with a guard at the lower edge into which semi-circular cuts had been made, each of which received the head and neck of a turtle. Almost casually, a worker took a pistol, placed it against the head of the first turtle, and fired. A fountain of blood sprang up to a height of about a foot, then slackened a few seconds later as the volume and driving force of the blood failed. The turtle's eyes glazed and closed. It became inert surprisingly quickly - generally turtles do not die tidily or on demand, but continue to twitch and slap for a long time. The process was repeated with the second turtle; the head of the quiet reptile suddenly ejected an ephemeral fountain of blood as a living creature was converted to a load of dead meat. The two turtles were turned over to facilitate drainage of the blood, then were placed on the conveyor belt and taken into the adjoining chamber. The conveyor belt seemed a somewhat irrelevant little technological detail, with the abundance of strong hands that could have easily have passed the dead turtles through to their colleagues in the next room: it seemed as if Suarez' goal of 'industrialization' of the turtle resource required all of the little symbols of industry, including that most ubiquitous symbol of mass production for destruction?, the conveyor belt, be incorporated in the plant.

In the next room, the turtles were laid out on stone blocks with shallow depressions so that the convex carapace would rest without rocking about. Then I was struck as I had been before by how inadequate the bony shell of a sea turtle is to protect it from ingress by that harsh and clever latter-day predator, man. To convert an intact ridley into a carapace-bowl of bloody viscera and eggs does not even require the cutting of any bone; the well-ossified shell of a sea turtle has no bony connections between the dorsal shell, or carapace, and the breastplate, or plastron. With a sharp knife, the plastron can be cut out in about twenty seconds. The armor that protected the turtle for a hundred million years is simply no barrier to a knife-wielding Mexican.

Suarez was proud too of the speed with which his workers would remove the skin from the suspended front and hind quarters of the turtles; with quick cuts and slices of the same scalpel-sharp knives, it took only a minute or two to separate the two irregular-shaped pieces of skin and drop all the other parts into a plastic bucket. Laura Tangley of Defenders of Wildlife felt somewhat different emotions as she reached into the bucket and picked up a still-beating heart in her hand.

I returned the following day, with two or three colleagues and a somewhat reluctant Suarez. To see what a more typical day at the slaughterhouse was like, the killing was finished for the day, and all the turtles - hundreds of them - were already dead. The butchering room and the skinning rooms were awash with blood. Never have I seen a place to which the term "blood bath" better applied. There was an inch of blood on the floor, oozing slowly towards gutters that sloped off towards the sea. The walls were covered with it. The workers were speckled and smeared with it from head to foot. Suarez saw my grim countenance and said: "This is not a pretty sight. I do not like it either." I even think he might have been sincere; the irony of the fact that he had built the building, designed the operation, and paid the workers did not seem to bother him. Perhaps his philosophy is that it is better not to look, rather than that it is better not to let it happen.

Ridleys are less variable than other sea turtles. The adults show little variation in size or shape. A big one has a shell length of about 28 inches, a small one about 24 inches - the size spread of mature green turtles or loggerheads is much greater. As the turtles were being systematically disassembled in this 'fully industrialized' fashion, it seemed almost as if the turtles

themselves, all so similar, had similarly been produced or stamped out in some 'fully industrialized' facility, rather than that each one had been hatched years ago (how many, who knows?), had beaten the odds against hatching survival (100 to 1, maybe even 500 to 1, against), had migrated, grown, sought for and found food, reproduced (perhaps), and lived before meeting its rendezvous with PLOSA at the little adobe slaughterhouse at San Augustinillo.

I as a biologist, but I find occasional indulgences in anthropomorphism important to maintain compassion and respect for life. I tried to single out individuals in the streams of turtles entering the plant, to wonder about their particular origins and journeys through life, and what went through their hopefully dim minds as they passed through their violent last minutes. I saw a turtle out of the many on the floor and walked over to it. It was already dead. Head intact, not perforated by bullet or smashed by iron bar, but stiff, eyes sunken, dead. It had probably been caught and unloaded at Puerto Angel, left in the sun for hours, and then dumped in a truck with six layers of turtles on top of it for the bumpy journey to San Augustinillo. Not killed, but abused to death, sacrificed to make a pair of shoes for an Italian pimp. Programmed by its genes and prompted by its swarming ovaries to migrate hundreds, perhaps thousands, of miles to Escobilla, to hurry ashore, as ridleys do, build a nest, lay its eggs, and cover them up with the marvelous light-stepping dance that the ridley species has evolved, alone among sea turtles as part of its breeding rituals, all this was lost and brutally intercepted by its bad luck to have been floating in the path of a turtle boat the previous day. I am a rational person, conversant with notions of sustained yield of wildlife, not unsympathetic with the capitalist ethic, but every fiber of my body said this was wrong.

A couple of days later, I sat on the verandah of a hillside cottage overlooking the beautiful coast of Michoacan, a few hundred miles west along the Pacific coast of Mexico, trying to analyze my thoughts and get them in order. I had a large sack of oysters beside me, and my conscience bothered me not at all as I pulled them out of the sack one by one, smashed them with hammers and rocks, opened them with a blunt knife, and ate them with gusto. More turtles and oysters really comparable resources? I snash up oysters, and Suarez smashes turtles, and there is really no difference? And I started to think about slaughterhouses in general. None of them are pretty, and all get smeared with blood as the day's work proceeds. Perhaps I am being unfair in dwelling on the ugliness of the slaughter while continuing to eat beef, pork, and other slaughter-

house products. I am sympathetic to the vegetarian ethic, but have never practiced it myself. Am I a hypocrite, well-fed and comfortable, objecting to the Mexican turtle slaughter just because turtles are my favorite animals? But after a little cogitation, I decided that my position was a fully tenable and consistent one, for the following reasons:

Firstly, the Mexican Pacific olive ridley turtle populations are formally listed as 'endangered' by the United States Department of the Interior. This listing was not made cavalierly or without due consideration, but rather followed years of data gathering, and took account of the observation that the other massive nesting colonies in Pacific Mexico - in the states of Jalisco and Guerrero - had been virtually wiped out, to the point that the great nesting arribadas no longer took place, within the last decade. Any animal that is listed as endangered, whether small darter or rhinoceros, should be protected, and while concessions for subsistence use of such valuable animals as turtles may be necessary, concessions to international commerce are not.

There are still a lot of turtles in Oaxaca - even in 1979 the nesting aggregations, though reduced from former years, still dug each others' eggs up, such was their density - but I know of no turtle biologist that regards the annual take in Pacific Mexico to be within the sustainability of the population. Conservationists urge caution when exploiting a species whose life history is almost completely unknown. Only adult olive ridleys are found in Oaxaca, and the maturation time or the location of the post-hatching, pre-adult turtles is still speculative. Suarez admits this information gap, but has some ideas of his own (which he usually introduces as 'una teoria mia' with considerable panache). He feels that the adult turtles took much younger now than when he started in Oaxaca, and concludes that the old animals have now been largely killed off, but that they are being replaced by young adults derived from the hatchlings that PLOSA has released over the years. He also asserts that the population is being monitored, and that serious decline will result in a reduction of quotas, or even a complete closed season. But he warns, as always, that biological considerations are only one of the factors in the management of the species. Economics, politics, and sociology also play an important part. As illustration of this, the East Pacific green turtle is in even worse shape than the olive ridley, and Suarez agrees that total protection is now biologically justified and desirable. He also maintains that green turtles are not as important economic consideration for him personally, and he would not be making

any great personal sacrifice by refusing to buy any more from the cooperative. But he warns that a complete ban might force a partially controlled situation out of control; if he did not buy any more, cooperatives, in large part made up of coastal people with no real economic alternatives, will sell elsewhere or operate outside the law rather than cease operation. Suarez warns constantly about what he calls 'pelebras bonitas' - beautiful words, laws, regulations, or promises that sound extremely high-minded but which reflect little if at all on what is happening in the real world. And he is right.

Suarez likens himself and PLOSA to a nozzle on a fire hose. The turtle slaughter that he found when he first came to Mexico was out of control, like a runaway fire hose. To bring about control, there is no possibility of fitting a closed-off nozzle onto the hose; but if an open nozzle is attached - and Suarez likens himself and PLOSA, with its ultimate monopoly, to an open nozzle - then and only then can the nozzle be closed off or adjusted to bring control of the situation.

Suarez looks upon the United States ban on his product as a personal insult and an unjustified vote of no confidence in his quota and management program. He asserts that the take of olive ridleys in Ecuador doubled immediately when the US ban went into effect, since, being cut off from the most lucrative foreign market, the fishermen had to catch far more turtles to meet their target income. Conservationists, including myself, have always assumed that the more valuable a commodity becomes, the more it is sought after, and if markets for endangered species products are progressively closed, the pressure on the wild populations of those species will diminish. This certainly works for many species and in many cases - for example, the pressure was not really taken off the American alligator until the New York market was closed for the skins - but it does presuppose that the exploiters have some flexibility and can move to other work when selling the product becomes difficult. Suarez argues that in coastal Mexico or Ecuador, there are no real economic alternatives at the present time, and to reduce the quota on turtles, and have it stick, he needs to be able to offer the high price per turtle that access to lucrative foreign markets implies. The upshot of his argument is that, if we are serious about saving turtles, we should open the US market to an annual quota of turtle skins and other products, so that he could expand his monopoly, increase his control, and gain the ability to recommend quotas to the fisheries department that will actually be acceptable to the cooperatives and thus enforceable.

Conservationists need to consider these arguments carefully, lest they get stuck defending yesterday's cages, or policies that worked in other places with other species that may not work here. But there is unquestionably a self-serving element to Suarez's arguments. Higher prices for the cooperatives also means higher prices for him. And he conveniently overlooks the fact that some of the cooperatives are in fact far more restrained and conservation-minded than he is. Two of them, for example, strongly opposed the taking of the olive ridley during the breeding season. He also ignores the realities of law enforcement. If any turtle products are legal in the United States, prosecution of purveyors of illegal products immediately takes a quantum leap in difficulty. During a brief period in 1978-79, products from the Grand Cayman turtle farm could be legally exported to the United States but the wild product was banned. During that time, the quantity of meat and other products that was freely imported and represented as having been raised on the farm outweighed manyfold the actual farm production. I know and like the owners of the Cayman Turtle Farm; but must observe that their product creates the opportunity for wild turtle importers to sell their product in the United States with virtual impunity. One can contrive many 'palabras bonitas' about shipment in bond, approved ports of entry, import quotas, and so on, but the reality is that if any of it is legal, law enforcement does not take place.

As a side note, since the sea turtle ban was instituted in the United States, turtle meat has continued to flow in through several ports. It is now labeled 'Tabasco River Turtle, *Desmochelys olivacea*', which is a rare species from the tropical Gulf of Mexico river drainages in Tabasco, Campeche, and Veracruz. This species, even more than the olive ridley, should be listed as endangered, but it is not, and so, unless the identification is challenged, product so labelled can enter the United States. It is hoped that this loophole will be closed soon; the National Marine Fisheries Service has already confiscated over 250,000 pounds of turtle meat mislabeled in this way.

The other reasons to object to PLOSA's operation center on aesthetic considerations. These may matter little in an area as tough and poor as coastal Oaxaca but they matter to the world nonetheless; and Suarez will have to face them if, now that he is comfortably rich, he wishes to have the world think well of him - which I think he does. To catch and butcher the female ridleys as they gather, laden with eggs, off the shores of Escobedo is the moral equivalent of a terrorist bursting into a maternity ward with a machine gun. Massive-scale

killing of breeding females of an endangered species, for profit, is simply not an acceptable activity to most decent people. However, in the long run, Mexico has a vested interest in preserving the Ridley arribadas in as intact and spectacular a condition as possible. Just as Ecuador has now recognized that the Galapagos National Park will draw many thousands of well-heeled visitors annually - if the endemic biota is conserved - so Mexico will in the long run profit greatly by the influx of tourist dollars to its remote coastal areas if it can offer people a chance to see what must surely be one of the most dramatic natural spectacles in the world - a beautiful tropical beach covered with thousands upon thousands of nesting turtles.

The day after the tour of the laboratory and slaughterhouse, Antonio invited us out to see the turtles in the water and to demonstrate how they were caught. In view of our sensitivities this was to be a demonstration only; turtles would be caught in the area close to the nesting beach, temporarily closed to commercial turtle hunting until the next arribada came ashore, and would be re-released. We used two boats. I traveled in the one with Suarez himself, and the other observers in the boat included Archie Carr, George Balazs, Carlos Nagel and Richard Felger.

We saw no turtles for some time, and then we came into the area quite abruptly. After we had spotted two floating turtles, I commented that well, there were at least two left. That means one for me, replied Suarez. Soon we were among them, sometimes seeing eight or ten at once. Suarez was keen to have me admit that they were as abundant as they had been when I was there two years before, and in truth they seemed to be, though the comparison is too superficial to be meaningful. What seemed strangest about them was their femeness. This was especially striking to George Balazs, who for years has worked with the skittish green turtles on Hawaii, and who was dumbfounded to see turtles that showed no sign of alarm even when the boat passed right beside them.

By this time the three female occupants of the other boat - Angie McGehee of the University of Central Florida; Georgita Ruiz, a veterinarian and turtle biologist from Mexico City; and Laura Tangley of Defenders of Wildlife in Washington, had stripped down to skimpy bikinis and were practicing catching the turtles and swimming among them. Dr. David Ehrenfeld, the turtle biologist and ecologist from Rutgers University, remained in the boat looking somewhat overdressed, cerebral, and a little nonplussed by his athletic female companions, who in truth greatly impressed the Mexicans who had always considered that only men could catch turtles.

After taking a lot of photographs, I finally slipped into the sea myself, with mask and tube. The water was the most sensually perfect I had ever encountered. The sun's rays refracted through the cobalt-blue water, converging on remote points dozens - seemingly hundreds - of feet below. The temperature made one feel that mankind was designed for toiling in tropical waters, not for the harsh exigencies of terrestrial life. I swam slowly up to a turtle, and hovered in the water a few feet away, watching the play of sunlight on its every scale. It gradually summoned the energy to swim and peddled in a slow circle, with me following. It went down at the same unhurried pace, finally and with total relaxation disappearing into the fathomless translucent depths. But there were more. Turtles on all sides, with sympathetic human female forms swimming among them. For a hedonistic chelonophile like myself, it was bliss.

I climbed into the boat. George Balazs then decided to go into the water, and was just relaxing his hold of the boat when I said "sea snake". Relaxed muscles tightened again, and he came back into the boat again fast. And indeed, he would have fallen right on top of a yellow-bellied sea snake that was swimming up to the boat. These snakes are not in the least aggressive, and most people who live near them do not realize all sea snakes are venomous and many have venom of almost unbelievable potency. Another snake swam near the back of the boat, and Antonio reached out to pick it up. I warned him of the risk he was taking, and he pulled his hand back with a shy smile. "That might have been the end of all your problems", he said.

Back in Puerto Angel, one of the many stark ironic contrasts of the trip manifested itself. A dozen or so turtles had been brought ashore and left in the sun on their backs for someone to pick up some time. The sudden shift from the turtles relaxing in their oceanic environment, feeling, however illusorily, at peace with the world to these wretched beasts baking in the sun was shocking. We reported the incident to Suarez, and he dismissed it by saying that a truck would come for them soon, and that this did not usually happen. But later, while enjoying his hospitality in his sumptuous Mexico City residence, we pressed him again for a commitment to make improvements in the humane handling of the animals.

"Look", he replied. "The people on the coast of Oaxaca are not like you and me. They cut each other up for recreation. Do you think we can get them to worry about the suffering of turtles? Do you realize that the lowest-paid job in the whole operation is the actual slaughter of the turtles, and yet that

Is the job everyone wants? Violence is a way of life for these miserable cabrones. Just to show you what they are like, let me tell you something that happened not long ago.

"After the day's work at the slaughterhouse ended, two of the workers got into a fight. One of them pulled a gun and shot a hole through the head of the other one, who dropped dead with his head cocked sideways in a posicion extrema - a strange position - which Antonio proceeded to demonstrate. "The authorities were called, but they always get drunk on weekends, and it was two days before any of them came to investigate. Meanwhile, a wedding reception and dance had been planned. The failure of the authorities to pick up the body could not be allowed to stop this." Antonio continued his story with dramatic gesticulations showing how everyone had had a wonderful time that evening with the bloating corpse still in the alta crumpled configuration not fifty feet from the dance floor. I made a feeble joke to the effect that surely the law required "aprovechamiento total" - complete utilization - of a corpse so near the turtle plant. "Why don't you try hiring some high-class workers?", I asked. "Ah Peter", he replied. "I have tried that too. Just about three weeks ago, before I left for Spain, I hired a new plant manager. Highly educated man, with a degree in food science. I left him in charge at Puertos Angel, and departed. When I came back just a couple of days ago, I checked by my office, and there he was sitting there. "What are you doing here?", I asked. "You should be in Puerto Angel managing the plant." "I have resigned," he replied. "Why?", I asked. "Because that place is a hell on earth." So you see, Peter, these sub-human chingaderos are the only people we can get to run the operation.

This has not been an easy article to write. Both the situation and my views on it are too complicated for the story to be a facile one, with a simple theme and clear-cut heroes and villains. Despite the sad and terrible scenes I have attempted to portray, I have a notable lack of venomous feelings towards the various parties who are not conducting themselves as I would wish. The Director of Fisheries in Mexico, Dr. Jorge Carranza, who formally issues the turtle quotas, is an honorable, brutally overworked man, with whom I have a most cordial relationship. He has about ten minutes each week to think about turtles, and only then because a hundred protest letters from Europe and the United States have arrived on his desk the same morning that the cooperatives are straining at the bit to have the quotas increased. Antonio Suarez is a man I now consider a friend; and I find few prospects more stimulating than that of an eight-hour

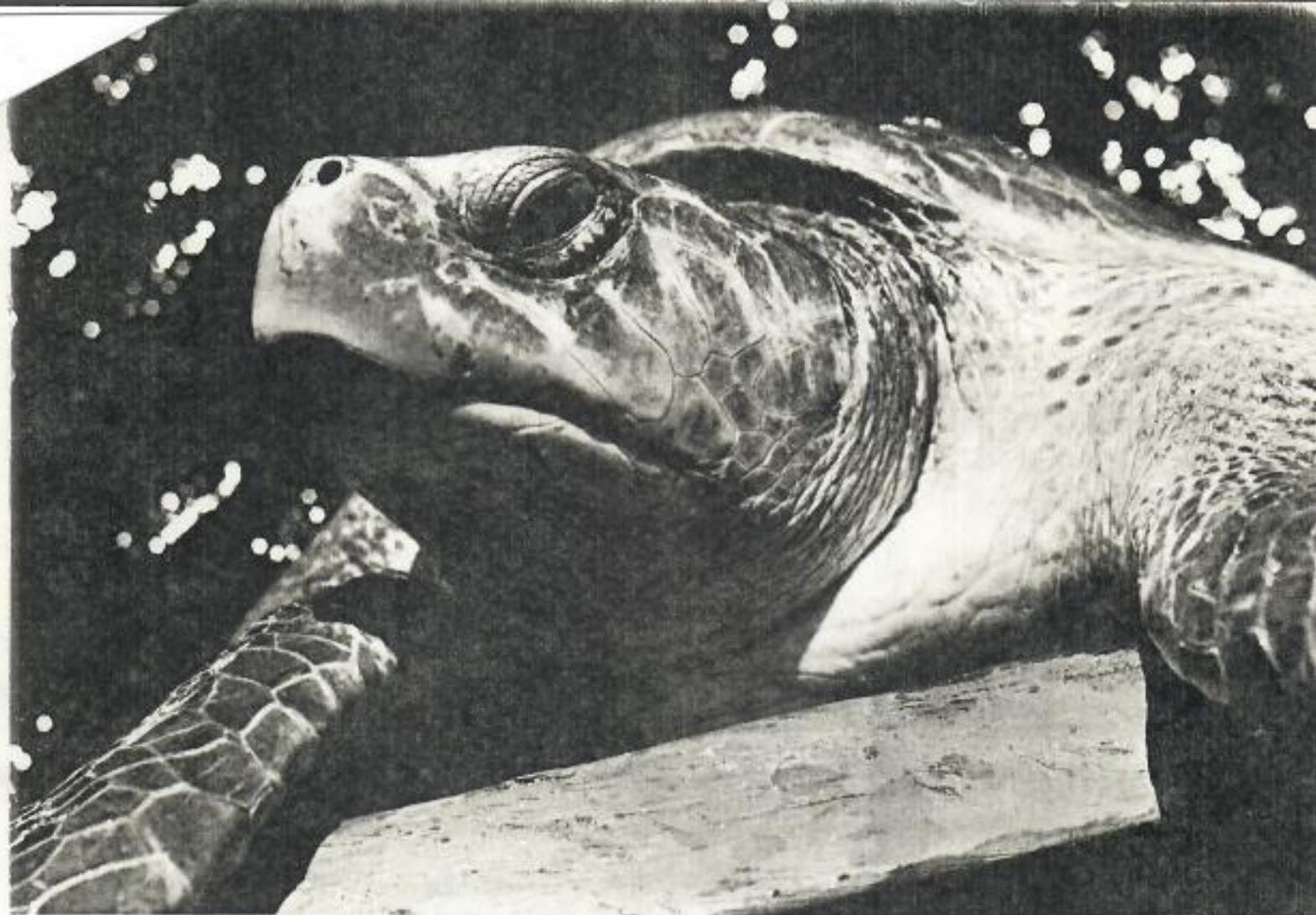
dinner with Suarez at the elegant Estoril Restaurant as we pursue every nuance and implication of the Mexican turtle industry over a fine dinner and rare wine with Carlos Nagel suavely interweaving with translation when the tempo gets too anteaired for me to keep up with the Spanish. And I must also confess a sneaking admiration for the tough, blood-and-guts coastal people of Oaxaca, who know what it is like to be hungry, angry, or passionate to a degree unknown to most cloistered and comfortable members of middle class Western Society - though I am also a little scared of them.

But somehow, between and among all of these people, doing their thing, the turtles are losing out. I have described at length - perhaps even at sentimental length and in gory detail - what happens to turtles in Oaxaca, not just for the sake of being shocking for its own sake, but because the turtles are disappearing. Just a few years ago, arribadas in Oaxaca numbered as many as 100,000 turtles, and took place five times in a season. Now they are down to 30,000 each time and are only seen twice in a season. Further north, the great arribadas of Jalisco and Guerrero have disappeared completely. The turtles are being killed in staggering numbers, both on their Mexican breeding grounds and in the feeding areas of Ecuador. They are killed for their leather - everything else is essentially by-product, even the meat - which is bought by thoughtless but by no means vicious people in Japan and southern Europe. It is my hope that such people will read this article and recognize that turtles do not yield their leather the same way a sheep yields its wool, but rather have it stripped from them after suffering and violent death at a stage of the species' life cycle at which it is most vulnerable.

In a way, my article is simply a testimony to an infinitely sad situation rather than a finger pointed at a villain that I wish to overcome. As mankind proliferates over the face of the earth, in the long run spectacular concentrations of edible or valuable wildlife may be doomed to disappear. Perhaps the days of the Mexican arribadas were numbered when Cortez arrived, or even when the first native Americans migrated into Mexico from the north. But the world's great wildlife species should not be allowed to disappear without us at least thinking and worrying about it; and if enough of us worry, one of us may be smart enough to find a way to turn the clock back, to gain some time at least, to find economic alternatives for coastal Mexicans, and to make good conservation not just a long-term economic imperative, but a short-term one as well, since governments, businessmen, and hungry people only understand the short-term.

I learned a new word on my last trip to Oaxaca. In most places in Mexico, a massed return of female turtles to the nesting beach is called an *arribada* - which simply means "arrival" in Spanish. However, in coastal Oaxaca, a different more romantic word, *Morrillo*, is used. When I first heard the word it occurred to me that the scientific generic name of certain Burmese pond turtles, *Morenia*, was similarly pronounced, but that was purely an eclectic coincidence. Antonio Suarez explained that *Morrillo* was not a word of widespread use in Mexico, but that it came from the region of Galicia, in Spain, and it was used to denote a return to the fatherland by people who had spent a lifetime away from where they were born.

I asked Antonio what the etymology of the word was. He looked a little uneasy, and said he guessed it came from the word *morir*, meaning to die. The irony was not lost on me. While the homecoming of the elderly wandering Galician to his place of birth was in acceptance of death as the natural next chapter in his life, the *Morrillo* of the rideys had no such harmony today. As they converged annually by the tens of thousands on the wild beautiful coast of Escobilla, their body chemistry and hormones are programmed, not for death, but for laying eggs deep in the sands of their natal beach, to perpetuate their kind before returning once again to their distant feeding grounds. It is only the brutal intervention of man that makes this journey a rendezvous with death rather than with life for many thousands of the turtles, and gives a sinister literal meaning to the ancient and beautiful Galician word.



Peter Prischard

The Great Turtle Expose

by Juanita Greene

'Tabasco river turtle,' said the labels, but the meat was that of the legally protected olive ridley sea turtle

ON A SPRING DAY in 1979, the owner of a fish market in a suburb of St. Petersburg, Florida, placed a sign in his window.

"SEA TURTLE MEAT," it read.

Sea turtle meat has become a rare item, since it is against the law to kill most sea turtles or to import their meat into this country.

Passing the market by chance was an employee of the National Marine Fisheries Service in St. Petersburg. Next day at the office, the employee told law enforcement chief Charles Fuss about the

sign. Fuss geared up an investigation that last October 28 found Mexico's leading sea turtle processor standing before a federal judge in a Miami courtroom.

The defendant was Antonio Suarez, charged with exporting olive ridley turtle meat into the United States under the label "Tabasco river turtle," a species that although rare is not subject to United States import controls. Suarez stood stiff and straight in pride and anger. He wore a trimly tailored light brown suit.

"How do you plead?" asked the judge.

"Guilty," said Suarez through clenched

teeth. His arms were folded tightly against his chest. His Miami attorney had the check ready to cover the \$50,000 fine.

In the same case before the Miami court, three other persons and six corporations were indicted for conspiracy and importation of almost 90,000 pounds of olive ridley meat. The charges against two of the corporations were dismissed. All other defendants pleaded guilty and were fined. All pleas were by negotiations which took months to work out. They were handled by a special Justice Department attorney, José A. Toro, of the Wildlife Section of the

Land and Natural Resources Division. U.S. Fish and Wildlife Service officials estimated that the amount of smuggled meat required the slaughter of at least 7,500 turtles.

From the fish market the wildlife enforcement team had traced the ridley meat back to Suarez's operation near the beach at Escobilla in the state of Oaxaca. Here is where ridleys by the tens of thousands still come several times a year, in late summer and fall, to lay eggs. The Mexicans call it the "arribada," the arrival. Days before the turtles come ashore they can be seen gathering in great numbers out in the water. The turtles found their way legally to Suarez's processing plant near the beach, where they were slaughtered and their unlaidd eggs were incubated for hatching and release. For various



Peter Pritchard

reasons few of the eggs hatch. Many are not fully shelled when the turtles are slaughtered. Others are contaminated by blood and viscera or disturbed so much that they become non-viable.

The investigation into the illegally imported ridley meat was intensive. On Fuss's special team were 12 agents from the

An olive ridley turtle captured by a swimmer is hauled onto a boat of the Suarez turtle fleet off the Mexican state of Oaxaca. Below, the slaughter room of Suarez's processing plant. A conveyor belt waits for the turtles to be killed with iron bars or cattle guns. In other rooms the plastron is cut off and the leather is removed.

Fish and Wildlife Service, U.S. Customs Service, and National Marine Fisheries Service and Toro.

The sea turtle sign in the window was not the only lead. Customs inspectors had noted large quantities of meat labeled "Tabasco river turtle" or "Dermatemys mawii," the turtle's scientific name, entering through Miami International Airport. At the same time, other large quantities were being shipped in refrigerator trucks from Mexico to Brownsville, Texas, this time labeled "jewfish fillets."

The customs officers conferred with turtle experts. There weren't that many Tabasco river turtles in all of Mexico to account for that much meat, they learned. Working with import papers, the investigators followed a trail to a Mexican sea-

Tim Clabaugh



furtle fishermen do their work early in the day, then take the turtles in. A boatload of freshly caught ridleys, opposite, waits while the crew has breakfast. Below, workmen load a truck bound for the processing plant.

food exporter, a reputable man who knew nothing about the turtle meat. The exporter was amazed to learn he was on the United States Customs list as a turtle meat exporter. Someone had stolen some of his export papers and used them to cover the turtle meat shipments. The exporter had an idea who the thief might be. The tip took investigators to another company in Mexico City. The company was being supplied by Suarez's plant at Escobilla.

tification came after the phone rang one day in the laboratory of Sylvia Braddon, a research chemist with the National Marine Fisheries Service in Charleston, S.C. It was Fuss. He asked Braddon whether she could develop a procedure for identifying olive ridley meat. In a few weeks she had done so.

The method employed is called isoelectric focusing. Like so many riddles once they are solved, it seems simple. When the process is completed Braddon looks at a series of thin blue lines on a plate of gelatin. She can tell by the way the lines are arranged whether the meat tested is from an olive ridley turtle. From known samples of ridley meat, Braddon had run tests to determine what the pattern should look like.



Peter Pritchard

Back in this country, the task force began combing through subpoenaed bank records and other papers to build a case. All the assembled information enabled Toro to get grand jury indictments in Miami and Brownsville. The big catch in the Miami case was Suarez, a wealthy Spaniard and a prominent man in Mexico. In Brownsville, the enforcement team fared less well. The defendant was a very prominent local businessman. After hearing the prosecution testimony, the federal judge dismissed the case. Then the judge polled the jury and learned that every last one of them would have been prepared to find the defendant guilty.

What made the Miami and Brownsville indictments possible was patient research by government scientists. The investigators had proof that the meat labeled freshwater Tabasco river turtle was in fact the meat of the olive ridley. The positive iden-

Here is how Braddon runs the test. From a meat sample she extracts the juice by squeezing or by grinding and adding a little water. The liquid is placed on a matrix of gelatin that has been smeared on a glass plate. The plate is hooked up to an electric current by two wires placed on two wicks lying on the gelatin. The plate is then charged with 1,500 volts of electricity for three or four hours.

The proteins in the liquid sample on the matrix have plus and minus charges. As the protein migrates through the matrix it will lose and gain charges, eventually reaching an equal number of pluses and minuses. At this point the protein can no longer migrate and it will "focus." As each protein comes to rest, it forms a thin, horizontal line. The lines are easily visible after the gelatin has been stained.

"You get a distinct pattern evident for

each individual species," stated Braddon.

The testing works because the extracted proteins are representative of the genetic material of a species. The more closely related the species, the more alike the patterns will be. The patterns are complex. "It takes some experience looking at gels to interpret them," said Braddon. She had run tests for other animals before Fuss asked her to prepare one for olive ridleys. She also has identified fish meat and crabmeat by the same method. The technique is not new, but the application is.

Finding fresh samples of the meat of any endangered species for comparison with the test samples is difficult. For the olive ridley, Braddon got two samples from Peter Pritchard, vice president for science and research of the Florida Audubon Society, and another sample from a sea turtle expert at the University of California at Berkeley.

The results of this kind of testing often are used in court cases. This fact had a bearing on the decision of the Miami defendants to plea bargain, said Toro. In the Brownsville trial, Braddon took the stand. Questions by the judge to the jury after he dismissed the case showed that the jury had been convinced by Braddon's testimony that the meat was ridley meat.

In addition to the efforts made in science and law enforcement to protect the ridley, diplomacy also was at work. A successful effort to get Ecuador to halt the harvest on ridley feeding grounds was carried out by Derek Green, a British sea turtle biologist; Pritchard; Jack Frazier, researcher with the National Zoological Park in Washington D.C., and many others.

Ridleys are the smallest of the sea turtle species. They are about the size of a bicycle wheel. Although animated on land and able to migrate great distances at sea, they float high in the water and are slow to dive when approached. All this makes them vulnerable. A fisherman can jump overboard, approach the turtle from the rear as it floats resting on the surface, grasp the front of the shell to keep the turtle from diving, and have a companion pull him in on a line around his waist.

The olive ridley, which ranges the tropical world widely, is probably the most numerous of the world's diminishing sea turtles. Despite its numbers, it is considered by some experts to be threatened with extinction.

Coming ashore to lay eggs, female ridleys cluster on beaches once remote but now accessible to humans. Such lack of caution has imperiled the olive ridleys found off the Pacific coast of Central and

South America. They are on the endangered list of our Department of the Interior as well as in Appendix I (prohibited in commerce) of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

In the last few years the United States has made a mighty effort to protect the species, even though it is almost unknown in our waters. Once in a rare while the olive ridley appears off the coast of California or Oregon, or off Puerto Rico.

In the end, however, the olive ridley will only be saved when the large-scale slaughter off the Mexican Pacific coast is stopped, just as Ecuador has finally called a halt to the industrial-scale killings of feeding ridleys off its coast. The greatest benefit of all would come if there were a worldwide moratorium on the manufacture and sale of turtle leather goods, according to some turtle experts. This would give not only the ridley but other sea turtles a welcome reprieve from the path to extinction.

Although it was ridley meat that caused all the recent enforcement activity in the United States, the turtle is most prized for its skin. Japan, Italy, Spain, and some other countries import the leather for manufacture into belts, shoes, bags, and other items. Mexico has its own leather processing plants. The amount of usable skin from a ridley is not very great, but it is valuable enough to make the slaughter worthwhile. The only parts used are the neck flippers, part of the tail, part of the front flippers, and a piece under the neck.

"Leather is the driving force of the whole industry," Pritchard says. The average olive ridley produces only about 12 pounds of edible meat, and the meat is not a prized item in Central and South America. Suarez had to dispose of it somehow because Mexican law requires that all parts of the turtle be used. There is no doubt that the turtle meat met a demand in the United States. Some gourmet restaurants once featured sea turtle on the menu, although it is the green turtle, not the olive ridley, that gourmets demand. Turtle meat is popular with some Latin populations and with people from the Caribbean islands. But at the famous Green Turtle Inn on the Florida Keys the chef declares: "Turtle meat? Why, we haven't had any of that for years."

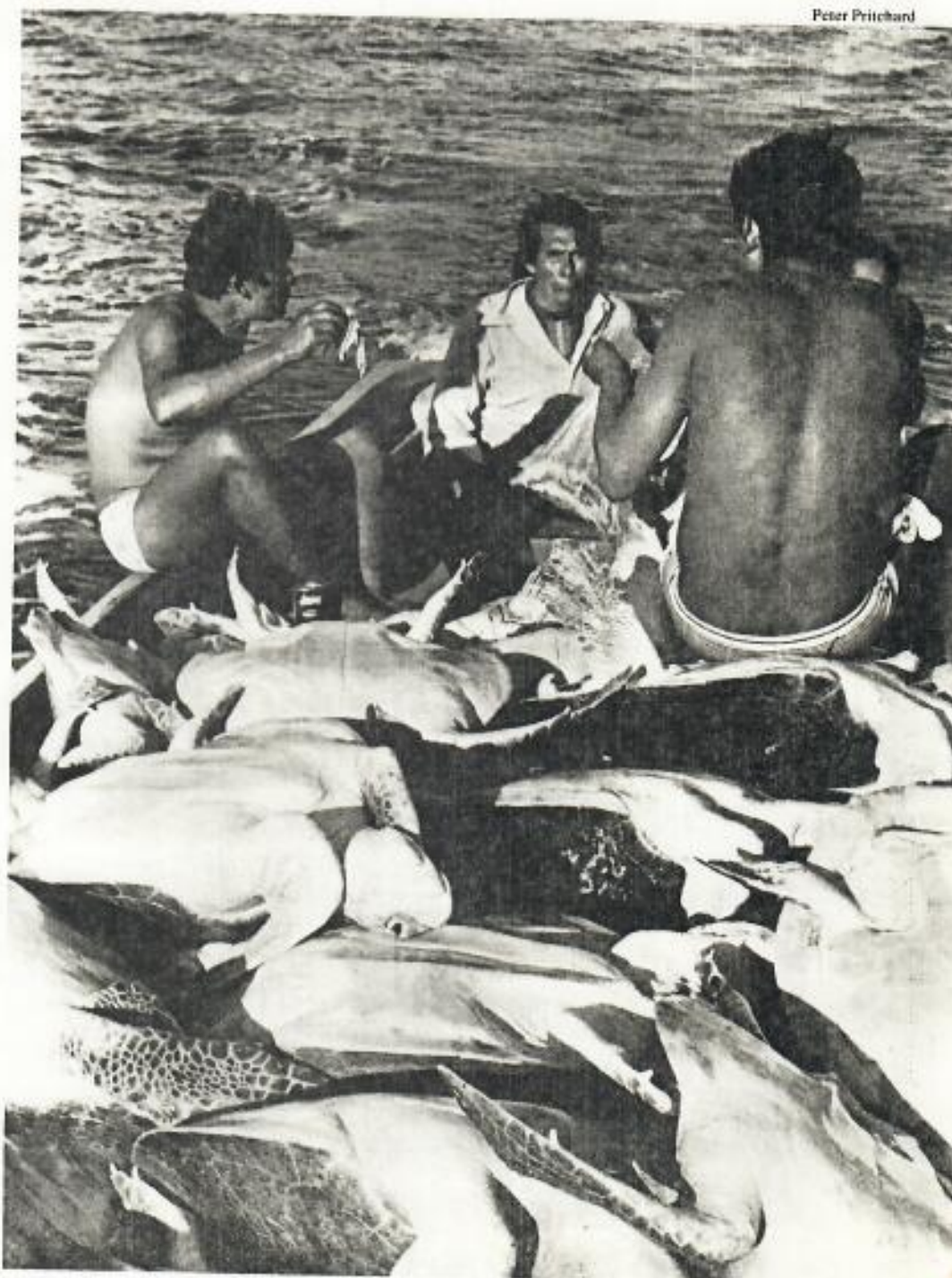
Some sea turtles are prized for their shells, but the ridley is not one of them. Ridley eggs, however, along with the eggs of other sea turtles, are sought by people who believe they enhance male sexual performance. This is a belief among people living along seacoasts around the world,

reports zoologist Archie Carr of the University of Florida, the nation's leading sea turtle expert.

In the great turtle meat expose, Suarez emerged as a convicted lawbreaker. In the larger world of turtle exploitation, he comes out half villain, half hero, in the opinion of Pritchard, who came to know him well. Suarez argues that companies like his PIOSA (Pesquería Industrial de Oaxaca, Sociedad Anónima) are the hope of the world's remaining sea turtles, according to Pritchard. "Suarez says the only way to protect the turtles is to give them dollar value industrially. He argues that big business then would take over and plough back part of the profit to protect the nesting beaches," Pritchard asserts.

In 15 years Pritchard has seen the olive ridley all but disappear from Playón de Mismaloya in Jalisco and Piedra de Tlacoyunque in Guerrero, two Mexican beaches that once were crowded with tens of thousands of them at nesting time. At Escobilla the females still gather by the tens of thousands. Suarez claims this is because the colony has been industrialized, although Pritchard observes that the numbers once were in the hundreds of thousands. What Suarez overlooks, according to Pritchard, is the possibility of giving the nesting beaches total protection, allowing neither big business nor local people to disturb the turtles. This Costa Rica does at two beaches where the female olive ridleys gather in huge numbers. Suarez says the total-protection policy

Peter Pritchard



is too idealized for the impoverished third world, according to Pritchard. But Pritchard believes some third-world countries, such as Costa Rica and Suriname, are "quite idealistic" and are "doing their



A smiling Antonio Suarez photographed while showing conservationists around his Oaxaca processing plant in 1979. Below, newly caught ridleys, alive but helpless, lie in the hot sun waiting to be trucked to slaughter.

Photographs by Peter Pritchard



best in nature protection." Mexico allows the slaughter of egg-bearing and egg-laying females but sets a quota on the take. Pressure from fishermen caused Mexico to relax an earlier total ban on turtling during the breeding season.

Pritchard describes Suarez as a "proud Spaniard" who is "very concerned about what the world thinks of him" and did not like being accused of contributing to the ridley's extinction. After his trouble with the law he sold his company to the Mexican government and moved to Spain. "Now we are dealing with a faceless government entity, with bureaucrats shrugging their shoulders," Pritchard says.

Suarez did more than destroy thousands of turtles, according to Pritchard. He sponsored observers of Pritchard's choice for two seasons to prove the turtles still are nesting in good numbers. As a result, says Pritchard, "we were able to make an independent judgment of the size of the groups of nesting animals coming up." Suarez also put money into turtle conservation in Mexico, including the controversial hatchery next to his slaughter house and other incubation projects.

"The federal agents were only doing their duty," said Pritchard. "The trail of detective work led to Suarez. But getting Suarez is not how you save ridleys."

Saying he disagreed completely with Pritchard's assessment was Ken Berlin, former chief of the Wildlife Section of the Department of Justice and now counsel and legislative director of the National

Audubon Society. "Certainly one major threat to the Pacific ridley is illegal, large-scale commercial trade. Suarez was, as far as we can tell, the largest illegal dealer in the country," declared Berlin.

Dr. Wayne King, director of the Florida State Museum and another turtle expert, also disagrees with Pritchard about the effect of Suarez's operation on the ridley population. King believes that Suarez was a menace. His conviction proves this, said King, and dispels any claim that Suarez was a misguided but honest man. King also takes issue with Suarez' statement that total protection in a third world country is too idealized.

Pritchard says he was embarrassed about the manner in which Suarez was served with federal subpoenas. It happened when Suarez stepped down from the podium at a Washington, D.C., meeting of the First Conference on World Sea Turtle Conservation in November, 1979. Suarez was in the country and was speaking at the conference on Pritchard's invitation. Pritchard says he was as surprised as Suarez by the action. After being subpoenaed, Suarez illegally fled the country, in such haste that he left his clothes and luggage at his hotel.

Although the special wildlife enforcement team won only half the battle, Toro is convinced that its activities bode well for the ridley. The United States was the principal outlet for the turtle meat, he said. "I think we stopped the traffic," he said. Not so sure is Pat McIntosh, Fish and Wildlife Service agent at Miami International Airport. "The smuggling probably still is going on," he said. "There are more ways people can get turtle meat and other turtle products in than we are able to control."

The ridley that inhabits the Pacific coast of Central and South America is only one of several Pacific ridley groups found around the world, in the Indian Ocean and off the Atlantic coast of South America. There also is a North Atlantic species known as Kemp's ridley that is in far worse danger than the olive ridley.

"The Kemp's now is so rare only a few hundred breeding females are left in the world," says Pritchard. For the more numerous Pacific olive ridleys he also has pessimistic projections. "I think the future will be very bleak if the international demand for ridley leather continues," he said. "I don't think the turtles can survive more than a couple of decades if price and demand remain high."

Juanita Greene is the environment writer of the Miami Herald.