# ANTHROPOLOGICAL WORKING PAPERS

A Series
Issued From the Office Of
The Staff Anthropologist
Trust Territory Of The Pacific Islands
Guam, M. I.

NUMBER 1

## NOTES ON THE PRESENT REGULATIONS AND PRACTICES OF HARVESTING SEA TURTLE AND SEA TURTLE EGGS IN THE TRUST TERRITORY OF THE PACIFIC ISLANDS

Robert Gamble
Jack Tobin



SECOND EDITION
APRIL 1961

# A N T H R O P O L O G I C A L  W O R K I N G  P A P E R S

A Series
Issued From the Office of
The Staff Anthropologist
Trust Territory of the Pacific Islands
Guam, M.I.

Number I

# NOTES ON THE PRESENT REGULATIONS AND PRACTICES OF HARVESTING SEA TURTLE AND SEA TURTLE EGGS IN THE TRUST TERRITORY OF THE PACIFIC ISLANDS

Second Edition
April 1961

# FOREWORD

This paper is the result of data collected and submitted by the following people:

Jack Tobin.....District Anthropologist
Marshall Islands District

Gustav Weilbacher.....Assistant District Anthropologist
Ponape District

Edward Iwaniec.....District Agriculturist
Ponape District

Frank Mahoney.....District Anthropologist
Truk District

Shigeru Kaneshiro.....District Anthropologist
Yap District

Richard Emerick.....Assistant Staff Anthropologist

Appendix B was written by Richard Emerick from material supplied by Robert Owen, Staff Entomologist.

CONTENTS

NOTES ON THE PRESENT REGULATIONS AND PRACTICES
OF HARVESTING SEA TURTLES AND SEA
TURTLE EGGS IN THE TRUST
TERRITORY OF THE PACIFIC
ISLANDS

## TRUK DISTRICT

### A. Methods of Capture or Killing

In aboriginal times the Trukese utilized two general methods for hunting and capturing turtles. In the first method they constructed a net out of sennit twine approximately two hundred feet long and from ten to twenty feet wide. At night when the tide was high the net would be tied to poles and suspended in the water. When a turtle was sighted the net would be drawn around it in a wide circle. The diameter of the circle was gradually diminished until the turtle was enmeshed and could be taken alive. This method is no longer used.

The second method was to watch for signs of turtles on uninhabited beaches. When signs were seen they would search out the eggs and seize and count them. The odd number of eggs over even hundreds would be the number of days after which the turtle could be expected to return. Thus, if 217 eggs were found, the turtle would be expected to return in 17 days. At that time, they would return to the beach in hopes of picking up the turtle. The Trukese still pick up turtles on the beaches but they don't follow the old custom religiously. Furthermore, a husky man and a strong swimmer

will always jump on a turtle whenever he sees one.

When the Trukese acquired metal, they fashioned harpoons and would go turtle hunting at night by torch light. The turtles could be harpooned and taken alive. Apparently the Japanese used to go skin diving for turtles at great depths. They used a long pole which was barbed at one end. They would dive down and try to hook a turtle in the neck after which he could be dragged to the surface and, still living, be maneuvered into a boat.

B. Local Custom Regarding Capture of Turtle and Use of the Meat

In Truk District there are no special regulations or taboos reserving harvesting rights to any particular individuals. Traditionally, certain parts of a turtle would be offered to one's own chief or to the chief or most important person on whose island or reef a turtle was captured. The traditional offering consisted of the head, certain strips of flesh from the belly and the sexual parts. However, this offering was made from all the larger and more important animal food resources. This is no longer being done.

C. Raising Turtles in Captivity

Only one case was reported from Truk District of an attempt to raise turtles in captivity. In Japanese times an enterprising business man is said to have brought two turtles, a male and a female, into the lagoon at Tunnuk Village on Moen Island. This lagoon is sealed off at its normally open end by a causeway. Some sand was

brought into the lagoon and an artificial beach constructed in the hope that the turtles would mate and deposit eggs on the beach. After little more than a year no eggs were produced and the project was abandoned. This attempt was apparently made sometime in the mid-1930's.

D. Regulations

In regard to regulations, the present statute placing limitations on the taking of turtles is virtually unknown in the Truk District. It is almost certainly being disregarded whenever an opportunity presents itself. One informant was able to give his interpretation of Japanese regulations. This informant stated that no eggs could be taken at any time nor could females be taken when they were in the process of laying eggs. A turtle season was established and no turtles could be taken out of season. During the season, any size of the thin-shelled turtles could be taken but only the larger members of the thick-shelled variety could be taken. This sounds very much like the present statute in the Code. (See Appendix C) However, the present regulation is practically unknown.

## YAP DISTRICT

A. Methods of Capture or Killing

Sea turtles are not common to the waters around Yap, although this belief may in part be due to the ineffective methods employed in capturing them. In the past, surround nets and weirs of coral

rocks and bamboo occasionally brought in a turtle. In Japanese times, a few Yapese learned to dive and spear turtles using a spear attached by a line to a float so that the speared turtle could be hauled in after swimming itself to exhaustion. Nonetheless, few turtles are caught today. At one time during the past five years, a couple of Yapese caught and sold turtle meat, but this venture ended abruptly when the diver half of this partnership died. Turtle eggs are not known to be found in Yap. Yapese believe that turtles in these waters go to Ngulu or Ulithi to lay their eggs. So far as is known, no attempt has been made here to raise turtles in captivity.

B. Local Custom Regarding Capture of Turtles and Use of the Meat

As in other parts of Oceania, turtle meat is highly prized in Yap. Traditionally, rights to turtle depended upon ownership of the right to turtles within certain fishing grounds, such rights residing generally in high-ranking estates (tabinaw). This may serve to explain in part the complexities of customary Yapese concepts of rights to fishing grounds. Complete ownership of fishing grounds and their resources does not reside in one person or in the estate; rather, various rights such as the right to build fish weirs, set traps, to use surround nets and the right to certain types of fish and to turtles are each held by various estates with these rights dove-tailing into the same tract of fishing ground. Consequently, a fisherman finding a turtle in his fish weir was

obligated to present it to the owner of sea turtles, the suwon e wel. This requirement, however, is not too rigidly observed today although violations are not openly displayed.

Turtles in Ulithi Atoll belong to some of the high lineages residing on Mogmog. The chief turtle grounds in Ulithi are the islands of Yorr and Gillab which are controlled by the chiefs of Falalop who reside on the lands Gachalaw and Lipipi. Neither turtles nor their eggs may be taken from these islands without the consent of the Falalop chiefs. Turtles caught in the atoll are taken to the land Rolang, next to the Mogmog men's house where, under the supervision of someone from the land Falimey, they are killed and distributed with the head and intestines reserved for the atoll chief. In the past, Falalop got only the shell and part of the hind bone without any of the flesh. Changes have taken place in their methods of distribution to what is now believed to be more equitable although Mogmog still seems to get the lion's share. Turtle eggs need not be presented to the Mogmog chiefs.

On Ifaluk turtles are reserved for the ranking Kovalu clan to whose chief belongs the prerogative of butchering and distributing turtle meat. Here as elsewhere the meat is highly prized. Uninhabited Olimarao Atoll is noted for its turtles and canoe-loads of people from Lamotrek regularly go there to make copra and capture turtles and hunt their eggs during their laying season. Gaferut (actually Fayeuw) is said to be a favorite place for turtles but

Faraulep Islanders who own the island have not attempted going there since 1950 when canoes started for the atoll but were caught in a storm resulting in the loss of around twelve lives including their chief.

The hawk-bill turtle is not as important or prized for its flesh as it is for its shell. In Yap it is believed that burning the shell of this turtle causes leprosy. The Yapese words for hawk-bill turtles and leprosy are homonyms - darau.

C. Raising Turtles in Captivity

In Faraulep Atoll baby turtles have been seen kept as pets, but it has never been noted that they are raised to maturity. These turtles are released rather than being allowed to become full grown and killed. The concept of pets may here extend to turtles, although pigs sometimes treated as pets are nonetheless killed and eaten eventually.

D. Regulation

There seems to be no apparent design on the part of the Yapese to conserve turtles. Instead the intent seems to be that they should capture as many as possible and collect their eggs as well. Contrary to the Code (see Appendix C) most turtles are captured ashore during the breeding and laying season but the number captured each year by this method is not excessive and there are a number of distant uninhabited islands in Yap District which provide excellent

breeding grounds for sea turtles.

## MARSHALL ISLANDS DISTRICT

(preliminary notes)

A. Methods of Capture or Killing

The Northern Radak atolls of Bikar, Bokak (Taoni), Toke, the island of Jemo, and the islands of Erik and Luij in Erikub Atoll have been used from time immemorial as game reserves by the Marshall Islanders. Periodically, turtles and their eggs were harvested there. The traditional practices of harvesting these animals and their eggs usually took place on special islands with the chief opening the season. Stylized and elaborate rituals were connected with these first food gathering expeditions of the year which occurred in the summer. This gathering was apparently done at the time when the turtles were ashore laying eggs. Both the eggs and the turtles would be taken at this time. Though turtles and their eggs are still taken the ceremonialism formerly connected with this activity is no longer practiced.

The ability of the Marshallese to capture turtles at sea depends to a great extent on the fact that the habits of turtles, an important source of protein to the atoll dwellers and highly prized by them, are well known, having been observed by them for centuries. Certain of the Marshallese know more than the others about these reptiles and their opinion and guidance is sought and

respected.

B. Local Custom Regarding Capture of Turtles and Use of the Meat

As has been previously noted, expeditions were assembled to go to some of the islands known to be heavily populated by turtles. Upon arriving at the island the chief and all of the members of the expedition went ashore. The chief had to lead the first trip of the year and he was the first person to step ashore.

Before the party commenced their search for eggs, supernatural sanctions were requested. Everyone assembled on the beach, before proceeding in, and cut a leaf of coconut frond. With the chief leading the way they walked in single file, each carefully stepping in the footprints of the person in front of him so that only one set of footprints would appear, as if only one person had been there.

The women were required to hold mats over their heads while on the island so that they could only see the ground well enough to gather the eggs and other items. Strict silence was observed. Often medicine was made by the chief from the leaves of a small rare plant (marutto). The leaves were pounded and the juice extracted and drunk by all to prevent anal bleeding and diarrhea which might result from an unaccustomed meal of turtle and bird's eggs. After the eggs were gathered the group assembled at a specified place before consuming any eggs. Four eggs were thrown in each of the

four cardinal directions by the chief as an offering. These "sacrificial" eggs were then re-gathered and eaten by the leader of the party and the remaining eggs were then divided up and eaten by the others.

Turtle flesh was distributed according to a specified, traditional pattern but this custom is not followed today.

C. Raising Turtles in Captivity

Turtles are occasionally captured when small and kept in buckets or tubs and moved into salt water ponds when they outgrow these containers. These turtles are regarded as pets and are not eaten but are released by their owners or else eventually escape.

D. Regulation

Aside from the limitations on turtle harvesting imposed by the Code (see Appendix C), the Marshallese unintentionally practice a form of conservation by allowing the turtle hatchlings to escape from the nest. This is not really for reasons of conservation but because the newly hatched turtles are not salty enough for the Marshallese palate.

## PONAPE DISTRICT

A. Methods of Capture or Killing

Several methods of hunting and catching turtles have been used in Ponape. During the windy season one particular method was

especially popular and apparently fruitful. During the time of the day when the tide was going out it carried with it great loads of seaweed which had been piled up by the strong winds. Sometimes mile-long strips of this seaweed would drift outside the reef having been carried there by the tide. The Ponapeans, knowing the habits of the turtles, would follow the length of such strips of floating weeds and look for turtles which would come there to feed. When a turtle was sighted an expert swimmer in the canoe would tie a rope around his waist and jump on the turtle's back and transfer the rope from his own waist to one of the hind legs of the turtle so that he might be pulled into the canoe by one of the other men.

During the calm season, turtles were also captured inside the reef by searching them out in a canoe and jumping on their backs, stunning them enough to render them easy to catch. This would be done either during the night or during the day. At night this could prove to be dangerous, however, because of the possibility of mistaking a sting-ray for a turtle.

Another method commonly used is one whereby a marked area on the reef would be baited with a certain kind of seaweed thought to be irresistable to turtles. The fisherman waits with a spear near the baited spot and kills the animal when it comes up to feed.

Sometimes several canoes will set out and lay out a large net in the water around areas where turtles have been sighted. When a turtle is seen, the net is maneuvered into a certain spot through

which the fishermen know the turtle would pass if alarmed. When this is done, stones are thrown into the water to frighten the animal which then swims into the net and is thereby caught.

It is common for turtle hunters to seek out a pair of turtles copulating during the mating period. The male is captured and hauled into the canoe but the female is left in the water with one leg tied by a length of rope to a floating log. She supposedly will attract other males to her which, when they have mounted her and are engaged in copulation, can be very easily taken.

Probably the most common turtle hunting techniques traditionally used in Ponape were simply to catch them laying eggs on sand beaches during the months of March, April, May, June and July. The creature would simply be flipped over on its back after which it is virtually helpless.

B. Local Custom Regarding Capture of Turtles and Use of the Meat

The actual capture of certain kinds of turtles or the collection of their eggs has never been regarded as the special prerogative of certain individuals but the use of the meat was quite rigidly specified. This was a favorite food to offer to Nanmwarki (highest ranking individuals on the island). The Nanmwarki and other high-ranking individuals had the right to confiscate a turtle or its eggs from a fisherman who had failed to offer them to the Nanmwarki. The high-ranking people had certain

property rights to turtle meat and eggs. Punishments were meted out to individuals who failed to offer the meat or eggs to appropriate high-ranking persons, especially to the Nanmwarki. A person neglecting this traditional custom might be exiled from his land, have his house burned, be forced to make prolonged atonement feasts to the Nanmwarki or even be killed.

C. Raising Turtles in Captivity

There were several cases of raising turtles in captivity reported from the old days but informants say that the meat of such turtles was not highly prized. During Japanese times, several individuals raised turtles under government sponsorship and special pens were constructed for this purpose. On Mokil such pens are still kept for this purpose. The shells of these animals have always been used for making ornaments and containers and tools. (see Appendix A)

D. Regulations

Aside from the specifications in the Code (see Appendix C), there are no local traditional rules concerning the capture of turtles or the gathering of eggs. No special seasons were recognized as being better or safer, the fishermen deciding for themselves when to hunt them and when not to. No turtle flesh is known to be poisonous at Ponape at any particular season of the year.

## PALAU DISTRICT

### A. Methods of Capture or Killing

In Palau District a number of different methods are employed to kill or capture sea turtles. One of the most common is the following:

A man will walk on a beach known to be a turtle egg-laying area. When he finds the footprints of a turtle he follows them to the spot where the animal has laid her eggs. He digs up the eggs and examines them to determine when the female will return to lay another batch of eggs. Newly-laid eggs are yellow in color with a white spot on them about the size of a chicken's eye. An experienced man can tell how long the eggs have been developing by observing how much the white spot has increased in size for when the eggs are mature they are white all over. After the age of the eggs has been determined, the number of days is subtracted from 15. This is done because the Palauans have observed that a turtle returns 15 days after laying her first group of eggs to lay another. If the age of the eggs is discovered to be 5 days, the egg hunter knows that the turtle may be expected to return in 10 days. Usually the man will return to the spot two days before the calculated date in case he has misjudged the age of the eggs.

When the eggs are first discovered, they are counted in order to determine the size of the turtle which deposited them. According to Palauans, 170-200 eggs indicated that the size of the

turtle is worth waiting for and catching. When the female turtle returns she is allowed to dig a hole and deposit her eggs before she is captured. The eggs are then collected also.

This is an especially preferred method particularly for the hawk-bill turtle for it assures the hunter that his catch will be a female. The shell of the female hawk-bill is, according to Palauans, thicker and more beautiful than that of the male.

Another method used by Palauans requires the services of experienced turtle hunters. Such men will examine the floor of the lagoon and by the nature of the topography are able to determine likely spots for turtles. Special nets called Marames are then stretched across such areas. These nets are woven of coconut fibre and have a large 5"-8" mesh and are specially made for catching turtles - either hawk-bill, green or loggerheads.

After the net is set, it is visited twice a day to see if a turtle has become entangled in it by his head or flippers. Quite often when a turtle is found thus entangled, it is drowned.

Another method used in the Palau area is as follows:

A turtle hunter will dive in a likely looking area of the lagoon until he locates a large coral rock with an excavation or hollow under it. By examination he can tell from experience whether or not this is a place where a turtle frequently comes to "rest". If it proves to be such a place, the man will wedge a wooden stick in the middle of the entrance to the hollow and tie a rope to it.

At the other end of the rope, which must be at least as long as the depth of the water at that point, he ties a stone which is set on the lagoon bottom a short distance from the hollow. The man returns to the spot by canoe several times each day. If the stick is found to be floating on the surface the hunter knows that probably a turtle has gone into the hollow to "rest" and in doing so has dislodged the stick which rose to the surface. The man then dives down to the rock and quite often the turtle will still be in the hollow and can be easily caught by spearing or by tying a rope on one of its flippers. This particular method of capturing turtles is infrequently used today.

Sometimes several canoe loads of men will go out to the reef and line the canoes up is such a way that they can be poled along in the same direction. Large areas can be "combed" in this way and turtles are seen and speared. The animal is retrieved by one of the men who will jump into the water after the speared turtle and stick his fingers into its eyes and bring it to the surface.

Divers sometimes swim about the lagoon until they see a turtle which they will try to spear in its neck or flipper or head in order to keep from damaging the shell. If the diver can get close enough he sometimes implants a hook in the soft parts of the turtle by using a long pole to which the hook is detachably fastened. The hook is tied to the end of a rope at the other end of which is a float. The turtle will swim about pulling the float after him

until he becomes exhausted and is then easily caught. This latter method was allegedly introduced by the Okinawans during Japanese times.

Whenever a pair of turtles are seen having sexual intercourse in the water, the observer simply waits until they have exhausted themselves at which time they are relatively easily caught.

B. Local Customs Regarding Capture of Turtles and Use of the Meat

There never seems to have been any particular class or group of individuals to whom the catching or killing of turtles was restricted. Any man was permitted to hunt these animals. When a man killed a turtle, he would take it to his house and call the women members of his clan in the neighborhood to come and partake of the meat. The women would gather and bring their own taro and feast on the meat. At the close of the feast the women would take some of the meat to their homes for their husbands and family. At this time the man who killed the turtle would claim some of the meat for himself and his own family. It is not a Palauan custom for a group of men to gather together for the purpose of eating turtle meat.

On occasion turtle meat was used in the treatment of an illness. If a household had a sick member it could sometimes be determined by divination which spirit (Chelid) was causing the

malady. A turtle would then be caught and killed and taken to the place in the forest where this particular spirit was known to dwell. At this spot (sometimes a hut was erected there) the members of the sick person's household would gather to eat the turtle meat and plead with the offending spirit to restore the sick person to good health. Pigs could be used for the same purpose.

Several decades ago a new religion called Modekngei was started in the Palau area. One of the ceremonial practices of this group involved the burning of turtle meat as an offering to their "deity" on special offering days. Some of the practices of the Modekngei religion were considered unlawful by the Japanese and the religion was declared unlawful by them and the two founders of the sect were jailed. There are still individuals who make the turtle-meat offering today, however.

C. Raising Turtles in Captivity

The Palauans did not customarily attempt to raise turtles in captivity. (see Appendix B)

D. Regulation

Aboriginally no restrictions were placed on the killing or capture of turtles or the collecting of their eggs. As has been previously stated, anyone could participate in this activity regardless of rank or clan or other affiliation. No seasons were declared for turtle hunting.

One local restriction was observed on Airai. If any person killed or captured a turtle on Ngerduais beach in Airai, he was obliged to take the meat to the house of the Nger Kikelang family for they were the family of the god of Airai (Medechiibelaw). Only this god required such an offering and the practice has been abandoned for many years.

APPENDIX A

Turtle Project on Oroluk Atoll
Ponape District

Through Field Trip Officers and other personnel visiting Oroluk it was learned that there is a very high mortality rate among the newly hatched turtles on that island. Since turtles are a very important source of food to the islanders, a special study was made of the situation there. Edward Iwaniec, the District Agriculturist at Ponape District, submitted the following report as a result of the study as it has been made so far:

It was learned that turtles came in to lay their eggs practically the year around, but the heaviest laying season is from April through July. The female comes ashore and digs a hole with her hind flippers - about 18" deep and about 12" in diameter. She deposits about 140 eggs, covers them up and goes back into the ocean. After about 10 days she returns and deposits about 80-90 eggs in another hole and repeats the same performance a third time with about 50-60 eggs.

The above observations were made possible by marking each turtle with wire. A wire was attached to a different part of each turtle and a record kept of the time elapsed between egg laying and quantity of eggs laid for each turtle.

The eggs when laid are about 1-1/2" in diameter and yellow in color. After a few days the eggs become white. Eggs were

collected and eaten when yellow and when boiled were found to be of good quality. The white eggs when cooked were gritty in texture and not so palatable.

Sixty days from the time of laying, the eggs hatch, usually in the evening. The young turtles scatter and head for the water. They are white, about one inch in diameter and soft-shelled. As soon as they enter the water they are snatched up by sharks which seem to sense the time of hatching. These black-tipped sharks are between one and three feet long. They are able to run in water only a few inches deep and in such great numbers that only a very few young turtles survive.

Thus our efforts were directed toward raising the young to a size where the shell is hard enough so that they are relatively safe from predators.

The first harvest of 300 was made in June 1956 and released in September of the same year. One of the Assistant Agriculturists spent three months on Oroluk and in February 1957 released an additional 300 small turtles. The following method is used in raising the turtles:

The spot where a female turtle lays her eggs is marked, the date is noted on a calendar and on the sixtieth day, toward evening, a group of men wait for the turtles to come out. The young are caught and placed in a wire mesh flat bed 3' by 4' with wooden sides so that they will float when anchored in shallow water. The young animals are fed bits of fish, clams and leaves of the

Messerschmidia. When they are about 4" long (approximately 4 months old) they are taken out in a boat into the deep water and released. When the Assistant Agriculturist left Oroluk in February 1957, seventy-seven additional young turtles were being raised there. Thirteen were brought to Ponape for further study. One turtle was kept in a box for six days without water to find out if young turtles could be shipped in this way. After six days the animal showed no ill effects. Six turtles were sent to Kusaie, three to Mokil and three to Pingelap. Holes were drilled through the shells in different parts of each turtle and they were copper wire-banded in such a way as to prevent snagging. Those for Kusaie were banded on the lower right corner of the shell. Those for Pingelap were banded on the upper left and for Mokil were banded on the lower left. They were measured and records were put on file. At four months the sizes ranged from four inches to five and a half inches.

It is hoped that when these turtles are again caught information can be obtained as to the distance travelled, rate of growth and other pertinent data.

## APPENDIX B

### A Recent Attempt to Raise Turtles in Captivity In Palau District

Throughout Micronesia the hawk-bill turtle has gained in economic importance in recent years. Although the Green turtle is a better food source, the hawk-bill can be eaten and the flesh, in fact, is very palatable. More important, however, is the shell of the hawk-bill which is unsurpassed as a material for the manufacture of articles of handicraft. This is particularly true in the Palau District where the income from handicraft is higher than in any other district in the Trust Territory.

Unfortunately the survival of newly-hatched turtles is severely handicapped by beach and sea predators. When the young, tender, soft-shelled animals break free from their eggs and begin to crawl toward the sea, they fall prey to crabs, birds and other creatures. Those that successfully reach the water find no haven there, for small sharks and other fish await them in great numbers. It is estimated that after the young turtles have run the gamut of hungry stomachs, only about five percent of them survive to grow to a size where they are relatively safe.

In 1955 an enterprising Palauan business man named Lomisang recognized the above facts and decided to raise hawk-bill turtles in captivity on Peleliu. He felt that if he could gather the eggs from their nests on the beaches and hatch them artificially where

conditions could be controlled he should be able to accomplish as much as ninety percent survival instead of only five percent as under natural conditions. This method had been tried before but not successfully.

Lomisang had already had considerable experience with turtles and was able, by inspection, to determine the age of turtle eggs when he found them. He located a large number of nests and moved the eggs to a safe place off the beach in the sand. The eggs were not moved, however, until they were within a very short time of hatching.

When the transported eggs hatched it was discovered that nearly ninety percent of them had survived the move. The newly-hatched turtles were put into galvanized metal trays in about three inches of sea water. During the first few weeks they were fed the meat of the small tridachna clam cut into lead pencil eraser-sized pieces. When the claws of the small turtles hardened up a little they were able to shred and tear their own meat.

Lomisang had some trouble with a fungus disease which affected the eyes of the young turtles, blinding some and killing a few. There was relatively little loss, however.

It was Lomisang's plan to put the turtles in dyked areas along the shore or in artificial ponds. He felt that they could be raised there to a size large enough for the shells to have commercial value. From the sale of the shells he hoped to make enough

money to maintain the business and make a profit. The conservation angle had not been overlooked either for he intended to release ten percent of the turtles he successfully raised. He planned to return them to the sea as soon as they were large enough to be relatively safe from predators (approximately eight inches in diameter). Since an estimated mere five percent survived when hatched naturally, it was felt that a return of ten percent would more than compensate for the robbing of the turtle nests.

A pond was made at Peleliu and Lomisang had as many as 700 turtles in it in a number of stages of development. He attempted to get land in Koror on which to carry out his project on a larger scale. His request for the land was not granted, however. The administration authorities were placed in an uncomfortable position. Some of the people there, including the staff entomologist, recognized the value of the experimental part of Lomisang's project but what he was doing was actually in violation of the Trust Territory Code which makes it unlawful to molest the nests of sea turtles. (see Appendix C). Since Lomisang's efforts were purely a private business venture and not a government-sponsored experiment, the administration could not give its official recognition nor turn over land for that purpose.

Lomisang attempted to keep his turtle-raising project as quiet as possible because he didn't want other Palauans to get the same idea nor did he want too many people to know about his turtle

ponds because they would steal the animals unless they were constantly watched. Thirdly, Lomisang was fully aware that certain aspects of his program were, strictly speaking, illegal.

At any rate the project failed. First of all Lomisang found it difficult to keep the young turtles safe from human predators once they had grown to a size that required they be kept in ponds. He found the cost of hiring the watchmen too high and also the cost of hiring people to gather and prepare food for the newly-hatched animals in lots of 2,000 was more than he could financially handle. Also the local administration officials could not have continued to overlook the illegality involved once they had become officially aware of his work. In addition to all this, a storm destroyed his pond at Peleliu and all of the turtles escaped.

In spite of the fact that Lomisang's project failed, it made some interesting contributions to the problem of raising turtles in captivity. Although Lomisang failed in being financially able to carry out his proposed program, he succeeded very notably in certain aspects of the program in which many others have only met with failure - namely in being able to hatch transported turtle eggs with approximately ninety percent success.

## APPENDIX C

The following is from Chapter 12 E, Code of the Trust Territory of the Pacific Islands:

Sec. 781. LIMITATIONS ON TAKING OF TURTLES. No Hawkbill turtles or sea turtles shall be taken or intentionally killed while on shore, nor shall their eggs be taken. No Hawkbill turtles or sea turtles shall be taken or intentionally killed in the water, except those whose shells are twenty-four (24) inches or more in length. No Hawkbill turtles of any size shall be taken or intentionally killed from June 1st to August 31st inclusive, nor from December 1st to January 31st inclusive.