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A REVIEW OF SEA TURTLE PUBLICATIONS IN THE PHILIPPINES

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A B S T R A C T

This brief paper reviews the state of knowledge of sea turtles in Philippine technical publications. Taxonomic papers published during the Spanish Period and the American Regime listed four species of sea turtles found in the Philippines, viz., the green, the hawksbill, the loggerhead, and the leatherback. No taxonomic work has been published since the inception of the Republic (1946).

Two incidents of poisoning resulting from the ingestion of turtle meat are recorded. The fishery for tortoise shell in the first two decades of this century and the commercial gathering of turtle eggs at mid-century are reported.

As to the biology of sea turtles, the food of several species and the breeding of the green turtle are treated by two authors. One author describes and illustrates the development of the green turtle.

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A Review of Sea Turtle Publications in the Philippines

In spite of the presence of several species of sea turtles in the Philippines, there has been a dearth of research work on them. Concern for dwindling populations in recent years has kindled interest in these marine reptiles and a more concerted effort to study them is in the offing. This paper reviews the state of knowledge of sea turtles in Philippine technical publications. The author felt the need to make known to the international community the existence of some sea turtle literature in the Philippines as reference to them has been notably lacking in foreign reviews.

SPECIES OF MARINE TURTLES IN THE PHILIPPINES

Spanish Period (1521-1898):

The first records of marine turtles in the Philippines during the Spanish period were cited by Taylor (1921). Unfortunately the original publications are not available to the writer. According to Taylor (1921), Elera (1895) listed four species of sea turtles in his systematic catalog of Philippine fauna, namely: Dermochelys coriacea Linnaeus, Chelone mydas Linnaeus, C. imbricata Strauch, and Thalassochelys caretta Linnaeus. Taylor synonymized the last named species with Caretta olivacea Eschscholtz.

American Regime (1898-1946):

Seale (1917) wrote of three species of sea turtles as being of considerable commercial importance, viz., the hawksbill (Chelone imbricata) the loggerhead (Thalassochelys caretta), and the green turtle (Chelone mydas). Taylor (1921) listed the four species of Elera, but used synonyms as follows: Eretmochelys imbricata (Pennant), Chelonia japonica (Thunberg), Caretta olivacea (Eschscholtz) and Dermochelys schlegelii (Garman).

The Republic (1946 to the present):

No paper on the systematics of sea turtles has appeared within the past several decades. The recent literature which is not taxonomic in nature mentions three species: Chelonia mydas (C. japonica), Eretmochelys imbricata, and Caretta olivacea. It is curious that Domantay (1953) refers to the last named as the "leatherneck." This certainly is not the leatherback (Dermochelys) since he described it as "very similar to the green turtle with slight differences in the size of the head and the number of claws." He perhaps meant loggerhead as previously mentioned by Seale.

Only the green turtle and the hawksbill seem to be present in sizeable numbers in the country at present. The leatherback is apparently a rare visitor seen by few authorities (Alcala, pers. comm.). No recent reports have been made on the occurrence of either the loggerhead or the Pacific ridley although one may assume that an occasional individual may come into Philippine waters.

TURTLE POISONING

Taylor (1921) mentioned a report of turtle poisoning that occurred in 1917 in central Philippines. The turtle causing the 14 fatalities was reported as Chelonia virgata (=Chelonia japonica). In 1954, another case of turtle poisoning occurred with nearly as many morbidities in southern Philippines. This case, reported by Ronquillo and Caces-Borja (1968) was assumed to have been caused by the ingestion of the boiled meat of a hawksbill, Eretmochelys imbricata.

TURTLE FISHERIES

Sea turtles and their eggs have been eaten by coastal inhabitants since time immemorial. In addition to local consumption, tortoise shells and shell products have been exported to various countries. Taylor (1921) reported the economic value of commerce in 1909 to be ₱34,942.00 (Philippine pesos) representing 2,040 kg of tortoise shell. During 1914, Seale (1917) wrote that 2,296 kg of shell valued at ₱34,947.00 were exported from the Department of Mindanao and Sulu in southern Philippines. He estimated 8,000 kg valued at ₱100,000.00 were gathered in the country annually.

In terms of egg production, Domantay (1953) supplied some figures for five years following the Second World War. For the four years when data were nearly complete, he cited figures ranging from 433,223 to 963,437 eggs per annum as those gathered and reported from the Turtle Islands alone. These figures do not represent the total number of eggs laid but only those reportedly gathered by collectors.

BIOLOGY

Food

According to Seale (1917) the hawksbill feeds almost exclusively on crabs, shrimps and mollusks, refusing to feed on fish in captivity. The green turtle eats fish to a limited extent but seems to prefer shellfish and sea weeds. The loggerhead lives exclusively on fish.

Domantay (1953) stated that Chelonia mydas is a purely vegetarian animal. Stomach content analysis showed Sargassum and green algae as the main food items.

Breeding

The well-known breeding places of sea turtles are in southwestern Philippines particularly small outlying islands of the Sulu Archipelago, such as Bancaran, Lumbucan, the Pearl Banks, and several islets near Sibutu (Seale 1917). The Turtle Islands consisting of seven islets straddle the international boundary between the Philippines and East Malaysia, located on the southern rim of the Sulu sea and on the northern shelf of Borneo. The islands are particularly well-known for the green turtle.

According to Domantay (1953) the turtles make their nests in fine white sandy beaches usually above the high tide mark. Turtles emerge from the sea to nest at night. Nest digging is reported to take 45 to 60 minutes, while egg laying may take from 10 to 30 minutes. Covering the eggs and spreading sand about the nest may take another half hour.

The process of copulation is described as occurring in the water after nesting. The male rubs and cleans the carapace of the female with its appendages before amplexus, this habit explaining the shiny shell of the younger egg-layers. Domantay reported that mating takes the whole duration of the tide of no less than six hours.

Renesting is said to occur a week later. The average of eggs laid by younger females is about 120 at one nesting.

The estimated hatching period of the eggs for the green turtle is from 51 to 53 days. Emergence of the hatchlings is usually during the night.

Domantay (1968) described in some detail the embryological development of the green turtle. Besides describing this process, the paper repeated the information on the breeding habits of the species reported in his 1953 paper. In fact, the 1968 paper had been previously published by him in 1961 in two installments in a mimeographed journal. The significant change was the addition of drawings of the developing embryo.

CONCLUSION

Since the appearance of the papers of Domantay and of Ronquillo and Caces-Borja in 1968, there have been no technical publications on sea turtles in the Philippines. Popular and semi-popular articles have appeared over the past two years particularly from the Forest Research Institute. It is hoped that in the not too distant future there will be technical papers reporting research that has had its inception in the past year or two. It is anticipated that Dr. Angel C. Alcala of Silliman University will be publishing results of his studies on the hawksbill in the coming year.

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