

NOTES ON A RARE CASE OF TURTLE POISONING

By INOCENCIO A. RONQUILLO and PRISCILLA CACES-BORJA
Of the Philippine Fisheries Commission

ABSTRACT

A rare case of turtle poisoning which occurred in a Muslim community at Cotabato, Mindanao, is reported. The meat, eggs and entrails of a sea turtle normally found in the locality were boiled and eaten, after which 11 individuals, as well as dogs, who ate the entrails died. Description of the turtle thru letters showed that its possible species is *Eretmochelys imbricata*, the hawksbill turtle. Although a previous case of poisoning was reported from a nearby locality, yet no accurate data were taken for comparison.

The symptoms noted showed the neurotoxic action of the poison which was similar to other cases previously reported in the literature. The epithelium of the buccal cavity was severely affected.

Samples of the turtle meat were salted and sent to the Manila Health Office for analysis, but it failed to show the symptoms of poisoning when fed to rats.

A review of literature of cases of turtle poisoning was made. A previous case in Cebu, Philippines (1917) was cited although Taylor (1921) believed that it was the green turtle, *Chelonia mydas* L. which caused the poisoning. The symptoms exhibited in these two Philippine cases were more or less identical.

This paper is a report on a rare case of turtle poisoning which occurred in Rosa community, Dinaig, Cotabato, Philippines.

On February 5, 1954, there was a gathering of Tirrurays, a Moslem community in Barrio Rosa, Dinaig, Cotabato, in connection with spiritual rites for a deceased. In this celebration, the guests, including their dogs, were served with meat, eggs and entrails of a sea-turtle, commonly eaten in said locality and known as *payukan*. The local name for this turtle is hawksbill turtle, *Eretmochelys imbricata* Pennant. The turtle's meat was prepared in the usual way as used by the natives wherein pieces of meat were boiled. Of the people who partook of this boiled turtle's meat, a total of 11 individuals, eight males and three females, died. Likewise, many dogs, which ate the entrails of the turtle, died also.

The approximate carapace size of the turtle was about one meter in length and about 61 cm. in width. As described (per comm.), this turtle had thin scutes which indicated that it had been previously caught while still young, its scutes having been removed and then thrown back into the sea, because it is locally believed that it would develop another set of scutes. The scutes of this turtle are commonly known as the *tortoise shells of commerce*, and it is the common practice in the locality to return the tortoise to the sea after removing the scutes by heating the carapace over the fire until the shell is loosened.

In another adjacent community in Kimini, Cotabato, the same kind of turtle, with a new growth of scutes, had caused a similar poisoning during the same season. Inasmuch as this is the only turtle wherein scutes are removed for commercial purposes, we believe that the identity of the species is, more or less, accurate. Furthermore, the egg diameter (2.5 to 3 cm.) is the normal size of this turtle.

Symptoms.—A few hours after partaking of the cooked meat, the victims complained of hot sensations at the region of the abdomen, accompanied by cold sensations at the extremities. A strong feeling of nausea ensued which caused some of the victims to vomit a portion of the food they ate. This condition persisted until the following day when dizziness then set in, accompanied by degeneration of the sense of balance, together with blurred vision and a feeling of sleepiness. To some of the victims, vomiting and diarrhea had been very severe. After 3 to 4 days in this condition, the mucous membrane of the mouth and throat of the victims became red and swollen, becoming sore later. These membranes assumed the appearance of having been scalded with hot water. The tongue, particularly, became heavily coated with a whitish membrane. Because of this condition of the mouth, throat, and tongue, the victims had extreme difficulty in eating and even in drinking. Some patients complained of frequent urination of highly colored urine. Of the victims who partook of the feast, six children, ranging from 1½ to 4 years old, one young man, aged 35, and three older people, 50 to 60 years old, died.

Eight days after the poisoning, the District Health Officer of Cotabato, who was called to attend to the cases, advised the patients to gargle warm water with normal saline solution to prevent further infections of the mouth.

Those who were still alive at the time were very weak and were given a liquid diet of boiled rice and tea or coffee. Those

who were seriously ill were given muscular injections of caffeine and sodium benzoate.

The Health Officer sent samples of the turtle meat to the Manila Health Office for analysis. Furthermore, he gave the clinical data for which we are greatly indebted. The meat was fed to laboratory rats, but these did not show any symptoms of poisoning. The meat was heavily salted and dried. However, it was washed to remove most of the salt before boiling in water. Both meat and water were given to the animals. Reports from the Public Health Research Laboratories, Manila, indicated negative results as far as active ingredients were concerned. Rats fed with the meat, which was boiled after washing, were not affected at all. It is possible that the salt used to preserve the meat might have destroyed the poisonous nature of the flesh.

This information was verified by the Municipal Health Officer of Cotabato.

Inquiries made in Zamboanga City indicated that there is no known case of turtle poisoning in that City where green turtles (*Chelonia mydas*, L.) are butchered regularly throughout the year. The Muslim population there relish the meat of this reptile without any mental reservation. That no reported case of turtle poisoning in that city where a lot of marine turtles are being butchered more than in any other part of the Philippines is therefore interesting.

Review of Literature:

The earliest record of turtle poisoning was from the New World. It took place at Saint Jacques, Windward Islands, North America, way back in 1697, as reported by the monks, Damplier and R. P. Labat, in 1724. Labat stated that Jean Montididier, also a monk, bought a tortoise plastron of probably *Eretmochelys imbricata* Pennant, and in spite of his warning, ate as much as he could. As a result, after four days, he was covered with boils. These were accompanied by a terrible diarrhea and high fever for which he suffered for eighteen to twenty days. Father Labat himself, who took caution in partaking of the turtle's meat, had a little diarrhea for six days, accompanied by three boils.

Cleland, sometime in 1845-47, cited from Banfield's "Confession of a Beachcomber" that in some localities in northern Queensland, Australia, the flesh of the hawksbill turtle, *Eretmochelys imbricata* is said to be imbued with a deadly poison,

so that care should be exercised in the killing and butchering of this animal, lest a certain gland, located in the neck, be opened. The poison is so toxic that flesh cut with a knife which has touched the critical part, becomes impregnated with the poison. One old seafarer acknowledged that he nearly "pegged out" after a hearty meal of the liver of the hawksbill.

"Banfield also states that the flesh of the luth or leathery turtle, *Dermochelys coriacea*, also causes symptoms of poisoning.

Chevellier and Duchesne (1851) reported that the hawksbill turtle, *Eretmochelys imbricata*, is not good to eat; that it has a special purgative quality according to Damplier and Labat, (*op. cit.*), and that, when eaten, one may be "certain of being covered with boils," if there are some impurities in the body. But if eaten sparingly, the flesh can cure some diseases. When the flesh of this turtle is salted, it loses its purgative effect,

Tennent (1861) reported that the flesh of sea turtles caught in the southwest coast of Ceylon during certain seasons is avoided because they are poisonous. Tennent cited a case of poisoning at Pantura, near Colombo, Ceylon, where in October, 1840, twenty eight persons who partook of a sea turtle were seized with sickness immediately after which a coma supervened and 18 died during the night. Those who survived related later that the flesh of the turtle was fatter than that of the ordinary. He also stated that similar fatal occurrences had been attributed to turtle curry, although there was room for believing that the poison might have been contained in some other ingredients.

The first Philippine report on turtle poisoning was made by Taylor (1921) and cited that the turtle alluded to in Sir Tennent's report (*op. cit.*) was a *Chelonia virgata* [*Chelonia japonica* (Thunb.)]—*Chelonia mydas* (Linnaeus). Taylor (*op. cit.*) cited a case of turtle poisoning in the Philippines, presumably by *Chelonia mydas*. It occurred in November, 1917, in Bantayan Island near Cebu. Fourteen deaths were reported out of 33 cases. The victims suffered from pain in the throat and lips vomiting, and drowsiness. Two of those who died had their symptoms very much delayed, coming out after 8 days of partaking of the turtle's meat. Nevertheless, they had symptoms of poisoning similar to those who died earlier and they died after 6 days. It was also reported that relapse in this case occurred even after cure had set in. The

tendency to drowsiness from the moment symptoms appeared was also manifested, and even if improvement under treatment appeared later, still the victims died. It was noted that there is a great similarity of symptoms between the poisoning of 1917 in Bantayan Island and that of the present case. Read (1917) had scattered references to turtle poisoning but without proper identification of the real species.

The similarity of these two recorded cases of turtle poisoning in the Philippines indicates a strong credence that there is really a poisonous substance at times in the meat of some sea turtles which are caught in the Philippines that causes death, although the particular species is not clearly verified in all cases.

It should be noted that like the report of Chevellier and Duchesne in 1851, the flesh of the poisonous turtle, when salted, loses the purgative effect. The flesh of the turtle in the present case showed the same findings when a piece of its meat was sent to the Public Health Research Laboratories in Manila for analysis, just as a sample of meat from the 1917 poisoning was also sent in for examination. In both cases, the meat was heavily salted and dried, and the examination of the flesh failed to reveal the presence of any known poison.

It was noted that, inasmuch as the diarrhea following the eating of turtle's meat had a very dehydrating effect, most of the victims who died in the present case were both young and old. Although one of the dead was 25 years old, this supported the observations of Chevellier and Duchesne: "It is necessary to be of strong, robust nature to resist this evacuation." That the flesh samples delivered at the Government Laboratory in Manila did not have any trace of poison or any effect on experiment rats may be answered from the report of Chevellier and Duchesne (1851) that, if the flesh of the hawksbill turtle has been salted, the purgative effects of poison are lost.

Deraniyagala (1939) noted that the flesh of the leather back turtle, *Dermochelys sp.*, is also reported to possess faintly toxic properties during some seasons when taken on the east coast.

From the review of the literature, it is more or less, concluded that the sea turtle which caused the mass poisoning in Barrio Rosa, Municipality of Dinaig, province of Cotabato, is of the species *Eretmochelys imbricata*.

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