

Think about a Species of Eels in Samar of Philippines

Shigehisa Nakamura

Kyoto University, Japan

The author notes on a species of eels in Samar of Philippines in this work. This could be taken as an extension of the research project started in 1950 for the public request to solve a shortage of foods for finding a sustainable of the civil life and activity. This project was proposed to start by Professors Shoitiro Hayami and Denzaburo Miyadi of Kyoto University. The scientists of the University of Tokyo had started to survey the ocean by settled log line on the sea surface, In the promoting of the project, it was found that a kind of the Japanese eels life cycle had been on a route between the specific zone neighbor the Mariana Trench and the coastal zones in the northwest Pacific. It is found that the eels have been repeated their life cycle to spawning in the zone in the ocean and spending in the zone in the river of fresh water. With an understanding what noted above, what is the author's aim in this note could be realized well.

Keywords : Eels, River, Zoology, Physics, Fishing, Mariana, Samar, Philippine

1. Introduction

A note is introduced on a species of eels in Samar Island of Philippines. It is helpful to note some historical background for the research project of Kyoto University started in 1950 in order to see this work as an extensive one at introducing the eels in brief.

Then, a biological aspect of the eel found in Samar Island is noted how to do for the eel's zoological positioning in the biological classification tree.

There have been many of related works published so that it must be very hard to identify the eel in Samar as a new species.

Some of the related information is introduced briefly. That must be included the life style of the village at a long reach from the river mouth facing the ocean.

The life style of the native tribe in the village is noted for realize their living manner. This could be compared to the life style of the ancient people in a village in Japan referring to what is described in the old tales and some public descriptions.

It is concluded that where the species of the eels found in the world. The fish catalogues published in 1975 seems never included in the specific species of the eel found in the village in the upper reach of a river in Samar of Philippines.

The author has reminded that a research project started in 1950 in the staff of Kyoto University. The aim was to find species of fishes which could be satisfied for the public shortage of the food and neutritions. The project leaders in Kyoto University were Professor Denzaburo Miyadi of Biology and Professor Shoitiro Hayami of

physical oceanography. After this project was started, the University of Tokyo has had an ocean survey ship named as "Hakuho-maru". The ship has acted for several projects including the theme "where is spawning location of the eels found in the river of the Japanese Islands."

2. Historical Review

As far as the author concerns about problem on the eels found in the rivers in Japan, he takes it to be natural to consider first that any eels found in the rivers might do spawning just around the river.

The survey along a logline on the Pacific Ocean, some kinds of the eels were found in the ocean. The other ocean survey ships had joined for the project noted above.

After repeating surveys various logline in the ocean, some data was compiled and published by Tokai University (Masuda et al., 1975). One of the co-authors was a staff in Kyoto University, Dr. Chuiti Araga who had worked in the Maizuru Fishery Research Station, Faculty of Agriculture, and the Seto Marine Biological Station, Faculty of Sciences, Kyoto University.

3. Biological Classifications of Species

Biological classifications are consisted by the two tree systems, one of those is for zoological species and the other is for botanical species in order to realize a systematic interrelation for all of the known species.

In this work, the author's interest is focused for the zoological tree systems.

Following the rule of scientific classification, the eels are defined to have branches as in **Family Anguillidae, Order Anguilliformes, in Class Osteichthyes.**

A description in the published catalogue (Masuda et al., 1975) is noted as follows, that is, "Eels" – Body elongated, snake-like. Gill openings vertical slits, on the side of the head. Dorsal and anal fins continuing round the extremity of the tail. Pectoral fins present. Ventral fins absent. Scales are small and embedded in the skin.

One genus, 16 species. Two species are known in Japan. All breed in in the sea and adults live in fresh water. Catadromous is a migrator.

3.1 Distribution of the species of Eels in the Ocean

In this section, a brief overview and a basic notice for understanding of technical taxonomical terms are introduced.

(1) The ichthyofauna of the southern coasts of Japan contains a considerable tropical element due to the western boundary intensified current in the northern Pacific, although most of these are geographically situated in the temperate zone. Most of these tropical species are so-called "Indo-Pacific" species and their northern limits are often found on the Pacific coast of the western part of Japan Islands.

It therefore seems valuable to note these limits as concretely as possible; for example, "Tanabe Bay" in Wakayama and its southward".

(2) The "Ryukyu Islands" is defined as including the Tokara, Amami, Okinawa, Miyako and Yaeyama Islands.

(3) The range of a species within Japan is separated from that beyond Japanese waters, for convenience.

- (4) The limits of the Indo-Pacific region vary according to the opinion of the researcher consulted. It is defined as extending from the east coast of Africa (including the Red Sea) through India, the Philippines and East Indies eastward to Micronesia, Polynesia (including Hawaii) and Easter Island. The southern border is Queensland and the level between New Caledonia and Easter Island.
- (5) The central Pacific is defined as covering the area from Polynesia, including Hawaii, to Easter Island. The region west of the above is referred to as the West Pacific.
- (6) Certain sub-marginal continental species such as the drum, *Argyrosomus argentatus*, are also included. Almost of all of them are distributed from southern mainland Japan, along the eastern and southern coast of China and occasionally to the Indian Ocean, but are not found in the Ryukyu Islands. In this case, the localities known thus far are given rather than the term "Indo-West Pacific".

3.2 *Anguilla japonica* Temminck et Schlegel

Clearly distinguished from *A. Marmorata*, another eel found in Japan, by not having darker spots and marblings. Important food fish and extensively cultured in ponds. Attains 60 cm TL. / Range : Southern Japan; Korea, China.

4. Eel Found in Samar

The author heard that an eel in Samar Island of Philippines is a newly finding of a specific species. The eel length is about 80 cm (Fig. 1). This species might not be yet named any academic name as to be in the list for the zoological tree.

In these years, identification should be after confirming specific hereditary characters. An analysis of DNA identification of the interested species should be applied for identifying whether any one new species can be accepted as newly found.

Additional information is that a scientist obtained eggs of the eel turning to Japan at the location southeast off Guam Island just neighbor the Mariana Trench and the submarine ridge known as the Izu-Mariana submarine ridge which is located at the east boundary of the Philippine tectonic plate confronting to the Pacific plate..

The sample eggs of the eel were obtained after towing the plankton net and recovery of the trap container attached at the tip of the plankton net around 600 meters under the sea surface where a horizontal haline interface had been formed.

A scientist of the University of Tokyo has given his comment about the eels *japonica* could be get to Japan if the starting zone is the Mariana of 14°N but the eels *japonica* starting in a zone of the Mariana of 13°N should be take their fatal route.

In the author's understanding of what is the inter-relation between physical oceanography and biological oceanography, the above comment should be carefully considered for accepting in public scope of the understanding.

An ensemble of the eel *japonica* can not be any one of some passive diffusive drifters. Nevertheless, the numerical model is not paid any consideration about that an ensemble of the eel *japonica* is not the passive diffusive drifters but the active diffusive drifters.

The passive drifters must be act as if they were carried by the water particles which contains diffusive materials, for example, thermal energy which is expressed by sea water temperature as an observable factor, and the solvents such as notified by salinity which contains various kinds of ionized materials. There are suspended materials of the land origin resources.

Any one of proper biological scientists must have understanding of the ensemble of the interested eels' behavior which surely be not any fatal route even in the ocean.

In addition, the comment was given about that a route from the Mariana to the Japan Islands were existed for the ensemble of the eel japonica through the coastal zone of Philippines before the eel behaves to find a rout. This means that the Mariana submarine ridge was ever been located a open channel off the Philippines.

Now, the author has to raise it to be necessary to clarify what the comment is noticed in the scientific scope in advance of the final conclusion.

It is necessary to start a big project in a scope of inter-disciplinary fields

4.1 Environment of Village

Now, it is necessary to note about the environment of the village which is located in the upper reach of a river in Samar Island.

It seems to be as that people living in the area of the river mouth and the down reach of the river would not have any contact with them. So that, any one of the guide persons would not supports those who are wishing to get to the village.

In the upper reach of the river, any transportation (by bus or cars) can get to an end of the driving road. The river flow is in the mid of a jungle zone.

A horse ride along the river flow is in a limited distance. Successively, those who have in need should get to the village have to do walk on foot about 60 kilometers.

Then, it can be understood that the village is located in a state of isolation out of the people in the down reach area of the river.

It seems that they have never had any threat of storms, typhoons, earthquakes and the other natural hazardous actions (Nakamura, 1978).

4.2 Tribe

The environment of the village is isolated so that it seems to see their life style to the details. The people in the village seem to be satisfied their present life.

They have had lived there for a long time in the village. Essentially, the tribe is completely different from the tribe in the down reach of the river.

Essentially, it is natural to take them as a native people though some of other scientists are considering that the tribe there might be Negrete and partly a kind of Malaysian.

It is said that there is a quite similar village in the northern Lezon. It is pity but the author has no additional information at present.

Their life style is controlled by a primitive reciprocation economy, because they need their product of smoked eel for exchange rice, wheat cereals or grains.

4.3 Lingual Pattern

The residents of the village have been continued their pre-historic life with a faint contact with the neighboring tribes.

The author has heard that ever the villagers have a language in a form to tell by a present tense only. It loks as if they have never had any past in their memory and any future in their mind.

In fact, they tells in a form of present tense though their language is ruled to notice the past at firstbefore the present status. Then, the sentence for future is noticed at the last part of the phrase.

4.4 Numbers Counting

The villagers have no nominal expression.

For example, it is sure that they have no concept for zero.

It was found that they can express in a simple word for counting the materials. The word corresponding "a little" in English is used for the cases of one fish, two fishes, or three fishes in practice. Beyond four of a material, they express for counting a word "many" in English. When there are ten of the material, they tell us "many" in smile.

4.5 Noun and Verb

The villagers seems not to have any pronoun.

They have only a limited numbers of the noun, verbs, and, adjectives.

Then, they express by their manner "Sam, I like. Sam comes. Good." with their happy mind in their body language which is common to us, human-being. This is their response to an information of "Dr. Sam Henry will come again to your village next month."

The term of "Sam" is printed in their mind as their memory.

Such conversations are repeated to get a complete communication with them.

4.5 Nutrition

The people in the village in the area of the upper reach of the river have had get a food from the river water where the eel is living. They have had a healthy life after taking the eel as their nutrition.

4.4 Fishing Technique

In Samar, their technique for fishing to get an eel in the river water is quite similar to that the "Hae-nawa" fishing technique used in the coastal zone off the Japan Islands.

They uses their hand-made hook (or hook needle) made of steel. The one end of the "U-shaped hook" is designed to fix up to the strings, wires or ropes. They have used their hand-made rope. The other end of the hook is in a form of a spit with a reversed pick not to miss at eel fishing operation. Their hook is well brushed up.

They use a kind of earthworms and beetles (a kind of insects) as a decoy at the tip of the hook's spit for fishing the eel in the river water.

Then, the author feels it necessary to add his note as that some of Kyoto people has used a simple bamboo trap for capture of an eel on the river bed of "Ujigawa", in an upper reach area of "Yodo-gawa" River. The water flow of the "Yodo-gawa" River go down to the down reach near the urban area of Osaka in Japan.

Timing of the fishing for the eel is almost same to each other in Samar and in Kyoto. The fishing-tackle is usually begin in evening or night and wait the recovery in morning through the night in order to get a great eel at the hook in Samar and in the trap in Kyoto.

4.5 Smoking Processing

The most primitive and pre-historic manner of smoked eel making for food must be in Samar. The smoked eel is a kind of protein. Similarly, various kinds of the smoked meats have been helped for healthcare of the humankind in Europe.

Then, those in Samar have to need to obtain a kind of grains by exchange process without any currency use. In Europe, the smoked meats can be exchanged for rock salt which was necessary for their life.

As for the pre-historic age of Japan, there must have been a rich rice field as source of a kind of grains. The eel was taken to be the most effective kind of food for healthcare during summer season in Japan located in the mid-latitude zone. This fact can be seen in the ancient descriptions in Japan.

5. Conclusions

A note on a species of eels in Samar of Philippines is introduced. The eel found in Samar might be a new kind of the species though it should be declared after biological identification procedure. At present, it must be taken to be not enough to declare after referring biological morphology and ecological zoology for a biological classification.

The information of the eel finding in Samar was effective to know that the Negrete tribe has maintained their pre-historic life style.

Their fishing technique is found to be essentially same to the technique for one of fishing techniques in the coastal zone.

They must have a stable and safe environment so that they could have continue their life style without any change for modernization of their life.

The author could see that they have developed their own culture under the protection of them by the natural environment even the location is in the tropical zone and no threat of storm, typhoons and seismic damages fortunately.

Acknowledgements

The author expresses his appreciation to the information about the eel in Samar by JAMSTEC and the University of Tokyo, and the contribution of the Bishop Museum in Honolulu, Hawaii should be highly evaluated. The author has to express his appreciation to all of those who had assisted for his work.

Lastly, the author has to notice that this work could be taken as an extensive work which was started as a scientific project in 1950 conducted by Professors Denzaburo Miyadi of Zoology and Shoitiro Hayami of Physical Oceanography.

References

- Masuda, U.; Araga, C.; Yoshino, T. 1975. *Coastal Fishes of South Japan*, Edited by Tokai University, Tokai University Press.
- Nakamura, S. 1978. On statistical tsunami risk of the Philippines, *Southeast Asian Studies*, 15(4): 581-590.



Fig. 1. Glance of Eel in Samar, Philippines

Fig. 1. Glance of Eel in Samar, Philippines