

## NOTES AND NEWS

### NOTES ON THE CAVE SHRIMP *EDONEUS ATHEATUS* HOLTHUIS, 1978, WITH AN ACCOUNT OF ITS TYPE LOCALITY AND HABITS (DECAPODA, CARIDEA, ATYIDAE)

BY

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#### INTRODUCTION

In 1978 a new genus and species of cavernicolous atyid shrimp, *Edoneus atheatus*, was described by the second author (L.B.H.). The type material consisted of 3 specimens, which were not in optimal condition. The specimens are typical stygobionts and were collected in a cave in the Maddela area near Santiago in northern Luzon in 1977; they were obtained by the Leiden Museum through the kind offices of Mrs. C. L. Deeleman-Reinhold from the Reverend T. R. S. Bandsma, who at that time was the pastor of the parishes of Maddela and Aglipay, and received the specimens from one of the parishioners. No details were then known of the habitat (other than it being a cave), habits or colour of the material; later also the accuracy of the type locality indication was found to be somewhat questionable.

It was most fortunate therefore that the first author (D.S.B.), from 28 to 31 December 1985 could visit the area with the special purpose to locate, collect and observe these cave shrimps there. The expedition was successful: additional material of the shrimps was obtained and information on the live specimens and their habitat became available. In the weekend of 2 June 1991 the first author could repeat this visit.

Also additional details of the type locality were received from the Reverend Bandsma (in litt., 4 June 1991).

The present paper deals with all this new information.

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***Edoneus atheatus* Holthuis, 1978**

Cave no. 6, sitio Disilwad, barrio Palasian, municipality Aglipay, prov. Quirino, northern Luzon, Philippines, 16°27'N 121°38.5'E; in subterranean river, in total darkness; 30 December 1985, D. S. Balete. — 6 males, 4 females.

When the first author arrived at Maddela (province Quirino, 16°21'N 121°41'E) on 28 December 1985, he learned upon arrival that the Reverend Bandsma was no longer stationed in this parish, so that his hope for direct information about the type locality could not be realized. He thus had to rely completely on the information that he gathered from his conversations with the people of the St. Vincent Church of Maddela. After making clear his intention and by practically giving a lecture on cave life and the adaptations to it by the cavernicolous fauna, he gradually obtained the interest and cooperation of the local inhabitants. Also the authorities were most helpful.

From the information gathered he learned that there are more than 50 caves in the Maddela area, notably near Aglipay (16°23'N 121°39'E), north-west of Maddela and near San Pedro not far east of Maddela. But of only two of these caves it was known that they contained subterranean streams. The first of these, closest to Maddela, is Busibus Cave in barrio San Pedro, situated on the bank of the Ngilinan River, at about 16°20'N 121°43'E, east of Maddela. This cave was visited on 31 December. From the subterranean stream several crabs were collected, but shrimps were looked for in vain.

The second cave with a subterranean river is situated in sitio Disilwad, barrio Palasian near Aglipay, at 16°27'N 121°38.5'E, likewise in Quirino Province. It lies some 35 km north-west of Maddela and about 500 m east of the Debili River. The cave is located in a Boy Scout camp area which covers 175 hectares (= 430 acres). The head of the camping area, Chief Scout Agustin Santiago was most helpful and provided much useful information and sent his nephew Chris Santiago to act as a guide.

The cave with the underground stream is known as Cave no. 6. Its main entrance is 3 meters wide and 2 meters high; it is situated about 125 m up the slope of a fossil-rich limestone hill. The entrance gives access to three galleries, the first of which is reached via a narrow passage that opens some 5 m left of the main entrance. This passage leads to the underground river some 50 m away. The river is in total darkness. It is a swift stream and the water is clear. At some parts it has a narrow bank, but mostly the water reaches the wall of the cave, and the river can only be explored there by wading. When following the river upstream, it becomes neck-deep and further exploration was stopped. Some inhabitants of the area claim that the origin of the river is a subterranean source. Downstream the river follows the passage and at some 7 m from the end it drops about 6 m and, with a westward bend, continues down to reach the exit point at the foot of the hill about 1 km away. All the shrimps were caught above the waterfall. The temperature of the water was 25.5°C, about

the same as the air temperature of the cave. In the deeper parts of the river the bottom is rocky; at some points, however, it is shallow and here the bottom is muddy. Two brown crabs were caught in the rocky part of the river. In the shallow muddy part a number of *Edoneus* specimens were taken.

The cave contains a second stream which flows in a direction perpendicular to that of the just mentioned fast river. The second stream is sluggish and is found on a higher level, about 1 m higher. Of the slow flowing stream about 115 m could be followed, until it disappeared rather abruptly in the bottom sediment. The dry river bed ended in a narrow tunnel and could not be followed further. This second stream is nowhere more than 2 m wide and at the most 0.5 m deep. Its bottom is largely covered by a thick layer of bat droppings mixed with mud. The only obvious source of water for this stream seems to be the water that drips from the cave ceiling. Several crabs were caught in this stream; some burrows, observed near the sides of the stream, were said by the guides to have been dug by the crabs. Also *Edoneus* was seen in this stream and several specimens were collected. Both the shrimps and the crabs were seen feeding on dead bats lying in the water. The shrimps were mostly observed to stay on the substrate, but swam quickly away when the hand of the collector came close. When caught they would try to jump away. They seemed not to be attracted to human skin as are so many other shrimps (Palaemonidae, Hippolytidae, Atyidae), which when a submerged hand or leg is kept still, will approach it and nibble at the skin.

That Cave no. 6 of the Boy Scout camp ground at Disilwad is the type locality of *Edoneus atheatus*, becomes clear from the recent information sent by the Reverend Bandsma. The three type specimens namely were collected for him in 1977 by Mr. Felimon Alunday. Mr. Alunday then visited the Boy Scout camp at Disilwad and entered the three largest caves there. Cave no. 6 being the only one with water, must have been the one where he obtained the shrimps. The original indication of the type locality "Cave near Santiago, Maddela area, Isabela Province, Luzon", is incorrect in so far that Maddela (both the village and the municipality of the same name) at present is not situated in Isabela Province, but, through a rearrangement of the provinces, in Quirino Province. Also Disilwad, and the cave, which both are in the municipality Aglipay, form part of Quirino Province. Santiago is the largest town in the area and lies at 16°45'N 121°34'E, about 60 km northwest of Maddela.

Cave no. 6 was again visited by the first author during the first weekend of June 1991. Unfortunately it bore signs of deterioration: broken stalagmites, graffiti on the walls, presence of garbage and discarded nylon nets used for the capture of bats, fishes and crabs. Due to the dry season (it had not rained since April) the water level in the main stream was lower. No shrimps were observed in it, not even in places where they were plentiful in 1985. However, *Edoneus* was quite abundant in two pools in the partly dry bed of the smaller stream.

Many of the specimens were juveniles. In one of these pools also a catfish, showing no pigment, was observed, as well as crabs. The latter were more abundant in the pools than in the main stream.

#### ACKNOWLEDGEMENTS

We want to express our gratitude to the Reverend T. R. S. Bandsma, Villaverde, Nueva Vizcaya, Philippines, who not only made the type specimens of this species available for description, but also, after 14 years, was willing to comply with our request for additional information about the type locality. In this he was assisted by Mr. Felimon Alunday, the actual collector of the type material, to whom we are equally indebted.

Also we should like to thank the authorities of the municipality of Maddela, who made the visits to San Pedro and Disilwad possible, and especially Councillor Jose Bacani, who volunteered to be the guide to Busibus Cave. In Disilwad Mr. Agustin Santiago gave the most cordial help and provided information which led to the rediscovery of the type locality of *Edoneus atheatus*; Mr. Chris Santiago and Mr. Primo Guillermo, guard of the caves, both acted as guides in Cave 6 and helped to collect the material. We are greatly indebted to all these gentlemen and to several others who extended courtesies to the first author.

#### LITERATURE

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Received for publication 31 March 1991.

### ERRONEOUS RECORDS OF THE MALAYAN RICELAND PRAWN *MACROBRACHIUM LANCHESTERI* (DE MAN) FROM INDIA — LARVAL EVIDENCE (DECAPODA, CARIDEA, PALAEMONIDAE)

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Recently, based on study of adults, it has been proved that the Malayan riceland prawn *Macrobrachium lanchesteri* (De Man, 1911) is endemic to Thailand and the Malay Peninsula and its earlier reports from India are erroneous (Chong & Khoo, 1988; Jalihal et al., 1988). According to Jalihal et



