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POSTURE OF *IRIDINA SPEKEI* (BIVALVIA: MUTELIDAE) ON THE FLAT SANDY BOTTOM OF LAKE TANGANYIKA

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ABSTRACT Length, height and angle of the exposed part of mussel, *Iridina spekei*, above the bottom were examined on the sandy flat of Lake Tanganyika. The larger mussel protruded higher above the bottom, which seemed to be advantageous to scatter sperm or larvae farther in order to increase chances of the fertilization or parasitism of larvae on fish. Immature mussels seemed to lie hidden to avoid predation by fish.

INTRODUCTION

Iridina spekei is the largest bivalve of Lake Tanganyika (Leloup, 1950). It was easily found on the sandy flat because a part of shell was protruded above the bottom. Since the exposed part of shell was covered with algae (Leloup, 1950), posture of living shell can be examined from the preserved specimen. This study presents the results of examination on the specimens collected at the northern end of Lake Tanganyika.

MATERIALS AND METHODS

Specimens were collected by hand with aid of SCUBA on the flat sandy bottom of 2–5 m in depth at four localities (Fig. 1) from August to November 1983. Mussels collected were all dissected and examined their sex, if possible. Shell length, length and height of exposed part, and angle of shell (Fig. 2) were measured on these shells.

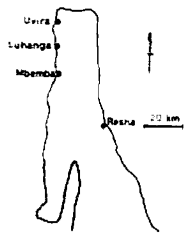

Fig. 1. A map of the northern part of Lake Tanganyika.

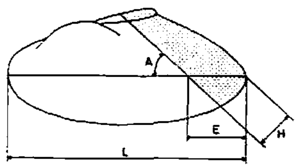

Fig. 2. Linear measurements (in millimeters) and angle (in degrees) of shell. Shaded area represents the exposed part of shell covered with algae. L: shell length, E: length of exposed part, H: height of exposed part, A: angle of shell.

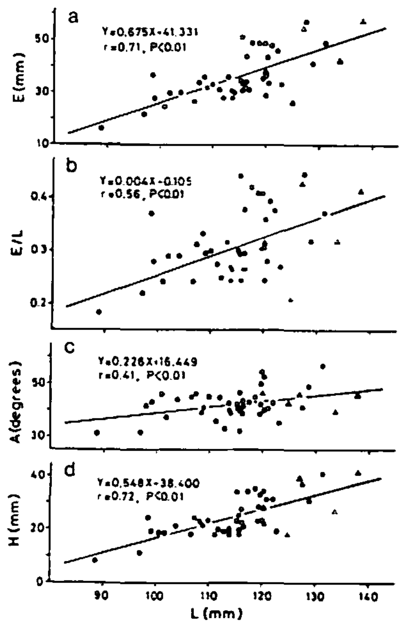

Fig. 3. Relationships between shell length and other measurements. Abbreviations are shown in Fig. 2. ○: Luhanga, ●: Resha, △: Uvira, ▲: Mbemba.

RESULTS AND DISCUSSION

Length of exposed part increased significantly with shell length (Fig. 3a). It was estimated from the regression line that the length of exposed part was zero when shell length was 61.2 mm. If the extrapolation of the line is applicable, it suggests that the mussel lies hidden under the bottom until it grows at about 61 mm in size. Predation pressure may be forced small mussels to lie hidden, because there is a large mollusc-eating fish, *Lobochilotes labiatus*, whose maximum size is about 400 mm (Poll, 1956: Brichard, 1978). But mussels larger 61 mm may be free from predation due to its size, and then they may emerge out of the bottom. After the emergence, the ratio of exposed part and angle of shell increased with shell length (Fig. 3b, c). As a result, the larger mussel protruded higher above the bottom (Fig. 3d).

A small mutelid mussel, *Moncetia lavigeriana*, which resembles *I. spekei* in shape matured at about 23 mm in shell length (Kondo, 1984). Its maximum size recorded was 61 mm (Leloup, 1950). The ratio of shell length at maturity to the maximum one was 0.38. It was about 0.4 in Japanese unionid mussels (Kondo, unpublished data). Thus, it is likely that the ratio of size at maturity to the maximum one is the same in *I. spekei* as in *M. lavigeriana*. If so, *I. spekei* may mature at 61.6 mm in shell length, because the maximum size recorded was 162 mm (Leloup, 1950). It closely agreed with the size of emergence. These results suggest that only mature mussels are emerged out of the bottom. Unfortunately, small mussels did not found in the present study. But the smallest one collected (88.7 mm in shell length) was incubating eggs in her inner gills.

I. spekei was observed to be distributed sparsely on the sandy bottom. Fertilization occurs in the gill-chamber of females, and females spit out their larvae which are the obligate ectoparasites on fish. Scattering sperm or larvae farther may increase chances of fertilization or parasitism, which may be the reason why the larger mussel protruded higher above the bottom.

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