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Diel fluctuations in catch of the postlarval *Penaeus japonicus* group

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The major objectives of this study are to measure the diel fluctuations in the catch of the postlarvae of the two species in relation to the tidal cycle, light conditions (day and night) and water temperature, and to discuss those comparing with other postlarval *Penaeus* spp. appearing along shore waters in the Philippines.

The samplings of postlarval *Penaeus* were accomplished with the aid of a triangular push net every 2 hours over a 96-hour period at the shore waters of Tigbauan, Iloilo, Philippines from February 23 to 27, 1979. *P. japonicus* group includes *P. japonicus* or *P. latisulcatus*.

During a 96-hour sampling, 2,617 postlarval *P. japonicus* group amounting to 15.5% of all postlarval *Penaeus* spp. were caught. Distribution of numbers of dorsal rostral spine represented a monomodal curve of 6, while that of ventral spine was zero.

The number of the postlarval *P. japonicus* group collected at night was significantly greater than that during daytime ($P < 0.01$), representing 2,152 individuals from 25 night operations and 506 from 24 daytime operations.

At every sampling, the postlarvae of *P. japonicus* group occurred, and two peak occurrences were daily observed coinciding with the tidal elevation.

The major peaks were found 0 to 2 hours before lower low tides at 0400-0600 hours (during ebb tide before sunrise) when water temperatures were more or less lowest. On the other hand, the minor peaks were 0 to 2 hours before higher high tides at 1800-2400 hours (during flood tide after sunset) when water temperatures were lowering.

However, in the cases of 2 peaks, viz. one at 1800 hours on Feb. 23 and another at 0400 hours in the following morning, these peaks were inversed showing higher peak during higher high tide and lower peak at lower low tide. As a result, all peak occurrences mentioned above occurred during night time.

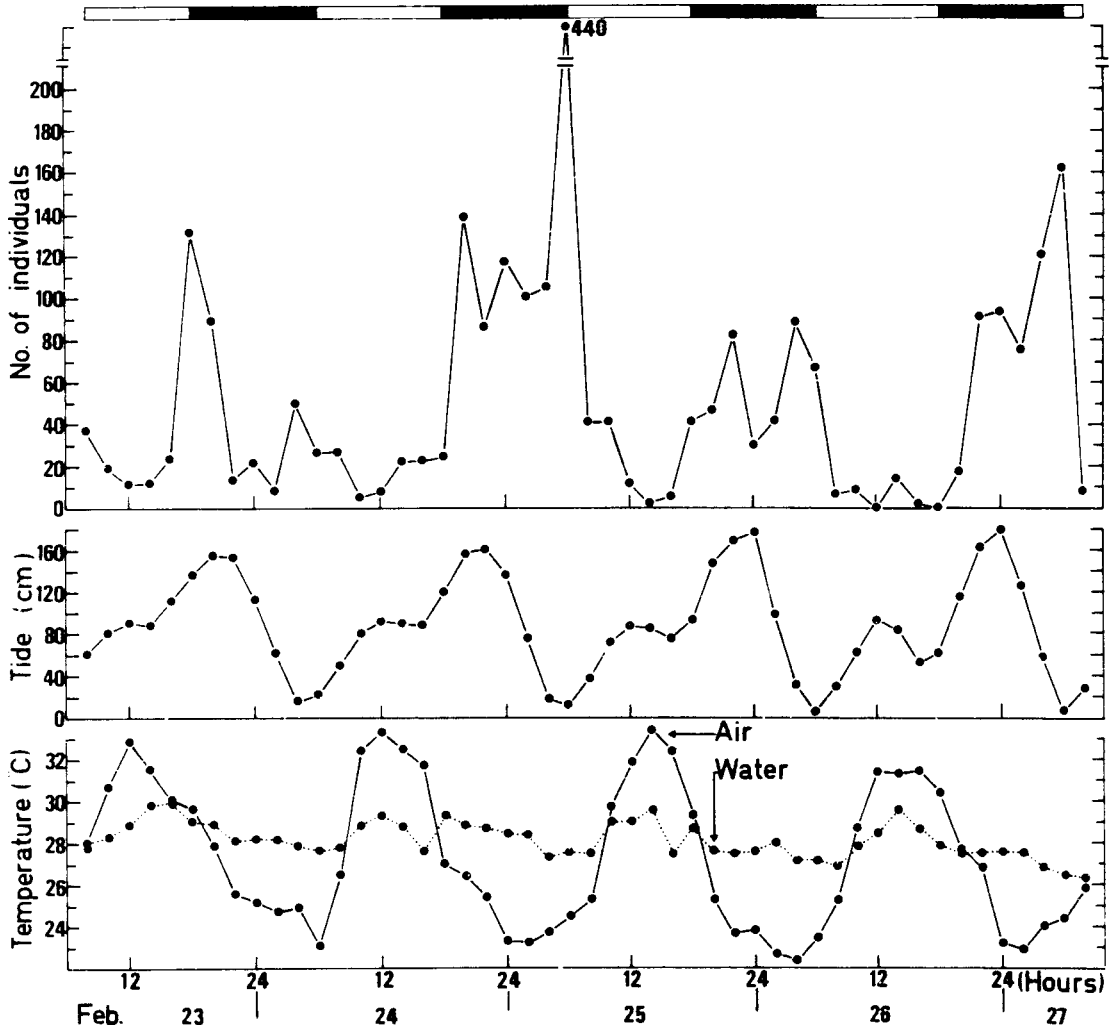


Fig. 1. Catch of postlarval *P. japonicus* group (upper), fluctuations in tide (middle), and air and water temperatures (lower) at 2 hour intervals during a 96-hour period in the shore waters of Tigbauan, Philippines, 1979.