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Description of the Feminises Male Form of *Macrobrachium malcomsonii* from Prawn Catches in Bangladesh

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Abstract - Male *Macrobrachium malcomsonii* in drag net catches from the Old Brahmaputra River at Mymensingh, Bangladesh were 87% of the normal form and 13% of the feminises form. The latter male form was distinguished from typical males by lighter coloration, less carapace and second cheliped spination and significantly (.01 level) smaller second chelipeds. The second cheliped/body length ratio averaged 1.9 in normal males and 0.97 in the feminises form. As the tail yield increased from 36.4% to 51.4% and territorial area was reduced in this form compared to the normal males, further studies in terms of aquaculture potential appear warranted.

Macrobrachium malcomsonii, the monsoon river prawn, attains 230 mm total length and is found in the rivers of Pakistan, India and Bangladesh (Holthuis 1980). It is the major commercial prawn in the Godvari and Ganga Rivers of India (Jhingran 1975) and in the Old Brahmaputra and Padma Rivers in Bangladesh (Kibria 1983). The reproductive period may extend throughout the year, but is primarily confined to the rainy season, April to August (Jhingran 1975; Kibria 1983). We obtained numerous adult specimens of *M. malcomsonii* from the Old Brahmaputra River near the Freshwater Aquaculture Research Station (FARS), Mymensingh, Bangladesh, and describe a male form which may be of value in culture. Ahmed (1967) stated that *M. birmanicus* and *M. malcomsonii* males are of two forms - normal males with well-developed second chelipeds and "males feminises" with second chelipeds similar to that of the female and shorter than the body length.

From May to October, we examined and made collections from the 326 prawns of species larger than 2.0 cm in eleven catches made by drag nets poled behind small boats in the vicinity of Mymensingh.

M. malcomsonii comprised 96.4% by numbers of the larger species

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(exceeding 2.0 cm total length), and *M. rosenbergii* and *M. birmanicus* each 1.8%. Females dominated catches of *M. malcomsonii,* 81.2%, and an overall average of 83.4% were berried. In the last sample, 22 September, 53.3% were berried. Of the 18.8% males, normal males comprised 87%. The second cheliped to body length from eye to telson ratio averaged 1.90 ± 0.13 (n = 14), carapace and second chelipeds were spinous, and the body color was brown to olive (Fig. 1). These characteristics are in agreement with the descriptions of *M. malcomsonii* given by Ahmed (1967), Kibria (1983) and Holthuis (1980). The remaining 23% males resembled the female and were mistaken for females on several occasions. The second cheliped to body length ratio averaged 0.97 ± 0.16 (n = 9) and was significantly less (.01 level) than the ratio of normal males. The carapace and second chelipeds were smooth and the body color was grey (Fig. 1). In other respects, i.e., rostral shape, size and teeth number, characteristics agreed with normal *M. malcomsonii.* We attribute these specimens to the "males feminises" form of Ahmed (1967). Two intermediates with lightly-spined carapace and second chelipeds, light coloration, and cheliped/body length of 1.30 and 1.50 were also found. Females examined averaged 0.66 ± 0.06 (n = 15) second cheliped/body length and the ratio was significantly (.01 level) less

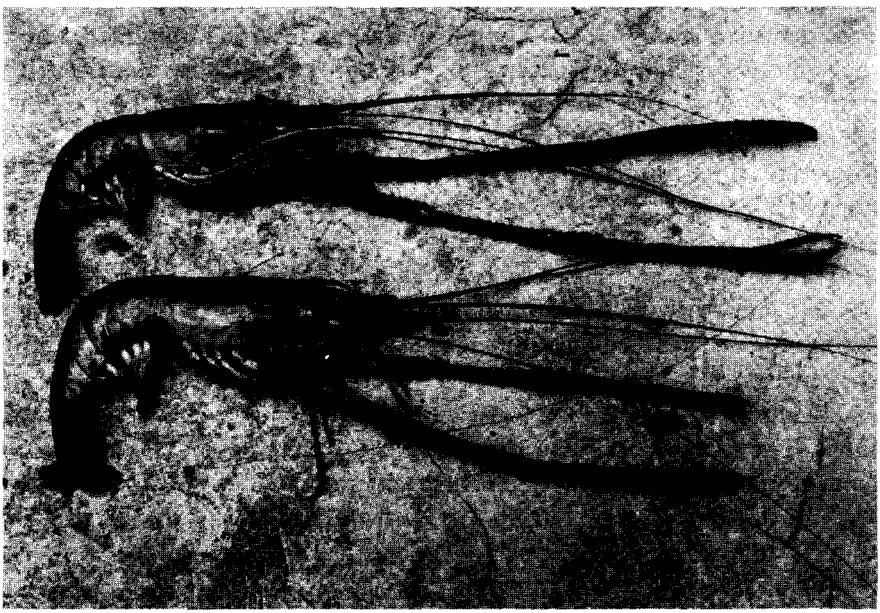

Fig. 1. Two forms of mature male *M. malcomsonii:* normal male above and feminises below.

than that of the feminises males. They possessed smooth carapace and chelipeds, and light coloration. Specimens were preserved and stored at FARS.

The potential advantages of the feminises compared to the normal form in culture are several. The smaller and lighter claws resulted in a tail yield of 51.4% in a 160-mm (eye to telson), 68-g specimen, compared to 36.4% in a 150-mm (eye to telson), 99-g normal male. The smaller second chelipeds reduced territorial area from holding tank observations, perhaps allowing greater stocking densities while reducing the size disparities at harvest. Coloration was an attractive light grey with a reddish tint similar to many penaeids.

Studies should be undertaken to determine the genetic basis of the feminises form. *M. malcomsonii* larval production in captivity is easily accomplished and larval culture appears similar to that of *M. rosenbergii* (unpublished data). It was also observed that a smaller normal male prevented a larger feminises male from spawning when the two were held together, but when the normal male was removed the feminises male readily spawned.

References

Ahmed, N. 1967. Prawn fishery of East Pakistan. Directorate of Fisheries, East Pakistan Government Press, Dacca. 43 p.

Holthuis, L.B. 1980. FAO species catalogue. Vol. 1. Shrimps and prawns of the world. FAO Fish. Synop. 125(1). 271 p.

Jhingran, V.G. 1975. Fish and fisheries of India. Hindustan Publ. Corp., Jawahar, Nagar (Delhi). 954 p.

Kibria, G. 1983. Shrimp fishery and shrimp culture. Jahan Printing Press, Satkhira, Khulna, Bangladesh. 124 p.

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