

Biological data of Burmese carplet *Amblypharyngodon atkinsonii* (Blyth, 1860) in South Myanmar (Cypriniformes Cyprinidae): a preliminary report

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ABSTRACT

The present paper reports on biological data of Burmese carplet, *Amblypharyngodon atkinsonii* (Blyth, 1860) in Tanintharyi River, Tavoy, Tanintharyi Division, South Myanmar. The study indicated that this fish is a surface and mid-water feeder. According to stomach content, it can be considered as planktivorous and insectivorous. Food items can be separated into five groups, namely phytoplanktons, zooplanktons, aquatic insects, plant materials and organic matters, the first two being the main items. Females of *A. atkinsonii* were found to be predominant. The length-weight relationship was related by the equation, $W = 0.0000031SL^{3.5221}$; ($R^2 = 0.94$). Fecundity ranged from 1,548–4,020 eggs. Fecundity-length relationship was related by the equation, $Fe = 0.88046SL^{1.9560}$; ($R^2 = 0.87$) and Fecundity-weight by $Fe = 914.4292W^{0.6182}$; ($R^2 = 0.88$).

KEY WORDS

Amblypharyngodon atkinsonii; feeding habit; fecundity; Myanmar.

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INTRODUCTION

The Tanintharyi River originates at Tanow Sri mountain range, frontier of Thailand and Myanmar at an altitude of 2,074 m. This river system runs through Tanintharyi Division, Southern Myanmar after passing by several towns, including Tagu, Banlaw, Wunna, Thamihla, Tharapon and Kahan and flows into the Andaman Sea at the Tanintharyi Estuary, Myeik City with a total length of about 250 kilometers. Tanintharyi River is a major river of southern Myanmar and a very important river basin (Grosberg, 2005), but very little is known about aquatic resources in this area, including biological data of fish populations.

The freshwater cyprinid fish genus, *Amblypharyngodon* Bleeker, 1860, order Cypriniformes Bleeker, 1859, family Cyprinidae Cuvier, 1817, has been reported from Indian Subcontinent to Southeast Asia (Blyth, 1860; Talwar & Jhingran, 1991; Kottelat, 2013; Doi, 1997).

In Myanmar, it comprises two valid species: *Amblypharyngodon mola* (Hamilton, 1822) reported from West to Central Myanmar and *A. atkinsonii* (Blyth, 1860) (Fig. 1) reported from Central to South Myanmar (Vidthayanon et al., 2005). In Myanmar it is poorly known, on the contrary, in India *A. mola* is a popular food, particularly in the Indian sub-continent. *Amblypharyngodon mola* is a species, mostly planktivorous, inhabiting in

ponds, reservoirs, slow-moving streams or main stream. The spawning season is all year round and fecundity was found to range from 1,021–13,812 eggs (Suresh et al., 2007; Gupta & Banerjee, 2013, 2014; Mondal & Kaviraj, 2013). At present, nothing is known on *A. atkinsonii*.

A survey project aimed at studying freshwater fishes in Tanintharyi River, Tavoy, Tanintharyi Division, South Myanmar was carried out in August 2014. Specimens of *A. atkinsonii* were collected by beach seine along with other fish including *Esomus ahli* Hora et Mukerji 1928, *Puntius chola* (Hamilton, 1822), *Mystus pulcher* (Chaudhuri, 1911), *Parambassis ranga* (Hamilton, 1822), *Trichogaster labiosa* Day, 1877, *Pseudopocryptes elongatus* (Cuvier, 1816), *Odontamblyopus rubicundus* (Hamilton, 1822) and others. The purpose of this study is provide new preliminary data on biology of *A. atkinsonii*.

ACRONYMS AND ABBREVIATIONS. Standard length = SL; head length = HL.

MATERIAL AND METHODS

Field study was carried out in August 2014. Fifteen specimens of Burmese carplet were collected by beach seine (1x1 mm). Feeding morphology was investigated according to Nakabo (2002); stomach content analysis was performed as in Hyslop (1980); sex, length-weight relationship and fecundity were studied as reported by Krebs (1998).

RESULTS

Feeding habit

Feeding morphology of Burmese carplet (Fig. 2) showed that the position of the mouth is in the upper part of the head (superior mouth), this character indicated that this fish is a surface and mid-water feeder. Average values of intestinal length (compared to standard length) is 300.77 ± 6.57 . Gill rakers are short, sparse, pointed in shape, average number of first gill rakers is 12 ± 3 . Particularly, *A. atkinsonii* is compressed, body length is about 42–54 mm, body depth is 33.6–35.5% SL. Head

length is 26.6–26.8% SL. Eye is large, eye diameter is 25.7–27.3%HL (7.3–7.6% SL). Post orbital length is 66.7–67.1% HL (17.7–18.6% SL), snout length is short, 12.1–14.9% HL (3.2–4.6% SL) and interorbital width is 37.3–39.2% HL (10.2–10.8% SL). Based on stomach content analysis, the fish can be considered as planktivorous and benthivorous. Food items can be separated into five groups, i.e. phytoplanktons, zooplanktons, aquatic insects, plant materials and organic matters. Phytoplanktons and zooplanktons were the main ones.

Sex

The number of female specimens we found was higher than males, namely 11 females and 5 males. This finding is in line with other papers reporting on sex ration in *A. mola* (see Afroze et al., 1991; Mondal & Kaviraj, 2013; Gupta & Banerjee, 2013; 2014).

Length-Weight relationship

Total length ranged from 42 mm to 54 mm and weight from 1.63 to 3.9 grams. The length-weight relationship equation (sexes combined) was:

$$W = 0.0000031SL^{3.5221} \\ (R^2 = 0.94)$$

Where

W = weight of specimens (g)
SL = standard length of specimens (mm)

Fecundity

Fecundity ranged from 1,548–4,020 eggs. Linear relationships were estimated between fecundity and standard length and weight, respectively.

Fecundity - Length relationship

$$Fe = 0.88046SL^{1.9560} \\ (R^2 = 0.87)$$

Where

Fe = fecundity of specimens (eggs)
SL = standard length of specimens (cm)

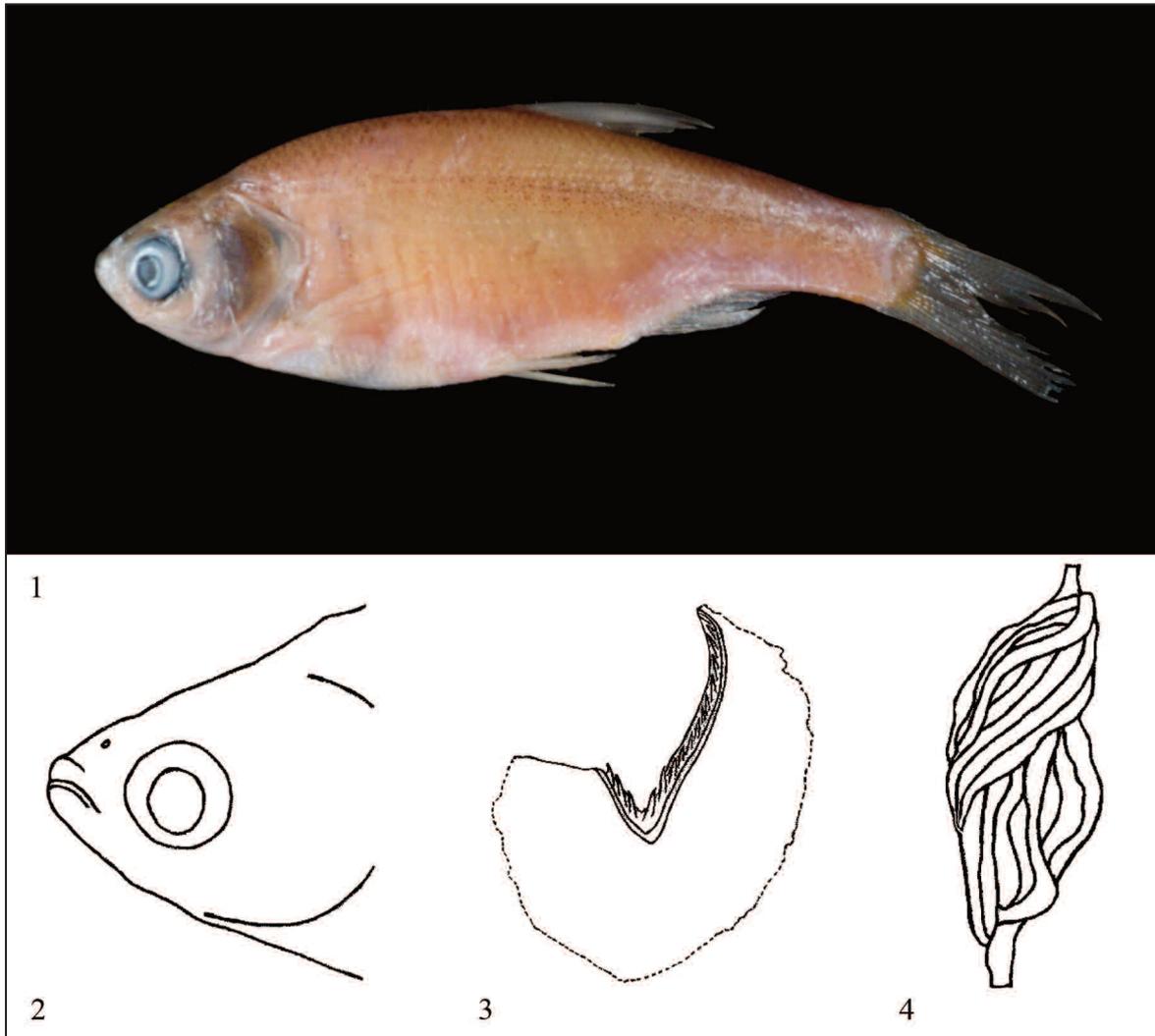


Figure 1. *Amblypharyngodon atkinsonii*, 54 mm SL, from South Myanmar. Figures 2–4. Feeding morphology of *Amblypharyngodon atkinsonii*; Figure 2. The position of the mouth, Figure 3. Gill rakers, Figure 4. Intestine.

Fecundity - Weight relationship

$$Fe = 914.4292W^{0.6182}$$

($R^2 = 0.88$)

Where

Fe = fecundity of specimens (eggs)

W = weight of specimens (g)

CONCLUSIONS

Very preliminary data discussed herein suggest

that Burmese carplet in South Myanmar is planktivorous and benthivorous; fecundity (1,548–4,020 eggs) was found to be related to body length and weight.

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