

Short note :

NOTES ON SOME BIOLOGICAL ASPECTS OF *Nemachilus fasciatus* IN CISADANE RIVER, BOGOR, INDONESIA.

by

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Preliminary study on some biological aspect of *Nemachilus fasciatus*, namely spatial distribution, reproduction and food habits were carried out in Cisadane River, Bogor, West Java, Indonesia. The study was carried out between March and August 1986. The fish were collected using electrofishing gear apparatus operated for a period of 15 minutes in each habitat type.

Table 1. The individual number and standard length (mm) of *N. fasciatus* at each habitat type in three sampling stations of Cisadane River.

Current Bottom texture	0.2 - 0.4 m/sec(Moderate)		0.4 - 1.00 m/sec(Fast)		1.00 m/sec(Torrent)	
	Depth		Depth		Depth	
	Moderate	Deep	Moderate	Deep	Moderate	Deep
Sand	x	x	x	3 (61.5-67.2)	x	0
Gravel	x	2 (54.0-54.9)	x	x	x	x
Pebble	x	x	1 (63.4)	5 (44.4-66.5)	3 (63.0-68.8)	9 (53.0-67.2)
Big stoes	x	x	3 (6.3-68.6)	4 (48.7-60.6)	0	6 (54.0-67.6)
Big stone and rock	x	x	0	2 ?	x	1 (69.3)
Rock	x	0	0	3 (56.0-43.1)	0	1 (38.1)

Notes : Number between brackets indicates standard length of individuals. x : in the habitat mentioned do not exist. Moderate depth : 20 - 50 cm; deep depth : 50 cm or more

The standard length, body weight and gonade maturity of the fish collected from the river were measured. The Gonade Mature Index (GMI) was calculated according to Benegal and Braum (1978)

method (Eggs and early life history. In : T. Benegal (Ed.) *Method for assesment of fish production in fresh water*. Blackwell Scientific Publication, Oxford. 365 pp).

It was found that the fish has the habit to occupy the stony substances, deep waters and fast torrent current stream. (Table 1). As they do not have adhesive organs on the belly to adhere to stones, the fish inhabit crevices and stay in a position not directly opposing the fast-torrent current. This was fascilitated by their small body size (90 mm standard length) and slightly stream line, enabling them to well easier in such a type of habitat. It was also found that there were no habitat segregation between fingerlings and mature fish.

A part from being used for hiding, stony substrates may also act as feeding sites. Upon gut content analysis, it was found that the fish feed mainly on insects, mostly Ephemeroptera.

Table 2. Gonade mature Index (GMI), Fecundity (F) and the regression value and correlation between Standard Length (SL) and Fecundity (F), and between Body Weight (BW) and Fecundity (F) of matured fish.

GMI (%)	Fecundity	Regression value (log y x log x)
March : 14.21 (n = 6)	1659 - 6476 (n = 6)	
April : 21.15 (n = 7)	4190 - 10107 (n = 5)	
May : 14.52 (n = 3)	x	
June : 16.96 (n = 2)	8470 (n = 1)	
July : 6.79 (n = 2)	x	
August : 9.14 (n = 3)	x	
		SL x F (n = 12)
		Y = -4.753 + 1.63 x
		r = 0.485 (n.s)
		BW x F (n = 12)
		Y = 2.504 + 2.251 x
		r = 0.880 *

* Significantly different at 0.1 % level.

Table 2 shows that the highest GMI value was in April, indicating that the month of April is one of the peak(s) of it spawning seasons. Upon direct observation on the river it was found that the water level was low, flows between stones. It was found that a large number of Ephemeroptera larvae were abundant on stone surface. It is likely that the peak of the fish spawning season coincides with the abundance of its natural food resouces.

It is also seen from Table 2 that there is a significance correlation between the fish fecundity and body weight, the heavier the body the higher the fecundity. However, there is no correlation between the standard length and the fecundity. The fishes have the Gonade Mature Index (GMI) value ranging between 6.79 - 21.15%. According to Benegal (1978) (Aspects of fish fecundity. In : *Ecology of freshwater fish production*. S.D. Gerking (Ed.). Blackwell Scientific Publication, Oxford. 520 pp) fishes having the GMI value less than 20% belong to groups which spawns several times in a year.