Short note : NOTES ON SOME BIOLOGICAL ASPECTS OF Nemachilus fasciatus IN CISADANE RIVER, BOGOR, INDONESIA.

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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.

Current	0.2 - 0.4 m/sec(Moderate) Depth		0.4 - 1.00 m/sec(Fast) Depth		1.00 m/sec(Torrent) Depth	
Bottom						
texture	Moderate	Deep	Moderate	Deep	Moderate	Deep
Sand	x	x	x - (1 = n) (3 (61.5-67.2)	16.06 (n = 2)	0
Gravel	x	2 (54.0-54.9)	X×	x	6 7 x (1 = 2) 9 14 (1 = 3)	X
Pebble	$Y = \frac{X}{2}753 + 1.6$	x	1 (63.4)	5 (44.4-66.5)	3 (63.0-68.8)	9 (53.0-67.2)
Big stoes	х В 11 в 11 (п. е. 1	x	3 (6.3-68.6)	4 (48.7-60.6)	0	6 (54.0-67.6)
Big stone and rock	x 50402 x 5 Y	x	0	2 ?	x	1 (69.3)
Rock	X	0	0	3 (56.0-43.1)	0 dy dijjerent ot 1	1 (38.1)

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

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 assessment 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	Regn	ession value (l	og y x log x)
	14.21 (n = 1.15 (n = 7		9 - 6476 (n = 6 0 - 10107 (n =		Moderate	on Albittan anutzet ndea
	14.52 $(n = 1)$ 16.96 $(n = 1)$	Contraction of the second second second	$\begin{array}{c} x \\ 0 & (n = 1) \end{array}$	Č.,		Sand
	9.14 (n = 2)					
					SL x F (n = 1) Y = -4.753 + 1 r = 0.485 (n	1.63 x
					BW x F ($n =$	23032 gill 12)
		s			Y = 2.504 + 2 r = 0.880 *	2.251 x
4		2	0	0	T.	Vanti

* 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.

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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 betwen 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.

a dilary, with many flowered inflorescense; the Hower being yellow streakly at first which later turn crange or brange by two alterwards (Backet and van den Brink Jr. in Flora of Java Vol. 1 + 583-585, 1963). Observations were made on insect visions the quanting flowers of C urasamoensis which grew wild at foremany stang and Sindangbarang area in the district of Bogor. As many as 15 species of masers visitors were found frequented the flowers. They considered of Distoral Drosophy Educ (2 species), Syrphidae (1 species), Muscidae (1 species): Lenkingers : Jamides sp. (1 species). Jamides prototorous, Helpe sp. (1 species), Hesperidae (1 species), Hymneon area : Aylo obs helpes. X confuse, Components irritansmel, Competions, Sp.

Pollmation of flowers in C unitermotive was becaut when obdenotes are visited by appropriate insect visitors, as its anters and pollitis are located hidden in the flowers parts which is called can be (hig. 1) and is very hard for most insect visitors to break drivingh (mong all insect flower visitors, only those having burge body and strong month parts, X. latipes, X. confuse and M. oppette (for 2) the able to overcome the problem, exabling the pollmation protects to take place.

The presence of rough and long han over the body and logs of the three species of bees play important a site of corrying policit group body flowers they visited. Hous on the ventral abdomain of bit composita are evenly woven to form a policin basket. Policit grains from the flower adhering to the here have are transported to other flowers.

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