

BIOLOGY AND MORPHOMETRY STUDY OF DREPANE PUNCTATA

(CUV & VAL) AT JUVENILE STAGE OF BOMBAY COAST

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ABSTRACT

The metric and meristic characters of *Drepane punctata* from Versova fish landing Centre of Bombay have been studied. The meristic characters showed considerable variations. The number of dorsal fin rays were relatively stable characters. Statistical interpretation of metric data indicated that there is a direct relationship between the preanal, predorsal in relation to total length and eye-diameter in relation to head length.

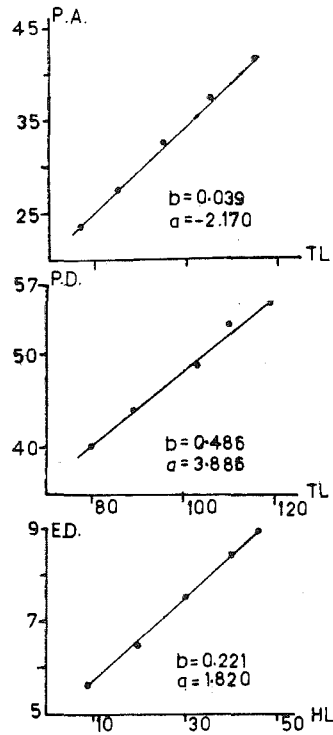
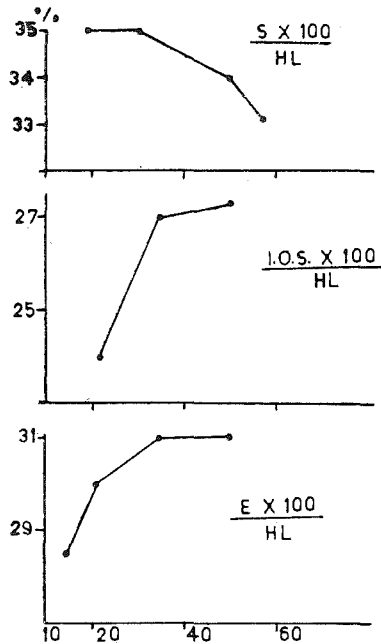
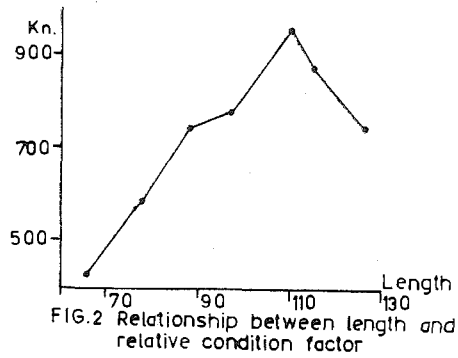
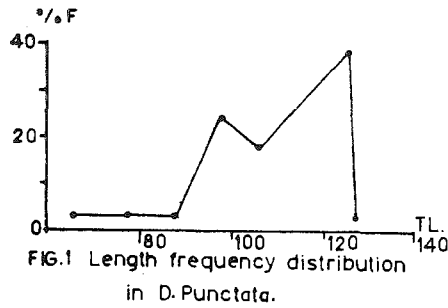
INTRODUCTION

The genus *Drepane* was first created by Cuv & Val to distinguish the deep bodied quadrangular fishes with long acythe like pectorals, tapering to the base of caudal. Prior to the above writers, these species were included by Linnaeus in the genus *Chaetodon* owing to their similarity in size and shape and also to the similarity in the possession of the brilliant silvery glose on sides, Bloch, Lacepede and Russel (1801), followed. Linnaeus in the nomenclature of the genus and added a few more species.

Day (1958) described this species from the Red Sea and east coast of Africa through the seas of India to Australia.

MATERIALS AND METHODS

For the present study 200 specimens of *D. punctata* were collected during December to February, 1980, from Versova Fish landing Centre for study of length frequency, condition factor, metric, meristic, and sex ratio.



The total length frequency distribution of *D. punctata* are given in (fig. 1), for graphic representation, the frequencies were converted in to percentage and these were plotted against the respective length groups. Although the influence on length frequency distribution are based on large number of samples taken as cross section of the samples analysed has been given so as to get an over all picture of the different age groups present in the commercial catch.

The relative condition factors K_n (Le cren 1951) of *Dr. punctata* was calculated by employing the formula $K_n = w/W$ where w is the observed weight are plotted (Fig. 2) and their relationship with observed and calculated weight are in table-3.

The metric and meristic characters were made as per standard procedure adopted earlier by Dwivedi and Menezes (1974). The length of specimens ranged from 60-130 mm.

RESULTS AND DISCUSSION

Metric characters studied are preanal pre dorsal in relation to total length and eyediameter in relation to head length were studied. The index values for snout length, inter orbital space and eyediameter have been made with reference to head length (Fig. 3). The regression of pre anal (0.035) pre dorsal (0.486) and eye diameter (0.221) were studied (Fig 4).

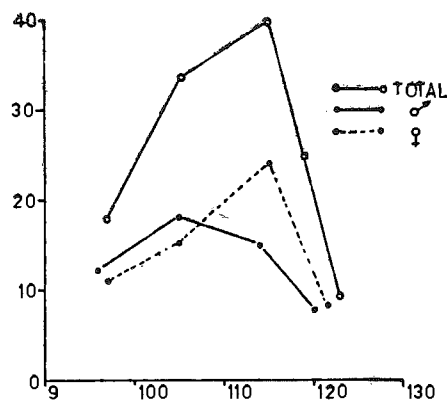


FIG.5. Sex percentage in Dsepane-punctata.

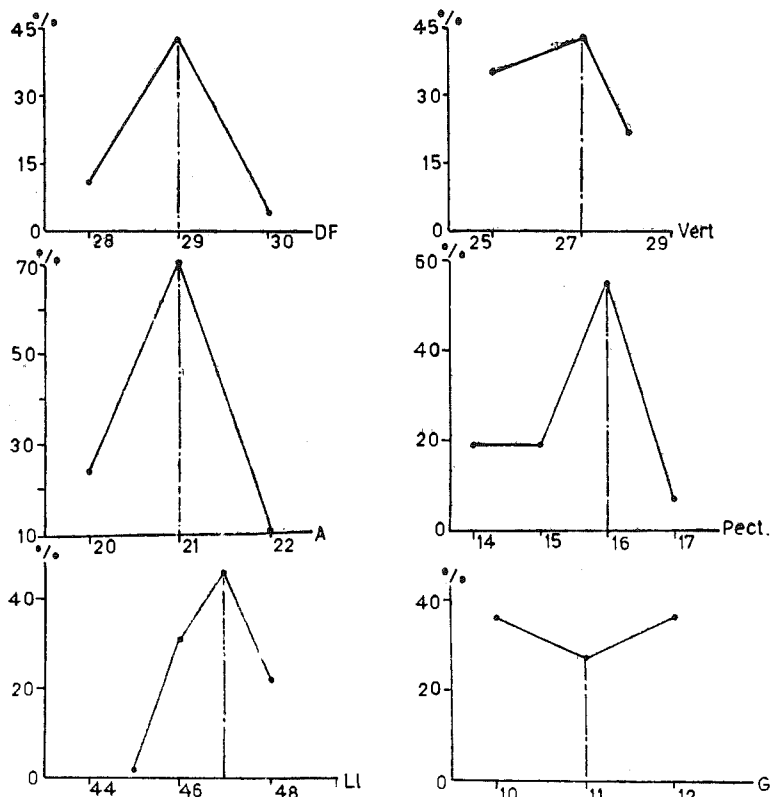


FIG 6 Frequency Polygons for number of Dorsal finrays (DF), Pectoral finrays (Pect.), Anal finrays (A), Lateral line scale (LI), Vertebrae (Vert) & Gill rakers (GR).

The ratio of females to males in the over all sample was 13:7. The females being comparatively more abundant than males (Fig. 5).

Amongst the meristic characters, the number of lateral line scales, vertebrae, gill rakers and fin rays of dorsal, pectoral, ventral, anal and caudal fins have been studied. Their mean values, variations, standard error and coefficient of variations are given in Table-2 and their percentage frequency distribution is shown in (Fig. 6).

The number of dorsal, pectoral, ventral, anal, caudal fin rays and lateral line scales show differences from that of earlier authors Day (1958) and Munro (1955). From coefficient of variation of meristic characters, it seems that dorsal fin are stable characters.

The result of the meristic characters of *D. Punctata* has been given along with earlier authors in Table-2. It is clear from this table that present studies of meristic characters are quite different from that of Day (1958) and Munro (1955).

Hence the stable species characters, the number of dorsal fin rays can help in characterizing the species and in studying the localized population.

The value of K_n is highest at 110 mm may be due to attainment of first maturity.

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TABLE 1

Variation of Meristic Characters in *D. Punctata*.

Characters	Range	Mode	Mean	± Standard error*	Co-efficient of variation
Dorsal fin rays	28-29	28	29	± 0.04	0.14
Pectoral fin rays	14-17	15	15.51	± 0.22	5.00
Anal fin rays	20-22	21	21	± 0.04	4.70
Lateral line scales	45-48	46	47	± 0.34	4.53
Gill rakers	10-12	11	22	± 0.02	2.45
Vertabrae	25-28	27	27.5	± 0.03	4.58

* .95% level of confidence.

TABLE 2

Meristic Characters in *D. Punctata*

Authors	FINRAYS					Lateral line scales	Gill rakers	Vert.
	Dorsal	Pectoral	Ventral	Anal	Caudal			
Day (1958)	8-9/21-22	17	1/5	3/18-19	15	50-55	—	—
Munro (1955)	8-9/10-22	—	—	3/17-19	—	50-55	—	—
Present study	8/20-22	14-17	1/4	3/17-19	19	46-48	10-12	25-28

TABLE — 3

Value of Relative Condition Factor in Relation to Observed and

Calculated weight

Characters							
Observed weight	6.0	9.5	15.0	18.0	24.0	32.0	43.2
Calculated weight	14.13	17.36	20.19	22.74	22.0	27.82	30.94
Relative condition factor	0.429	0.588	0.730	0.783	0.960	0.875	0.750
