



Physical morphology of the mandarin dogfish *Cirrhigaleus barbifer* (Squalidae) from Gili Air, Indonesia

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Summary

Despite its rarity, the mandarin dogfish *Cirrhigaleus barbifer* has been sighted at fish landing site in Bali and Lombok. However, the specimen in this research came from a male *C. barbifer* found dead and floating on the surface in one of the SCUBA diving site on Gili Air, Indonesia on March 3rd 2018. The limited data record of *C. barbifer* makes every specimen is valuable to understand the biology of this species. This research examined the external and internal morphology of the *C. barbifer*. The specimen was weighted, measured, and dissected. All the measurements was done by following the guideline from Compagno (2002) using a measurement tape. The specimen is 3.4 kg in weight. Three main features of *C. barbifer* are the absence of anal fin, spine in two dorsal fins and barbels on the anterior nasal flaps. Results from key measurement as follow: 81.6 cm Total Length; 69.8 cm Pre-Caudal Length; 16.5 cm Head Length; 22 cm Inter-Dorsal Space. From the dissection, a fishing hook was found at the beginning of the stomach, showing that this specimen encountered a threat from fishing activity and most likely the cause of death. The rest of stomach content could not be identified since it had been heavily digested. The information from this research hopefully can be used as new knowledge of *C. barbifer*, especially because of its deep water habitat that is beyond the reach of SCUBA diver.

Introduction

A male Dogfish (*Squalidae*) was found dead and floating (the belly facing up) at the surface of Han's Reef (A dive site in Gili Islands, West Nusa Tenggara) on Saturday March 3rd 2018 around 3.30 PM. It was spotted by Beta, Oceans5 dive boat captain. It was then recovered to the boat and taken back to the dive shop. Then, Oceans5 management decided to give the dead shark to Gili Shark Conservation (GSC) team for storage and further investigation.

Half of the head are gone as well as the two eyes. No sign of spear gun, fishing hook, or any other damage on the external organs. However, there are already slimes coming out from the body. The most recognizable features are the two spines at the first and second dorsal fins. Anal fins are not presence.



Results

The next day, Sunday March 4th 2018, the shark was weighted, measured, and dissected by GSC team following the guideline from Compagno (2002) as shown Figure 1 and 2. From the dissection, a fishing hook was found at the beginning of the stomach. The rest of stomach content could not be identified since it had been heavily digested. The liver took 80% of the internal organs which is quite big even for a shark (Figure 3 and 4).

The details are shown below.

Location : Han's Reef, North East of Gili Air, West Nusa Tenggara, Indonesia

DD/MM/YYYY : 03/03/2018

Boat Name/Capacity : IDC Gili Island (Oceans5)/15 persons

Longitude/Latitude : 116.088/-8.352

TL (cm) : 81.6

Weight (kg) : 3.4

Sex : Male

Clasper (cm) : 8.6

Spine Length (cm) : 5 cm

Results from main longitudinal Measurement

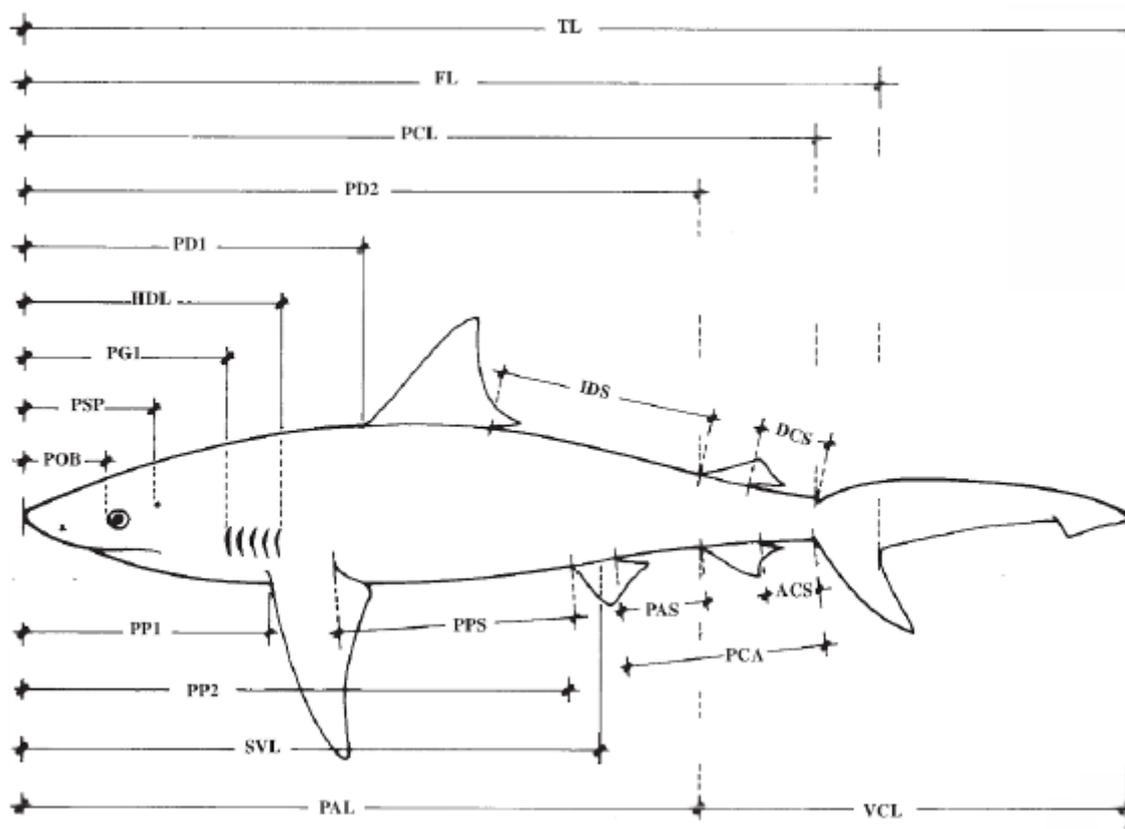


Figure 1. Main longitudinal measurement

TL	81.6 cm	PG1	N/A	PAS	N/A
FL	77.7 cm	PSP	9 cm	ACS	N/A
PCL	69.8 cm	POB	7.5 cm	PCA	23.4 cm
PD2	57 cm	PP1	15.2 cm	VCL	N/A
PD1	28.1 cm	PPS	25.4 cm		
IDS	22 cm	PP2	45.6 cm		
DCS	14.5 cm	SVL	48 cm		
HDL	16.5 cm	PAL	N/A		

Results from others measurement

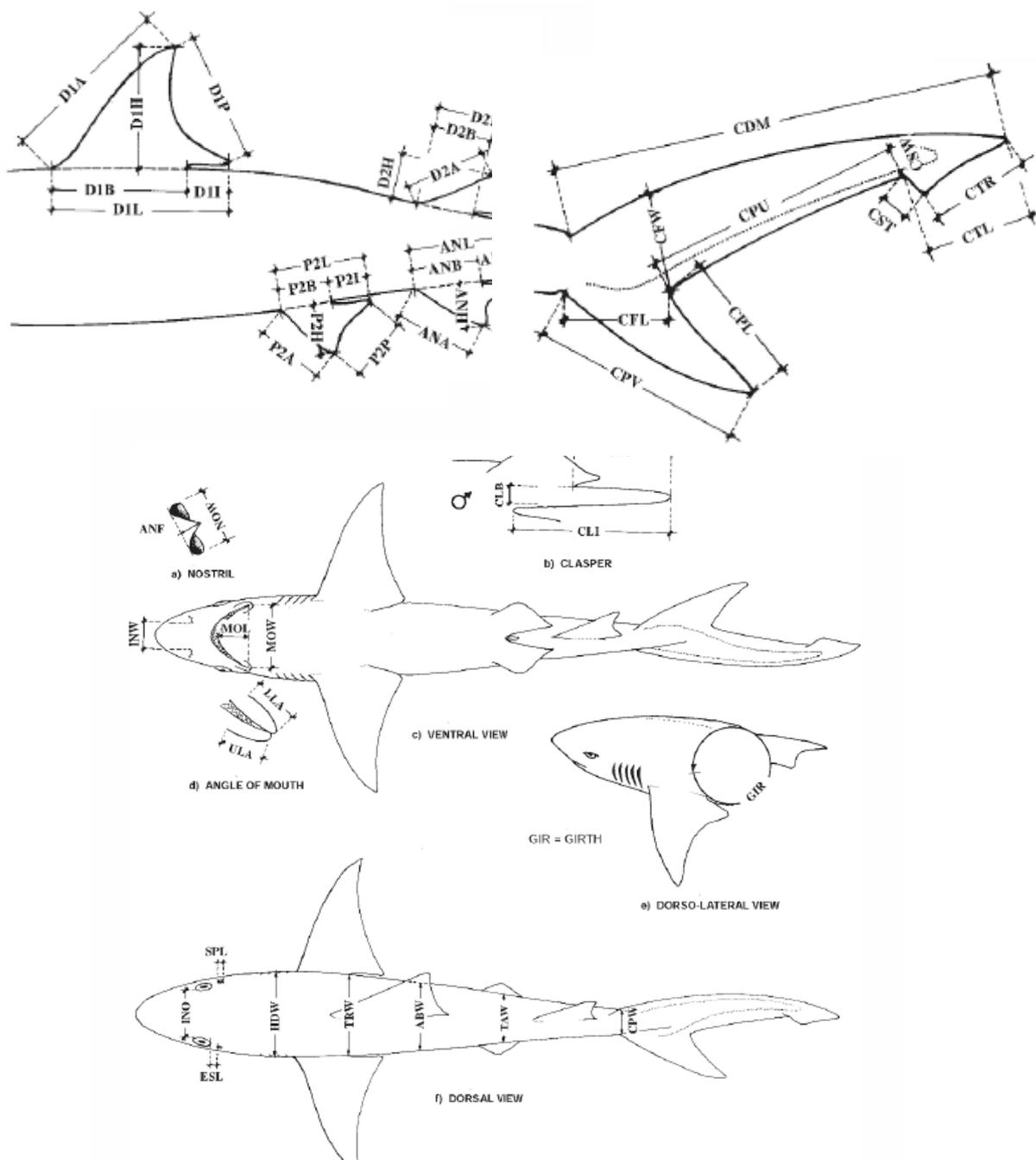


Figure 2. Other measurement

INO	N/A	ANF	N/A	INW	N/A	GS5	2.1 cm
ESL	2.5 cm	NOW	1.5 cm	MOL	N/A	ING	4 cm
SPL	1.4 cm	ULA	3 cm	MOW	7 cm	P1A	12.3 cm



HDW	13 cm	LLA	5 cm	PRN	3.7 cm	P1R	11.9 cm
TRW	15 cm	CLO	4 cm	POR	5.1 cm	P1I	5.8 cm
ABW	14.4 cm	CLB	2 cm	EYL	2.9 cm	P1P	9.6 cm
TAW	8.1 cm	CLI	8.6 cm	EYH	1.5 cm	P1H	11 cm
CPW	3.2 cm	GIR	12.8 cm	GS1	1.5 cm	P1L	11.1 cm

D1A	9.8 cm	D2A	10.2 cm	P2A	6 cm
D1P	8.9 cm	D2P	8 cm	P2P	6.5 cm
D1H	8 cm	D2H	7 cm	P1H	5 cm
D1B	7 cm	D2B	8.1 cm	P1B	4.3 cm
D1I	5 cm	D2I	2.5 cm	P2I	4 cm
D1L	11 cm	D2L	11 cm	P2L	10.5
CDM	13.5 cm	CPU	12 cm	CFW	8.9 cm
CSW	6.4 cm	CFL	8 cm	CPL	3 cm
CST	7.4 cm	CTR	7.1 cm	CTL	7.1 cm



Figure 3. The adult male mandarin dogfish during measurement and dissection. Inset: the presence of clasper showing this is a male.



Figure 4. The liver of mandarin dogfish.



Reference

Compagno, L. (2002). Sharks of the world. Rome: Food and Agriculture Organization of the United Nations.