

**First Records of the Combtooth Dogfish Shark,
Centroscyllium nigrum (Chondrichthyes: Squalidae)
from the Pacific Subantarctic of Chile**

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The combtooth dogfish, *Centroscyllium nigrum* Garman 1899, is a small, deepwater squaloid shark that lives in the eastern Pacific. Five juvenile male specimens of *C. nigrum*, reported here for the first time, were trawled from three deep water localities in the Strait of Magellan in the Pacific subantarctic of Chile below 53°S (Fig. 1). These specimens represent the southernmost distribution of *C. nigrum* in the Pacific.

The southern Chilean *C. nigrum* specimens were captured on or near the bottom at depths from 269 m to 869 m in a 1.5 m Blake trawl by the United States Naval Ship (USNS) *Eltanin* in the spring of 1966, but their capture localities have not been published until now. The specimens are curated in the Los Angeles County Museum of Natural History (LACM).

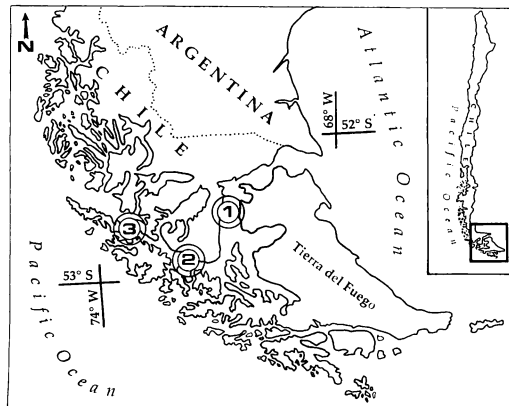


Fig. 1. Map of southern South America showing *Centroscyllium nigrum* capture localities at USNS *Eltanin* stations (circled numbers) in the Strait of Magellan off southern Chile. 1) Station 1602; 2) station 1603; 3) station 1604.

***Centroscyllium nigrum* Garman, 1899
(Fig. 2a-c)**

Material examined. LACM 11155-1A (male, 330 mm TL, Fig. 2a), LACM 11155-1B (male, 291 mm TL), both were trawled from a 311 m bottom on 31 March 1966, from 53°24'S, 70°51'W to 53°26'S, 70°48'W (USNS *Eltanin* station 1602, fig. 1: 1), in the Strait of Magellan south of Punta Arenas; LACM 11156-1A (male, 204 mm TL), LACM 11156-1B (male, 132 mm TL, Fig. 2c), both were trawled from a 269 m bottom on 1 April 1966, from 53°51'S, 71°36'W to 53°50'S, 71°41'W (USNS *Eltanin* station 1603, fig. 1: 2), in the Strait of Magellan between Peninsula de Brunswick and Isla Clarence; LACM 11157-2 (male, 282 mm TL, Fig. 2b), trawled from a 869 m bottom on 1 April 1966, from 53°21'S, 73°02'W to 53°19'S, 73°07'W (USNS *Eltanin* station 1604, fig. 1: 3), in the Strait of Magellan between the northern end of Peninsula Cordova and the south end of Isla Desolacion.

Description. Percent proportions of selected measurements are listed in Table 1. Tricuspidate upper and lower teeth; body moderately stout; luminous glands closely distributed on the belly; overall color blackish-brown lacking conspicuous black markings on the lateral and ventral areas of the body; white or decolored posterior edges of the dorsal, pectoral, pelvic, anal, and caudal fins; abdomen and caudal peduncle relatively short; mouth relatively short and low arched, less than a third high as wide; dorsal fins low; although second dorsal fin is slightly higher than first dorsal fin, the dorsal fins are relatively the same length; posterior edge of the pectoral fins reaches to below dorsal spine when depressed against body; dorsal spines separated from dorsal fins by small gap, second dorsal spine longer than first dorsal spine; claspers not well-developed; larger specimens (204, 282, 291, and 330 mm TL) with dermal denticles throughout body, smaller specimen (132 mm TL) lacks denticles on abdomen and back and on pineal window on top of head.

Remarks. Compagno's (1984) species key for *Centroscyllium* is provisional, but the suite of characters used by Compagno (1984) to diagnose *C. nigrum* from other *Centroscyllium* species are found in the southern Chilean specimens and lead to identification as *C. nigrum*. *Centroscyllium granulatum* is also found along southern Chile and on the Falkland Plateau in the southwestern Atlantic (Compagno, 1984; Melendez, 1988). *Centroscyllium granulatum* has the following characters (after Compagno, 1984) not found in *C. nigrum* or the southern Chilean *Centroscyllium* specimens: the second dorsal fin is considerably larger and longer than the first; the fins

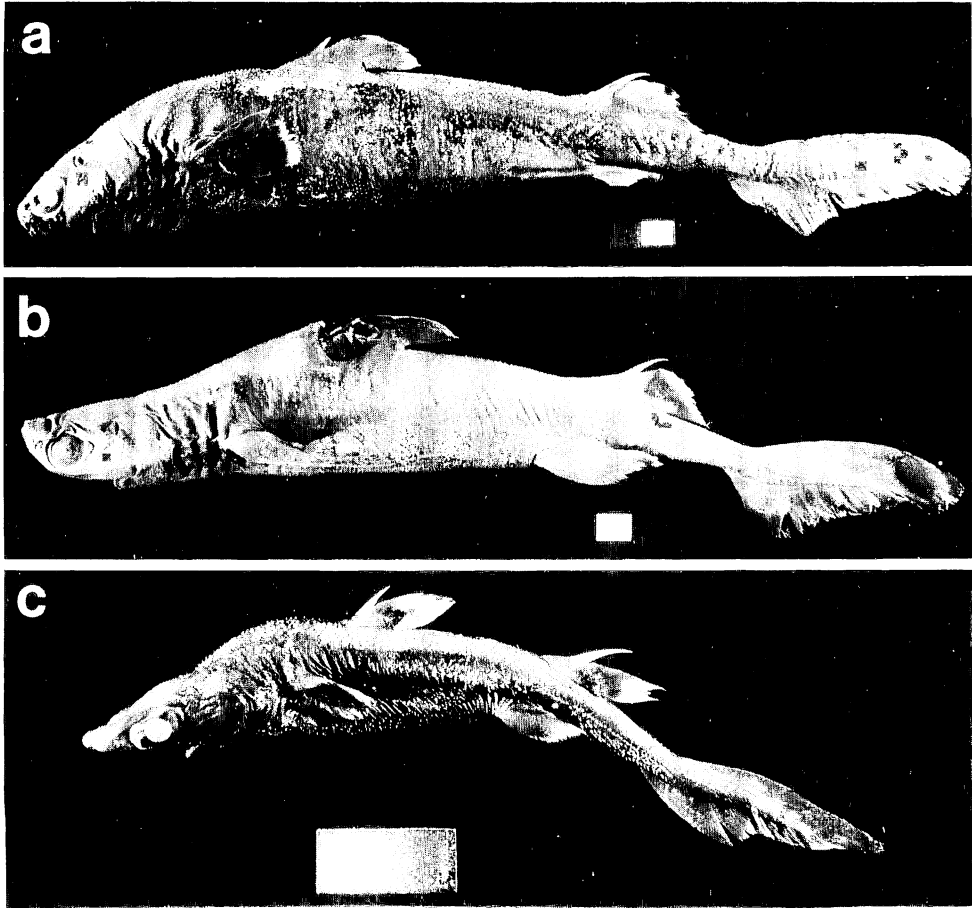


Fig. 2. Photographs of alcohol-preserved specimens of *Centroscyllum nigrum* captured in the Strait of Magellan off southern Chile. a) LACM 11155-1A, a 330 mm TL male; b) LACM 11157-2, a 282 mm TL male, the area anterior to the first dorsal spine is parasitized by the parasitic barnacle *Anelasma* sp. (see Long and Waggoner, 1993), causing the pathological condition; c) 11156-1B, a 132 mm TL male. White scale bar in all photos equals 1 cm.

lack a decolored margin; when depressed against the body, the posterior margin of the pectoral fin terminates anterior to below the origin of the 1st dorsal spine; the abdomen and caudal peduncle are proportionately long; the mouth is more arched. Additionally, this species matures at 28 cm (Compagno, 1984), but three of the southern Chilean *Centroscyllum* specimens longer than 28 cm are immature.

The southern Chilean specimens described here represent the southernmost distribution of *Centroscyllum nigrum*, which was previously known from around the Hawaiian Islands, along the coasts of the Pacific along southern California, Central and northern South America, to the Cocos and Galapagos

Islands, and along the central coast of Chile (de Buen, 1960; Eschmeyer et al., 1983; Compagno, 1984). The previous southern limit of *C. nigrum* was based on two specimens of *C. granulatus* (= *C. nigrum* in Compagno, 1984) collected from 400 meters off Punta Angeles near Valparaiso, along the central Chilean coast at about 33°S (de Buen, 1960). The additional specimens from the Strait of Magellan (53°S) extend the range of *C. nigrum* 20° and about 2300 km southward. *Centroscyllum nigrum* is now known from the Pacific subantarctic.

The specimens were small males (the largest at 330 mm TL), all with poorly-developed claspers, indicating that they were not yet reproductively mature;

Table 1. Proportional measurements expressed as a percentage of the total length of *Centroscyllium nigrum* from southern Chile. Measurements after Compagno (1984) and Shirai and Nakaya (1990)

Specimen	11155-1A	11155-1B	11156-1A	11156-1B	11157-2
Total length (mm)	330	291	204	132	282
Snout to vent	58.2	58.1	57.4	55.3	58.9
Vent to lower caudal origin	41.8	41.9	41.7	44.7	41.1
Snout to 1st dorsal fin	29.7	30.6	32.4	31.4	30.1
Upper caudal lobe length	22.1	22.7	24.0	27.3	23.8
Caudal peduncle height	3.3	2.9	2.9	3.4	2.8
Head length	23.5	22.3	23.8	27.8	22.5
Snout to mouth	7.7	8.2	9.1	11.0	8.7
Snout to inner nostril	3.3	3.4	3.4	4.9	3.4
Mouth width	12.3	10.1	10.8	14.8	11.2
Mouth height	1.7	1.7	2.2	2.2	1.8
Pectoral fin length	9.4	9.6	10.8	10.6	9.2
1st dorsal fin height	4.1	4.6	4.2	3.8	3.5
1st dorsal fin total length	10.3	10.0	10.8	14.4	10.3
1st dorsal fin base length	4.7	4.5	4.2	4.6	5.0
1st dorsal spine length	2.3	3.3	3.9	4.5	1.6
2nd dorsal fin height	5.3	5.3	4.7	3.9	5.1
2nd dorsal fin total length	10.3	10.0	10.5	14.5	9.2
2nd dorsal fin base length	4.6	4.1	4.4	4.7	4.8
2nd dorsal spine length	5.5	5.2	6.4	7.1	4.4
Interspace between:					
Pectoral and pelvic fins	26.2	27.3	27.9	21.2	26.6
2nd dorsal and upper caudal	11.2	10.0	10.5	9.8	8.9
Pelvic and lower caudal	12.7	13.6	12.0	13.6	13.8
1st and 2nd dorsal	18.9	19.1	17.4	15.5	18.3

Compagno (1984) said that this species probably reaches maturity at 35 cm. The 132 mm TL specimen has a umbilical scar on the abdomen midway between the insertions of the pectoral fins, and was probably born shortly before capture, suggesting that *C. nigrum* are born at a smaller size than other *Centroscyllium* species (see Templeman, 1963).

The skin of adult *Centroscyllium* (except *C. kamoharai*) is covered almost entirely with dermal denticles (Shirai and Nakaya, 1990). The embryos of *C. excelsum* examined by Shirai and Nakaya (1990) lacked dermal denticles. The 132 mm TL southern Chilean specimen had dermal denticles on the most of the body, except on the lateral sides of the abdomen, on the back between the dorsal fins, and on the center of the top of the head. As noted by Gilbert (1905) and Shirai and Nakaya (1990) squamation development in *Centroscyllium* may be ontogenetic.

Acknowledgments

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Southern Chilean *Centroscyllum nigrum*

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チリ沖亜寒帯海域から初めて記録されたカシミザメ属の一種, *Centroscyllum nigrum*

Douglas J. Long

マゼラン海峡(南緯 53°以南)において, 1966年春に, 5個体のカシミザメ属(*Centroscyllum*)魚類が採集された。これらの標本はいずれも未成熟(全長 132-320 mm TL)であったが, 背鰭の位置, 色彩などで, *C. nigrum* の標徴に一致する。東部太平洋海域における同種の分布範囲は南緯 33° のチリ中部より北方とされており, さらに南方に 2300 余 km 広い範囲に同種が棲息するものと考えられる。これらの個体から得られ *C. nigrum* の生物学的な知見についてもあわせて報告した。