

New records of Sharks, *Sphyrna lewini* and *Alopias vulpinus* (Pisces: Elasmobranchii) in Korea

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ABSTRACT

Two species of *Sphyrna lewini* (Griffith and Smith, 1834) and *Alopias vulpinus* (Bonnaterra, 1788) belonging to the Elasmobranchii were collected for the first time from the western coast of Korea. *S. lewini* is similar to *S. zygaena*, but differs in some morphological characters: a prominent median indentation on anterior margin of head and free rear tip of second dorsal nearly reaching upper caudal origin. *A. vulpinus* differs from *A. pelagicus* in having labial furrows, long terminal lobe and white ventral coloration extending above the pectoral fin bases.

Key words: Elasmobranchii, *Alopias vulpinus*, *Sphyrna lewini*, Korean fish fauna.

INTRODUCTION

The living sharks comprise approximately 350 species in the world (Compagno, 1984). Since the sharks of Korea was first reported by Jordan and Metz (1913) with 8 species, Mori (1952) and Chyung (1977) treated 36 species of sharks (Elasmobranchii) found in the waters around the Korean Peninsula. Two species of *Sphyrna lewini* and *Alopias vulpinus* were redescribed as new record to the fish fauna of Korea.

MATERIALS AND METHODS

Sphyrna lewini was collected from off Cheju Isl., Korea by fisherman, July 10, 1996 and *Alopias vulpinus* from off Kunsan, Chollabuk-do, Korea, October 10, 1996. Proportional measurements for specimens and terminology for external characters were made according to Compagno (1984) and expressed in percent of total length. The specimens were deposited in Department of Marine Living Resources, Kunsan National University (KNUM), Korea.

SYSTEMATIC ACCOUNTS

Family Sphyrnidae Gill, 1872

Genus *Sphyrna* Rafinesque, 1810

Key to species of family Sphyrnidae of Korea

- 1a. No median indentation on anterior margin of head (Fig. 1A). Free rear tip of second dorsal fin well ahead of upper caudal origin. Anal base about as large as second dorsal fin base (Fig. 2A)
 *Sphyrna zygaena*
- 1b. A prominent median indentation on anterior margin of head (Fig. 1B). Free rear tip of second dorsal fin nearly reaching upper caudal origin. Anal base noticeably larger than that of second dorsal fin (Fig. 2B) *Sphyrna lewini*

1. *Sphyrna lewini* (Griffith & Smith, 1834) 홍살귀상어(신칭) (Fig. 3)

Sphyrna lewini Griffith and Smith, 1834, p. 640, pl. 50.

Material examined. KNUM 1016, one specimen, 50 cm TL, Cheju Isl. July 10, 1996.

Description. In percentages of total length, head length 22.0, head height 10.6, trunk height 12.0, caudal peduncle height 4.4, eye length (diameter) 2.2, pre-first dorsal length 29.2, pre-second dorsal length 58.2, prebranchial length, 17.8, prepectoral length 22.4, prepelvic length 45.0, precaudal length 69.0, snout-vent length, 47.0, pectoral-pelvic space 18.6, preanal length 57.0, anal-caudal space 6.4, interdorsal space 21.0, dorsal-caudal space 6.2, pelvic-anal space 7.2, intergill length 6.4, gill slit height 3.6, pectoral anterior margin 12.6, pectoral posterior margin 8.2, pectoral inner margin 4.4, dorsal caudal margin 32.0, preventral caudal margin 11.8, upper postventral caudal

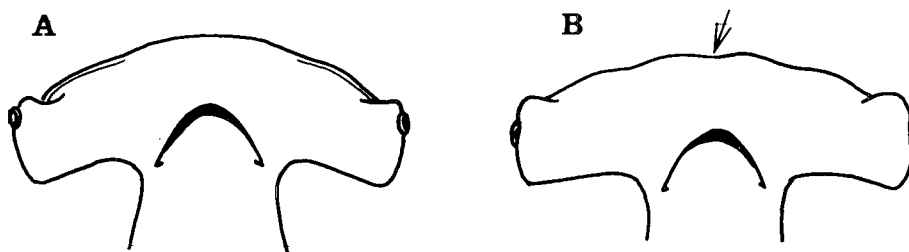


Fig. 1. A median indentation on anterior margin of the head: A, *Sphyrna zygaena*; B, *S. lewini*

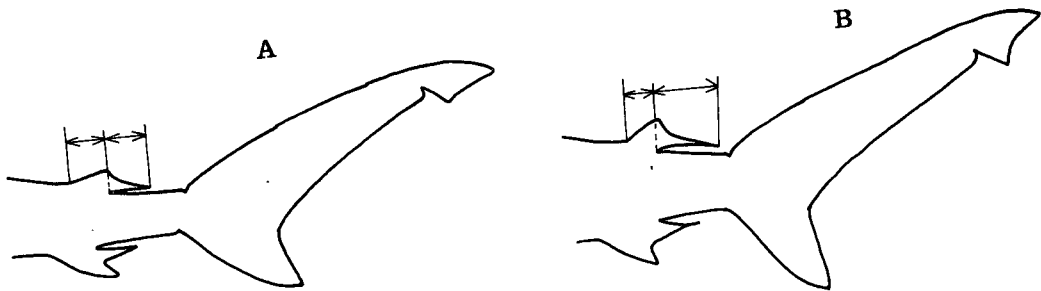


Fig. 2. Relation of 2nd dorsal, anal and caudal fins: A, *Sphyrna zygaena*; B, *S. lewini*



Fig. 3. *Sphyrna lewini*, KNUM 1016, 50 cm TL

margin 20.0, terminal caudal margin 4.2, caudal fork width 7.6, subterminal caudal margin 2.8. Body fusiform, moderately slender. Head expanded hammer shaped laterally. Anterior margin of head very broadly arched, with prominent median and lateral indentations. First dorsal-fin origin about over or slightly behind pectoral-fin insertion. Second dorsal-fin origin about over mid-point of anal-fin base; free rear tip of fin nearly reaching upper caudal-fin origin.

Color in formalin. Body dark grey-brown dorsally, white below.

Distribution. South sea in Korea. Circumglobal in coastal warm temperature and tropical seas.

Remarks. The species was first recorded as *Zygaena lewini* Griffith & Smith (1834). This species is similar to *Sphyrna zygaena* morphologically, but differs from it in having a prominent median indentation on anterior margin of head and free rear tip of second dorsal nearly reaching upper caudal origin.

Family Alopiidae Bonaparte, 1838

Genus *Alopias* Rafinesque, 1810

Key to species of family Alopiidae of Korea

- 1a. Labial furrows absent (Fig. 4A). Sides above pectoral base dark, without an extension of the white abdominal area (Fig. 5A) *Alopias pelagicus*
 1b. Labial furrows present (Fig. 4B). Sides above pectoral bases marked with a white patch extending forward from the abdominal area (Fig. 5B) *Alopias vulpinus*

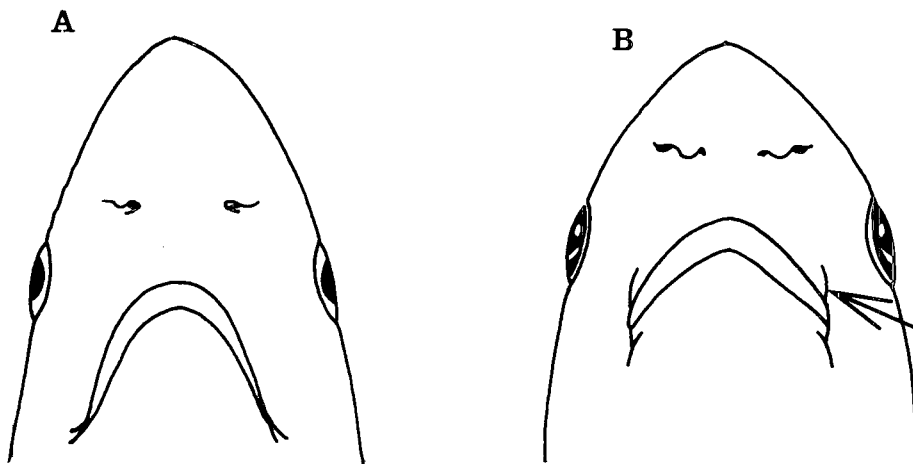


Fig. 4. Labial furrows (arrow) of under surface of head: A, *Alopias pelagicus*; B, *A. vulpinus*

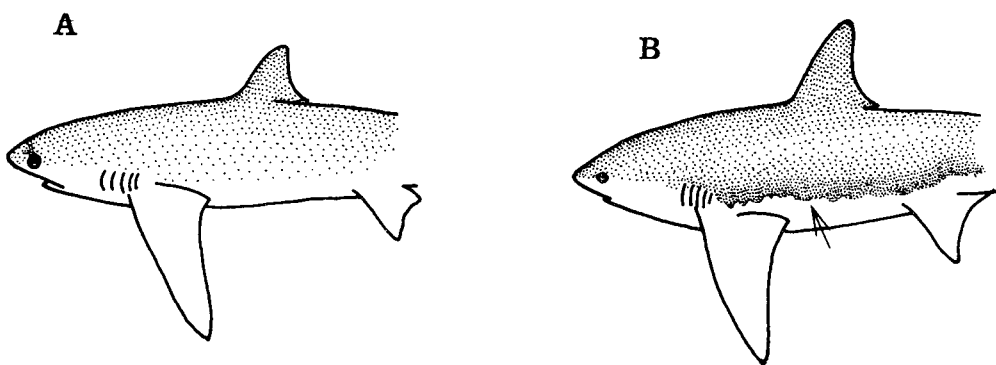


Fig. 5. Color patterns above pectoral and pelvic fin bases: A, *Alopias pelagicus*; B, *A. vulpinus*

2. *Alopias vulpinus* (Bonnaterre, 1788) 흰배환도상어(신칭) (Fig. 6)

Alopias vulpinus Bonnaterre, 1788, p. 9.

Material examined. KNUM 1017, one specimen, 173 cm TL, Kunsan, Korea, October 10, 1996.

Description. In percentages of total length, head length 14.5, head height 10.1, trunk height 11.6, caudal peduncle height 4.9, eye length (diameter) 1.5, pre-first dorsal length 23.1, pre-second dorsal length 42.5, prebranchial length, 11.6, preorbital length 3.1, prepectoral length 13.0, prepelvic length 32.4, precaudal length 48.0, snout-vent length, 35.8, preanal length 43.4, pectoral-pelvic space 13.3, anal-caudal space 3.8, interdorsal space 13.3, dorsal-caudal space 5.5, pelvic-anal space 5.4, intergill length 3.2, gill slit height 1.9, pectoral anterior margin 14.7, pectoral inner margin 2.3, dorsal caudal margin 53.5, preventral caudal margin 6.6, upper postventral caudal margin 46.2, terminal caudal margin 2.9, caudal fork width 7.5, subterminal caudal margin 0.1.

Body fusiform, moderately stout; snout relatively short, conical and pointed. Eyes moderately large but not extending onto dorsal surface of head. Labial furrows present in the corner of mouth. Free rear tip of first dorsal fin well in advance of pelvic-fin origin. Second dorsal and anal fins minute. Pelvic fin large. Pectoral fins falcate, apices pointed and narrow-tipped. Caudal-fin upper lobe

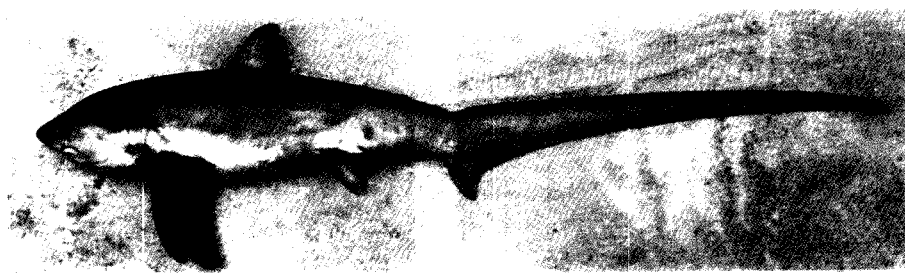


Fig. 6. *Alopias vulpinus*, 1730 mm TL

enormously long; length of upper lobe of caudal fin about as long as or longer than remaining body. Terminal lobe of caudal fin moderately large.

Color. When fresh, blue-grey above with a metallic lustre dorsally. White color of abdomen extending above pelvic and pectoral fin bases as a conspicuous patch.

Distribution. West sea in Korea. Atlantic. Western Pacific. Oceanic.

Remarks. The species was first recorded as *Squalus vulpinus* by Bonnaterre (1788). This species is similar to *Alopias pelagicus* morphologically, but differs from it in the following characteristics: labial furrows present, long terminal lobe and white ventral coloration extending above the pectoral fin bases.

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RECEIVED: 12 November 1998

ACCEPTED: 6 December 1998

한국산 상어류(*Elasmobranchii*) 2 미기록종 *Sphyrna lewini*와
Alopias vulpinus

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요 약

우리나라의 서해연안에서 채집된 상어류 2개체는 아직까지 국내에서는 보고된 바 없는 *Sphyrna lewini*(Griffith and Smith)와 *Alopias vulpinus*(Bonnaterre)로 동정되었다. *S. lewini*는 귀상어(*S. zygaena*)와 유사하지만 두부의 중앙부가 함입되어 있고, 제2등지느러미 끝이 거의 꼬리지느러미에 닿한다는 점에서 귀상어와 구분되었다. *A. vulpinus*는 환도상어(*A. pelagicus*)와 유사하지만 복부의 흰색이 가슴지느러미 기부 위까지 확장되고, 입의 양쪽 끝에 입술주름이 있어서 환도상어와 구분되었다.