

First Record of the Eyebars Goby, *Gnatholepis cauerensis* (Perciformes: Gobiidae) from Jeju Island, Korea

By Hyun-Geun Cho and Byung-Jik Kim^{1,*}

Marine Research Center, Korea National Park Research Institute, Yeosu 59723, Republic of Korea

¹Animal Resources Division, National Institute of Biological Resources, Incheon 22689, Republic of Korea

ABSTRACT The Eyebars goby, *Gnatholepis cauerensis* is reported firstly from Korea, based on four specimens (36.3~47.1 mm in SL) collected at depth range of 12~16 m in the southern coastal waters of Jeju Island, Korea. They are characterized by having mostly ctenoid scales on body, head including cheek, opercle, and middle of predorsal region with cycloid scales, and a unique coloration of yellow blotch with marginally black marking above pectoral fin base as well as transverse black bar below eye. A new Korean name, "Geom-eun-nun-ddi-mang-dug", is proposed for the species.

Key words: Gobiidae, *Gnatholepis cauerensis*, first record, Jeju Island, Korea

INTRODUCTION

The gobiid genus *Gnatholepis* Bleeker, 1874 belongs to the Gobioid subfamily Gobionellinae, a large group containing 55 genera (Pezold, 2011). The members of this subfamily inhabit mostly estuarine to freshwater with the exception of *Gnatholepis*, being commonly found on sandy or silty sandy bottoms near corals of tropical seas (Thacker, 2004a; Larson and Buckle, 2012). The gobies of *Gnatholepis* are usually small (adult size 25~40 mm in standard length), pale with dark mottling and markings, and inconspicuous in their habitat (Thacker, 2004b). In the taxonomical revision of the genus, Larson and Buckle (2012) have recognized 10 species as valid, viz., *G. anjerensis* (Bleeker, 1851) and *G. cauerensis* (Bleeker, 1853) from Indo-Pacific, *G. argus* Larson and Buckle, 2005 from northern Australia; *G. caudimaculata* Larson and Buckle, 2012 from Red Sea to Persian Gulf; *G. gymnocara* Randall and Greenfield, 2001 from Queensland, Australia; *G. knighti* Jordan and Evermann, 1903 from Hawaii and Line Islands; *G. ophthalmotaenia* (Bleeker, 1854) from Cocos-Keeling, Philippines, Taiwan, southern Japan, Indonesia, and New Guinea; *G. pascuensis* Randall and Greenfield,

2001 from Easter Island; *G. thompsoni* Jordan, 1904 from Atlantic; *G. yoshinoi* Suzuki and Randall, 2009 from Malaysia, Indonesia, and Japan.

During an ichthyofaunal survey around Jeju Island of Korea, four specimens belong to the genus *Gnatholepis* with the notable black bar through eyes and yellowish spot above pectoral fin were collected off the southern coastal waters, Jeju Island, and identified as *G. cauerensis*, which is not yet reported from Korea. We describe herein the species in detail, representing the first record from Korea.

MATERIALS AND METHODS

The present specimens were collected at sandy bottom near rocky reef at depth range of 12~16 m, off southern coastal waters of Jeju Island, Korea in autumn and winter seasons 2020 and 2021 with combination of SCUBA gears and a small hand net (20 cm, 1 mm mesh size). They are deposited at the fish collection of the National Institute of Biological Resources (NIBR-P), Korea as voucher.

The methods of counts and proportional measurements generally were followed those of Hubbs and Lagler (2004) and slightly modified as Larson and Buckle (2012) as follows: transverse scale counts were taken by counting the number of scale rows from just before the anal fin origin

저자 직위: 조현근 (연구원), 김병직 (환경연구원)

*Corresponding author: Byung-Jik Kim Tel: 82-32-590-7475,

Fax: 82-32-590-7250, E-mail: kimbyungjik@gmail.com

diagonally upward and back toward the second dorsal fin base; head length is taken to the upper attachment of the opercular membrane; body width was taken at anus and body depth at both origin of the first dorsal fin and anus.

The numbers of vertical fin rays and vertebrae were obtained from radiograph (Softex VIX-100, Japan). The pterygiophore formula and designation of the sensory canal pores follow those of Birdsong *et al.* (1988) and Akihito *et al.* (1984), respectively. The terminology used for head lateral line canals and papillae rows is from Larson (2001) and Sanzo (1911), respectively.

TAXONOMIC ACCOUNTS

Genus *Gnatholepis* Bleeker, 1874

(New Korean name: Nun-ddi-mang-dug-sog)

Gnatholepis (as subgenus of *Stenogobius*) Bleeker, 1874: 318 (type species: *Gobius anjerensis* Bleeker, 1851, by original designation and monotypy).

Dorsal fin rays VI-I, 10~12; anal fin rays I, 11~12; pectoral fin rays 14~19; longitudinal scales 24~31; transverse scale count backward 9~11; dorsal pterygiophore pattern 3-12210; vertebrae 10 + 16; scales on body mostly ctenoid; colour pattern with black mark above eyeball, dusky to black line from eye crossing cheek to rictus, dark and/or light spot or blotch above pectoral base (*see* Larson and Buckle, 2012: 7).

Gnatholepis cauerensis (Bleeker, 1853)

(New Korean name: Geom-eun-nun-ddi-mang-dug)

(Figs. 1, 2; Table 1)

Gobius cauerensis Bleeker, 1853: 269 (type locality: Cauer, Sumatra, Indonesia).

Gnatholepis cauerensis: Goren, 1981: 99 (New Caledonia);

Randall and Greenfield, 2001: 6, pl. IG, H, pl. IIA (South Africa, Tanzania, Comoros, Agalega Isl., Oman, Maldives, Thailand, Indonesia, Philippines, Japan, Papua New Guinea, Marina Isl., Wake Isl., Marshall Isl., Samoa, Line Isl., Society Isl.); Larson and Buckle, 2012: 29, figs. 4C~D, 12C, 13~18 (South Africa, Djibouti, Indonesia, Philippines, Australia, New Guinea, Papua New Guinea, Micronesia, Solomon Is., Fiji; Tonga, New Caledonia, Kiribati, Marshall Is., Hawaii, Yemen, Mozambique, Aldabra, Tanzania, Seychelles, Society Is., Maldives, Taiwan, Japan); Hayashi and Shiratori, 2013: 97, unnumbered fig. (Kashiwa Isl., Japan); Akihito *et al.*, 2013: 1413 (key to species, Japan).

Gnatholepis cauerensis australis Randall and Greenfield, 2001: 7, pl. IIB (Haurei Bay, Rapa, Tubuai Is.).

Gnatholepis cauerensis hawaiiensis Randall and Greenfield, 2001: 10, pl. IIC, D (Pukukea, Oahu, Hawaiian Is.).

Gnatholepis cauerensis cauerensis: Suzuki *et al.*, 2004: 242, unnumbered figs. (Ogasawara Isl., Izu Isl., Ryukyu Isl., Iriomote Isl., Japan); Motomura *et al.*, 2010: 213, fig. 525 (Yaku Isl., Japan).

Gnatholepis scapulostigma Herre, 1953: 193 (type locality: Engebi Isl., Eniwetak Atoll, Marshall Is.); Akihito *et al.*, 1984: 252, pl. 252-R (Japan); Randall and Goren, 1993: 13, pl. 3D (Maldives); Akihito *et al.*, 2002: 1212 (key to species, Japan).

Material examined. Four specimens, NIBR-P0000077550, 46.8 mm SL, 12 m depth, Bomok-dong, Seogwipo-si, Jeju-do, Korea, 27 November 2020, B. J. Kim, S. K. Kim and J. H. An; NIBR-P0000077551, 47.1 mm SL, 15 m, Bomok-dong, Seogwipo-si, Jeju-do, Korea, 10 December 2020, B. J. Kim and S. K. Kim; NIBR-P0000077552, 36.3 mm SL, NIBR-P0000077553, 43.4 mm SL, 16 m, Bomok-dong, Seogwipo-si, Jeju-do, Korea, 8 September 2021, B.



Fig. 1. *Gnatholepis cauerensis*, (NIBR-P0000077551, 47.1 mm SL) collected from the southern coastal waters of Jeju Island, Korea.

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Diagnosis. A species of *Gnatholepis* with ctenoid body scales reaching rear corner of opercle; nape midline scales cycloid; narrow black vertical mark on top of each eye, and vertical bar crossing cheek below eye; small dark mark above pectoral fin base, with small yellowish spot in centre.

Description. Comparison of meristic counts are provided in Table 1. Dorsal fin rays VI-I, 11; anal fin rays I, 10~11; pectoral fin rays 16; pelvic fin rays, I, 5, fully joined to form a disk, frenum well developed; segmented caudal fin rays 9+8; branched caudal fin rays 7+6; predorsal scales 8~9; longitudinal scale rows 27~29; transverse scale count from origin of anal fin toward second dorsal fin base 9~10; gill rakers 1+4=5 (n=2); Dorsal pterygiophore formula, P-V 3/12210/9; vertebrae 10+16=26. Measurements in % SL: head length 27.5~29.5 (mean 28.2); body depth 21.8~23.9 (22.6); body depth at origin of first dorsal fin 22.3~25.2 (23.0); body width 13.8~17.1 (14.8); predorsal length 32.9~35.8 (33.9); preanal length 51.7~56.9 (53.6); base of dorsal fins 53.9~55.4 (54.5); length of first dorsal fin 20.2~24.0 (22.0); length of fourth dorsal fin spine 12.2~17.4 (14.9); length of third dorsal fin spine 12.4~15.2 (13.9); length of fifth dorsal fin spine 12.2~16.0 (13.4); length of second dorsal fin 38.9~44.5 (41.9); length of longest soft dorsal ray (penultimate ray) 14.5~16.7 (15.9); length of second dorsal spine 12.4~13.0 (12.7); base of anal fin 30.8~33.6 (32.0); length of longest anal soft ray (penultimate ray) 14.2~17.1 (15.6); pectoral fin length 24.1~25.7 (24.6); length of pelvic fin 19.2~22.6

(20.9); length of pelvic fin spine 4.3~5.5 (5.0); length of caudal peduncle 16.0~17.9 (16.9); depth of caudal peduncle 10.7~11.5 (11.2). Measurements in % HL: head depth at posterior preopercular margin 66.2~76.0 (69.9); head width at posterior preopercular margin 61.0~67.4 (63.5); snout length 29.0~31.7 (30.3); length of upper jaw 29.5~36.6 (32.3); eye diameter 20.9~25.9 (23.0); preorbital width 20.0~20.9 (20.3); interorbital width 8.0~10.8 (9.2).

Body slender, cylindrical anteriorly and somewhat compressed posteriorly; its width less than body depth. Anus situated just before origin of anal fin. Head compressed; its depth greater than width. Snout short, bluntly pointed. Anterior naris short and tubular, and posterior naris round. Mouth terminal, slightly oblique; upper jaw slightly projecting beyond lower jaw; posterior end of jaw below anterior margin of pupil; lower lip fold posteriorly, forming triangular flap. Eyes moderate, dorsolaterally positioned. Interorbital space narrow. Teeth on both jaws with two to three irregular rows anteriorly, narrowing to a single row posteriorly; outer row of teeth at front of both jaws with curved and pointed tip; its size larger than those of inner row; posteriormost one to three rows of outer teeth enlarged on both jaws. Tongue free from floor of mouth, its tip clearly divided into two halves by cleft at center. Gill membranes fused into isthmus, widely separated from each other; gill opening slightly narrow, extending anteriorly to lower edge of pectoral fin; gill rakers on outer surface of first arch short, blunt, and well-spaced. Dorsal fin two, united by a minute membrane; first dorsal nearly semicircular, 3rd and

Table 1. Comparison of diagnostic characters of *Gnatholepis cauerensis* between the present study and previous works

	<i>Gnatholepis cauerensis</i>		
	Present study	Larson and Buckle (2012)*	Akihito <i>et al.</i> (2013)
Standard length (mm)	36.3~47.1 (n = 4)	24.5~56.0 (n = 117)	–
Dorsal fin rays	VI-I, 11	VI-I, 10~11	VI-I, 11
Anal fin rays	I, 10~11 (mean 10.8)	I, 10~12 (11.2)	I, 11
Pectoral fin rays	16	12~18 (16.3)	17
Longitudinal scales	27~29 (27.8)	24~30 (26.7)	29
Transverse scales backward	9~10 (9.5)	8.5~12 (10)	10
Predorsal scales	8~9 (8.75)	7~12 (8.8)	8~9
Gill rakers	1+4	1~2+3~4 (1+4)	–
Dorsal pterygiophore formula	3/12210	3/12210	3/12210
Vertebrae	26 (10+16)	26 (10+16)	26 (10+16)
Scales on predorsal region	Cycloid	Cycloid	–
Blotch color on upper base of pectoral fin	Yellow edged black	Yellow edged black	Yellow edged black

*including holotype (RMNH 4523) of *Gobius cauerensis*.
Superscription means the number of specimens examined.

4th spines longest; first dorsal fin posteriorly beyond base of second soft ray of second dorsal fin when depressed; height of second dorsal fin equal to that of first dorsal fin. Bases of second dorsal and anal fins rather long, origin of former inserted slightly anterior to that of latter. Anal fin lower slightly than second dorsal fin; penultimate ray longest in both fins. Pectoral fin somewhat long, pointed, middle rays longest; its hind margin extending to vertically origin of second dorsal fin. Pelvic fins fused by frenum with distinctive fimbriate margin; its tip reaching to base of anal fin. Caudal fin somewhat oblong and posterior margin rounded.

Body overall covered with ctenoid scales except for head, abdomen, and origin of pectoral fin; predorsal region scales mostly cycloid (sparsely ctenoid on each side of nape above middle of opercle in NIBR-P0000077552); cheek, opercle, and origin of pectoral fin, sparsely covered with cycloid scales.

Cephalic sensory system (Fig. 2). Head sensory canal pores developed, comprising snout pores (A' and B), anterior (C) and single posterior (D) interorbital pores, two postorbital (F and H') and preopercular (M', N and O') pores; two posterior oculoscapular pores (K' and L'). Head sensory papillae in transverse pattern on head; four short, essentially transverse sensory papillae rows (1, 2, 3, and 4) on cheek below eye; transverse row *a* short, reduced below posterior edge of eye; three longitudinal rows (*b*, *c*, and *d*) short; row *d* broken in two section; opercular papillae with *os*, *ot*, and *oi*; transversal row *z* on oculoscapular; longitudinal row *e* and *i*, extending along lower jaw.

Color when fresh. Ground color of head and body yellowish pale brown dorsally and pale greyish ventrally; numerous brownish spots scattered on body. Upper part of snout dusky and a black broad bar as wide as pupil below eye; two reddish streaks on cheek. A small yellowish spot margined with pale brown above pectoral fin origin. Six broad dusky vertical bands on body, latter two not prominent. Small bluish spots scattered on head and body. Dorsal fins and caudal fin with pale brownish spots scattered on fin rays. Pectoral, pelvic and anal fins dusky.

Color after preservation. Ground color of head and body brown dorsally, grayish white ventrally. Six dark brown transverse bands on lateral side of body, extending from origin of first dorsal fin to caudal peduncle; three broad dark bands on anterior half of body, posteriorly three bands indistinct; longitudinal 5~6 rows of brownish spots on lateral body; irregularly 2~3 rows of spots darker on upper half of body; pale brownish blotch edged in black U-shape above base of pectoral fin. Vertical black bar through eye on cheek broad, extending to ventral area of head; its posterior and

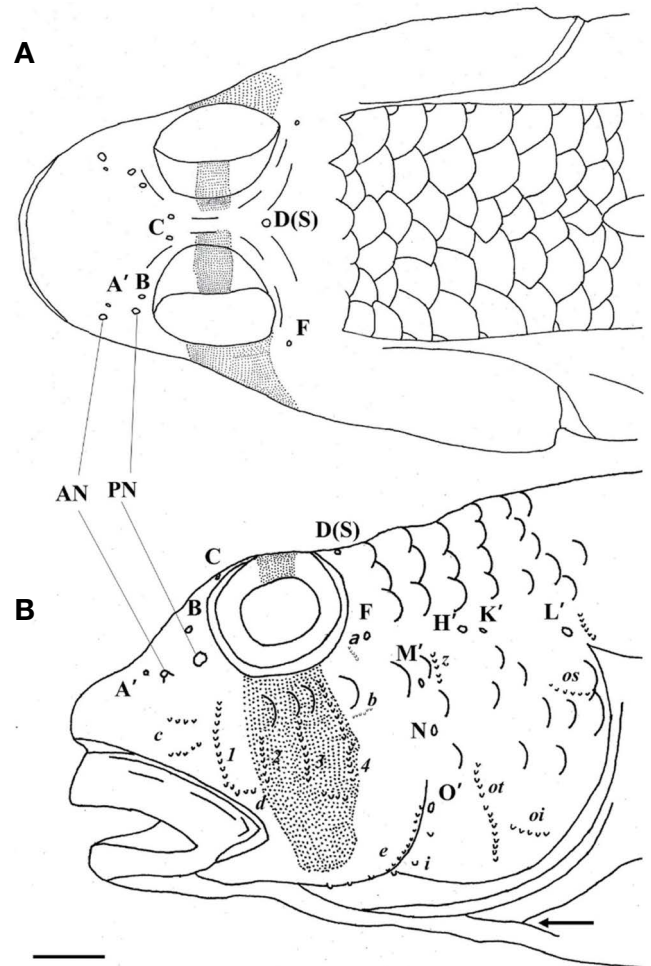


Fig. 2. Dorsal (A) and lateral (B) views of head in *Gnatholepis cauerensis* (NIBR-P0000077550, 46.8 mm SL). AN and PN, anterior and posterior nasal pores, respectively; A' to H', anterior oculoscapular canal pores; K' to L', posterior oculoscapular canal pores; M' to O', preopercular canal pores. Apostrophes, terminal pores of canals; (S), single pore; *a*, *b*, *c*, *d*, *e*, *i*, *z*, *oi*, *os*, and *ot*, sensory papillae rows. The arrow shows an attachment position of gill membrane to isthmus and bar indicates 1 mm.

anterior margin with blueish transverse line; transverse black band narrow on eyes, separated from each other in interorbital region. Small blue spots sparsely scattered on opercle. First and second dorsal fins with several wavy brownish; pectoral fin membrane grayish white with brownish basally; pelvic and anal fins brownish brown, margined with grayish-white, respectively; caudal fin uniformly with many small spots.

Ecological notes. All the present specimens were observed solitary on sandy bottom near rocky reef at depth range of 12~16 meters in the southern coastal waters of Jeju Island, Korea.

Distribution. Known widely from South Africa to Pitcairn

Island in the Indo-Pacific: north to Miyake-jima, Japan and Korea, south to Sydney Harbour, Australia (Larson and Buckle, 2012; present study). In Korea, from southern coastal waters of Jeju Island, Korea only at present (this study).

Remarks. The four specimens collected from Jeju Island, Korea were characterized by having following features: VI-I, 11 dorsal fin rays, I, 10~11 anal fin rays, 16 pectoral fin rays, 27~29 longitudinal scales, 9~10 transverse scales backward, 8~9 predorsal scales, 1 + 4 gill rakers (n = 2); 26 vertebrae; 3-12210 dorsal pterygiophore pattern; body with ctenoid scales except middle line of predorsal region, cheek, opercle, and origin of pectoral fin with cycloid scales; outer teeth enlarged on both jaws; a paired pore C of anterior interorbital region; transverse pattern of sensory papillae; narrow vertical black mark on top of each eye; black vertical bar on cheek below eye; a distinct yellowish blotch with marginally U-shaped black marking above base of pectoral fin.

These characteristics agree well with the diagnostic characters of *Gnatholepis cauerensis* (Bleeker, 1853) presented by Larson and Buckle (2012), with some exceptions of color pattern on body including a black vertical bar on cheek as wide as pupil [vs. narrow vertical line in diagnosis of Larson and Buckle (2012)]. However, body colors of the present species seem not to be important discriminating species, because it shows considerable variation in its colour pattern within a species (Randall and Greenfield, 2001).

In the Indo-Pacific ocean, *G. cauerensis* is similar to *G. anjerensis* in sharing overall coloration of head and body, and partly overlapped morphometric characters as well as meristic counts. However, the former is readily distinguished from the latter in having cycloid predorsal scales (vs. ctenoid in the latter), and small dark mark, often W-shape, above pectoral fin base with small yellowish spot in centre [vs. small round orange to gold spot, often with short dark line underneath Larson and Buckle, 2012; this study]. We therefore, finally identified them as *G. cauerensis*, and represent the first record from Korea.

Additionally, *G. cauerensis* is very likely to be confused with the Atlantic species, *G. thompsoni* Jordan, 1904 in possessing the major diagnostics of the former such as cycloid predorsal scales and unique coloration of spot above pectoral fin base. Randall and Greenfield (2007) re-described *Gobius cauerensis* Bleeker, 1853, and concluded that *G. thompsoni* is a junior synonym of *G. cauerensis*, because the former could not be differentiated morphologically or by colour from the latter. Subsequently, Larson and Buckle (2012) recognized *G. thompsoni* and *G. cau-*

erensis as allopatric sister species based on mtDNA data by Rocha *et al.* (2005). They also morphologically distinguished *G. thompsoni* from *G. cauerensis* by having 9~11 (modally 10) predorsal scales [vs. 7~12 (9) in the latter], all the predorsal scales cycloid (vs. always cycloid in midline, with some ctenoid scales extending over the opercle), the transverse black line on the upper part of the eye joining the somewhat oblique to curved black line crossing cheek and usually ending well behind end of jaw (vs. the transverse black bar on cheek mostly vertical to curved, ending past end of jaw), and the dorsal half of body with three to five rows of small dark spots dorsal (vs. the dorsal half of body usually with 2~3 rows of short lines; some specimens with rows of spots). However, *G. thompsoni* is still difficult to differ from *G. cauerensis* without their geographic origin by only photographs, because the diagnostic characters of the former lie within the range of variation of the latter (Larson and Buckle, 2012; Smith-Vaniz and Collette, 2013).

A new Korean name, “Geom-eun-nun-ddi-mang-dug”, is proposed here for *G. cauerensis*. It is derived from the black bar (= Geom-eun-nun-ddi) referring to have a black band below eyes.

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REFERENCES

- Akihito, M. Hayashi, T. Yoshino, K. Shimada, H. Senou and T. Yamamoto. 1984. Gobioidae. In: Masuda, H., K. Amaoka, C. Araga, T. Uyeno and T. Yoshino (eds.), The fishes of the Japanese Archipelago. Tokai Univ. Press, Tokyo, Japan, pp. 236-289.
- Akihito, K. Sakamoto, Y. Ikeda and K. Sugiyama. 2002. Gobioidae. In: Nakabo, T. (ed.), Fishes of Japan with pictorial keys to the species, English ed. Tokai Univ. Press, Tokyo, Japan, pp. 1139-1310.
- Akihito, K. Sakamoto, Y. Ikeda and M. Aizawa. 2013. Gobioidae. In: Nakabo, T. (ed.), Fishes of Japan with pictorial keys to the species, 3rd ed. Tokai Univ. Press, Kanagawa, Japan, pp. 1347-1541 (in Japanese).

- Bleeker, P. 1851. Over eenige nieuwe soorten van Blennioïden en Gobioïden van den Indischen Archipel. *Natuurk. Tijdschr. Ned.-Indië*, 1: 236-258.
- Bleeker, P. 1853. Diagnostische beschrijvingen van nieuwe of weinig bekende vischsoorten van Sumatra. Tiental V-X. *Natuurk. Tijdschr. Ned.-Indië*, 4: 243-302.
- Bleeker, P. 1854. Bijdrage tot de kennis der ichthyologische fauna van de Kokos-eilanden. *Natuurk. Tijdschr. Ned.-Indië*, 7: 37-48.
- Bleeker, P. 1874. Esquisse d'un système naturel des Gobioïdes. *Arch. Neerl. Sci. Exact. Nat.*, 9: 289-331.
- Birdsong, R.S., E.O. Murdy and F.L. Pezold. 1988. A study of the vertebral column and median fin osteology in gobioid fishes with comments on gobioid relationships. *Bull. Mar. Sci.*, 42: 174-214.
- Goren, M. 1981. Three new species and three new records of gobies from New Caledonia. *Cybiu*, 5: 93-101.
- Hayashi, M. and T. Shiratori. 2013. Gobies of Japanese waters. *TBS Encyclopaedia Britannica/Hankyu*, Tokyo, 223pp.
- Herre, A.W.C.T. 1953. A new species of *Gnatholepis* with a key to the tropical Pacific species. *Philipp. J. Sci.*, 82: 193-197.
- Hubbs, C.L. and K.F. Lagler. 2004. *Fishes of the Great Lakes Region*. University of Michigan Press, Ann Arbor, U.S.A., xvii + 213pp.
- Jordan, D.S. 1904. Notes on the fishes collected in the Tortugas Archipelago. *Bull. U.S. Fish. Comn.*, 22: 539-544.
- Jordan, D.S. and B.W. Evermann. 1903. Descriptions of new genera and species of fishes from the Hawaiian Islands. *Bull. U.S. Fish. Comn.*, 22: 161-208.
- Larson, H.K. 2001. A revision of the gobiid fish genus *Mugilogobius* (Teleostei: Gobioidae), with discussion of its systematic placement. *Rec. West. Aust. Mus.*, 62 (suppl.): 1-233.
- Larson, H.K. and D. Buckle. 2005. A new species of the circumtropical goby genus *Gnatholepis* Bleeker (Teleostei, Gobiidae, Gobionellinae) from northern Australia. *The Beagle Rec. Mus. Art Galleries N. Terr.*, 21: 67-72. <https://doi.org/10.5962/p.287416>.
- Larson, H.K. and D. Buckle. 2012. A revision of the goby genus *Gnatholepis* Bleeker (Teleostei, Gobiidae, Gobionellinae), with description of a new species. *Zootaxa*, 3529: 1-69. <https://doi.org/10.11646/zootaxa.3529.1.1>.
- Motomura, H., K. Kuriwa, E. Katayama, H. Senou, G. Ogihara, M. Meguro, M. Matsunuma, Y. Takat, T. Yoshida, M. Yamashita, S. Kimura, H. Endo, A. Murase, Y. Iwatsuki, Y. Sakurai, S. Harazaki, K. Hidaka, H. Izumi and K. Matsuura. 2010. Annotated checklist of marine and estuarine fishes of Yaku-shima Island, Kagoshima, southern Japan. In: Motomura, H. and Matsuura, K. (eds.), *Fishes of Yaku-shima Island. A World Heritage Island in the Osumi Group, Kagoshima Prefecture, Southern Japan*. *Natl. Mus. Sci. Nat.*, Tokyo, Japan, pp. 65-247.
- Pezold, F.L. 2011. Systematics of the family Gobionellidae. In: Patzner, R.A., J.L. Van Tassell, M. Kovacic, and B.G. Kapoor (eds.), *The biology of gobies*. Science Publishers Inc., Enfield, NH, pp. 87-98. <https://doi.org/10.1201/b11397-8>.
- Randall, J.E. and M. Goren. 1993. A review of the gobioid fishes of the Maldives. *Ichthyol. Bull. J.L.B. Smith Inst. Ichthyol.*, 58: 1-37.
- Randall, J.E. and D.W. Greenfield. 2001. A preliminary review of the Indo-Pacific gobiid fishes of the genus *Gnatholepis*. *Ichthyol. Bull.*, 69: 1-17.
- Randall, J.E. and D.W. Greenfield. 2007. Redescription of *Gnatholepis cauerensis* (Bleeker, 1853), with discussion of the validity of the species. *Zool. Meded. Leiden*, 81: 303-308.
- Rocha, L.A., D.R. Robertson, C.R. Rocha, J.L. Van Tassell, M.T. Craig and B.W. Bowen. 2005. Recent invasion of the tropical Atlantic by an Indo-Pacific coral reef fish. *Mol. Ecol.*, 14: 3921-3928. <https://doi.org/10.1111/j.1365-294X.2005.02698.x>.
- Sanzo, L. 1911. Distribuzione delle papille cutanee (organi ciatiformi) e suo valore sistematico nei Gobi. *Mitt. Zool. Stat. Neapel*, 20: 249-328.
- Smith-Vaniz, W.F. and B.B. Collette. 2013. Fishes of Bermuda. *Aqua, Int. J. Ichthyol.*, 19: 165-186. <https://doi.org/10.1007/s11160-006-9000-3>.
- Suzuki, T. and J.E. Randall. 2009. *Gnatholepis yoshinoi*, a new gobiid fish from Okinawa, Japan. *Bull. Natl. Mus. Nat. Sci., Ser. A*, 35: 83-88.
- Suzuki, T., K. Shibukawa and K. Yano. 2004. A photographic guide to the gobioid fishes of Japan. Heibonsha, Tokyo, 534pp (in Japanese).
- Thacker, C. 2004a. Phylogeny and species boundaries in the gobiid genus *Gnatholepis* (Teleostei: Perciformes). *Zool. J. Linn. Soc.*, 142b, 573-582. <https://doi.org/10.1111/j.1096-3642.2004.00142.x>.
- Thacker, C. 2004b. Population structure in two species of the reef goby *Gnatholepis* (Teleostei: Perciformes) among four South Pacific Island groups. *Coral Reefs*, 23: 357-366. <https://doi.org/10.1007/s00338-004-0391-0>.

우리나라 제주도 남부 연안에서 채집된 망둑어과 한국첫기록종, *Gnatholepis cauerensis*

조현근 · 김병직¹

국립공원연구원 해양연구센터, ¹국립생물자원관 동물자원과

요 약 : 우리나라 제주도 남부 연안의 수심 12~16 m에서 채집된 4개체 (36.3~47.1 mm in SL)의 표본들을 근거로 망둑어과 어류, *Gnatholepis cauerensis*을 한국첫기록종으로 보고한다. 본 종은 몸의 대부분이 빗비늘로 덮여 있지만, 뺨과 아가미뚜껑, 그리고 등지느러미 앞 중앙 부분은 등근비늘로 덮여 있는 점, 가슴지느러미 기부 위에 가장자리가 검정색인 노란색 반점과 눈 아래의 흑색 가로줄무늬가 있는 것이 특징이다. 본 종의 신한국명으로 '검은눈띠망둑'을 제안한다.

찾아보기 낱말 : 망둑어과, *Gnatholepis cauerensis*, 첫기록, 망둑어, 제주도