

EIGHT NEW RECORDS OF GROUPERS (PERCOIDEI: SERRANIDAE) FROM TAIWAN

KWANG-TSAO SHAO, LIH-WEN CHEN and SIN-CHE LEE

Institute of Zoology, Academia Sinica
Nankang, Taipei, Taiwan 11529 R. O. C.

(Accepted September 30, 1986)

Kwang-Tsao Shao, Lih-Wen Chen and Sin-Che Lee (1987) Eight new records of groupers (Percoidei: Serranidae) from Taiwan. *Bull. Inst. Zool., Academia Sinica* 26(1): 69-75. This paper reports eight new records of groupers recently collected from Heng-chun Peninsula, southern tip of Taiwan. They are *Variola albimarginata* Baissac, *Salopita powelli* Smith, *Cephalopholis obtusaurus* Evermann and Seale, *Cephalopholis sexmaculatus* (Rüppell), *Anyperodon leucogrammicus* (Valenciennes), *Epinephelus retouti* Bleeker, *Liopropoma lunulatum* (Guichenot), and *Plectranthias yamakawai* Yoshino. Among the above seven genera, *Salopita* and *Anyperodon* are first records from Taiwan. Diagnostic character, distribution, remark, and color figure of each species are given in this paper.

During our recent intensive collection of fishes from the surrounding waters of Taiwan and its adjacent islands, we have collected many new records of fishes. In the present paper, a total of eight species representing seven different genera were reported here for the first time in Taiwan. They are *Variola albimarginata* Baissac, *Salopita powelli* Smith, *Cephalopholis obtusaurus* Evermann and Seale, *Cephalopholis sexmaculatus* (Rüppell), *Anyperodon leucogrammicus* (Valenciennes), *Epinephelus retouti* Bleeker, *Liopropoma lunulatum* (Guichenot), and *Plectranthias yamakawai* Yoshino. Among the above seven genera, *Salopita* and *Anyperodon* are newly added genera for Taiwan. The work on the overall revision of this family is being carried out by one of the authors (SCL) under a joint project entitled "Fish fauna studies of Taiwan" with the financial support from National Science Council of the Republic of China.

MATERIALS AND METHODS

All of the eight species were purchased from fishermen or local fish markets at Heng-chun Peninsula, southern tip of Taiwan. These fishes were caught by long-liners from the waters of deeper than 50 meters.

Specimens were photographed when fresh, and preserved in 10% formalin for further observations. Measurements of body proportion and meristic counts were based on the formalin preserved specimens. Standard length (SL) was taken from the tip of the lower jaw to the base of the caudal fin. Interorbital width was measured at the nearest distance between two orbits. Pored lateral-line scales were counted to the base of the caudal fin. The transverse series of scales were counted between lateral line and the base of median dorsal spine. All specimens are now deposited in the Museum of the Institute of Zoology, Academia Sinica (ASIZP).

1. Paper No. 284 of the Journal Series of the Institute of Zoology, Academia Sinica.

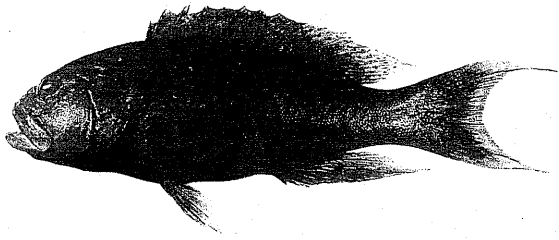


Fig. 1. *Varola albimarginata*, 154.10 mm SL.

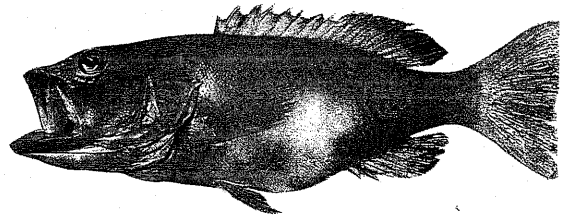


Fig. 2. *Salopita powelli*, 309.80 mm SL.

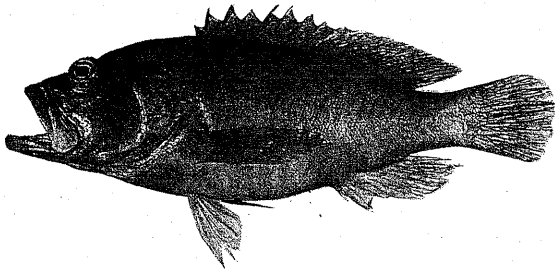


Fig. 3. *Cephalopholis obtusaurus*, 192.25 mm SL.

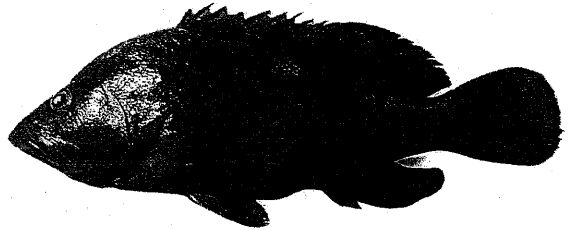


Fig. 4. *Cephalopholis sexmaculatus*, 357.35 mm SL.

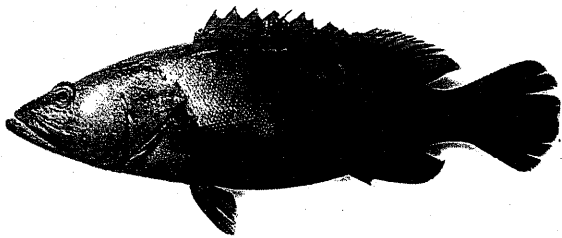


Fig. 5. *Anyperodon leucogrammicus*, 359.58 mm SL.

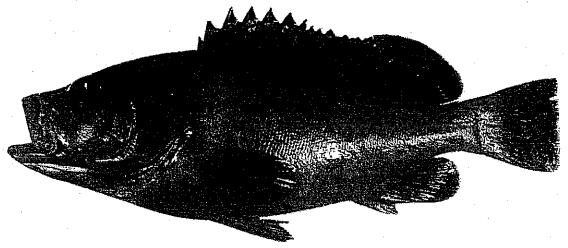


Fig. 6. *Epinephelus retouti*, 263.85 mm SL.

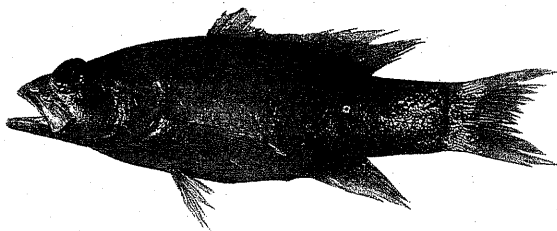


Fig. 7. *Liopropoma lunulatum*, 146.50 mm SL.

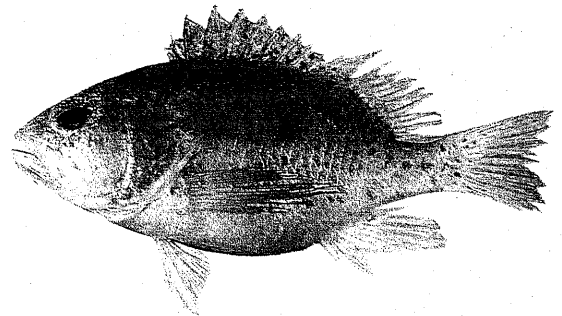


Fig. 8. *Plectranthias yamakawai*, 185.00 mm SL.

***Variola albimarginata* Baissac 白尾緣星鱸**

Fig. 1

Variola albimarginata Baissac, 1953: 214 (type locality, Mauritius); 1956: 395; Morgans, 1982: 5; Masuda *et al.*, 1984: 126.

Materials: One specimen ASIZP 056031, 154.10 mm SL., Dec. 5, 1985, Wan-li-tung.

Diagnosis: D. IX, 14; A. III, 8; P. i+17; C. 15; GR (5)2+1+8(4). The following measurements are expressed by percent (%) of standard length: HL 38.51, predorsal length 35.17, prepectoral length 35.13, preventral length 39.33, preanal length 66.61. Percent of HL (%): snout 29.06, eye diameter 18.96; interorbital width 17.52, maxillary length 43.13, snout to posterior margin of orbit 35.38. Mouth large, maxillary extending well beyond the anterior margin of eye. The outer row of conical teeth on upper jaw much longer than depressible inner teeth; one canine tooth on each side of upper jaw and two on the left and 3 on the right sides of the lower jaw. Operculum with 3 spines, median one almost equidistantly between the other two spines, though a little nearer to the lower one. Body color when alive, generally orangish red, with white spots on body and red spots on head, and median fins. The soft rays of these median fins much elongated.

Distribution: Known from Southern Japan to the Indian Ocean including Rodrique, Mauritius and Chagos Islands.

Remark: It is easily distinguished from *V. louti* by having the white posterior margin of the caudal fin.

***Salopita powelli* Smith 褒氏貧鱸**

Fig. 2

Salopita powelli Smith, 1963: 719 (type locality, Cook Island); Masuda *et al.*, 1984: 127.

Materials: One specimen ASIZP 056063, 309.80 mm SL., Sep. 11, 1986, Heng-chun.

Diagnosis: D. VIII, 11; A. III, 8; P. 15; Llp. 73; GR 8+17. Percent of SL (%): HL 40.87, body depth 35.05, body width 17.96, depth of caudal peduncle 10.81. Percent of

HL (%): snout 31.67, interorbital 24.80, eye diameter 17.77, maxillary 39.65, snout to posterior margin of orbit 47.00. Lower jaw without canine teeth. Lower edge of preoperculum with one antrorse spine. Caudal fin slightly emarginate. Body color when alive, generally pink or in combination of red and yellow, paler ventrally. Head red from the origin of dorsal to the snout; dorsal fin and posterior part of caudal fin yellow, the color at the anteriormost few dorsal spines reddish.

Distribution: Known from Ryukyu Islands, South China Sea and the Cook Islands.

***Cephalopholis obtusaurus* Evermann and Seale 暗金鱸**

Fig. 3

Cephalopholis obtusaurus Evermann and Seale, 1907: 77 (type locality, Bacon, Sorsogon).

Cephalopholis obtusaurus, Randall, 1964: 287; Masuda *et al.*, 1984: 128.

Materials: One specimen ASIZP 056034, 192.25 mm SL., Sep. 11, 1986, Heng-chun.

Diagnosis: D. IX, 14; A. III, 9; P. 18; Llp. 47; GR (2)4+1+9(5). Percent of SL (%): HL 40.78, body depth 35.24, body width 17.79, depth of caudal peduncle 12.48, longest pectoral ray 29.18. Percent of HL (%): snout 34.18, eye diameter 18.37, interorbital 10.97, maxillary 43.37, snout to posterior margin of eye 48.34. Several rows of small teeth on jaws, vomer, and palatines; upper jaw with 2 canines on each side anteriorly, lower jaw with one canine on each side of symphysis. Maxillary reaches middle of eye. Operculum with 3 equidistant spines, posterior margin of preoperculum finely serrated. Longest pectoral ray extending to the origin of anal spine. Caudal fin rounded. Color when alive, body and fins orangish red tinged with pale brown, color of head darker than body. Head, nape and dorsal fin with numerous dots of bright orangish.

Distribution: It is known from Ryukyu Islands, Taiwan, Philippine Islands, and Tahiti.

***Cephalopholis sexmaculatus* (Rüppell) 六斑鱸**

Fig. 4

Cephalopholis sexmaculatus Rüppell, 1828: 107 (type locality, Red Sea); Fowler, 1928: 175; Fowler and Bean, 1930: 229; Baissac, 1953: 517; Morgans, 1982: 10; Masuda *et al.*, 1984: 128.

Cephalopholis gibbus Fourmanoir, 1954: 215; 1957: 147.

Materials: One specimen, ASIZP 056033, 357.35 mm SL., Feb. 5, 1986, Heng-chun.

Diagnosis: D. IX, 16; A. III, 9; P. i+16; GR. (2)6+1+9(5); C. 13; Llp. 103, Ltr. 14/46. Percent of SL (%): HL 41, body depth 35.88, body width 16.26, pectoral length 25.38, longest ventral ray 19.31, 4th dorsal spine (longest) 0.99, predorsal length 4.21, prepectoral length 38.12, preventral length 39.55, preanal length 71.08. Percent of HL (%): snout 32.32, eye diameter 14.10, maxillary 51.14, posterior margin of orbit 44.55. Head pointed, mouth large, maxillary extending beyond the posterior margin of eye. Low margin of preopercle finely serrated; opercle with 3 spines, the middle one closer to the lower than to the upper one. Body color when alive, bright red with small bluish dots except the paired fins. Six blackish blotches on dorsal flank of body, four of them at base of dorsal fin and the other twos at dorsal edge.

Distribution: Distributed from Zanzibar, Polynesia, Indian Ocean, Comoros, Mauritius, Red Sea, East Indies, Society Islands, Philippines, and Taiwan.

***Anyperodon leucogrammicus* (Valenciennes)**

白線長首石斑

Fig. 5

Serranus leucogrammicus Valenciennes in Cuvier and Valenciennes, 1828: 347 (type locality, Seychelles).

Anyperodon leucogrammicus Fowler and Bean, 1930: 293; Weber and de Beaufort, 1931: 81; Schultz, 1953: 360; Randall, 1955: 57; Smith, 1955: 310; Fourmanoir, 1957: 159; Morgans, 1982: 12; Masuda *et al.*, 1984: 128.

Materials: One specimen ASIZP 056035,

359.58 mm SL., Feb. 5, 1986, Heng-chun.

Diagnosis: D. XI, 15; A. III, 9; P. i+15; GR. (2)7+1+9(5); C. 15. Percent of SL (%): HL 38.9, predorsal length 39.12, prepectoral length 35.39, preventral length 37.59, depth of caudal peduncle 9.42, length of longest pectoral ray 17.41, length of longest ventral ray 15.41. Percent of HL (%): snout 24.03, maxillary 45.40, eye diameter 14.19. Head pointed, mouth large and oblique, maxillary extends well beyond the posterior margin of eye; preoperculum with 28 minute serrations; operculum protruded into a long angular flap, the posterior margin with 3 spines of almost in equidistance. Caudal fin rounded. Body color when alive, generally brown-olive with 3 narrow white longitudinal stripes extending to the caudal fin. Medium-sized orangish-red spots on head, body and fins.

Distribution: Ranging from the Eastern Africa, Red Sea; and Indian Oceans toward the Indo West Pacific Ocean including Ryukyu Islands, Taiwan, Philippines and extending further south to Micronesia.

***Epinephelus retouti* Bleeker 截尾石斑**

Fig. 6

(*Epinephelus truncatus* Katayama, 1957: 158) *Epinephelus retouti*; Bleeker, 1868: 339 (type locality: Réunion); Randall and Heemstra 1986: 51-56 1960: 66; Masuda *et al.*, 1984: 129.

Materials: One specimen ASIZP 056036, 270.45 mm SL., Mar. 18, 1986, Hou-bi-hu; 1 specimen ASIZP 056058, 263.85 mm SL., Sep. 11, 1986, Heng-chun.

Diagnosis: D. XI, 16-17; A. III, 8; P. 19; GR. (2)4+1+11(3). Percent of SL (%): HL 41.84-41.98, body depth 32.74-34.49, body width 17.53-18.17, depth of caudal peduncle 9.91-9.95. Percent of HL (%): snout 31.44-31.84, maxillary 34.96-35.87, eye diameter 16.60-19.25, interorbital 16.60-17.12. Mouth large, both jaws with several rows of small conical teeth, of which a pair of enlarged canines on each side of symphyses in each jaw; maxillary reach below the middle of eye. The posterior edge of preoperculum finely

serrated, opercular flap extending beyond the insertion of pectoral fin and that of dorsal fin as well. Caudal fin truncated. Color when alive body including fins, generally yellowish brown, dorsal fins olive green with dark-red at distal ends of spines, operculum also with dark-red tip, upper caudal fin also in olive coloration. Pectoral, ventral, and anal fins olive orangish.

Distribution: Known from Madagascar, Indian Ocean, Southern Japan and Taiwan to the South Pacific Ocean.

Liopropoma lunulatum (Guichenot) 彎月鱸

Fig. 7

Grystes lunulatus Guichenot, 1863: 4 (type locality, Reunion Island) (not seen).

Chorististium lunulata Katayama, 1960: 116.

Liopropoma lunulatum, Masuda *et al.*, 1984: 133.

Materials: Four specimens ASIZP 056030, 110.40–146.50 mm SL., Sep. 11, 1986, Heng-chun.

Diagnosis: D. VIII, 12; A. III, 8; P. i+14; Llp. 50–51; GR. (4–5)1–2+1+7–8(4–5). Percent of SL(%): HL 40.38–41.30, body depth 31.16–31.19, body width 18.86–18.98, depth of caudal peduncle 15.58–15.75; longest pectoral ray 31.09–31.39. Percent of HL(%): snout 30.48–30.85, maxillary 42.60–43.42, eye diameter 21.22–21.71, interorbital 15.57–18.09, posterior margin of eye 48.68–49.62. Jaws, palatines, and vomer with villiform teeth, maxillary reaching the posterior margin of eye. Operculum with 3 spines, the middle one much closer to the lower one, posterior margins of preoperculum and operculum finely serrated. Dorsal insertion a little behind pectoral base, the membrane between dorsal spines notched. Longest pectoral ray almost reaching the origin of anal spine. Caudal fin lunated. Body color when alive, generally yellowish red, a brownish yellow band from snout to caudal base; outer edges of caudal fin with yellowish band. The coloration of this species is variable, it may present with dark patches on dorsolateral part of body.

Distribution: It is known from Reunion Island, Mauritius, Mascarene Islands, Sumi-suto, Taiwan and Japan.

Plectranthias yamakawai Yoshino 1972

山川氏花鱸

Fig. 8

Plectranthias anthioides Kamohara and Yamakawa, 1968: 8.

Plectranthias yamakawai Yoshino, 1972: 53 (type locality, Okinawa); Randall, 1980: 184; Masuda *et al.*, 1984: 134.

Materials: One specimen ASIZP 056037, 185.00 mm SL., Jun. 10, 1986, Hou-bi-hu.

Diagnosis: D. X, 17; A. III, 7; P. 13; C. 13; Llp. 30, Ltr. 5/14; GR. 5+12; Vert. 26. Percent of SL(%): HL 45.40, body depth 46.13, body width 22.39, depth of caudal peduncle 11.49, longest pectoral ray 39.18, longest ventral ray 25.84. Percent of HL(%): snout 23.77, interorbital 14.63, eye diameter 26.23, maxillary 40.74. Body oblong, compressed. Mouth large, oblique and protractile; lower jaw slightly protruded when closed. Maxillary extends to below the posterior border of pupil; jaws with minute teeth; a pair of large conical teeth on upper jaw near symphysis; one (right) and two (left) strong backwardly directed conical teeth on each side of the lower jaw anteriorly. Posterior border of preopercle rather weakly serrated (about 28 serrations), the lower border with two antrorse spines; opercle with 3 spines, the median one the strongest. Pectoral fin long, reaching to below the base of 2nd soft anal ray; caudal weakly emarginated, with the upper most rays slightly filamentous. Head thickly scaled except snout, preorbital, lips, both jaws, and throat; 7 rows of scales on cheek. Body color when alive, reddish yellow above and whitish below, speckled with dark green on upper half of body, spinous dorsal as well as the bases of soft dorsal and caudal fins. A large reddish blotch of about eye diameter lies below lateral line. Ventral, anal and caudal fins yellowish; pectoral fins reddish.

Distribution: Known from Southern Japan to Taiwan.

Remark: *Plectranthias yamakawai* differs from *P. anthioides* in having less numerous

pored scales in lateral line (30), more numerous dark-greenish speckles and rather shorter 3rd dorsal spine (Yoshino, 1972).

REFERENCES

- BAISSAC, J. de B. (1953) Contribution a l'étude des poissons de l'île Maurice. V. *Proc. R. Soc. Mauritius* 1(3): 185-240.
- BAISSAC, J. de B. (1956) Description d'un nouveau serranide de l'île Maurice. *Proc. R. Soc. Mauritius* 1(4): 395-396.
- BLEEKER, P. 1868. Description de deux espèces inédites d'*Epinephelus* rapportées de l'île de la Réunion par M. M. Pollen et van Dam. *Versl. Akad. Amsterdam*, 2(2): 336-341.
- CUVIER, G. and A. VALENCIENNES (1828) *Histoire Naturelle des poissons*. Vol. 2. F. G. Levrault, Paris. 490pp.
- EVERMANN, B. W. and A. SEALE (1907) Fishes of the Philippine Islands. *Bull. Bur. Fish.* 26(607): 49-110.
- FOURMANOIR, P. (1954) Ichthyologie et pêche aux Comores. *Mem. l'Inst. Scient. Madagascar* 9: 187-239.
- FOURMANOIR, P. (1957) Poissons teleostéens de l'eau Malgaches du Canal de Mozambique. *Mem. l'Inst. Scient. Madagascar* (F): 1-316.
- FOWLER, H. W. (1928) The fishes of Oceania. *Mem. B. P. Bishop Mus.* 10: 1-540.
- FOWLER, H. W. and B. A. BEAN (1930) The fishes of the families Amiidae, Chandidae, Duleidae and Serranidae, obtained by the U. S. Bureau of Fisheries Steamer "Albatross" in 1907 to 1910, chiefly in Philippine Islands and adjacent seas. *Bull. U. S. Natl. Mus.* 10(100): 1-334.
- GUNTHER, A. (1880) Report on the shore fishes procured during the voyage of H. M. D. "Challenger" in the years 1873-1876. *Rep. Sci. Res. Expl. Voy. H. M. S. Challenger, Zoology* 1(6): 1-82, 32pls.
- KAMOHARA, T. and T. YAMAKAWA (1968) Additional records of marine fishes from Amami. *Rept. Usa. Mar. Biol. St.* 15(1): 1-25.
- KATAYAMA, M. (1957) Four new species of serranid fishes from Japan. *Japan. J. Ichthyol.* 6(4/6): 153-159.
- KATAYAMA, M. (1960) *Fauna Japonica Serranidae* (pisces). Tokyo News Service, Ltd., Tokyo. 189pp.
- KATAYAMA, M. (1973) Serranid fishes of the Okinawa Islands (I). *Bull. Fac. Edu., Yamaguchi Univ.* 23(2): 197-208.
- KATAYAMA, M. (1974) Serranid fishes of the Okinawa Islands (II). *Bull. Fac. Edu., Yamaguchi Univ.* 24(2): 99-112.
- KATAYAMA, M. (1975) Serranid fishes of the Okinawa Islands (III). *Bull. Fac. Edu., Yamaguchi Univ.* 25(2): 161-178.
- MASUDA, H., K. AMAOKA, C. ARAGA, T. UYENO and T. YOSHINO (1984) *The fishes of the Japanese Archipelago*. Tokai Univ. Press., Tokyo. 437 pp.
- MORGANS, J. F. C. (1982) Serranid fishes of Tanzania and Kenya. *Ichthyol. Bull., J. L. B. Smith Inst. Ichthyol., Rhodes Univ.* 46: 1-44.
- RANDALL, J. E. (1955) Fishes of the Gilbert Islands. *Atoll Res. Bull.* 47: 1-243.
- RANDALL, J. E. (1964) Notes on the groupers of Tahiti, with description of a new serranid fish genus. *Paci. Sci.* 18(3): 281-296.
- RANDALL, J. E. (1980) Revision of the fish genus *Plectranthias* (Serranidae: Anthiinae) with descriptions of 13 new species. *Micronesica* 16(1): 101-187.
- RANDALL, J. E. and P. C. HEEMSTRA (1986) *Epinephelus truncatus* katayama, a junior synonym of the Indo-Pacific serranid fish *Epinephelus retouti* Bleeker. *Jap. Jour. of Ich.* 33(1): 51-56.
- RÜPPELL, E. (1828) *Atlas zu Reise in nördlicher Afrika*. 4. *Fische des rothen Meers*. 144pp.
- SCHULTZ, L. P., E. S. HERALD, E. A. LACHNER, A. D. WELANDER and L. P. WOODS (1953) Fishes of the Marshall and Marianas Islands. *Bull. U. S. Natl. Mus.* 202, 1: 1-685.
- SMITH, J. L. B. (1955) The fishes of Aldabra, Pt. II. *Ann. Mag. Nat. Hist.* 8(88): 304-312.
- SMITH, J. L. B. (1963) A new serranid fish from deep water off Cook Island, Pacific. *Ann. Mag. Nat. Hist.* ser. 13, 6: 719-720.
- WEBER, M. and L. F. de BEAUFORT (1931) *The Fishes of the Indo-Australia Archipelago*. Vol. 6. E. J. Brill, Leiden. 448pp.
- YOSHINO, T. (1972) *Plectranthias yamakawai*, a new anthiinae fish from the Ryukyu Islands, with a revision of the genus *Plectranthias*. *Japan. J. Ichthyol.* 19(2): 49-56.

臺灣產八種鱸科之新記錄種

邵廣昭 陳立文 李信徹

本文係報導筆者等最近在本省南部恆春半島海域所採集到的八種臺灣產新記錄種鱸科魚類。它們分屬於七個不同的屬，其種名分別是：白尾緣星鱸 *Variola albigmarginata* Baissac、褒氏貧鱸 *Salpita powelli* Smith、暗金鱸 *Cephalopholis obtusaurus* Evermman and Seale、六斑鱸 *Cephalopholis sexmaculatus* (Rüppell)、白線長首石斑 *Anyperodon leucogrammicus* (Valenciennes)、截尾石斑 *Epinephelus retouti* Bleeker、彎月鱸 *Liopropoma lunulatum* (Guichenot) 以及山川氏花鱸 *Plectranthias yamakawai* Yoshino。其中 *Salpita* 及 *Anyperodon* 為本省新記錄屬，文中除記述其形態特徵，地理分佈外，並附以各種之彩色圖片。

