

***Plectranthias normanby*, a new species of perchlet from Papua New Guinea, western Pacific (Teleostei: Serranidae)**

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Abstract

The Normanby perchlet *Plectranthias normanby* n. sp. is described from off Normanby Island, Milne Bay Province, Papua New Guinea, Solomon Sea, western Pacific Ocean, based on 2 specimens collected at depths of 175–480 metres. The new species is characterised within the *Plectranthias inermis* species group by the dorsal fin with 12 spines and 13 soft rays; no dorsal-fin rays filamentous; fourth dorsal-fin spine the longest, the spine length 2.25–2.34 in head; anal fin with 3 spines and 7 soft rays; pectoral-fin rays 13, none branched; branched caudal fin emarginate without filamentous rays; branched caudal-fin rays 13; no scales on anterior half of interorbital space; gill rakers 7 + 10–11; posterior margin of preopercle with 11–19 serrae, lower margin with 2 antrorse spines; lateral line incomplete, with 17 tubed scales; scales above lateral line to origin of dorsal fin 3½; scales below lateral line to origin of anal fin 9; circumpeduncular scales 14; cheek with ca. 5 diagonal rows of large scales; sides of body with a large, round black blotch, caudal peduncle with two dark brown spots. A key to the species of the *Plectranthias-inermis* species-group is presented.

Keywords: Perchlet, Serranidae, New Guinea, New species, Identification key, Distribution.

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Introduction

The perchlets of the genus *Plectranthias* are classified in the subfamily Anthiinae, family Serranidae (Nelson et al. 2016: 447; spelling of subfamily name follows Laan et al. 2021: 3). These small benthic fishes are found in tropical to subtropical seas of the Indo-Pacific and the western Atlantic from the shallows to depths as great as 400 m. The genus *Plectranthias* is characterised by a dorsal fin with X spines and 13–18 soft rays, III anal-fin spines and 6–8 soft rays, 12–18 pectoral-fin rays, pelvic-fin rays I,5, branched caudal-fin rays 12–16, gill rakers 4–9 + 9–17, branchiostegal rays 7, vertebrae 26, mouth terminal or with lower jaw projecting, and pelvic fin anterior to pectoral-fin base (Randall 1980: 105). The genus was revised by Randall (1980), who distinguished 30 valid species from the Indo-West Pacific and the western Atlantic. The following 30 species were described subsequently: *P. randalli* from the Chesterfield Islands by Fourmanoir and Rivaton (1980: 27, Fig.), later recorded from Taiwan by Lin et al. (1994: 175); *P. altipinnatus* from the Izu Peninsula, Japan by Katayama and Masuda 1980: 185, Fig. 1); *P. exsul* from the Juan Fernández Islands by Heemstra and Anderson (1983: 632, Figs. 1 and 2), later described from the same region under the name *P. lamillai* by Rojas and Pequeño (1998: 203), a junior synonym; *P. fijiensis* from Suva, Fiji by Raj and Seeto (1983: 15, Fig. 1); *P. bilaticlavata* from the Kermadec Islands by Paulin and Roberts (1987: 13, Fig. 1); *P. parini* from the Sala-y-Gómez Ridge, southeastern Pacific by Anderson and Randall (1991: 336, Figs. 1, 2A), later recorded from Easter Island by Pequeño (1997: 83); *P. pelicierii* from Mauritius by Randall and Shimizu (1994: 109, Figs. 1 and 2), later recorded from the Izu Islands and Ryukyu Islands by Senou and Yunokawa (1995: 4), from South Africa by Heemstra and Randall (2009: 14), from New Caledonia and Tonga by Fricke et al. (2015: 6); *P. lasti* from northern Western Australia, *P. pallidus* and *P. robertsi* from Queensland by Randall and Hoese (1995); *P. jothyi* from Malaysia and *P. knappi* from the Philippines by Randall (1996); *P. sheni* from Taiwan by Chen and Shao (2002: 64, Figs. 1 and 2); *P. klausewitzii* from Yemen, southern Red Sea by Zajonz (2006: 21, Figs. 2 and 3); *P. nazcae* from the Nazca Ridge, southeastern Pacific by Anderson (2008: 430, Figs. 1–2); *P. elaine* from South

Africa by Heemstra and Randall (2009: 7, Fig. 2); *P. elongatus* and *P. xanthomaculatus* from Taiwan by Wu et al. (2011); *P. flammeus* from the Marquesas Islands by Williams et al. (2013: 170, Figs. 2, 4); *P. alcocki* from Kerala, India by Bineesh, Gopalakrishnan and Jena in Bineesh et al. (2014: 492, Figs. 2-4); *P. bennetti* from Holmes Reefs, Coral Sea by Allen and Walsh (2015: 85, Figs. 1-4); *P. takasei* from southern Japan (Gill et al. 2016: 350, Figs. 1-5); *P. maekawa* from the Tokara Islands, Japan by Wada et al. (2018: 2, Figs. 1-2); *P. ahiahiata* from Easter Island (Shepherd et al. 2018); *P. cruentus* from Lord Howe Rise (Gill and Roberts 2020); *P. hinano* and *P. polygonius* from French Polynesia (Shepherd et al. 2020); *P. purpuralepis* from Taiwan (Tang et al. 2020); *P. ryukyuensis* from the Ryukyu Islands (Wada et al. 2020); *P. ferrugineus*, *P. grahami*, *P. mcgrouteri* and *P. moretonensis* from Australia (Gill et al. 2021). A worldwide total of 60 species of this genus is known at present.

During the MADEEP 2014 Oceanography Expedition, two specimens of an unusual species of *Plectranthias* were discovered. They turned out to belong to an undescribed species in the *P. inermis* species group, which is described in the present paper.

Materials and Methods

The holotype of the new species is deposited in the National Taiwan University, University Museum, Taipei, Taiwan (NTUM). Comparative materials are listed below. Abbreviations of museum collections follow Fricke and Eschmeyer (2021a). Methods follow Anderson and Heemstra (2012); measurements follow Hubbs and Lagler (1947); fin-ray counts follow Fricke (1983). In descriptions of new taxa, the data of the holotype are given first, followed by those of the other specimen, in brackets. Family classification and arrangement is based on Laan et al. (2014) and Nelson et al. (2016). Nomenclature follows Fricke et al. (2021). Citations of references and journals follow Fricke (2021) and Fricke and Eschmeyer (2021b). The key to the species of *Plectranthias* follows Randall (1980), but was updated concerning subsequently described species. The distribution map was composed using QGIS 2.12.2.

Comparative material (genus *Plectranthias*): *Plectranthias alleni* Randall 1980: WAM P.25625-001 (holotype), Western Australia; — AMS I.20125-001 (1 paratype), Western Australia; — ANSP 136750 (1 paratype), Western Australia; — BMNH 1978.2.27.3 (3 paratypes), Western Australia; — BPBM 21093 (2 paratypes), Western Australia; — BPBM 21094 (2 paratypes), Western Australia; — BPBM 21095 (7 paratypes), Western Australia; — BPBM 21096 (1 paratype), Western Australia; — CAS 40799 (1 paratype), Western Australia; — MNHN 1978-0082 (1 paratype), Western Australia; — SAIAB 933 (1 paratype), Western Australia; — USNM 218368 (3 paratypes), Western Australia; — WAM P.23309-001 (1 paratype), Western Australia; — WAM P.23322-001 (1 paratype), Western Australia; — WAM P.23323-001 (1 paratype), Western Australia; — WAM P.23325-030 (10 paratypes), Western Australia; — WAM P.23334-001 (1 paratype), Western Australia.

Plectranthias altipinnatus Katayama & Masuda 1980: ZUMT 54242 (holotype), Izu Peninsula, Japan.

Plectranthias anthioides (Günther 1872): BMNH 1871.7.20.49 (holotype), Sulawesi, Indonesia.

Plectranthias bauchotae Randall 1980: MNHN 1978-0084 (holotype), Banc de l'Étoile, south of Madagascar.

Plectranthias bennetti Allen & Walsh 2015: QM I.39334 (holotype), Holmes reefs, western Coral Sea.

Plectranthias bilaticlavata Allen & Roberts 1987: NMNZ P.14024 (holotype), Raoul Island, Kermadec Islands; — NMNZ P.20264 (1 paratype), L'Esperance Rock, Kermadec Islands.

Plectranthias cirrhitoideus Randall 1980: BPBM 15066 (holotype), Karapoo Iti Islet at south end of Rapa; BPBM 15067 (1 paratype), Rapa; — USNM 212177 (1 paratype), Rapa.

Plectranthias elaine Heemstra & Randall 2009: SAIAB 28200 (holotype), Eastern Cape Province, South Africa; — BPBM 35049 (1 paratype), KwaZulu-Natal, South Africa; — SAIAB 28204 (1 paratype), Kosi Bay, South Africa; — SAIAB 28205 (1 paratype), KwaZulu-Natal, South Africa.

Plectranthias elongatus Wu, Randall & Chen 2011: NMMST P01301 (holotype), Kaohsiung, Taiwan.

Plectranthias exsul Heemstra & Anderson 1983: ANSP 127843 (holotype), Juan Fernández; — USNM 176577 (1 paratype), Juan Fernández.

Plectranthias flammeus Williams, Delrieu-Trottin & Planes 2013: USNM 409014 (holotype), Nuku Hiva, Marquesas Islands; — MNHN 2013-0001 (1 paratype), Nuku Hiva, Marquesas Islands — USNM 409425 (1 paratype), Fatru Hiva, Marquesas Islands.

Plectranthias foresti Fourmanoir 1977: MNHN 1976-0377 (holotype), Simo Banks, off southwestern Luzon, Philippines; — BPBM 20873 (2 paratypes), Simo Banks, off southwestern Luzon, Philippines; — NTUM 10668 (1), Matthew-Hunter Ridge, New Caledonian EEZ; — SMNS 23755 (1), Lifou, Loyalty Islands.

Plectranthias fourmanoiri Randall 1980: BPBM 17242 (holotype), Enewetak Atoll, Marshall Islands; — ANSP 128436 (1 paratype), Pitcairn Island; — BMNH 1974.8.8.1 (1 paratype), Pitcairn Island; — BPBM 9608 (1 paratype), Enewetak Atoll, Marshall Islands; — BPBM 9263 (1 paratype), Tahiti, Society Islands; — BPBM 13925 (2 paratypes), Rarotonga, Cook Islands; — BPBM 15068 (1 paratype), Pitcairn Island; — BPBM 17466 (1 paratype), Tutuila, American Samoa; — CAS 20867 (1 paratype), Ducie Atoll, Pitcairn Group; — MNHN 1971-0122 (1 paratype), Mangareva, Tuamotu Archipelago; — USNM 212176 (1 paratype, Ducie Atoll, Pitcairn Group; — WAM P.26085-029 (1 paratype), Christmas Island, eastern Indian Ocean; — WAM P.26113-004 (2 paratypes), Christmas Island, eastern Indian Ocean; — WAM P.26113-005 (1 paratype), Christmas Island, eastern Indian Ocean.

Plectranthias gardineri (Regan 1908): BMNH 1908.3.23.62 (lectotype, selected by Randall 1980: 130), Amirante Islands, Seychelles.

Plectranthias garrupellus Robins & Starck 1961: ANSP 95129 (holotype), Florida, USA; — USNM 92679 (1), Cuba; — USNM uncat. (1), Florida east coast, USA.

Plectranthias helenae Randall 1980: BPBM 13957 (holotype), Oahu, Hawaiian Islands; — BPBM 21091 (1 paratype), Oahu, Hawaiian Islands; — CAS 40803 (1 paratype), Oahu, Hawaiian Islands; — USNM 218367 (1 paratype), Oahu, Hawaiian Islands.

Plectranthias inermis Randall 1980: BPBM 22468 (holotype), Luzon, Philippines; — BMNH 1978.2.27.2 1 paratype), Seram, Maluku, Indonesia; — BPBM 20324 (1 paratype), New Britain, Papua New Guinea; — BPBM 21087 (2 paratypes), Seram, Maluku, Indonesia; — BPBM 22460 (3 paratypes), Luzon, Philippines; BPBM 24777 (3), Mauritius; — CAS 40800 (1 paratype), Seram, Maluku, Indonesia; — NCIP 3768-3769 (2 paratypes), Seram, Maluku, Indonesia; — USNM 210121 (1 paratype), Saparua, Maluku, Indonesia; — WAM P.21213-03 (1), Madang, Papua New Guinea; — WAM P.21621-001 (2 paratypes), Christmas Island, eastern Indian Ocean; — WAM P.26125-008 (1 paratype), Christmas Island, eastern Indian Ocean.

Plectranthias intermedius (Kotthaus 1973): ZMH 5132 (holotype), off Sokotra, Yemen, 11°33.9'N 52°54'E to 11°38'N 52°52'E, depth 290-190 metres; — ZMH 5133 (1 paratype), same data as the holotype.

Plectranthias japonicus (Steindachner 1883): CAS-SU 9259 (holotype of *Sayonara satsumae*), Kagoshima, Japan; BPBM 20872 (2), Manila Bay, Philippines.

Plectranthias jothyi Randall 1996: BPBM 20230 (holotype), Strait of Malacca, Malaysia.

Plectranthias kamii Randall 1980: BPBM 19636 (holotype), Okinawa, Ryukyu Islands; — BPBM 5845 (1 paratype), Guam, Mariana Islands; — BPBM 24784 (1), Moorea, Society Islands; — USNM 219329 (1 paratype), Augulpelu Reef, Palau.

Plectranthias kelloggi (Jordan & Evermann 1903): USNM 50642 (holotype), Hawaii, Hawaiian Islands; — ASIZP 56172 (1), Kaohsiung, Taiwan; — ASIZP 56181 (26), Kaohsiung, Taiwan; — BPBM 14188 (1), Hawaiian Islands; — BPBM 21067 (1 paratype of *Plectranthias kelloggi melanesius*), Isle des Pins, New Caledonia; — BPBM 22484 (holotype of *Plectranthias kelloggi melanesius*), Isle des Pins, New Caledonia; — BPBM 22485 (1 paratype of *Plectranthias kelloggi melanesius*), Isle des Pins, New Caledonia; — NSMT-P 4671 (2), Ogasawara Islands.

Plectranthias klausewitzii Zajonz 2006: SMF 29279 (holotype), Strait of Perim, Yemen, southern Red Sea; — SMF 29294 (5 paratypes), Strait of Perim, Yemen, southern Red Sea.

Plectranthias knappi Randall 1996: USNM 219865 (holotype), Visayan Sea, Philippines.

Plectranthias lasti Randall & Hoese 1995: AMS I.22807-056 (holotype), Western Australia; — CSIRO H.651-02 (1 paratype), Queensland, Australia.

Plectranthias longimanus (Weber 1913): ZMA 113364. (lectotype, as selected by Randall 1980: 149), Paternoster Island, Indonesia; — ANSP 128644-128648 (8), Viti Levu, Fiji; — BMNH 1974.4.22.2-3 (2), Shazu, Kenya; — BPBM 16008 (1), Guadalcanal, Solomon Islands; — BPBM 18518 (1), Ambon, Maluku, Indonesia; — BPBM 19309 (1), Ambon, Maluku, Indonesia; — BPBM 19376 (1), Ambon, Maluku, Indonesia; — BPBM 21088 (1), Sumilon Island, Philippines; — BPBM 21089 (1), Luzon, Philippines; — BPBM 21111 (1), Ulithi, Micronesia; — BPBM 23464 (1), Luzon, Philippines; — BPBM 35318 (1), Ogasawara Islands; — BPBM 35570 (2), Seychelles; — CAS 33129 (1), Grande Comore, Comoro Islands; — MNHN 1989-0318 (1), Walters Shoals; — NTUM 10105 (1), Madang, Papua New Guinea; — NTUM 10143 (1), Madang, Papua New Guinea; — SMNS 23639 (1), Lifou, Loyalty Islands; — WAM P.30631-011 (1), Madang, Papua New Guinea; — ZMA 100478 (1 paralectotype), Paternoster Island, Indonesia.

Plectranthias maculicauda (Regan 1914): BMNH 1913.12.4.12-19 (8 syntypes), east of Cape North, New Zealand.

Plectranthias maugei Randall 1980: MNHN 1978-0083 (holotype), off Toliara, Madagascar; — BPBM 21157 (1 paratype), off Toliara, Madagascar; — MNHN 1978-0184 (1 paratype), off Toliara, Madagascar.

Plectranthias megalepis (Günther 1880): BMNH 1879.5.14.180 (lectotype as selected by Randall 1980), Kai Islands, Maluku, Indonesia.

Plectranthias megalophthalmus Fourmanoir & Randall 1979: BPBM 22486 (holotype), Ile des Pins, New Caledonia.

Plectranthias morgansi (Smith 1961): SAIAB 134 (holotype), Kenya; — SAIAB 806 (1 paratype), Kenya.

Plectranthias nanus Randall 1980: BPBM 7279 (holotype), Guam; — AMS I.17902-001 (2 paratypes), Oahu, Hawaiian Islands; — ANSP 128434 (2 paratypes), Cocos-Keeling Islands; — ANSP 128435 (1 paratype), Cocos-Keeling Islands; — ANSP 128437 (1 paratype), Oahu, Hawaiian Islands; — ANSP 128454 (5 paratypes), Cocos-Keeling Islands; — BMNH 1974.8.8.2 (1 paratype), Guam; — BPBM 6345 (2 paratypes), Oahu, Hawaiian Islands; — BPBM 6928 (1 paratype), Tahiti, Society Islands; — BPBM 8068 (1 paratype), Palau; — BPBM 8132 (2 paratypes), Enewetak, Marshall Islands; — BPBM 8444 (1 paratype), Guam; — BPBM 9768 (1 paratype), Oahu, Hawaiian Islands; — BPBM 9905 (1 paratype), Aurapukshekaru Island, Palau; — BPBM 12283 (3 paratypes), Oahu, Hawaiian Islands; — BPBM 13909 (1 paratype), Rarotonga, Cook Islands; — BPBM 13926 (3 paratypes), Rarotonga, Cook Islands; — BPBM 14042 (1 paratype), Takarua Atoll, Tuamotu Archipelago; — BPBM 16429 (1), Tahuata, Marquesas Islands; — BPBM 16542 (4 paratypes), Oeno Atoll, Pitcairn Group; — BPBM 16744 (2 paratypes), Pitcairn Island, Pitcairn Group; — BPBM 16847 (1 paratype), Pitcairn Island, Pitcairn Group; — BPBM 16891 (2 paratypes), Pitcairn Island, Pitcairn Group; — BPBM 17027 (1 paratype), Pitcairn Island, Pitcairn Group; — BPBM 17181 (1 paratype), Temoe Atoll, Gambier Islands; — BPBM 17467 (1 paratype), Tutuila, Samoa; — BPBM 17701 (3 paratypes), Ulithi, Micronesia; — BPBM 19571

(1 paratype), Fanning Island, Line Islands; — BPBM 20462 (1 paratype), Oahu, Hawaiian Islands; — BPBM 31789 (2), Bougainville Reef, Coral Sea; — BPBM 32762 (2), Osprey Reef, Coral Sea; — CAS 24405 (1 paratype), Babelthuap, Palau; — MNHN 1974-0083 (1 paratype), Pitcairn Island, Pitcairn Group; — SAIAB 3646 (2 paratypes), Oeno Atoll, Pitcairn Group; — SMNS 23666 (1), Lifou, Loyalty Islands; — SMNS 23674 (5), Lifou, Loyalty Islands; — SMNS 23773 (1), Lifou, Loyalty Islands; — SMNS 23814 (5), Lifou, Loyalty Islands; — SMNS 23943 (1), Lifou, Loyalty Islands; — SMNS 24067 (1), Lifou, Loyalty Islands; — WAM P.26090-002 (1 paratype), Christmas Island (eastern Indian Ocean); — WAM P.26122-003 (2 paratypes), Christmas Island (eastern Indian Ocean); — WAM P.30365-017 (1), Madang, Papua New Guinea; — USNM 212228 (1 paratype), Oahu, Hawaiian Islands.

Plectranthias nazcae Anderson 2008: USNM 312926 (holotype), Nazca Ridge; — BPBM 27978 (1 paratype), Nazca Ridge; — USNM 312927 (1 paratype), Nazca Ridge.

Plectranthias pallidus Randall & Hoese 1995: AMS I.25800-005 (holotype), Queensland, Australia.

Plectranthias parini Anderson & Randall 1991: — USNM 312925 (holotype), Sala-y-Goméz Ridge; — BPBM 33460 (1), Easter Island.

Plectranthias pelicier Randall & Shimizu 1994: — BPBM 24646 (holotype), Mauritius; — BPBM 35420 (1 paratype), Mauritius; — NSMT-P 45179 (1 paratype), Mauritius; — NSMT-P45180 (1 paratype, Mauritius); SAIAB 37015 (1 paratype), Mauritius; — SAIAB 51837 (3), Mauritius; SAIAB 52856 (1), Mauritius; — SMF 35746 (1), New Caledonia, Grande Terre, Lagon Sud; — USNM 325539 (1 paratype), Mauritius.

Plectranthias randalli Fourmanoir & Rivaton 1980: MNHN 1979-0430 (holotype), Chesterfield Islands, East Coral Sea.

Plectranthias retrofasciatus Fourmanoir & Randall 1970: BPBM 22487 (holotype), north of Grande Terre, New Caledonia.

Plectranthias robertsi Randall & Hoese 1995: AMS I.20968-003 (holotype), Queensland, Australia; — AMS I.25800-007 (6 paratypes), Queensland, Australia; — AMS I.25801-013 (2 paratypes), Queensland, Australia; — CSIRO H.682-01 (1 paratype), Queensland, Australia; — CSIRO H.690-01 (3 paratypes), Queensland, Australia; — CSIRO H.691-01 (1 paratype), Queensland, Australia; — CSIRO H.719-12-17 (6 paratypes), Queensland, Australia; — NTM S.11746-028 (5 paratypes), Queensland, Australia; — NTM S.11747-023 (5 paratypes), Queensland, Australia; — QM 20024 (1 paratype), Queensland, Australia; — USNM 319773 (2 paratypes), Queensland, Australia.

Plectranthias rubrifasciatus Fourmanoir & Randall 1979: BPBM 22513 (holotype), Grande Terre, New Caledonia; — BPBM 35809 (1), French Polynesia.

Plectranthias ryukyuensis Wada, Suzuki, Senou & Motomura 2020: NTUM 11242, New Ireland, Papua New Guinea; — NTUM 11281, New Hanover, Papua New Guinea; — NTUM 11317, New Hanover, Bismarck Sea, Papua New Guinea; — NTUM 12350, New Hanover, Papua New Guinea; — NTUM 12351, Milne Bay, Papua New Guinea.

Plectranthias sagamiensis (Katayama 1964): CAS 235596 (1), Philippines.

Plectranthias sheni Chen & Shao 2002: NTUM 3723 (holotype), Kaohsiung, Taiwan; — NTUM 6425 (1 paratype), Kaohsiung, Taiwan; — NTUM 7006 (1 paratype), Tashi (Daxi), Taiwan; — NTUM 8690 (1 paratype), Kaohsiung, Taiwan.

Plectranthias taylori Randall 1980: BPBM 22489 (holotype), Canton Island, Phoenix Islands (Kiribati); — USNM 219328 (1 paratype), Canton Island (Phoenix Islands (Kiribati)).

Plectranthias vexillarius Randall 1980: USNM 213545 (holotype), Gulf of Oman.

Plectranthias wheeleri Randall 1980: BPBM 22401 (holotype), Manado, northern Sulawesi, Indonesia; — BMNH 1890.2.26.28 (1 paratype), Kai Islands, Maluku, Indonesia; — SMNS 24052 (3), Lifou, Loyalty Islands.

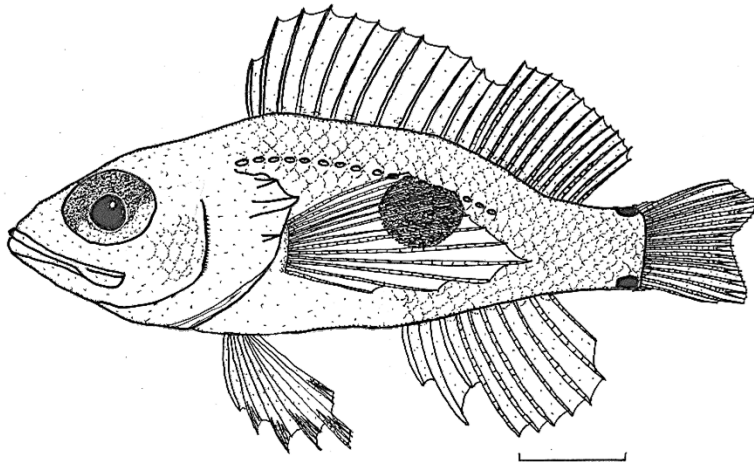


Figure 1. *Plectranthias normanby* new species, NTUM 17216, holotype, 25.3 mm SL, Solomon Sea, Papua New Guinea, Milne Bay Province, east of Normanby Island, 105-175 m depth. Lateral view of the preserved specimen, left side (scale = 4 mm).

Plectranthias whiteheadi Randall 1980: BMNH 1975.1.14.1 (holotype of *P. whiteheadi*), Kai Islands, Maluku, Indonesia; — NTUM 3721 (holotype of *Plectranthias chungchowensis* Shen & Lin 1984), Chungchou, Taiwan.

Plectranthias winniensis (Tyler 1966): ANSP 103583 (holotype), Amirante Islands, Seychelles; — BPBM 7340 (1), Hawaiian Islands, Oahu; — BPBM 9761 (1), Hawaiian Islands, Oahu; — BPBM 15497 (2), Hawaiian Islands, Oahu; — BPBM 16338 (1), Mauritius; — BPBM 19964 (1), Marshall Islands, Kwajalein; — BPBM 28460 (2, partly disintegrated), Mauritius; — BPBM 35498 (1), Seychelles, Bird Island; — BPBM 36742 (4), Indonesia, northern Sulawesi; — BPBM 37734 (1), Palau; — BPBM 40424 (1), Marshall Islands, Kwajalein; — BPBM 40649 (1), Indonesia, Bali; — WAM P.30625-008 (1), Madang, Papua New Guinea.

Plectranthias yamakawai Yoshino 1972: FAKU 44565 (holotype), Okinawa, Ryukyu Islands, Japan; — BPBM 18059 (1), Okinawa, Ryukyu Islands, Japan; — BPBM 19625 (1), Okinawa, Ryukyu Islands, Japan; — FAKU 44566-44568 (3 paratypes), Okinawa, Ryukyu Islands, Japan.

Results

Systematic ichthyology: The present paper follows the classifications provided by Nelson et al. (2016) and Laan et al. (2014):

Superclass Gnathostomata

Class Actinopterygii

Subclass Neopterygii

Division Teleostei

Order Perciformes

Family Serranidae Swainson 1839

Genus *Plectranthias* Bleeker 1873

Plectranthias normanby new species

(Figs. 1-3, Tables 1-2)

Common name: Four-eyes perchlet

Holotype: NTUM 17216, 25.3 mm SL, Solomon Sea, Papua New Guinea, Milne Bay Province, east of Normanby Island, 9°49.12'S 151°34.73'E - 9°48.78'S 151°34.05'E, 105-175 m depth, R/V Alis, St. DW4313-4 (PNG 2167), 3 May 2014, 13:45-14:05 h.

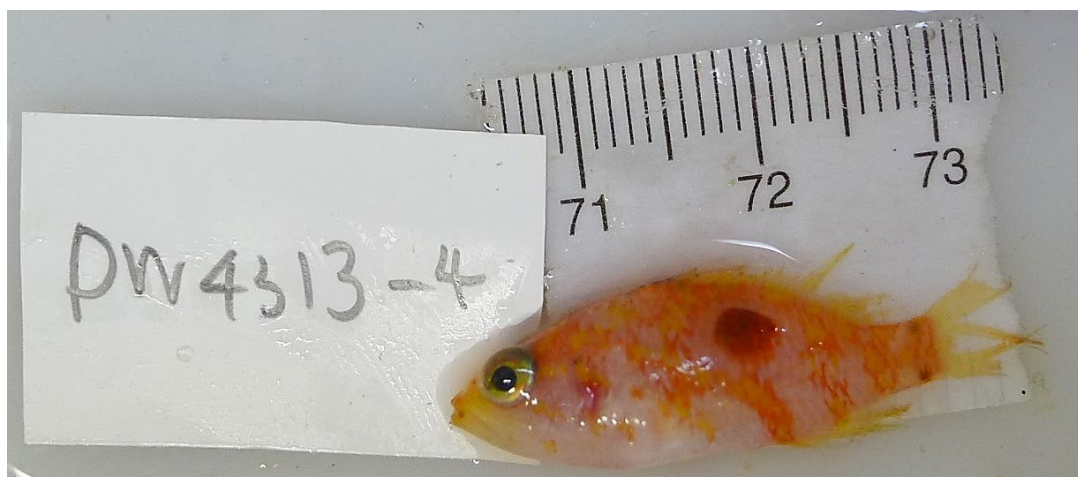


Figure 2. *Plectranthias normanby* new species, NTUM 17216, holotype, 25.3 mm SL, Solomon Sea, Papua New Guinea, Milne Bay Province, east of Normanby Island, 105-175 m depth. Photograph taken immediately after collection (J.-N. Chen).

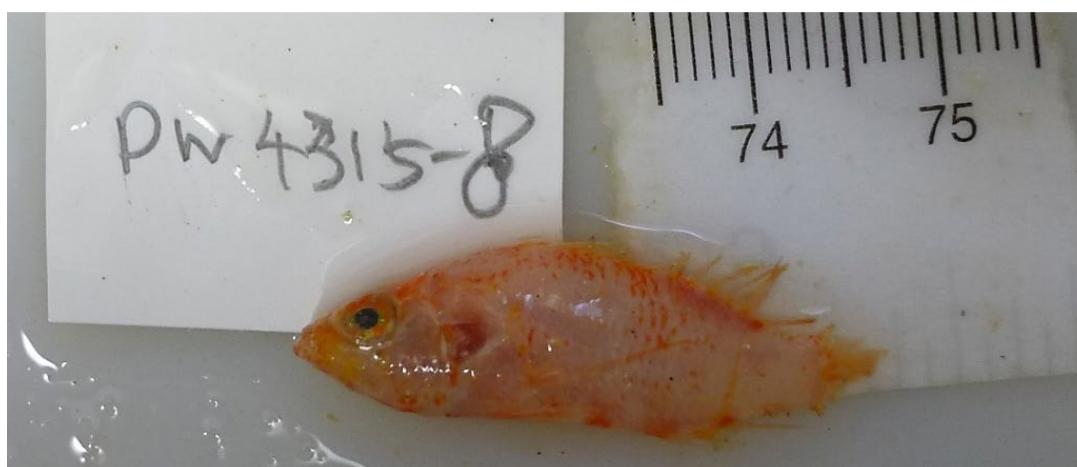


Figure 3. *Plectranthias normanby* new species, NTUM 12462, other specimen, 27.1 mm SL, Solomon Sea, Papua New Guinea, Milne Bay Province, east of Normanby Island, 480-510 m depth. Photograph taken immediately after collection (J.-N. Chen).

Non-type material: NTUM 12462, 27.1 mm SL, Solomon Sea, Papua New Guinea, Milne Bay Province, east of Normanby Island, 09°49'42.6"S 151°32'04.2"E - 09°49'45.5988"S 151°30'35.3772"E, 480-510 m depth, R/V Alis, St. DW4315-8 (PNG 2193), 3 May 2014, 15:35-16:15 h.

Diagnosis: Dorsal fin with 12 spines and 13 soft rays; no dorsal-fin rays filamentous; fourth dorsal-fin spine the longest, the spine length 2.25-2.34 in head; anal fin with 3 spines and 7 soft rays; pectoral-fin rays 13, none branched; branched caudal fin emarginate without filamentous rays; branched caudal-fin rays 13; no scales on anterior half of interorbital space; gill rakers 7 + 10-11; posterior margin of preopercle with 11-19 serrae, lower margin with 2 antrorse spines; lateral line incomplete, with 17 tubed scales; scales above lateral line to origin of dorsal fin 3½; scales below lateral line to origin of anal fin 9; circumpeduncular scales 14; cheek with ca. 5 diagonal rows of large scales; sides of body with a large, round black blotch, caudal peduncle with two dark brown spots.

Description: Measurements and proportions see Tables 1-2. Dorsal-fin rays XII,13 (XII,13); anal-fin rays III,7 (III,7), second spine longest and stoutest; pectoral-fin rays xiii (xiii), all unbranched, middle rays longest and reaching to about base of preultimate anal-fin ray; pelvic fin I,5 (I,5); caudal fin with 7 + 6 branched rays, iii dorsal and ii ventral unbranched rays, and 4 dorsal and 3 ventral procurrent rays (formula: (iv),iii,13,ii,(iii);

Table 1. *Plectranthias normanby* new species, Papua New Guinea, Milne Bay Province, Normanby Island: Meristic data and proportions of NTUM 17216, holotype, 25.3 mm SL.

	Measurement (mm)	Proportion of SL	% of SL
Standard length	25.3	--	--
Caudal-fin length	4.8	5.3	19.0
Caudal fin base to mid of concavity	3.7	6.8	14.6
Predorsal length	11.6	2.2	45.8
Dorsal-fin base length	14.5	1.7	57.3
Preanal length	16.4	1.5	66.9
Anal-fin base length	5.0	5.1	19.8
Prepelvic fin length	8.4	3.0	33.2
Prepectoral fin length	10.7	2.4	42.3
Length from tip of snout to end of preopercle	8.0	3.2	31.6
Head length	11.2	2.3	44.3
Body depth	8.7	2.9	34.4
Body width	4.8	5.3	19.0
Orbit diameter	3.2	7.9	12.6
Preorbital length	3.1	8.2	12.2
Bony interorbital	0.8	31.6	3.2
Caudal peduncle length	4.2	6.0	16.6
Caudal peduncle depth	3.2	7.9	12.6
Upper-jaw length	4.9	5.2	19.4
Length of first dorsal-fin spine	2.4	10.5	9.5
Length of second dorsal-fin spine	4.3	5.9	17.0
Length of third dorsal-fin spine	4.5	5.6	17.8
Length of fourth dorsal-fin spine	5.0	5.1	19.8
Length of fifth dorsal-fin spine	4.6	5.5	18.2
Length of first dorsal-fin ray	4.5	5.6	17.8
Length of longest dorsal-fin ray	4.6	5.5	18.2
Length of last dorsal-fin ray	2.0	12.6	7.9
Length of first anal-fin spine	2.7	9.4	10.7
Length of second anal-fin spine	4.5	5.6	17.8
Length of third anal-fin spine	3.2	7.9	12.6
Length of first anal-fin ray	5.8	4.4	22.9
Length of longest anal-fin ray	5.9	4.3	23.3
Length of last anal-fin ray	2.7	9.4	10.7
Pectoral-fin length (left side)	9.7	2.6	38.3
Length of pelvic-fin spine	3.2	7.9	26.6
Pelvic-fin length	6.8	3.7	26.9

lateral line complete with 17 tubed scales on left side (right side damaged); scales above lateral line (LL) to origin of dorsal fin $3\frac{1}{2}$ ($3\frac{1}{2}$); scales above LL to base of middle dorsal spine $2\frac{1}{2}$ ($2\frac{1}{2}$); scales below LL to origin of anal fin 9 (ca. 9); diagonal rows of scales on cheek ca. 5 (5); scales on top of head extending forward to level of posterior margin of pupil, well short of level of posterior nostrils; circumpeduncular scales ca. 14; no scales on chin, maxilla or snout; gill rakers 7 + 11 (7 + 10), including 2 rudiments on upper arch; pseudobranchial filaments ca. 12.

Body moderately deep. Mouth large, slightly oblique, posterior margin of maxilla reaching to a vertical at posterior edge of pupil; maxilla expanded posteriorly, with long, low lateral ridge running nearly parallel to

Table 2. *Plectranthias normanby* new species, Papua New Guinea, Milne Bay Province, Normanby Island: Meristic data and proportions of NTUM 12462, 27.2 mm SL. The specimen is severely damaged, so only selected measurements could be taken.

	Measurement (mm)	Proportion of SL	% of SL
Standard length	27.2	-	-
Predorsal length	11.7	2.3	43.0
Preanal length	18.2	1.5	66.9
Prepelvic fin length	10.8	2.5	39.7
Prepectoral fin length	11.9	2.3	43.8
Length from tip of snout to end of preopercle	8.9	3.1	32.7
Head length	11.7	2.3	43.0
Body depth	8.8	3.1	32.3
Body width	4.2	6.5	15.4
Orbit diameter	3.4	8.0	12.5
Preorbital length	2.6	10.4	9.6
Bony interorbital	1.2	22.7	4.4
Caudal peduncle depth	3.1	8.8	11.4
Upper-jaw length	6.0	4.5	22.1
Length of third dorsal-fin spine	4.9	5.6	18.0
Length of fourth dorsal-fin spine	5.0	5.4	18.4
Length of fifth dorsal-fin spine	4.3	6.3	15.8

dorsal margin; lower jaw slightly protruding; upper jaw with two pairs of enlarged canines and a band of about 3-4 rows of small, depressible sharp-tipped teeth; lower jaw with a band of about 4 rows of small, depressible sharp-tipped teeth anteriorly, gradually narrowing to a single row at posterior end of jaw, except interrupted at middle of side of jaw by 2 slightly enlarged canines, band of small teeth continued posteriorly, narrowing to a single row at end of jaw; vomer with roughly V-shaped band of 3 rows of sharp-tipped conical teeth, largest teeth in innermost row; palatines with 1 row of small, sharp-tipped conical teeth; tongue small, triangular, upturned, tip rounded, without teeth.

Opercle with 3 prominent flat spines, middle spine much longer than others and dagger-like; preopercle with 19 (11) small spines along posterior margin and 2 (2) antrorse spines on ventral margin; interopercle smooth; subopercle with 5 weak serrae or crenulations. Pair of nostril openings on each side of snout, near anterior border of orbit; the posterior opening a narrow slit, larger than nearby ovate, anterior opening; large, rounded skin flap before posterior opening, its length about one-fifth pupil diameter.

Scales ctenoid without ctenial bases in posterior fields (see Fig. 1 in Anderson and Heemstra 2012); lateral line broadly arched over pectoral fin following body contour, then following straight path mid-laterally on side of caudal peduncle, ending below posterior dorsal-fin base; dorsal and anal fins with a few small scattered scales encroaching onto base of fin; base of caudal fin covered with small scales; base of pectoral fins covered with small scales. Fourth dorsal-fin spine longest. Dorsal fin incised before first segmented fin-ray; anal fin with a slightly pointed profile with middle rays longest; caudal fin slightly emarginate, without filaments; pectoral fin lanceolate with seventh ray (counting from uppermost) longest and reaching vertical of base of penultimate segmented anal-fin ray; pelvic fins not reaching to anus.

Colour in life (Figs. 2-3): Head and body rose, snout yellow, dorsal parts of head and body yellowish orange, orange reaching down to anal-fin base and ventral margin of caudal peduncle in five irregular orange bars; eye light green, dorsally bluish grey; Sides of body in the holotype with an eye-sized, dark grey blotch on level of eye below mid-dorsal base; caudal peduncle with a dorsal and a ventral dark grey spot; dorsal fin anteriorly

orange, posteriorly yellow, the anterior membranes distally grey; anal fin yellow; caudal fin pale orange; pectoral fins translucent; pelvic fins white.

Colour in preservative: (Fig. 1) Generally yellowish, eye dark grey, sides of body in holotype with a large, round, black blotch about the size of orbit, situated immediately below the lateral line on the level between the eighth spine and second ray of dorsal fin; caudal peduncle in holotype with a small dark brown blotch each near the dorsal and ventral margins of the anal-fin base; fins whitish.

Distribution: The species is known only from two localities in the Solomon Sea off Normanby Island, Milne Bay Province, Papua New Guinea (Fig. 4). It was collected at depths of 175-480 m.

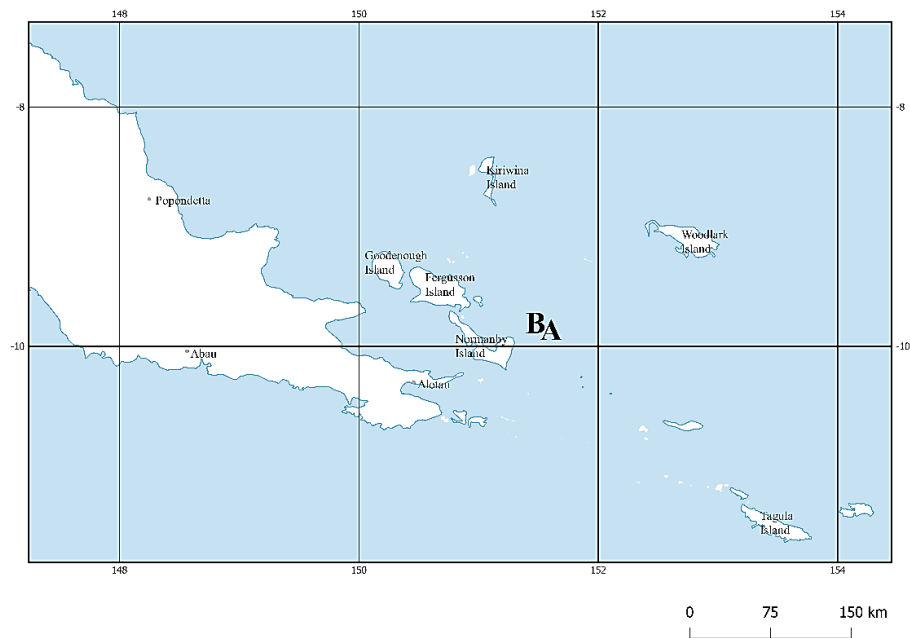


Figure 4. Distribution of the species of the *Plectranthias normanby* new species in Milne Bay Province, Papua New Guinea. A) NTUM 17216, holotype, male. B) NTUM 12462, additional specimen, female.

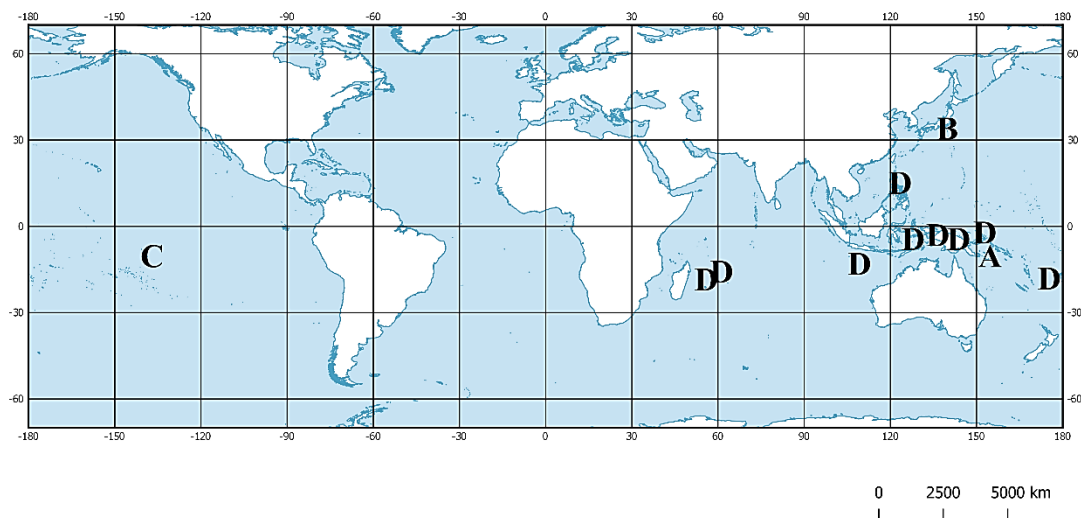


Figure 5. Distribution of the species of the *Plectranthias inermis* species group in the Indo-West Pacific. A) *Plectranthias normanby* new species. B) *P. altipinnatus* Karayama & Masuda 1980. C) *P. flammeus* Williams, Delrieu-Trottin & Planes 2013. D) *P. inermis* Randall 1980.

Table 3. Comparison of *Plectranthias altipinnatus*, *P. flammeus*, *P. inermis* and *P. normanby* n. sp. Character ranges different from *P. normanby* n. sp. are printed in bold face.

	<i>P. normanby</i> n. sp.	<i>P. altipinnatus</i>	<i>P. flammeus</i>	<i>P. inermis</i>
Dorsal-fin spines	XII	X	X	X
Dorsal-fin soft rays	13	18	14-15	16-18
Pectoral-fin rays	13	13	14	13
Lateral-line scales	17	27-28	15-17	12-18
Scale rows above lateral line	3½	3	2	2
Scale rows below lateral line	9	9	10	8½-9½
Gill rakers	7+10-11	6+11	6+13	5-6+10-11
Caudal-fin shape	emarginate	truncate	rounded	emarginate
Serrae on posterior margin of preopercle	11-19	serrate	8-10	0-5
Spines on ventral margin of preopercle	2	none	2	none
Body colouration	Sides with a large round black blotch; caudal peduncle with 2 brown spots	Red, with rows of yellow blotches ; no dark markings	Pale, with yellow blotches ; no dark markings	White, with rows of red blotches ; no dark markings

Etymology: The name of the new species refers to the type locality, Normanby Island. It is treated as a noun in apposition.

Comparison: The new species is in the *Plectranthias-inermis* species-group (Tab. 3) which differs from other species by a combination of all pectoral rays unbranched; upper margin of preopercle strongly serrate; third or fourth dorsal-fin spine the longest; no scales on maxilla; and top of head not scaled anteriorly to midinterorbital space. Within the group, the new species differs from the other species by its XII dorsal-fin spines and 13 dorsal-fin soft rays (other species: X spines, 14-18 soft rays), 7 gill rakers on the upper arch (other species: 5-6), and the presence of a large, eye-sized, round black blotch on the sides of the body and two small dark brown spots on the caudal peduncle (other species not with that colour pattern, but with rows of smaller, yellow or red blotches). It is furthermore distinguished from *P. altipinnatus* by its 17 tubed lateral-line scales (27-28 in *P. altipinnatus*), emarginate caudal fin (truncate in *P. altipinnatus*), and the presence of two antrorse spines on the ventral margin of the preopercle (none in *P. altipinnatus*); from *P. flammeus* by its 13 pectoral-fin rays (14 in *P. flammeus*), its 3½ scale rows above the lateral line (2 in *P. flammeus*), and 9 scale rows below (10 in *P. flammeus*), 11 gill rakers on the lower limb (13 in *P. flammeus*), the emarginate caudal fin (rounded in *P. flammeus*), and 19 serrae on the posterior margin of the preopercle (8-10 in *P. flammeus*); and from *P. inermis* by its 3½ scale rows above the lateral line (2 in *P. inermis*), and the presence of two antrorse spines on the ventral margin of the preopercle (none in *P. inermis*).

Remarks: A second specimen (NTUM 12462) collected near the type locality is too heavily damaged to include it as a paratype, but it provides some additional meristic data and counts.

According to an unpublished revision of the genus *Plectranthias* (R. Fricke, †J. E. Randall, R. L. Pyle), the *Plectranthias inermis* species group comprises four species: besides the new species also *Plectranthias inermis* Randall 1980, *P. altipinnatus* Katayama & Masuda 1980, and *P. flammeus* Williams, Delrieu-Tottin & Planes 2013. The new species was assigned to this species group as it shares its distinguishing characters: all pectoral rays unbranched; one or two antrorse spines present on lower margin of preopercle present; upper margin of preopercle strongly serrate; fourth dorsal-fin spine the longest; no scales on maxilla; and top of head not scaled anteriorly to midinterorbital space.

The presence of 12 dorsal-fin spines is unusual in anthiadines; however, as the new species is very close in all other respects in members of the *Plectranthias inermis* species group, it is here also treated as a member of the genus, and the species group.

Zoogeographically, this species group is restricted to the Indo-West Pacific. Only *P. inermis* has a wide distribution range in tropical water from the Mascarenes east to Fiji, in relatively shallow water at 14-65 m depth; the others are satellite species: *P. altipinnatus* is found on rocky reefs of southern Japan (40 m depth), *P. flammeus* also on rocks at Marquesas Islands in the central South Pacific (20-40 m depth), and *P. normanby* in Milne Bay Province (Papua New Guinea) at 175-480 m depth

The discovery of this enigmatic species is very interesting, adding another endemic to Milne Bay Province, Papua New Guinea. The total number of known valid species of *Plectranthias* is now raised to 61. Additional species of the genus remain to be discovered and/or described.

Key to the species of the *Plectranthias inermis* species group

- 1a) Lateral-line scales 21; preserved pale yellow, without markings (Japan) *P. altipinnatus*
- 1b) Lateral-line scales 12 to 18; preserved yellow with faint blotches or a large dark blotch 2
- 2a) Dorsal-fin spines XII; dorsal-fin soft rays 13; gill rakers on upper lobe 7; colouration in preservative: body yellow, male with a large dark grey blotch on the sides of the body below the lateral line, and two small brown blotches on the caudal peduncle *P. normanby* n. sp.
- 2b) Dorsal-fin spines X; dorsal-fin soft rays 14-18; gill rakers on upper lobe 5-6; colouration in preservative: body yellow, with series of faint blotches 3
- 3a) Body cream, with 3 series of elongate yellow blotches bordered dorsally and ventrally by brown; cheek with an oblique red streak running parallel to upper jaw; second dorsal-fin membrane pale, with orange spots (Marquesas Islands) *P. flammeus*
- 3b) Body cream, with a network of red blotches; cheek without an oblique red streak; second dorsal-fin membrane bright yellow, without spots (Mascarenes, Indonesia, Philippines and New Britain) *P. inermis*

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Literature cited

- Allen G.R., Walsh F. 2015. *Plectranthias bennetti*, a new species of anthiine fish (Pisces: Serranidae) from the Coral Sea, Australia. *Journal of the Ocean Science Foundation* 16: 82-89.
- Anderson Jr. W.D., Heemstra P.C. 2012. Review of Atlantic and eastern Pacific anthiine fishes (Teleostei: Perciformes: Serranidae), with descriptions of two new genera. *Transactions of the American Philosophical Society* 102(2): 1-173.
- Anderson Jr. W.D., Randall J.E. 1991. A new species of the anthiine genus *Plectranthias* (Pisces: Serranidae) from the Sala y Gómez Ridge in the eastern South Pacific, with comments on *P. exsul*. *Proceedings of the Biological Society of Washington* 104(2): 335-343.

- Anderson Jr. W.D. 2008. A new species of the perciform fish genus *Plectranthias* (Serranidae: Anthiinae) from the Nazca Ridge in the eastern South Pacific. *Proceedings of the Biological Society of Washington* 121 (4): 429-437.
- Bineesh K.K., Akhilesh K.V., Gopalakrishnan A., Jena J.K. 2014. *Plectranthias alcocki*, a new anthiine fish species (Perciformes: Serranidae) from the Arabian Sea, off southwest India. *Zootaxa* 3785(3): 490-496.
- Chen J.-P., Shao K.-T. 2002. *Plectranthias sheni*, a new species and *P. kamii*, a new record of anthiine fishes (Perciformes: Serranidae) from Taiwan. *Zoological Studies* 41(1): 63-68.
- Fourmanoir P., Rivaton J. 1980. *Plectranthias randalli* n. sp. un nouveau serranidé (anthiiné) du sud-ouest Pacifique. *Revue française d'Aquariologie Herpétologie* 7(1): 27-28.
- Fricke R. 1983. A method of counting caudal fin rays of actinopterygian fishes. *Braunschweiger Naturkundliche Schriften* 1: 729-733.
- Fricke R. 2021. Literature in Eschmeyer's catalog of fishes, electronic version (2 February 2021). San Francisco (California Academy of Sciences). Available at <http://research.calacademy.org/research/Ichthyology/Catalog/fishcatmain.asp> (last accessed 27 February 2021).
- Fricke R., Eschmeyer W.N., Laan R. van der. 2021. Eschmeyer's catalog of fishes, electronic version (2 February 2021). San Francisco (California Academy of Sciences). Available at <http://research.calacademy.org/research/Ichthyology/Catalog/fishcatmain.asp> (last accessed 27 February 2021).
- Fricke R., Eschmeyer W.N. 2021a. A guide to fish collections in Eschmeyer's catalog of fishes, electronic version (2 February 2021). San Francisco (California Academy of Sciences). Available at <http://research.calacademy.org/research/Ichthyology/Catalog/collections.asp> (last accessed 27 February 2021).
- Fricke R., Eschmeyer W.N. 2021b. Journals in Eschmeyer's catalog of fishes, electronic version (2 February 2021). San Francisco (California Academy of Sciences). Available at <http://research.calacademy.org/research/Ichthyology/Catalog/journals.asp> (last accessed 27 February 2021).
- Fricke R., Teitelbaum A., Wantiez L. 2015. Twenty-one new records of fish species (Teleostei) from the New Caledonian EEZ (south-western Pacific Ocean). *Marine Biodiversity Records* 8: 1-12.
- Gill A.C., Roberts C.D. 2020. *Plectranthias cruentus*, a new species of anthiadine perchlet (Teleostei: Serranidae) from the Lord Howe Rise, Tasman Sea. *Zootaxa* 4750(4): 560-566.
- Gill A.C., Pogonoski J.J., Moore G.I., Johnson J.W. 2021. Review of Australian species of *Plectranthias* Bleeker and *Selenanthias* Tanaka (Teleostei: Serranidae: Anthiinae), with descriptions of four new species. *Zootaxa* 4918(1): 1-116.
- Gill A.C., Tea Y.-K., Senou H. 2016. *Plectranthias takasei*, a new species of anthiadine fish from southern Japan (Teleostei: Serranidae). *Zootaxa* 4205(4): 349-356.
- Heemstra P.C., Anderson Jr., W.D. 1983. A new species of the serranid fish genus *Plectranthias* (Pisces: Perciformes) from the southeastern Pacific Ocean, with comments on the genus *Ellerkeldia*. *Proceedings of the Biological Society of Washington* 96(4): 632-637.
- Heemstra P.C., Randall J.E. 2009. A review of the anthiine fish genus *Plectranthias* (Perciformes: Serranidae) of the western Indian Ocean, with description of a new species, and a key to the species. *Smithiana, Publications in Aquatic Biodiversity, Bulletin* 10: 3-17.
- Hubbs C.L., Lagler K.F. 1947. *Fishes of the Great Lakes Region*. Bulletin, Cranbrook Institute of Science, Bloomfield Hills, MI 26: 1-186.
- Katayama M., Masuda H. 1980. Two new anthiine fishes from Sagami Bay, Japan. *Japanese Journal of Ichthyology* 27(3): 185-190.
- Laan R., van der, Eschmeyer W.N., Fricke R. 2014. Family-group names of recent fishes. *Zootaxa* 3883 (2): 1-230.
- Laan R., van der, Eschmeyer W.N., Fricke R. 2021. Cumulative addenda to family-group names in recent fishes. In: *Catalog of fishes, electronic version* (1 February 2021). San Francisco (California Academy of Sciences). Available at <http://www.calacademy.org/scientists/catalog-of-fishes-family-group-names/> (last accessed 27 Feb. 2021).
- Lin, P.-L., Shao, K.-T., Chen, J.-P. 1994. Five new records of coastal fishes from western Taiwan. *Zoological Studies* 33 (2): 174-176.

- Nelson J.S., Grande T.L., Wilson M.V.H. 2016. Fishes of the world. Fifth edition. John Wiley & Sons, Hoboken, N.J. 707 p.
- Paulin C.D., Roberts C.D. 1987. A new species of the anthiine fish genus *Plectranthias* (Percomorpha; Serranidae) from the Kermadec Islands off northern New Zealand. National Museum of New Zealand Records 3(2): 13-16.
- Pequeño G. 1997. Peces de Chile. Lista sistemática revisada y comentada: addendum. Revista de Biología Marina y Oceanografía 32(2): 77-94.
- Raj U., Seeto J. 1983. A new species of the anthiine fish genus *Plectranthias* (Serranidae) from the Fiji Islands. Japanese Journal of Ichthyology 30(1): 15-17.
- Randall J.E., Hoese D.F. 1995. Three new species of Australian fishes of the genus *Plectranthias* (Perciformes: Serranidae: Anthiinae). Records of the Australian Museum 47(3): 327-335.
- Randall J.E., Shimizu T. 1994. *Plectranthias pelicieri*, a new anthiine fish (Perciformes: Serranidae) from Mauritius, with notes on *P. gardineri*. Japanese Journal of Ichthyology 41(2): 109-115.
- 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. 1996. Two new anthiine fishes of the genus *Plectranthias* (Perciformes: Serranidae), with a key to the species. Micronesica 29(2): 113-131.
- Rojas M.J.R., Pequeño G. 1998. *Plectranthias lamillai*, a new anthiine fish species (Perciformes, Serranidae) from the Juan Fernandez Archipelago. Scientia Marina 62(3): 203-209.
- Senou H., Yunokawa K. 1995. New record of an anthiine fish, *Plectranthias pelicieri* (Perciformes: Serranidae) from the western Pacific. [In Japanese, English abstract.] I. O. P. Diving News 6 (9): 4-6.
- Shepherd B., Phelps T.A.Y., Pinheiro H.T., Rocha C.R., Rocha L.A. 2020. Two new species of *Plectranthias* (Teleostei, Serranidae, Anthiinae) from mesophotic coral ecosystems in the tropical Central Pacific. ZooKeys 941: 145-161.
- Shepherd B., Phelps T.A.Y., Pinheiro H.T., Pérez-Matus A., Rocha L.A. 2018. *Plectranthias ahiahiata*, a new species of perchlet from a mesophotic ecosystem at Rapa Nui (Easter Island) (Teleostei, Serranidae, Anthiinae). ZooKeys 762: 105-116.
- Tang C.-N., Lai N.-W., Ho H.-C. 2020. *Plectranthias purpurelepis* sp. nov., a new anthiadine perchlet from northern Taiwan (Perciformes: Serranidae). Zootaxa 4780(3): 508-522.
- Wada H., Senou H., Motomura H. 2018. *Plectranthias maekawa*, a new species of perchlet from the Tokara Islands, Kagoshima, Japan, with a review of Japanese records of *P. wheeleri* (Serranidae: Anthiinae). Ichthyological Research 2018: 1-11.
- Wada H., Suzuki T., Senou H., Motomura H. 2020. *Plectranthias ryukyuensis*, a new species of perchlet from the Ryukyu Islands, Japan, with a key to the Japanese species of *Plectranthias* (Serranidae: Anthiinae). Ichthyological Research, 2020: 1-14.
- Williams J.T., Delrieu-Trottin E., Planes S. 2013. Two new fish species of the subfamily Anthiinae (Perciformes, Serranidae) from the Marquesas. Zootaxa 3647(1): 167-180.
- Wu K.-Y., Randall J.E., Chen J.-P. 2011. Two new species of Anthiine fishes of the genus *Plectranthias* (Perciformes: Serranidae) from Taiwan. Zoological Studies 50(2): 247-253.
- Zajonz U. 2006. *Plectranthias klausewitzii* n. sp. (Teleostei, Perciformes, Serranidae), a new anthiine fish from the deep waters of the southern Red Sea. aqua, Journal of Ichthyology and Aquatic Biology 12(1): 19-26.