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A new species, *Polydactylus siamensis*, from Thailand and redescription of *P. plebeius* (Broussonet, 1782) with designation of a neotype (Perciformes: Polynemidae)

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Abstract A new species, *Polydactylus siamensis*, is described on the basis of eight specimens from Thailand. The species is similar to *P. plebeius* (Broussonet, 1782) in having five pectoral filaments and several dark stripes along the scale rows above and below the lateral line, but differs from the latter in having lower counts of pectoral fin rays (15 vs. 16–18 in *P. plebeius*), pored lateral line scales (54–58 vs. 60–68), scale rows above and below the lateral line (7 and 10 or 11, respectively vs. 8 or 9 and 12 or 13, respectively) and gill rakers (9 or 10 upper series, 13 or 14 lower and 22–24 total vs. 9–14, 13–18 and 24–32, respectively), and a longer upper jaw (mean 17% [range 16–17%] of standard length vs. 15% [13–16%]). *Polydactylus siamensis* is currently known only from Bangkok and Songkhla, Gulf of Thailand, and Phuket Island, Andaman Sea, whereas *P. plebeius* is widely distributed in the Indo-Pacific.

Key words Polynemidae · New species · *Polydactylus siamensis* · Redescription · *Polydactylus plebeius*

The polynemid fish, *Polydactylus plebeius*, which is the oldest available name for Indo-Pacific species in that genus, was originally reported by Broussonet (1782) from Tahiti, Society Islands, Polynesia. The species is characterized by five pectoral filaments and several prominent dark stripes along the longitudinal scale rows above and below the lateral line (e.g. Day, 1876; Menon, 1974; Talwar and Jhingran, 1992).

Recently, eight examples of a second polynemid species, also with five pectoral filaments and longitudinal dark stripes on the lateral body surface, were identified in museum collections, the specimens having been collected only from Thailand: Bangkok and Songkhla (Gulf of Thailand) and Phuket Island (Andaman Sea). The specimens, which were very similar to *P. plebeius* in overall body appearance, clearly differed from the latter in several aspects, including lateral line scale counts, scale rows above and below the lateral line, gill raker counts, pectoral fin ray counts and upper jaw length. Furthermore, seven other nominal species with five pectoral filaments and longitudinal dark stripes on the body were examined, resulting in the Thailand specimens being considered to represent an undescribed species of *Polydactylus*.

This article includes a description of the new species and a redescription of *P. plebeius*, based on the types and a wide range of non-type material. In addition, a neotype is designated for *P. plebeius*.

Methods

Counts and measurements generally follow Hubbs and Lagler (1958) and Feltes (1991), with some modifications following Motomura et al. (2000). Standard length is expressed as SL. Terminology of the supraneural bones follows Mabee (1988), and the formula for configuration of the supraneural bones, anterior neural spines, and anterior dorsal fin pterygiophores follows Ahlstrom et al. (1976). The configuration of supraneural bones and vertebrae counts were checked by X-ray photos. Institutional codes follow Leviton et al. (1985), with additional institutional abbreviations as follows: Division of Fisheries Sciences, Miyazaki University, Japan (MUFS); Phuket Marine Biological Center, Thailand (PMBC); and Shanghai Fisheries University, China (SFU).

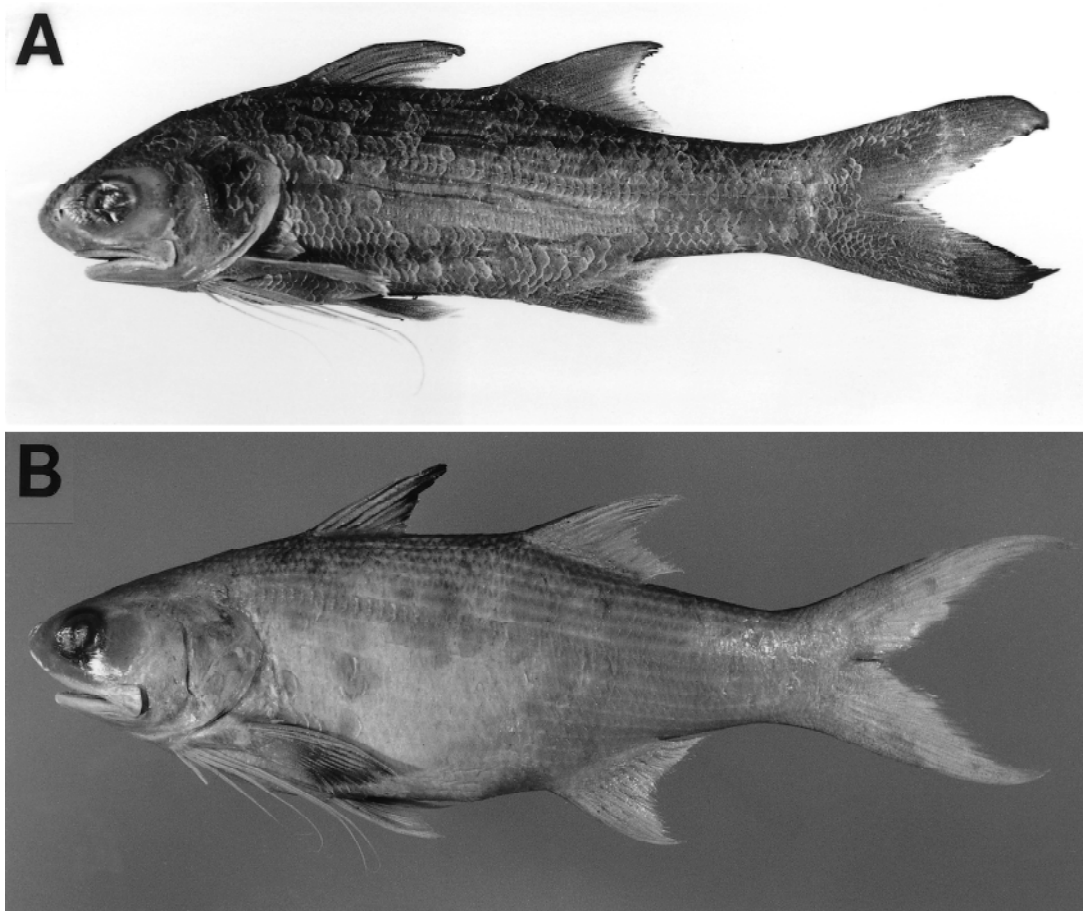


Fig. 1. **A** Neotype of *Polydactylus plebeius*, FMNH 108655, 88 mm SL, Tahiti. **B** Holotype of *P. siamensis* sp. nov., URM-P 14050, 252 mm SL, Thailand

***Polydactylus plebeius* (Broussonet, 1782)**

(English name: striped threadfin)

(Japanese name: tsubame-konoshiro)

(Fig. 1A)

Polynemus plebeius Broussonet, 1782: described on 27th page from a table of contents, 8th plate (7th species) (no pagination) (type locality: Tahiti, Society Islands and Tanna Island, New Hebrides Islands, Vanuatu); Bleeker, 1849: 58 (Indonesia); Cantor, 1849: 1009 (Malay Peninsula); Day, 1876: 179 (India); Munro, 1955: 97 (Ceylon); Kagwade, 1970: 44 (India); Menon, 1974: POLYN Poly 2 (eastern Indian Ocean and western central Pacific); Jones and Kumaran, 1980: 199 (Laccadive Archipelago, India); Menon and Babu Rao, 1984: POLYN Poly 2 (western Indian Ocean).

Polynemus emoi Lacepède, 1803: 410, 412 (type locality: Tahiti, Society Islands, replacement name for *P. plebeius* Broussonet).

Polynemus lineatus Lacepède, 1803: 410, pl. 13, fig. 2 (type locality: Réunion Island, Mascarene Islands).

Polynemus niloticus Shaw, 1804: 151 (type locality: Nile River, Africa [but probably erroneous; see Remarks], based on figure and description by J. Bruce).

Polynemus commersonii Shaw, 1804: 156 (type locality: Indian seas, based on figure by P. Commerson; replacement name for *P. lineatus* Lacepède).

Polynemus lineatus Günther, 1860 (not of Lacepède): 327 (type locality: Ambon, Indonesia and Guadalcanal, Solomon Islands, primary homonym of *P. lineatus* Lacepède).

Polynemus taeniatus Günther, 1860: 526 (type locality: Ambon, Indonesia and Guadalcanal, Solomon Islands, replacement name for *P. lineatus* Günther).

Trichidion plebejus (sic); Gill, 1861: 276 (east Indian sea, list only).

Polydactylus agonasi Jordan and McGregor, 1906: 814, unnumbered figure on page 815 (type locality: Tokyo, Japan).

Polynemus plebejus (sic); Weber and de Beaufort, 1922: 202 (Indo-Australian Archipelago); Marshall, 1964: 416, pl. 56, fig. 402 (Queensland, Australia).

Polydactylus plebejus (sic); Fowler, 1935: 282, fig. 60 (Hong Kong, China); Grant, 1982: 534, unnumbered figure on page 534 (Queensland and northern New South Wales, Australia).

Polynemus lydiae Curtiss, 1938: 43 (type locality: Tahiti, Society Islands).

Polydactylus plebeius; Smith, 1949: 327, fig. 898 (South Africa); Munro, 1967: 191, pl. 21, fig. 326 (New Guinea); Shen, 1984: 98, fig. 361–3a (in part; northeastern and southwestern parts

of Taiwan); Gloerfelt-Tarp and Kailola, 1984: 231, photo second from bottom on page 230 (southern Indonesia); Smith, 1986: 721, fig. 223.2 (South Africa); Talwar and Jhingran, 1992: 909 (India, key only); van der Elst, 1993: 278, unnumbered figure (South Africa); Senou, 1995: 847 (southern Japan); Fricke, 1999: 305 (Mascarene Islands).

Trichidion plebejum (sic); Bleeker, 1983: 22, pl. 455, fig. 3 (locality not provided, originally *Polynemat* pl. 3, unpublished plate by P. Bleeker).

Neotype. FMNH 108655, 88 mm SL, Tahiti, Society Islands, 6 Feb. 1962, collected by A. R. Watkins.

Other material ($n = 114$, 43–331 mm SL). AMS I. 10581, 119 mm SL, Manila, Luzon Island, Philippines; AMS IB. 2329, 117 mm SL, Geraldton District, Western Australia, Australia; BMNH 1855.11.7.35 (1 of 2 syntypes of *Polynemus taeniatus* Günther, 1860), 139 mm SL, Guadalcanal, Solomon Islands; BMNH 1858.4.21.85 (1 of 2 syntypes of *P. taeniatus* Günther, 1860), 147 mm SL, Ambon, Indonesia; BMNH 1899.1.24.8, 200 mm SL, Pakistan; BMNH 1913.4.7.137, 225 mm SL, Mombasa, Kenya; BPBM 8433, 80 mm SL, Papara, Tahiti, Society Islands; BPBM 35868, 171 mm SL, Grindstone, Rahah Bay, Oman (16°57' N, 54°49' E); BSKU 25698, 205 mm SL, Colombo market, Sri Lanka; BSKU 45336, 148 mm SL, Kochi, Japan; FMNH 21441, 210 mm SL, Tahiti, Society Islands; FMNH 91473 (15 specimens), 53–127 mm SL, Tahiti, Society Islands; FRLM 1624, 6681–6682, 9815, 11357, 13712–13714 (8), 95–245 mm SL, Goza, Shima, Mie, Japan; FRLM 23422, 57 mm SL, Tantai, Ambon, Indonesia; MNHN A. 5440 (holotype of *P. lineatus* Lacepède, 1803), 255 mm SL, Reunion Island, Mascarene Islands; MUFS 1394, 12731 (2), 186–309 mm SL, Miyazaki, Japan; MUFS 12982–12985 (4), 164–187 mm SL, Totoro, Nobeoka, Miyazaki, Japan; MUFS 14110, 14125–14126 (3), 143–160 mm SL, Meitsu, Nango, Miyazaki, Japan; MUFS 14201–14201 (2), 271–323 mm SL, Noumea, New Caledonia; MUFS 14315, 14349, 14351 (3), 161–172 mm SL, Meitsu, Nango, Miyazaki, Japan; MUFS 14480, 180 mm SL, Phuket Island, Thailand; MUFS 15760–15761 (2), 203–209 mm SL, Kushima, Miyazaki, Japan; MUFS 15762, 15765 (2), 205–238 mm SL, Oshima, Meitsu, Nango, Miyazaki, Japan; MUFS 15775, 233 mm SL, Kushima, Miyazaki, Japan; MUFS 16829–16830, 16834 (3), 118–130 mm SL, Kalairt fish landing port, Chennai (=Madras), India; MUFS 16849, 16851–16852 (3), 103–111 mm SL, Shanmugam fish market, Chennai (=Madras), India; MUFS 19063, 71 mm SL, Shankarpur landing center, Midnapore, Calcutta, India; NSMT-P 783, 131 mm SL, Tokyo fish market, Tokyo, Japan; NSMT-P 19247, 119 mm SL, off Ito, Shizuoka, Japan; NSMT-P 23943 (2), 195–223 mm SL, Ishigaki Island, Ryukyu Islands, Japan; NSMT-P 29332, 56 mm SL, Okinawa Island, Japan; NSMT-P 53857, 51 mm SL, Kuta, southern coast of Lombok Island, Indonesia; NSMT-P 53918, 53920 (2), 46–56 mm SL, Gerupuk, southern coast of Lombok Island, Indonesia; NSMT-P 54111, 48 mm SL, Hamajima, Mie, Japan; PMBC 5922, 234 mm SL, Phuket Island, Thailand; SAM 12076, 198 mm SL, East London, South Africa; SAM 18448, 166 mm SL, Natal, South Africa; SAM 19747, 76 mm SL, East London, South Africa; SFU 3832, 171 mm SL, Hong Kong, China; SFU 10031, 173 mm SL, Hainan Island, China; UMMZ 171715, 98 mm SL, Indonesia; URM-P 701, 877 (2), 148–166 mm SL, Okinawa Island, Japan; URM-P 3048, 331 mm SL, Chinen fish market, Okinawa Island, Japan; URM-P 6227, 149 mm SL, Okinawa Island, Japan; URM-P 24672, 24675, 24677–24678, 24680–24682, 25025–25026 (9), 132–180 mm SL, Nakagusuku fish market, Okinawa Island, Japan; USNM 30503,

252 mm SL, New Guinea; USNM 55608 (holotype of *Polydactylus agonasi* Jordan & McGregor, 1906), 155 mm SL, Tokyo, Japan; USNM 56398 (3), 135–138 mm SL, Tokyo, Japan; USNM 86575, 189 mm SL, Mauritius; USNM 106889, 112 mm SL, Honolulu, Hawaii; USNM 112734, 175 mm SL, Suva, Fiji Islands; USNM 115739, 79 mm SL, Pagai, Samoa; USNM 226566, 108 mm SL, Santo, New Hebrides; USNM 278193, 192 mm SL, mouth of Rewa River, Fiji Islands (18°09' S, 178°32' E); USNM 278216 (2), 47–58 mm SL, Peu, Vanikoro Island, Santa Cruz Islands (11°42' S, 166°50' E); USNM 278220, 43 mm SL, Madagascar (13°18.42' S, 48°9.15' E); USNM 349503, 60 mm SL, Mauritius (20°21.21' S, 57°44' E); YCM-P 44, 85 mm SL, Nobikaigan, Yokosuka, Kanagawa, Japan; YCM-P 133, 144 mm SL, Manazuru fish market, Kanagawa, Japan; YCM-P 25293 (3), 103–150 mm SL, Ogasawara Islands, Japan; YCM-P 25328 (2), 108–148 mm SL, Ogasawara Islands, Japan.

Diagnosis. A species of *Polydactylus* with the following combination of characters: 5 pectoral filaments; 16–18 (rarely 15, 1 of 100 specimens) pectoral fin rays; 60–66 (rarely 68, 1 of 96 specimens) pored lateral line scales; 8 or 9 scale rows above lateral line, 12 or 13 below; 9 to 14 upper series gill rakers, 13–18 lower, 24–32 total; upper jaw short (mean 15% [range 13–16%] of SL); 7 or 8 prominent dark stripes along longitudinal scale rows above lateral line, 7 to 9 faint stripes below (occasionally lost in older preserved specimens).

Description. Counts and proportional measurements as percentages of SL of the neotype and other material of *Polydactylus plebeius* are given in Table 1. When different from the neotype, data for other specimens are given in parentheses. Characters given in the diagnosis are not repeated.

Body oblong, compressed; maxilla covered with scales; orbit diameter greater than snout length; lower lip well developed; posterior margin of maxilla reaching to (or slightly beyond) level of posterior margin of adipose eyelid; depth of posterior portion of maxilla shorter than dermal eye opening; teeth villiform in broad bands on vomer, palatines and ectopterygoids; all pectoral fin rays unbranched; tip of fifth pectoral filament extending beyond posterior tip of pelvic fin; thickness of base of all first dorsal fin spines similar; second dorsal fin base and anal fin base similar; between pelvic fin and anal fin bases less than head length; lateral line simple, extending to upper end of lower caudal fin lobe; formula for configuration of supraneural bones, anterior neural spines and anterior dorsal pterygiophores 0/0/0+2/1+1/1/1/1/1; vertebrae 10 + 14; swimbladder simple, elongated.

Color in life.—Based on color transparencies and observations of all specimens collected from Miyazaki Prefecture, southern Japan: head and upper sides of trunk tinged slightly blackish-silver, becoming lighter silver on lower sides; abdominal region white; snout semi-transparent; first and second dorsal fins and caudal fin

Table 1. Counts and measurements of *Polydactylus plebeius*, including the neotype, other nominal types and non-type specimens, expressed as percentages of standard length

	Neotype of <i>Polydactylus</i> <i>plebeius</i> FMNH 108655	Holotype of <i>Polynemus</i> <i>lineatus</i> MNHN A. 5440 (dried specimen)	Syntypes of <i>Polynemus</i> <i>taeniatus</i> BMNH 1855.11.7.35 and 1858.4.21.85 (<i>n</i> = 2)	Holotype of <i>Polydactylus</i> <i>agonasi</i> USNM 55608	Non-type specimens (<i>n</i> = 109)
Standard length (mm)	88	254	139–147	155	43–331
Fork length (mm)	100	279	156–164	178	50–365
Counts					
Dorsal fin rays	VIII-I, 13	Broken	VIII-I, 13	VIII-I, 13	VIII-I, 12–13
Anal fin rays	III, 11	III, 11	III, 11	III, 11	III, 11–12
Pectoral fin rays	18	16	17	17	15–18
Pectoral filaments	5	5	5	5	5
Pelvic fin rays	I, 5	I, 5	I, 5	I, 5	I, 5
Pored lateral line scales	63	63	62–66	65	60–68
Scales above and below lateral line	8 / 12	—	8–9 / 12	9 / 13	8–9 / 12–13
Gill rakers	11 + 14 = 25	—	11 + 14–16 = 25–27	11 + 14 = 25	9–14 + 13–18 = 24–32
Measurements					
Head length	32	28	30–32	31	25–34 (31)
Body depth	30	28	27–30	29	25–32 (28)
Second body depth	29	28	29–33	32	25–34 (30)
Body width at pectoral fin base	15	—	12	14	11–17 (14)
Snout length	6	Broken	5–6	5	5–9 (6)
Dermal eye opening	8	Broken	7–8	7	5–9 (7)
Orbit diameter	9	Broken	8–9	8	7–11 (9)
Interorbital width	10	—	8–9	9	7–10 (8)
Postorbital length	18	16	17–18	18	15–20 (18)
Upper jaw length	16	15	14	15	13–16 (15)
Pre-1st dorsal fin length	38	35	36–37	36	33–38 (36)
Pre-2nd dorsal fin length	62	62	61	61	57–63 (61)
Preanal fin length	62	69	61–62	64	59–67 (63)
First dorsal fin origin to anal fin origin	40	42	42–44	43	37–45 (42)
Pelvic fin origin to anal fin origin	24	26	24–27	25	22–28 (25)
Second dorsal fin base length	16	16	15–18	18	15–19 (17)
Anal fin base length	16	15	16–17	17	14–18 (16)
Longest pectoral fin length	20	20	20–22	23	17–28 (20)
Longest pectoral filament length (5th)	39	Broken	35–42	31	22–40 (32)
Pectoral fin base length	9	Broken	10–11	9	9–11 (9)
Longest pelvic fin ray length (1st)	17	15	15–17	16	15–19 (16)
Longest 1st dorsal fin spine length (3rd)	21	19	22	21	17–24 (21)
Second dorsal fin spine length	9	7	9	8	6–10 (8)
Longest 2nd dorsal fin ray length (2nd)	22	20	24–28	21	19–28 (22)
Longest anal fin spine length (3rd)	8	Broken	8–9	9	6–10 (8)
Longest anal fin ray length (2nd)	14	17	23	Broken	17–23 (19)
Caudal peduncle length	26	23	25–26	25	23–27 (25)
Caudal peduncle depth	14	13	14–15	15	12–16 (14)
Upper caudal fin lobe length	39	37	41–43	37	33–44 (39)
Lower caudal fin lobe length	35	33	40	35	30–41 (36)

Means in parentheses include data of type specimens

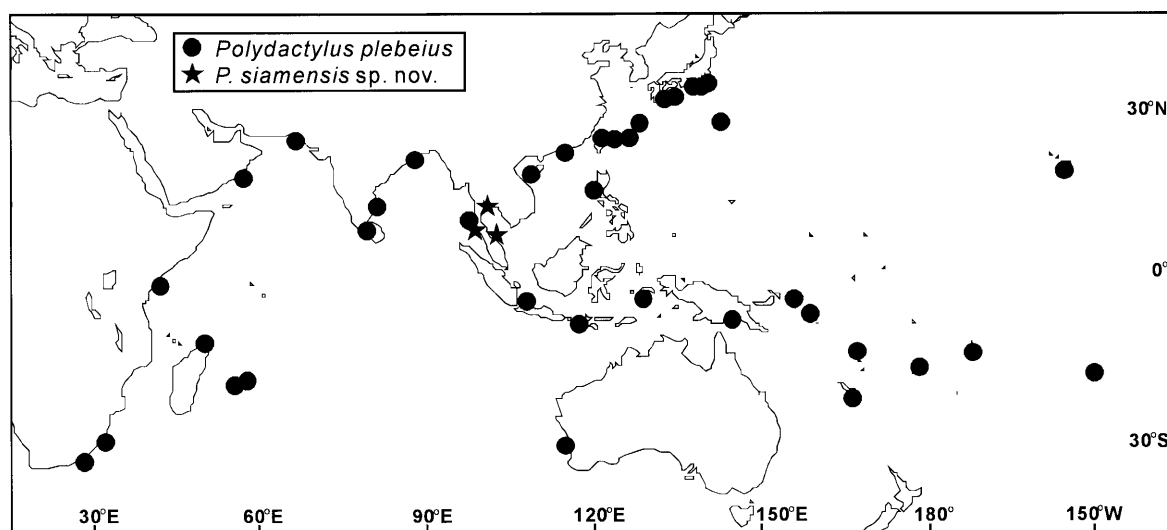


Fig. 2. Localities of specimens of *Polydactylus plebeius* (●) and *P. siamensis* sp. nov. (★) examined in the present study

pale with blackish posterior margins; pectoral fin membrane blackish; pectoral filaments white; anterior margins and origins of pelvic and anal fins white, other parts dusky yellowish-white; seven or eight prominent dark stripes along scale rows above lateral line, seven to nine faint stripes below.

Color of preserved specimens.—Based on neotype: head and upper sides of trunk tinged slightly blackish-brown, becoming lighter brown on lower sides; seven faint dark stripes along scale rows above lateral line; anterior margins of first and second dorsal fins blackish, posterior margins whitish and blackish, respectively, elsewhere blackish-brown; pelvic and anal fins blackish-brown, posterior portion whitish; caudal fin blackish-brown, darkening posteriorly; pectoral fin blackish; pectoral filaments pale brown.

Distribution and ecological notes. *Polydactylus plebeius* is widely distributed in the Indo-Pacific; including South Africa, Madagascar, Mauritius, Oman, India, Sri Lanka, Thailand, Indonesia, Philippines, Papua New Guinea, Australia, Solomon Islands, Vanuatu, New Caledonia, Fiji, Samoa, Tahiti, China, Japan and Hawaii (based on specimens examined during this study, Fig. 2). Other distributional locations of the species have been reported off Bangladesh, Myanmar, Malaysia, Brunei, Cambodia and Vietnam (Menon, 1974) and off Mozambique, in the Red Sea and off Pakistan (Menon and Babu Rao, 1984).

Examples of *P. plebeius* examined here were collected along shallow, sandy or muddy coastal beaches, as well as in estuaries. The species also occurs offshore in Miyazaki, southern Japan during the rainy (June and July) and typhoon seasons (September and October) (the first and

second authors, personal observations). Apparently *P. plebeius* usually inhabits estuaries and shallow coastal waters but departs the former during periods of high rainfall.

Remarks. *Polynemus* (= *Polydactylus*) *plebeius*, which is widely distributed in the Indo-Pacific, was originally described by Broussonet (1782) from Tahiti, Society Islands and Tanna Island, New Hebrides Islands, Vanuatu. According to A.-M. Hine (BMNH), the syntypes of *P. plebeius* have apparently been lost. Although the original description of *P. plebeius* is very poor, the figure clearly shows 16 pectoral fin rays, 5 pectoral filaments and several longitudinal dark stripes along each scale row on the lateral body surface.

The holotype (a dried specimen) of *Polynemus lineatus* Lacepède, 1803, both syntypes of *P. taeniatus* Günther, 1860 and the holotype of *Polydactylus agonasi* Jordan and McGregor, 1906 were all found to be conspecific, being the same species as the specimens considered here as *P. plebeius*. Their meristic and morphological characters are included in Table 1. Günther (1860) described *Polynemus lineatus* as a new species on the basis of two specimens from Ambon, Indonesia and Guadalcanal, Solomon Islands. Because that name was preoccupied by *P. lineatus* of Lacepède (1803), Günther (1860) proposed a replacement name, *P. taeniatus*, in an addenda to the original description of the species. In addition, Günther (1860) described *P. plebejus* (sic) (= *plebeius*) as being characterized by five pectoral filaments and a black blotch on the lateral line near its origin. Because the characters for *P. plebejus* given by Günther (1860) agree with those diagnostic of *Polydactylus microstomus* (Bleeker, 1851) (see Munro, 1967: 191;

Menon and Babu Rao, 1984: POLYN Poly 6), it is considered that he had misidentified examples of the latter.

Lacepède (1803) proposed a new name, *Polynemus emoi*, for *P. plebeius* Broussonet, 1782, but did not list any specimens. The former name has no standing in nomenclature, because the principle of priority was not followed, contrary to the requirements of Article 23 (ICZN, 1999).

Polynemus niloticus was described by Shaw (1804) as a new species from the Nile River, on the basis of a description and figure by J. Bruce. In fact, the latter had observed the species on the border of the Red Sea, but erroneously described it as being from the Nile River (McClelland, 1843). According to Shaw (1804), the species had a unique character, being a reddish snout. If damaged, however, the cartilaginous tissue of the snout of polynemid fishes is easily congested, as evidenced by a reddish coloration, owing to its semitransparent nature. *Polynemus niloticus* is considered conspecific with *Polydactylus plebeius*, owing to the number of pectoral filaments (5) and [corrected] type locality (Red Sea) of the former (Cantor, 1849; Daget and Njock, 1986; this study). Furthermore, Shaw (1804) proposed *P. commersonii* as a replacement name for *P. lineatus* Lacepède, 1803. The former name has no standing in nomenclature for the same reason as given earlier for *P. emoi*.

Polynemus lydiae was described by Curtiss (1938) as a new species from Tahiti, Society Islands. The original description of the species was very poor and gave no indication of type specimens. Enquiries established that no types of that species are held in MNHN (P. Pruvost, personal communication). According to the original description, the species was characterized by five pectoral filaments and longitudinal black stripes on the lateral body surface, characteristics being consistent with those of *Polydactylus plebeius*. All the Tahitian specimens ($n = 18$, 53–210 mm SL) examined during this study represented a single species, *P. plebeius*. Therefore, we are of the opinion that *Polynemus lydiae* should be regarded as a junior synonym of *Polydactylus plebeius*.

Fricke (1999) was synonymized *Sciaena pentadactyla* Lacepède, 1802 with *P. plebeius*. Furthermore, he designated a original figure of *P. plebeius* as neotype for the former in his faunal work of the Mascarene Islands because no type material of *S. pentadactyla* could be detected. However, this was done simply as a matter of faunal work (not a revisory work), such an action being expressly prohibited by Article 75.2 (ICZN, 1999) and was considered to be an invalid designation. We examined the original description of *S. pentadactyla* by Lacepède (1802) who described the following characters of the species: 7 first dorsal fin rays, 10 second dorsal fin rays, 5 rays in every abdominal (probably meaning 5

pelvic fin rays), 10 anal fin rays, caudal fin rounded, a spine present in anterior (probably meaning upper tip) of opercular, pectoral fin very large, and lateral line insensible. All these characters, except for a spine of the upper tip of the opercular, did not totally agree with the characters of *P. plebeius*, which had the following characters: 8 first dorsal fin spines, 13 or 14 second dorsal fin rays (including a spine), 6 pelvic fin rays (including a spine), 14 or 15 anal fin rays (including 3 spines), caudal fin deeply forked, pectoral fin not very large and lateral line not insensible. Accordingly, we strongly believe that *S. pentadactyla* is not a junior synonym of *P. plebeius*, although the taxonomic status of the former is still unknown (the former is herein treated as *nomen dubium*).

Recently, a figure of *Polynemus plebeius* in the original description was designated as the lectotype of the species by Fricke (1999). However, the lectotype was not designated on the basis of a specimen, such a case being expressly treated as an invalid designation by Article 72 (ICZN, 1999). The proposal of a neotype for *P. plebeius* (Broussonet, 1782) is herein justified to avoid taxonomic confusion because *P. plebeius* is very similar to the following new species and the syntypes of *P. plebeius* have apparently been lost. Accordingly, a specimen (FMNH 108655, 88 mm SL) collected from the same locality, Tahiti, is herein proposed as a neotype for the species.

Polydactylus siamensis sp. nov.

(New English name: large mouth striped threadfin)
(Fig. 1B)

Holotype. URM-P 14050, female, 252 mm SL, Samyan market, Bangkok, Thailand, 14 Feb. 1984, collected by H. Senou.

Paratype. MUFS 18280, sex undetermined, 137 mm SL, Samyan market, Bangkok, Thailand, 26 Nov. 1983, collected by H. Senou.

Other material ($n = 6$, 128–239 mm SL). PMBC 5917–5921 (5 specimens), 128–239 mm SL, Phuket Island, Thailand; Prince of Songkhla University uncatalogued, 174 mm SL, Hat Yai fish market, Songkhla, Thailand.

Diagnosis. A species of *Polydactylus* with the following combination of characters: 5 pectoral filaments; 15 pectoral fin rays; 54–58 pored lateral line scales; 7 scales above lateral line, 10 or 11 below; 9 or 10 upper series gill rakers, 13 or 14 lower, 22–24 total; upper jaw large (mean 17% [range 16–17%] of SL); 7 or 8 prominent dark stripes along scale rows above lateral line, 7 to 9 faint stripes below (occasionally lost in older preserved specimens).

Description. Counts and proportional measurements as percentages of SL of the holotype, paratype

Table 2. Counts and measurements of *Polydactylus siamensis* sp. nov., including the holotype, paratype and non-type specimens, expressed as percentages of standard length

	Holotype URM-P 14050	Paratype MUFS 18280	Non-type specimens (<i>n</i> = 6)
Standard length (mm)	252	137	128–239
Fork length (mm)	274	153	144–263
Counts			
Dorsal fin rays	VIII-I, 13	VIII-I, 13	VIII-I, 12–13
Anal fin rays	III, 11	III, 11	III, 11
Pectoral fin rays	15	15	15
Pectoral filaments	5	5	5
Pelvic fin rays	I, 5	I, 5	I, 5
Pored lateral line scales	58	54	54–57
Scales above and below lateral line	7 / 11	7 / 10	7 / 11
Gill rakers	9 + 13 = 22	10 + 13 = 23	10 + 13–14 = 23–24
Measurements			
Head length	31	32	31–34 (32)
Body depth	33	30	30–33 (32)
Second body depth	34	31	31–33 (32)
Body width at pectoral fin base	16	16	15–18 (16)
Snout length	7	7	5–8 (6)
Dermal eye opening	7	7	7–8 (7)
Orbit diameter	8	8	8–9 (8)
Interorbital width	7	8	8–9 (8)
Postorbital length	20	20	19–21 (20)
Upper jaw length	16	16	16–17 (17)
Pre-1st dorsal fin length	37	37	37–40 (38)
Pre-2nd dorsal fin length	63	60	62–66 (64)
Preanal fin length	68	65	64–68 (66)
First dorsal fin origin to anal fin origin	44	43	42–45 (44)
Pelvic fin origin to anal fin origin	29	26	22–28 (26)
Second dorsal fin base length	17	18	15–17 (17)
Anal fin base length	15	17	14–17 (16)
Longest pectoral fin length	20	22	20–22 (21)
Longest pectoral filament length (5th)	34	35	31–43 (36)
Pectoral fin base	11	10	10–11 (11)
Longest pelvic fin ray length (1st)	16	16	16–17 (16)
Longest 1st dorsal fin spine length (3rd)	19	21	19–23 (21)
Second dorsal fin spine length	7	9	7–9 (8)
Longest 2nd dorsal fin ray length (2nd)	21	21	22–24 (23)
Longest anal fin spine length (3rd)	7	8	8–11 (9)
Longest anal fin ray length (2nd)	19	20	20–23 (21)
Caudal peduncle length	24	25	22–25 (24)
Caudal peduncle depth	15	15	14–16 (15)
Upper caudal fin lobe length	37	41	38–41 (40)
Lower caudal fin lobe length	33	35	34–37 (35)

Means in parentheses include data of type specimens

and other material of *Polydactylus siamensis* sp. nov. are given in Table 2. When different from the holotype, data for paratype and non-type specimens are given in parentheses. Characters given in the diagnosis are not repeated.

Body oblong, compressed; maxilla covered with scales; orbit diameter greater than snout length; lower lip well developed; posterior margin of maxilla slightly beyond level of posterior margin of adipose eyelid; depth of posterior portion of maxilla shorter than dermal eye open-

ing; teeth villiform in broad bands on vomer, palatines and ectopterygoids; all pectoral fin rays unbranched; tip of fifth pectoral filaments not reaching to (reaching to or extending slightly beyond) posterior tip of pelvic fin; thickness of base of all first dorsal fin spines similar; second dorsal fin base slightly longer than anal fin base; between pelvic fin and anal fin bases less than head length; lateral line simple, extending to upper end of lower caudal fin lobe; formula for configuration of supraneural bones, anterior neural spines and anterior

dorsal pterygiophores 0/0/0+2/1+1/1/1/1/1; vertebrae 10 + 14; swimbladder not observed.

Color of preserved specimens.—Based on holotype: head and upper sides of trunk tinged slightly cream, becoming white on lower sides; seven dark stripes along scale rows above lateral line, stripes not apparent below; snout region semitransparent; base and posterior portion of first and second dorsal fins light yellow, tips blackish-brown, otherwise whitish-cream; pelvic fin light yellow posteriorly, otherwise whitish-cream; anal fin light yellow, caudal fin posterior margin whitish-cream, otherwise light yellow; pectoral fin membranes blackish; pectoral filaments whitish.

Distribution and ecological note. *Polydactylus siamensis* sp. nov. is currently known only from Bangkok, Songkhla and Phuket, Thailand (Fig. 2), but is probably more widely distributed about the Malay Peninsula. According to local fishermen at Bangkok, Samut Prakan and Prachuap Khirikhan, Thailand, *P. siamensis* rarely occurs in the Gulf of Thailand.

Etymology. The name of “*siamensis*” is based on Siam, the old name for Thailand, in reference to the holotype locality.

Comparison. To date, only *Polydactylus plebeius* (Broussonet, 1782) has been recognized as having five

pectoral filaments and several prominent dark stripes along the longitudinal scale rows above and below the lateral line. Although *P. siamensis* sp. nov. is very similar to *P. plebeius* in having the above characters, the former differs in having lower counts of pectoral fin rays (15 vs. 15–18 in the latter), scales above and below the lateral line (7 and 10 or 11, respectively vs. 8 or 9 and 12 or 13, respectively), pored lateral line scales (54–58 vs. 60–68) and gill rakers (9 or 10 upper series, 13 or 14 lower and 22–24 total vs. 9–14, 13–18, and 24–32, respectively) (Table 3). Furthermore, *P. siamensis* tends to have a slightly longer upper jaw than *P. plebeius*, although the proportional measurements for upper jaw length overlapped between the two species (Fig. 3).

Comparative material examined. *Polydactylus macrochir* (Günther): BMNH 1866.2.13.17 (holotype of *Polynemus macrochir*), 171 mm SL, New South Wales, Australia (but probably Queensland; see Motomura et al., 2000). *Polydactylus microstomus* (Bleeker): MUF 14159, 154 mm SL, Ouenghi River, New Caledonia. *P. multiradiatus* (Günther): FRLM 23414–23417 (4 specimens), 130–144 mm SL, Rumahtiga fish market, Poka, Ambon, Indonesia. *P. nigripinnis* Munro: FRLM 21472, 139 mm SL, Ambon, Indonesia; FRLM 23413, 163 mm SL, Rumahtiga fish market, Poka, Ambon, Indonesia. *P. sexfilis* (Valenciennes in Cuvier and Valenciennes): MNHN 9731 (lectotype of *Polynemus sexfilis*; see Motomura et al., 2001),

Table 3. Frequency distributions of selected meristic characters of *Polydactylus plebeius* and *P. siamensis* sp. nov.

	Gill rakers														
	Upper						Lower								
	9	10	11	12	13	14	13	14	15	16	17	18			
<i>Polydactylus plebeius</i> (n = 97)	1	4	64 ^a	25	2	1	2	16 ^a	36	27	12	4			
<i>P. siamensis</i> sp. nov. (n = 8)	1 ^b	7 ^c	—	—	—	—	6 ^{bc}	2	—	—	—	—			
	Gill rakers, total														
	22	23	24	25	26	27	28	29	30	31	32				
	<i>Polydactylus plebeius</i> (n = 96)	—	—	2	16 ^a	32	20	15	10	1	—	1			
<i>P. siamensis</i> sp. nov. (n = 8)	1 ^b	5 ^c	2	—	—	—	—	—	—	—	—				
	Pored lateral line scales														
	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68
	<i>Polydactylus plebeius</i> (n = 96)	—	—	—	—	—	1	9	16	30 ^a	21	8	10	—	1
<i>P. siamensis</i> sp. nov. (n = 8)	2 ^c	1	2	2	1 ^b	—	—	—	—	—	—	—	—	—	
	Scales above and below lateral line								Pectoral fin rays						
	7	8	9	/	10	11	12	13	15	16	17	18			
	<i>Polydactylus plebeius</i> (n = 90*)	—	65 ^a	25	—	—	66 ^a	24	1	9	66	24 ^a			
<i>P. siamensis</i> sp. nov. (n = 8)	8 ^{bc}	—	—	—	1 ^c	7 ^b	—	—	8 ^{bc}	—	—	—			

^aNeotype of *P. plebeius*

^bHolotype of *P. siamensis* sp. nov.

^cParatype of *P. siamensis* sp. nov.

*Pectoral fin rays were counted on 100 examples of *P. plebeius*

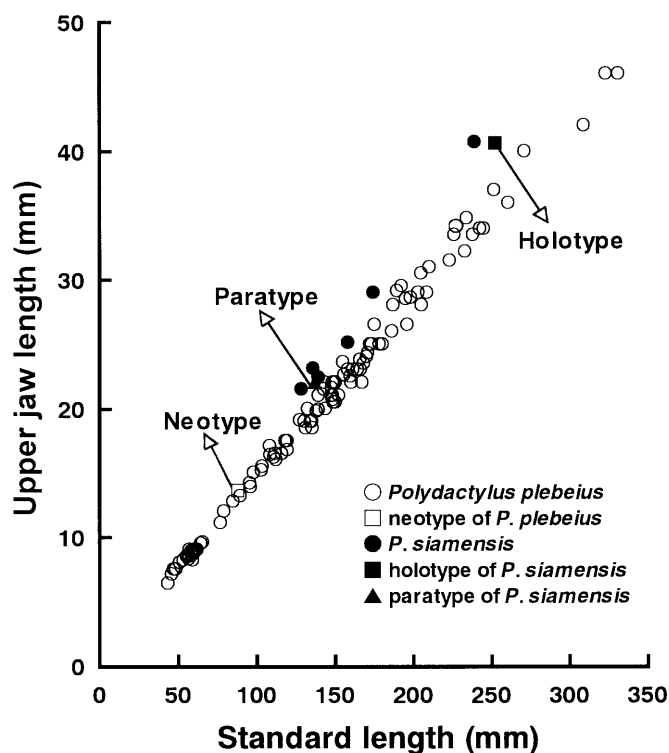


Fig. 3. Relationship between standard length and upper jaw length in *Polydactylus plebeius* and *P. siamensis* sp. nov.

265 mm SL, Mauritius; MNHN A. 3027, 9728 (2 paralectotypes of *Polynemus sexfilis*; see Motomura et al., 2001), 92–96 mm SL, Mauritius. *Polydactylus sextarius* (Bloch and Schneider): ZMB 565 (holotype of *Polynemus sextarius*), 125 mm SL, Tranquebar, India.

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