Polydactylus malagasyensis Motomura and Iwatsuki, 2001

Fig. 98; Plate IIIc

Polydactylus malagasyensis Motomura and Iwatsuki, 2001b: 338, figs. 1, 7a, 8a [type locality: estuary of Mananjary River (about 100 m from sea), Mananjary, eastern Madagascar; holotype (AMNH 88029, 125 mm standard length); 35 paratypes (AMNH 231222, 3 specimens, 95 to 141 mm standard length; AMS I. 28114009, 2 specimens, 102 to 104 mm standard length; ANSP 54807, 59 mm standard length; ANSP 77390, 127 mm standard length; ANSP 86372, 2 specimens, 94 to 136 mm standard length; CAS 66577, 3 specimens, 99 to 117 mm standard length; CAS 131390, 2 specimens, 144 to 148 mm standard length; MUFS 20381, 104 mm standard length; NRM 10479, 3 specimens, 135 to 149 mm standard length; NRM 10480, 4 specimens, 74 to 87 mm standard length; USNM 171045, 126 mm standard length; USNM 278209, 113 mm standard length; USNM 301505, 125 mm standard length; USNM 307631, 129 mm standard length; USNM 358684, 3 specimens, 124 to 139 mm standard length; USNM 363484, 3 specimens, 63 to 126 mm standard length; SAM 34057, 3 specimens, 121 to 134 mm standard length)].

Synonyms: None.

FAO Names: En - African blackspot threadfin; **Fr** - Barbure tâche noire d'Afrique; **Sp** - Barbudo mancha negra africano.

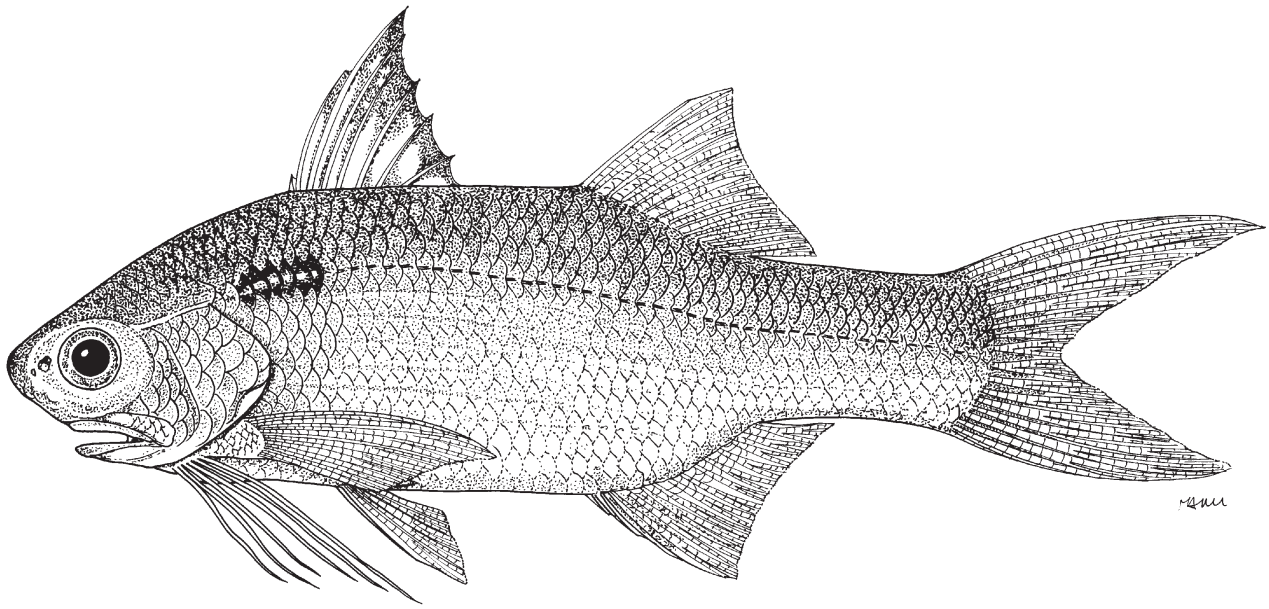

Fig. 98 ***Polydactylus malagasyensis***

Diagnostic Features: A small- to medium-sized species. Body depth at first dorsal-fin origin 31 to 35% (mean 34%) of standard length; head length 31 to 35% (mean 33%) of standard length. Snout pointed; occipital profile nearly straight. Posterior margin of maxilla extending slightly beyond or reaching to level of posterior margin of adipose eyelid; upper-jaw length 13 to 14% (mean 13%) of standard length; depth of posterior margin of maxilla less than eye diameter; lip on lower jaw well developed, dentary teeth restricted to dorsal surface; teeth villiform in broad bands on palatines and ectopterygoids; vomerine tooth plate covered with skin and teeth absent; palatines inwardly turned anteriorly. Posterior margin of preopercle serrated. First dorsal fin with VIII spines, second spine slightly more robust than or similar to others; second dorsal fin with I spine and 12 or 13 (mode 13) soft rays; anal fin with III spines and 12 soft rays, anal-fin base approximately equal to or greater than second dorsal-fin base; pectoral fin with 14 rays (all rays unbranched, except uppermost 1 or 2), its length 21 to 26% (mean 24%) of standard length, posterior tip not reaching to level of posterior tip of pelvic fin; pectoral filaments 6, first filament shortest, reaching to level of pelvic-fin origin; second to fifth pectoral filaments extending slightly beyond level of pelvic-fin origin; sixth pectoral filament longest, its length 27 to 31% (mean 29%) of standard length, just short of or extending slightly beyond level of posterior tip of pectoral fin; caudal fin deeply forked, upper and lower caudal-fin lobes not filamentous, upper caudal-fin lobe 35 to 40% (mean 39%) and lower lobe 34 to 38% (mean 36%) of standard length. Pored lateral-line scales 46 to 51 (mode 47); lateral line simple, extending from upper end of gill opening to upper end of lower caudal-fin lobe; scale rows above lateral line 5 or 6 (mode 6), below 9 or 10 (mode 10). Gillrakers 12 to 16 (mode 13) on upper limb, 17 to 19 (mode 18) on lower limb, 29 to 34 (mode 31) total. Vertebrae 10 precaudal and 14 caudal; supraneural bones 3. Swimbladder present, well developed. **Colour:** Golden olive above, but mainly silvery; a large black spot present anteriorly on lateral line.

Geographical Distribution: Currently known only from Kenya, Mozambique, South Africa and Madagascar (Fig. 99). It is likely to be distributed over a wider area, including United Republic of Tanzania and Somalia, east coast of Africa.

Habitat and Biology: Taken both in estuaries (less 5.5 m) and offshore (16 to 62 m). No other data available.

Size: Maximum standard length at least 15 cm (Motomura and Iwatsuki, 2001b).

Interest to Fisheries: None.

Local Names: MOZAMBIQUE: Barudo de mancha; UNITED REPUBLIC OF TANZANIA: Kupe, Mkizi komo maji; SOUTH AFRICA: Sesvinger-draadvin, Sixfinger threadfin.

Literature: Motomura and Iwatsuki (2001b); Motomura (2002).

Remarks: ***P. malagasyensis***, previously identified as ***P. sextarius*** (e.g. Smith *in* Smith and Heemstra, 1986; Menon and Babu Rao *in* Fischer and Bianchi, 1984), was recently described as a new species on the basis of 36 specimens (Motomura and Iwatsuki, 2001b).

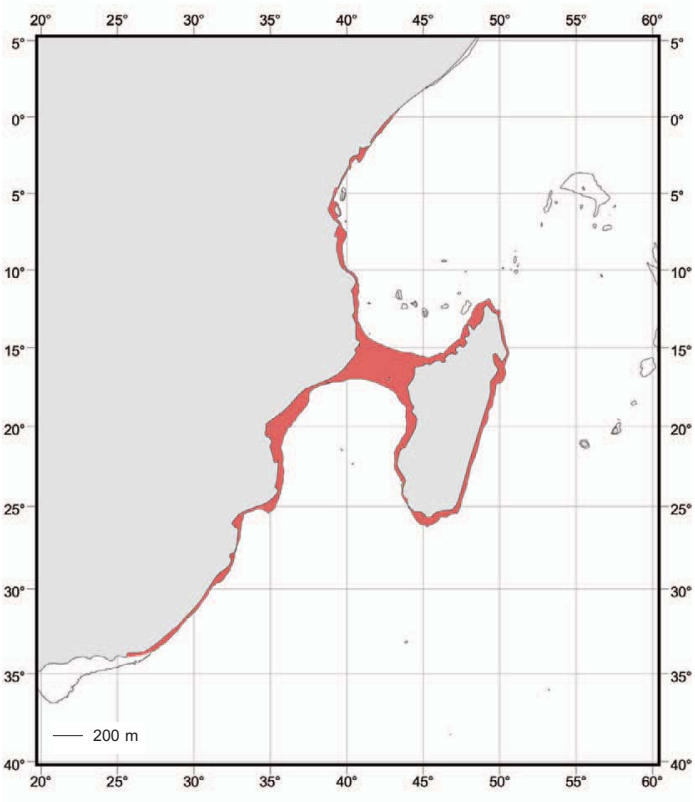

Fig. 99 ***Polydactylus malagasyensis***
Known distribution

Five ***Polydactylus*** species: ***P. malagasyensis***, ***P. microstomus***, ***P. mullani***, ***P. persicus*** and ***P. sextarius***, are characterized by having all pectoral-fin rays branched, except the uppermost 1 or 2, the vomer without teeth and a large black spot anteriorly on the lateral line. Characters of the pectoral fin and coloration of this group are unique among the family Polynemidae. In addition to the group, only a single species, ***P. nigripinnis***, has the vomer without teeth in the genus.

Polydactylus malagasyensis is similar to other 4 species in overall body appearance. However, the species can be easily distinguished from ***P. microstomus*** and ***P. mullani*** by the number of pectoral filaments [6 versus 5 (rarely asymmetrically 5 and 6) and 7 (rarely asymmetrically 6 and 7), respectively, in the latter].

The 3 species, with 6 pectoral filaments: ***P. malagasyensis***, ***P. persicus*** and ***P. sextarius***, have been considered as conspecific (e.g. Menon *in* Fischer and Whitehead, 1974; Menon and Babu Rao *in* Fischer and Bianchi, 1984). However, ***P. malagasyensis*** differs from ***P. sextarius*** in having a well-developed swimbladder (length about 40 to 45% of standard length versus an atrophied, string-like swimbladder, about 20% of standard length in the latter; see Motomura and Iwatsuki, 2001b: fig. 7), higher counts of gillrakers [29 to 34 (mode 31) versus 25 to 30 (mode 28) in ***P. sextarius***]. Furthermore, the second dorsal-fin spine length in ***P. malagasyensis*** [7 to 9% (mean 7%) of standard length] is significantly longer than that of ***P. sextarius*** [5 to 8% (mean 6%) of standard length].

Polydactylus malagasyensis differs from ***P. persicus*** in having higher counts of pectoral-fin rays [14 versus 12 to 14 (mode 12) in the latter] and scales below the lateral line [9 or 10 (mode 10) versus 8 or 9 (mode 9) in ***P. persicus***], in addition to the palatine being inwardly turned anteriorly (straight in ***P. persicus***; see Motomura and Iwatsuki, 2001b: fig. 8). Whereas the posterior tip of the uppermost pectoral filament of ***P. malagasyensis*** extends slightly beyond or does not reach to the posterior tip of the pectoral fin, that of ***P. persicus*** extends well beyond the latter, owing to ***P. malagasyensis*** having both a longer pectoral fin [21 to 26% (mean 24%) of standard length versus 18 to 20% (mean 19%) of standard length in ***P. persicus***] and shorter pectoral filaments [27 to 31% (mean 29%) of standard length versus 26 to 36% (mean 32%) of standard length in ***P. persicus***]. Furthermore, the pectoral-fin base length, including the pectoral-filament base, of ***P. malagasyensis*** [10 to 12% (mean 12%) of standard length] is significantly greater than that of ***P. persicus*** [10 to 11% (mean 10%) of standard length].

Polydactylus microstomus (Bleeker, 1851)

Fig. 100; Plate IIId

Polynemus microstoma Bleeker, 1851b: 217 [type locality: Bulukumba, Sulawesi, Indonesia; holotype (RMNH 6044, 53 mm standard length) determined from 9 Bleeker specimens by Motomura and Iwatsuki, 2001b].

Synonyms: ***Polydactylus zophomus*** Jordan and McGregor *in* Jordan and Seale, 1907: 11, fig. 4 [type locality: Cavite, Luzon Island, Philippines; holotype (CAS 120113, 138 mm standard length) determined by Motomura and Iwatsuki, 2001b; paratype (USNM 55598, 2 specimens including a paratype and a non-type, 137 to 151 mm standard length)].

FAO Names: En - Smallmouth threadfin; **Fr** - Barbure à petite bouche; **Sp** - Barbudo de boca pequeña.

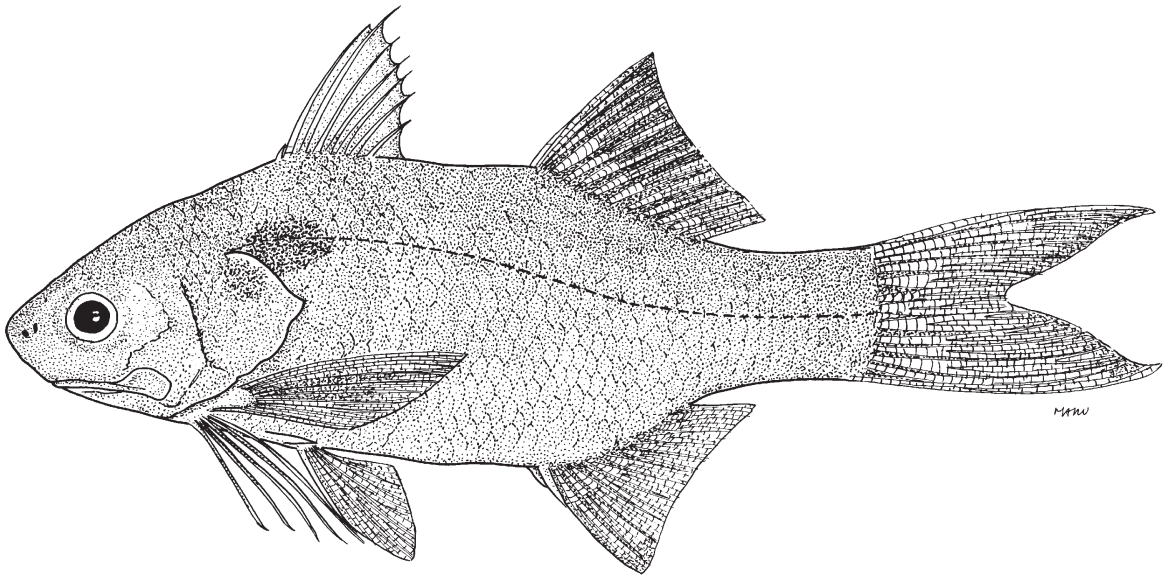

Fig. 100 ***Polydactylus microstomus***

Diagnostic Features: A small- to medium-sized species. Body depth at first dorsal-fin origin 26 to 36% (mean 32%) of standard length; head length 29 to 36% (mean 33%) of standard length. Snout pointed; occipital profile nearly straight. Posterior margin of maxilla reaching to or slightly short of level of posterior margin of adipose eyelid; upper-jaw length 12 to 14% (mean 13%) of standard length; depth of posterior margin of maxilla less than eye diameter; lip on lower jaw well developed, dentary teeth restricted to dorsal surface; teeth villiform in broad bands on palatines and ectopterygoids; vomerine tooth plate covered with skin and teeth absent; palatines inwardly turned anteriorly. Posterior margin of preopercle serrated. First dorsal fin with VIII spines, second spine slightly more robust than or similar to others; second dorsal fin with I spine and 12 to 14 (mode 13) soft rays; anal fin with III spines and 11 or 12 (mode 12) soft rays, anal-fin base approximately equal to or less than second dorsal-fin base; pectoral fin with 13 or 14 (mode 13, rarely 12 or 15) rays (all rays unbranched, except uppermost 1 or 2), its length 17 to 20% (mean 18%) of standard length, posterior tip not reaching to level of posterior tip of pelvic fin; pectoral filaments 5, first filament shortest, not reaching to or just reaching to level of pelvic-fin origin; second to fourth pectoral filaments just short of or extending slightly beyond level of pelvic-fin origin; fifth pectoral filament longest, its length 21 to 30% (mean 26%) of standard length, just short of or extending slightly beyond level of posterior tip of pectoral fin; caudal fin deeply forked, upper and lower caudal-fin lobes not filamentous, upper caudal-fin lobe 31 to 41% (mean 36%) and lower lobe 31 to 39% (mean 35%) of standard length. Pored lateral-line scales 46 to 49 (mode 47); lateral line simple, extending from upper end of gill opening to upper end of lower caudal-fin lobe; scale rows above lateral line 6 or 7 (mode 6), below 9 or 10 (mode 10, rarely 8). Gillrakers 10 to 14 (mode 13) on upper limb, 13 to 18 (mode 16) on lower limb, 24 to 33 (mode 29) total. Vertebrae 10 precaudal and 14 caudal; supraneural bones 3. Swimbladder present, well developed. **Colour:** Head and upper sides of trunk tinged yellowish silver, becoming lighter silver on lower sides; snout semi-translucent; posterior margins of first and second dorsal fins and caudal fin slightly blackish, remaining parts translucent yellowish white; pectoral fin membrane yellowish; pectoral filaments faintly white; anterior margins and origins of pelvic and anal fins faintly white, remaining parts yellow; a large black spot anteriorly on lateral line.

Geographical Distribution: Currently known from the Indian Ocean, where it ranges from Tamil Nadu, east of the southernmost tip of India, Sri Lanka, Myanmar and Phuket Island, Thailand, to the West Pacific where it ranges from Taiwan Province of China to New Caledonia, being relatively common in the eastern part of Indonesia and Philippines (Fig. 101). However, examples of ***P. microstomus*** have at no time (apparently) been collected from Australian waters.

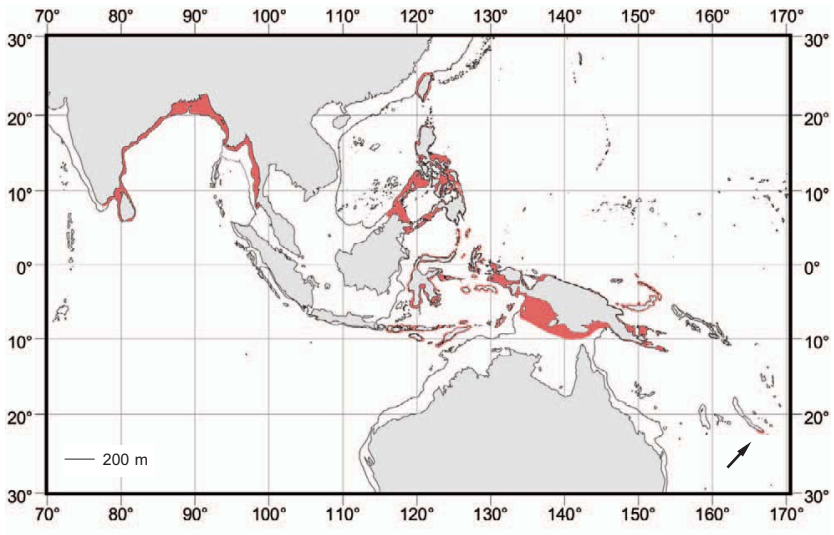

Fig. 101 ***Polydactylus microstomus***
Known distribution

Habitat and Biology: Inhabits turbid coastal waters, estuaries and mangrove creeks, as well as mangrove-lined rivers. Most of the species are taken from depths of less than 2 m. However, Schroeder (1980) reported the species in depths of less than 20 m in the Philippines. Furthermore, a specimen (USNM 300898, 132 mm standard length) from Myanmar was purportedly collected from a depth of 55 m.

Size: Maximum standard length at least 16 cm (Motomura and Iwatsuki, 2001b).

Interest to Fisheries: None.

Local Names: PHILIPPINES: Akin-akin, Kuwa-kuwa, Mamaling babai, Mamaling bato; PAPUA NEW GUINEA: Small-mouthed threadfin.

Literature: Motomura and Iwatsuki (2001b); Motomura (2002).

Remarks: ***P. zophomus***, originally described from Cavite, Luzon Island, Philippines, has been frequently regarded as a valid species (Jordan and Richardson, 1908; Seale, 1910), although type specimens of the species have apparently never been compared directly with those of ***P. microstomus***. Examination of the types of both species showed that they represented a single species (Motomura and Iwatsuki, 2001b). Therefore, ***P. zophomus*** is a junior synonym of ***P. microstomus***.

Günther (1860) described 2 specimens with 5 pectoral filaments and a black blotch on the lateral line near its origin as ***Polynemus plebejus***, but the specimens are clearly ***Polydactylus microstomus***. The species name, ***microstoma***, given by Bleeker (1851b), is changed to ***microstomus*** in accordance with the masculine gender of the genus name.

Polydactylus microstomus and 4 ***Polydactylus*** species: ***P. malagasyensis***, ***P. mullani***, ***P. persicus*** and ***P. sextarius***, are characterized by having all pectoral-fin rays branched, except the uppermost 1 or 2, the vomer without teeth and a large black spot anteriorly on the lateral line. The above 5 species are similar to each other in overall body appearance. However, ***P. microstomus*** can be easily distinguished from the other 4 species by the number of pectoral filaments [5 (rarely asymmetrically 5 and 6) versus 7 (rarely asymmetrically 6 and 7) in ***P. mullani*** and 6 in the remaining 3 species].

Polydactylus mullani (Hora, 1926) **Fig. 102; Plate IIIe**

Polynemus sextarius mullani Hora, 1926: 453 [type locality: Mumbai, India; holotype (ZSI-F 10747, 157 mm standard length); 3 paratypes (ZSI-F 10748, 106 mm standard length; ZSI-F 10749, 97 mm standard length; ZSI-F 10750, 92 mm standard length) reregistered by Motomura and Iwatsuki, 2001b].

Synonyms: None.

FAO Names: En - Arabian blackspot threadfin; **Fr** - Barbure à tâche noire d'Arabie; **Sp** - Barbudo de mancha negra árabe.

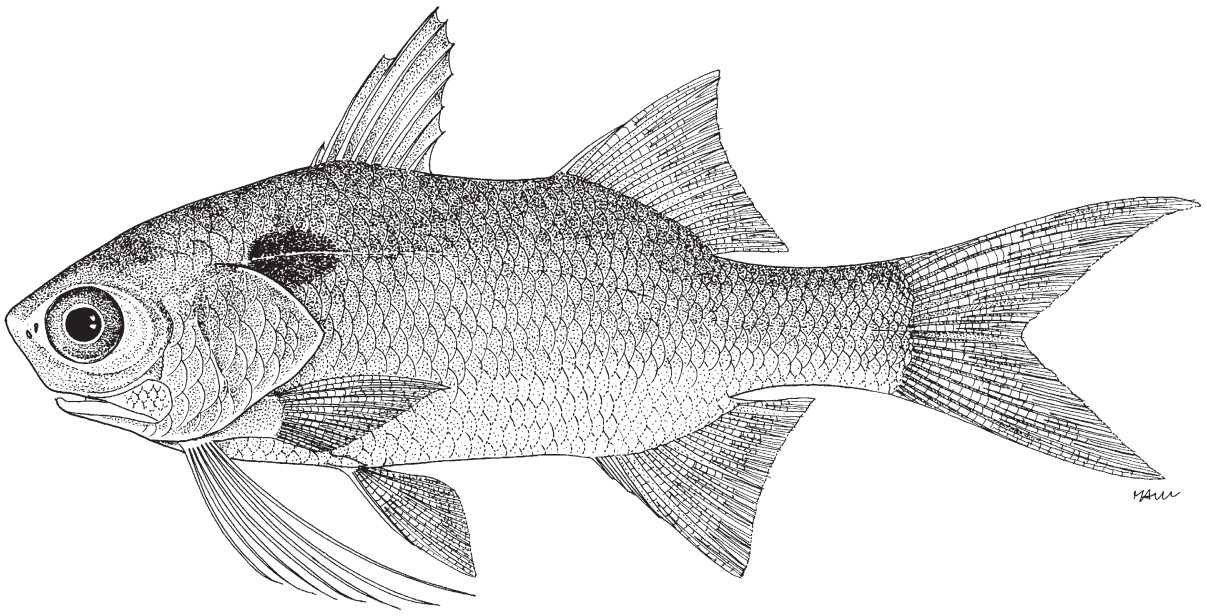

Fig. 102 ***Polydactylus mullani***

Diagnostic Features: A small- to medium-sized species. Body depth at first dorsal-fin origin 28 to 35% (mean 33%) of standard length; head length 33 to 37% (mean 35%) of standard length. Snout pointed; occipital profile nearly straight. Posterior margin of maxilla just reaching to or not reaching to (in adults over about 60 mm standard length), or extending well beyond (in young) level of posterior margin of adipose eyelid; upper-jaw length 14 to 17% (mean 15%) of standard length; depth of posterior margin of maxilla less than eye diameter; lip on lower jaw well developed, dentary teeth restricted to dorsal surface; teeth villiform in broad bands on palatines and ectopterygoids; vomerine tooth plate covered with skin and teeth absent; palatines inwardly turned anteriorly. Posterior margin of preopercle serrated. First dorsal fin with VIII spines, second spine more robust than others; second dorsal fin with I spine and 12 or 13 (mode 13) soft rays; anal fin with III spines and 11 or 12 (mode 12) soft rays, anal-fin base less than second dorsal-fin base; pectoral fin with 13 or 14 (mode 13) rays (all rays unbranched, except uppermost 1 or 2), its length 19 to 22% (mean 20%) of standard length, posterior tip not reaching to level of posterior tip of pelvic fin; pectoral filaments 7 (rarely asymmetrically 6 and 7); first (shortest) and second filaments, not reaching to level of pelvic-fin origin; third to sixth pectoral filaments extending beyond level of pelvic-fin origin; seventh pectoral filament longest, its length 28 to 45% (mean 33%) of standard length, extending well beyond level of posterior tip of pectoral fin and not reaching to (in adults over about 60 mm standard length) or reaching to (in young) level of anal-fin origin; caudal fin deeply forked, upper and lower caudal-fin lobes not filamentous, upper caudal-fin lobe 32 to 52% (mean 39%) and lower lobe 32 to 50% (mean 38%) of standard length. Pored lateral-line scales 46 to 50 (mode 48); lateral line simple, extending from upper end of gill opening to upper end of lower caudal-fin lobe; scale rows above lateral line 5 to 7 (mode 6), below 9 or 10 (mode 10). Gillrakers 13 to 16 (mode 14) on upper limb, 18 to 21 (mode 18) on lower limb, 31 to 35 (mode 32) total. Vertebrae 10 precaudal and 14 caudal; supraneural bones 3. Swimbladder present, well developed. **Colour:** Head and upper sides of trunk tinged darkly silver, becoming lighter silver on lower sides; snout semi-translucent; anterior and posterior margins of first and second dorsal, anal and caudal fins slightly blackish, other parts grey; pectoral-fin membrane grey with scattered melanophores; base of pectoral filaments white, becoming dark posteriorly; anterior margin and lower tip of pelvic fin grey, other parts white; a large black spot anteriorly on lateral line.

Geographical Distribution: Endemic and common in the northern Arabian Sea (Fig. 103).

Habitat and Biology: Taken from depths of 14 to 115 m. Hida (1967) examined 401 specimens of the species and determined their sexes: the hermaphrodites (231 specimens, 57.6% of total) range from 6.0 to 16.4 cm with a peak at 11.0 cm; the mature females with large granulated ova (144 specimens, 35.9% of total) range from 10.0 to 18.4 cm with a peak at 12.5 cm; and immature females (25 specimens, 6.2% of total) and presumed male (1 specimen, 0.3% of total) range from 9.0 to 15.9 cm without conspicuous peaks. ***Polydactylus mullani*** feeds mainly on shrimps and small fishes.

Size: Maximum standard length at least 19 cm (Motomura and Iwatsuki, 2001b).

Interest to Fisheries: One of the most important commercial species in the northern Arabian Sea. Caught by bottom trawls. Hida (1967) reported that 3 700 examples were caught in 1 haul off southern Kathiawar, India on 15 November 1963.

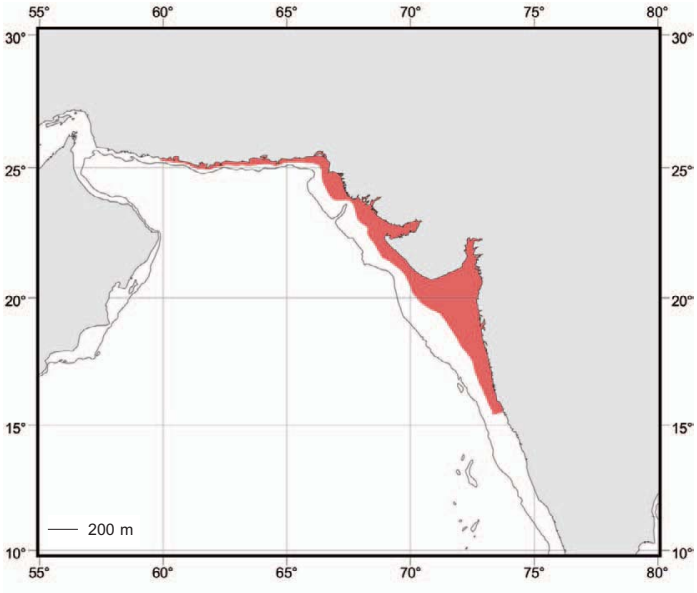

Fig. 103 ***Polydactylus mullani***
Known distribution

Local Names: None known.

Literature: Motomura and Iwatsuki (2001b); Motomura (2002).

Remarks: Hora (1926) described ***Polynemus sextarius mullani*** as a new subspecies on the basis of 4 specimens (holotype and 3 paratypes). The subspecies was raised to specific status (as ***Polydactylus mullani***) by Motomura and Iwatsuki (2001b), because the species can be easily distinguished from other congeners, including ***P. sextarius***.

Polydactylus mullani has been frequently misidentified as ***Filimanus heptadactyla*** (e.g. Kagwade, 1970, as ***Polynemus heptadactylus***; Talwar and Kacker, 1984, as ***Polydactylus heptadactylus***). However, ***P. mullani*** differs from the latter in having wider teeth bands on the upper and lower jaws (compared with the space separating the teeth bands on opposing premaxilla versus narrower teeth bands on the upper and lower jaws in ***F. heptadactyla***), the basisphenoid in contact with the prootic (not in contact in ***F. heptadactyla***), lower gill-raker counts [31 to 35 (mode 32) versus 35 to 41 (mode 39 in ***F. heptadactyla***)] and a large black spot present anteriorly on the lateral line (absent in ***F. heptadactyla***). Furthermore, whereas ***P. mullani*** is currently known only from the northern Arabian Sea in the Indian Ocean, ***F. heptadactyla*** is distributed in the western Pacific Ocean.

Polydactylus mullani and 4 ***Polydactylus*** species: ***P. malagasyensis***, ***P. microstomus***, ***P. persicus*** and ***P. sextarius***, are characterized by having all pectoral-fin rays branched, except the uppermost 1 or 2, the vomer without teeth and a large black spot anteriorly on the lateral line. ***Polydactylus mullani*** can be easily distinguished from the other 4 species by the number of pectoral filaments [7 (rarely asymmetrically 6 and 7) versus 5 (rarely asymmetrically 5 and 6) in ***P. microstomus*** and 6 in the remaining 3 species].

The body appearance of ***P. mullani*** varies remarkably with overall fish growth, compared with that of the other 4 species with a large black anterior lateral-line spot. The uppermost pectoral filament and posterior margin of the maxilla in young specimens (less than about 60 mm standard length) of ***P. mullani*** reach (versus not reaching in adults) the anal-fin origin and extend well beyond (versus just reaching or not reaching) posterior margin of the adipose eyelid, respectively. Furthermore, the upper and lower caudal-fin lobes of young specimens (less than about 60 mm standard length) of ***P. mullani*** are extremely long [50 to 52% (mean 51%) of standard length and 43 to 50% (mean 47%) of standard length, respectively versus 32 to 42% (mean 38%) of standard length and 32 to 39% (mean 36%) of standard length, respectively, in adults]. These growth-related features are not found in the other 4 species.

Polydactylus multiradiatus (Günther, 1860) **Fig. 104; Plate IIIf**

Polynemus multiradiatus Günther, 1860: 324 [type locality: China (but probably erroneous, see Motomura, Johnson and Iwatsuki, 2002); holotype (BMNH 1852.5.4.5, stuffed specimen, 147 mm standard length)].

Synonyms: ***Polynemus specularis*** De Vis, 1883: 285 (type locality: Brisbane River, Queensland, Australia; 2 or more syntypes apparently lost, see Motomura, Johnson and Iwatsuki, 2002). ***Polydactylus auratus*** McKay, 1970: 8 [type locality: Napier Broome Bay, Western Australia, Australia; holotype (WAM-P 16792-001, 115 mm standard length); 3 paratypes (WAM-P 16793-001, 106 mm standard length; WAM-P 16794-001, 129 mm standard length; WAM-P 16795-001, 99 mm standard length)].

FAO Names: En - Australian threadfin; **Fr** - Barbure à dos sombre; **Sp** - Barbudo de lomo oscuro.

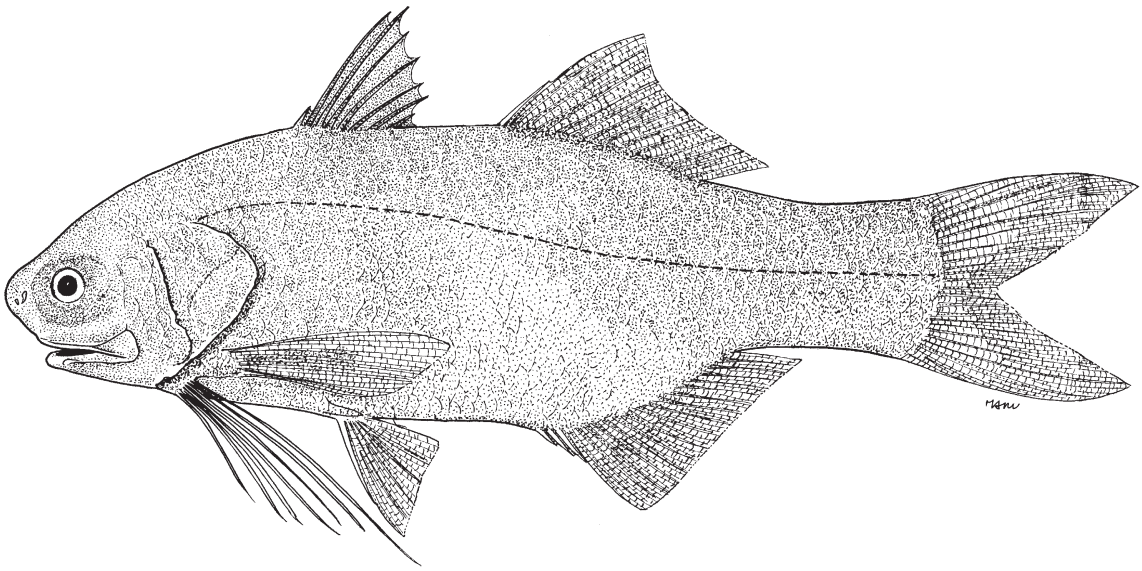

Fig. 104 ***Polydactylus multiradiatus***

Diagnostic Features: A small- to medium-sized species. Body depth at first dorsal-fin origin 31 to 38% (mean 35%) of standard length; head length 28 to 33% (mean 30%) of standard length. Snout pointed; occipital profile nearly straight. Posterior margin of maxilla not reaching to, just reaching to or extending slightly beyond level of posterior margin of adipose eyelid; upper-jaw length 12 to 14% (mean 13%) of standard length; depth of posterior margin of maxilla less than eye diameter; lip on lower jaw well developed, dentary teeth restricted to dorsal surface; teeth villiform in broad bands on vomer, palatines and ectopterygoids. Posterior margin of preopercle serrated. First dorsal fin with VIII spines, all spine bases of similar thickness; second dorsal fin with I spine and 13 to 15 (mode 14) soft rays; anal fin with III spines and 16 to 18 (mode 16) soft rays, anal-fin base greater than second dorsal-fin base; pectoral fin with 14 to 17 (mode 15) rays (all rays unbranched), its length 25 to 30% (mean 28%) of standard length, posterior tip not reaching to level of posterior tip of pelvic fin; pectoral filaments 7 (rarely 6 on each side, asymmetrically 6 and 7, or 7 and 8); first (shortest) and second pectoral filaments not reaching to level of pelvic-fin origin; third pectoral filament reaching to or just short of level of pelvic-fin origin; fourth pectoral filament extending slightly beyond or reaching level of pelvic-fin origin; fifth and sixth (rarely longest) pectoral filaments extending well beyond level of pelvic-fin origin; seventh pectoral filament longest, its length 26 to 32% (mean 30%) of standard length, not extending to posterior tip of pectoral fin; caudal fin deeply forked, upper and lower caudal-fin lobes not filamentous, upper caudal-fin lobe 36 to 42% (mean 39%) and lower lobe 34 to 41% (mean 37%) of standard length. Pored lateral-line scales 49 to 56 (mode 52); lateral line simple, extending from upper end of gill opening to upper end of lower caudal-fin lobe; scale rows above lateral line 7 or 8 (mode 8), below 14 or 15 (mode 14). Gillrakers 11 to 14 (mode 12) on upper limb, 16 to 20 (mode 17) on lower limb, 27 to 33 (mode 30) total. Vertebrae 10 precaudal and 14 caudal; supraneural bones 3. Swimbladder absent. **Colour:** Upper sides of head and trunk with slightly darkish silver to bronze tinge, becoming

lighter silvery white on lower sides; snout semi-translucent with dusky tip; intensity of pigmentation of pectoral and upper part of first dorsal fin variable, but usually at least partially covered with dusky melanophores; posterior tip of second dorsal fin blackish, other parts pale fleshy yellow; pectoral filaments white; anterior margin of anal fin white, other parts dusky whitish to yellow; caudal fin semi-translucent greyish.

Geographical Distribution: Currently known only from southern Indonesia (Timor and Arafura Seas) and northern Australia (Northern Territory, Queensland, and northern Western Australia and New South Wales) (Fig. 105). Judging from presently known locality data for the species, the type locality (China), given by Günther (1860) is most likely erroneous.

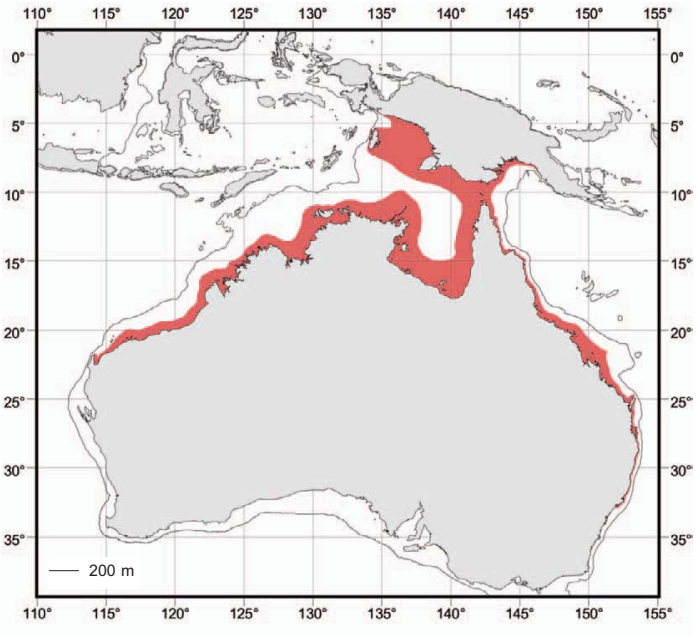

Fig. 105 ***Polydactylus multiradiatus***
Known distribution

Habitat and Biology: ***P. multiradiatus*** has a similar distribution to ***P. macrochir***, occurring in southern Papua New Guinea and northern Australia. However, collection data for ***P. macrochir*** indicated that specimens had been taken from depths of 0.2 to 6 m on muddy or sandy bottoms, whereas most specimens of ***P. multiradiatus*** (except a single young specimen, AMS IB. 3089, 103 mm standard length, collected from depth of 4 m), were taken from depths of 10 to 56 m, also on muddy or sandy bottoms. This suggests that ***P. macrochir*** and ***P. multiradiatus*** are segregated vertically, although fully overlapping geographically.

On the basis of gonad examinations, it is clear that ***P. multiradiatus*** is a protandrous hermaphrodite, changing sex from male to female between 120 and 140 mm standard length (Motomura, Johnson and Iwatsuki, 2002). The body depth of individuals also increased significantly during that period (Motomura, Johnson and Iwatsuki, 2002: fig. 2).

Sumpton and Greenwood (1990: table 1) listed the food items in the stomachs of juveniles (20 to 59 mm fork length) of ***P. multiradiatus*** from the Logan-Albert estuarine system, Moreton Bay, Queensland, Australia. Smaller individuals of the species (20 to 29 mm fork length) fed predominantly on calanoid copepods, which formed 83% by volume of their diet. With progressive increases in the size of the species, copepods became a less important dietary item, comprising only 28% of the average stomach volume at a size of 50 to 59 mm fork length.

Size: Maximum standard length at least 15 cm (Motomura, Johnson and Iwatsuki, 2002).

Interest to Fisheries: None.

Local Names: AUSTRALIA: Günther's threadfin; PAPUA NEW GUINEA: Many-rayed threadfin.

Literature: Motomura, Johnson and Iwatsuki (2002b); Motomura (2002).

Remarks: ***Polynemus specularis*** was briefly described by De Vis (1883) on the basis of 2 or more specimens from the Brisbane River, Queensland, Australia. De Vis (1883) stated that the anal-fin soft rays of the species numbered 17 or 18, which is consistent with ***Polydactylus multiradiatus*** (16 to 18), and different from the usual condition (10 to 13) among other Indo-Pacific ***Polydactylus*** species. ***Polynemus specularis*** is therfore regarded as a junior synonym of ***Polydactylus multiradiatus*** (Motomura, Johnson and Iwatsuki, 2002). ***Polydactylus auratus***, described by McKay (1970) on the basis of 4 specimens from Napier Broome Bay, Western Australia, Australia, are also found to be conspecific with ***P. multiradiatus***. Their meristic and morphological characters are included in Motomura, Johnson and Iwatsuki (2002: table 1).

Grant (1982, 1995) provided figures (1985, pl. 273 and 1995, fig. 631a) of a threadfin identified as ***Polydactylus heptadactylus***. This species, now recognized as ***Filimanus heptadactyla***, is characterized by 11 or 12 anal-fin soft rays, whereas the threadfin figured by Grant (1982, 1995) clearly had 16 or more anal-fin soft rays. Therefore, Grant's ***P. heptadactylus*** is clearly ***P. multiradiatus***.

Polydactylus multiradiatus can be easily distinguished from other Indo-Pacific congeners by the higher anal-fin soft ray counts (16 to 18 versus 10 to 13 in all others). Three Indo-Pacific ***Polydactylus*** species, ***P. macrophthalmus***, ***P. multiradiatus*** and ***P. mullani***, have 7 pectoral filaments. In addition to the difference in numbers of anal-fin soft rays, ***P. multiradiatus*** differs from ***P. macrophthalmus*** in having lower pored lateral-line scale counts [49 to 56 (mode 52) versus 87 to 94 (mode 88) in the latter], shorter pectoral filaments (no filaments extending beyond posterior tip of pectoral fin versus upper 3 filaments extending beyond caudal-fin base in ***P. macrophthalmus***) and occipital profile nearly straight throughout life (occipital profile concave in adults in ***P. macrophthalmus***). ***Polydactylus multiradiatus*** is clearly distinguished from ***P. mullani*** by the presence of vomerine teeth (absent in the latter) and absence of a large black spot anteriorly on the lateral line (present in ***P. mullani***).

NEXT PAGE