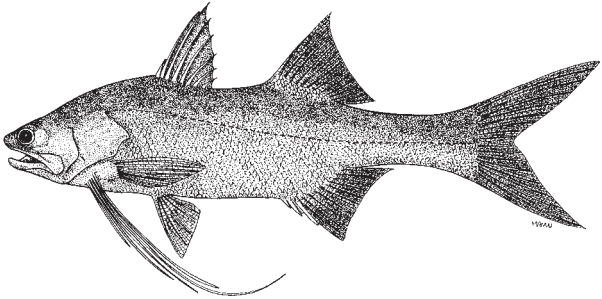


Polydactylus macrochir (Günther, 1867)

Frequent synonyms / misidentifications: *Polynemus sheridani* Macleay, 1884 / *Polydactylus indicus* (Shaw, 1804).

FAO names: En - King threadfin.

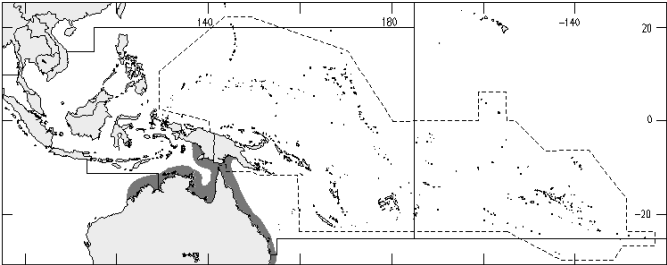
Diagnostic characters: A large, elongate species; body depth at first dorsal-fin origin 3.6 to 4.7 times in standard length, body depth at second dorsal-fin origin less than distance from pelvic-fin origin to anal-fin origin. Head length 3.3 to 3.6 times in standard length. Eye diameter about equal to or less than snout length. Snout is not acutely pointed; upper lip thin; lower lip thick; tooth patch on vomer rounded triangle; palatine tooth patches are wide; width of band of teeth on premaxillae less than 2 times in space separating band of teeth on one premaxilla from other; postorbital length greater than distance from snout to posterior margin of preopercle, postorbital length less than or equal to 3/4 of body depth at second dorsal-fin origin. Posterior margin of preopercle with less than 50 serrations. **Gill rakers on first gill arch 31 to 37** (mean 33). First dorsal fin with VIII spines; second dorsal fin with I spine and 11 or 12 (mean 12) soft rays; anal fin with III spines and 9 to 11 (mean 11) soft rays; anal-fin base longer than or equal to second dorsal-fin base; 2 times length of anal-fin base greater than distance from pelvic-fin origin to anal-fin origin; caudal-peduncle length greater than length of anal-fin base; about 11 to 16 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 13 to 15 (mean 14) simple rays, the fins insert low on body, reaching to posterior quarter to end of pelvic fins; **5** (rarely 4) **pectoral filaments**, fourth filament, from ventralmost, usually longest, **extending almost to anal-fin origin or a little past anal-fin origin**; pelvic fins reach near or past anus. **Lateral-line scales 63 to 75** (mean 71); lateral line terminates between first and second lower rays of caudal fin; scale rows above lateral line 8 to 10 (mean 9); scale rows below lateral line 10 to 13 (mean 12). Basisphenoid contacts prootic. Ventral section of the coracoid with foramina and anterior margin of this section greatly expanded. Vertebrae 10+14. Swimbladder simple, elongate, and large. Pyloric caeca about 25. **Colour:** body bluish silvery dorsally, and whitish ventrally; each line of scales shows a more or less distinct longitudinal streak; during some seasons ventral surface flushed with yellow; dorsal, anal, and caudal fins blackish; pectoral fins, pelvic fins, and pectoral filaments whitish or yellow; fins sprinkled with melanophores.



Size: Specimens with a standard length over 48 cm were abundant seasonally in the tidal waters of the Mary River, Australia, and this fish could attain a mass of 45 kg. Fish over 88 cm standard length were common at Maryborough, where the record was 30 kg. Fish of a weight of 45 kg are no longer caught; fish taken usually weigh 9 to 14 kg. Reported to attain a fork length of 140 cm and 32 kg in the Gulf of Carpentaria, and over 150 cm fork length in Princess Charlotte Bay, Australia. Estimated maximum size of 170 cm fork length and 40 kg.

Habitat, biology, and fisheries: Frequents rivers and estuaries. Often over sand or mud flats to 5 m. Both juveniles and adults are taken in the Trinity Inlet system at Cairns, Queensland. Along the coast of New Guinea, found near and in the Lower Purari River system in mangrove areas and around the Nypa palms between the mangroves and the swamps. More abundant there than *Eleutheronema tetradactylum* and second in commercial importance after *Lates calcarifer*. *Polydactylus macrochir* comprises about 30% of gill-net landings, by weight, from the Gulf of Carpentaria. *P. macrochir* is more abundant in the Kikori area than in the Purari delta where larger fish are taken. Juveniles were taken along the coast. Prawns, crabs, and fish are the predominant food items. It is suggested the species migrates down the Purari River to the sea to spawn. They are known to move at least 550 km along the Australian coast. Can live more than 20 years. Valued as a food fish, it is marketed as fresh or frozen fillets or whole fish. This is an important game fish in Queensland.

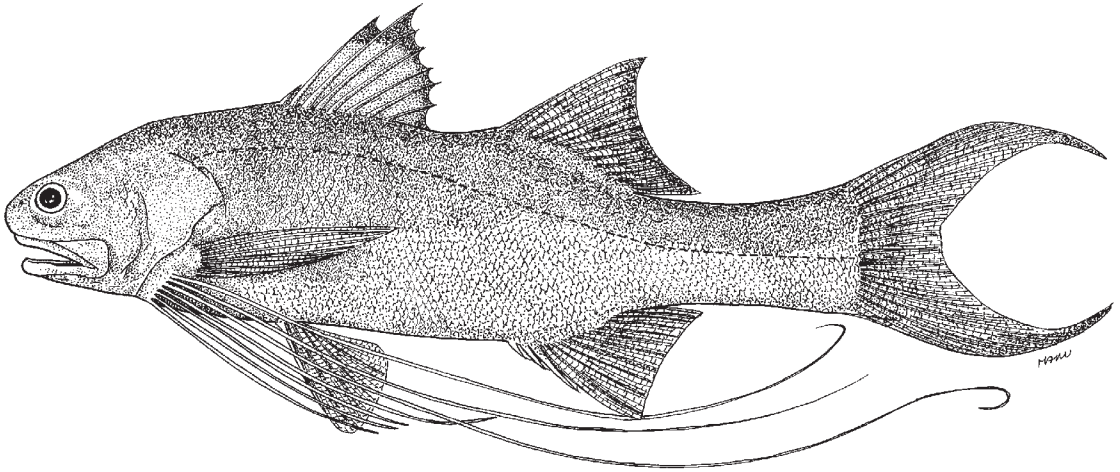
Distribution: Early reports of this species were from the Mary (Burnett) and Fitzroy rivers of eastern Australia; common along the coast and delta areas of Papua, New Guinea; south coast of New Guinea (Oetoemboewe to Gulf of Papua); in Australia, probably from as far west as Broome (Western Australia) north and east along the coast to the Brisbane River, Queensland, although Günther reports the type locality as New South Wales.



Polydactylus macrophthalmus (Bleeker, 1859)

Frequent synonyms / misidentifications: None / None.

FAO names: En - River threadfin.

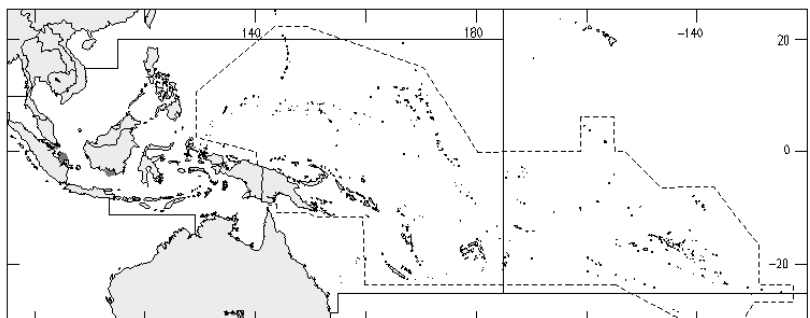


Diagnostic characters: A medium- to large-sized species, moderately elongate; body depth at first dorsal-fin origin 3.3 to 4.9 times in standard length. Head length 3.1 to 3.5 times in standard length. Eye diameter variable, about equal to snout length; **narrow interorbital**, 4.7 to 5.3 in head length; operculum with angular posterior margin; upper lip medium to thick; lower lip thick; tooth patch on vomer a wide “v” shape; tooth patch on palatine broad; width of band of teeth on premaxillae less than 2 times in space separating band of teeth on one premaxilla from other. Posterior margin of preopercle with less than 53 serrations. **Gill rakers on first gill arch 27 to 38** (mean 32). First dorsal fin with VIII spines; second dorsal fin with I spine and 13 or 14 (mean 14) soft rays; anal fin with III spines and 11 soft rays; anal-fin base shorter than second dorsal-fin base; caudal-peduncle length greater than length of anal-fin base; about 11 to 16 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 13 or 14 (mean 13) simple rays, the fins insert low on body, reaching to middle or end of pelvic fins; **7 long pectoral filaments**, fifth filament, from ventralmost, usually the longest, **extending well past end of caudal fin, may exceed twice standard length**; pelvic fins reach near or past anus. **Lateral-line scales 87 to 92** (mean 90); lateral line terminates between first and second lower rays of caudal fin, or rarely lateral line bifurcating on caudal fin with termination between centre of fork and first lower ray, and first and second lower rays; scale rows above lateral line 9 to 11 (mean 10); scale rows below lateral line 15 to 17 (mean 16). Basisphenoid contacts prootic. Ventral section of the coracoid with foramina and anterior margin of this section greatly expanded. Vertebrae 10+14. Swimbladder simple, elongate, moderate to large in size. Pyloric caeca 25 to 35. **Colour:** body dull silvery or brown to golden orange; unpaired fins dusky; tip of first dorsal fin may be black; second dorsal fin may be dark distally; pectoral fins dusky only dorsally; pectoral filaments with some melanophores.

Size: Maximum standard length at least 52 cm.

Habitat, biology, and fisheries: Middle to lower sections of rivers. Esteemed as a food fish along the Kapuas River, Borneo.

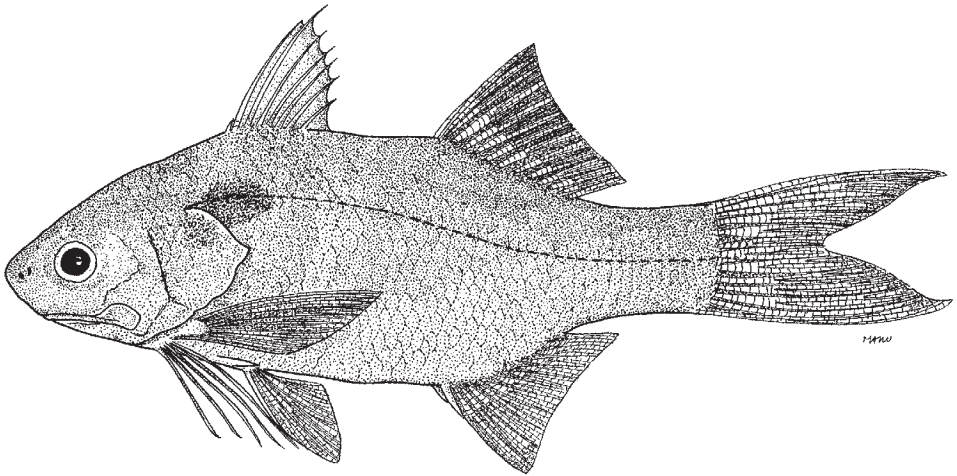
Distribution: Hari and Musi rivers of Sumatra and Kapuas River (Borneo), at least as far up as Silat.



***Polydactylus microstoma* (Bleeker, 1851)**

Frequent synonyms / misidentifications: *Polydactylus zophomus* Jordan and McGregor in Jordan and Seale, 1907 / *Polydactylus sextarius* (Bloch, 1801); *P. plebeius* (Broussonet, 1782).

FAO names: En - Smallmouth threadfin.

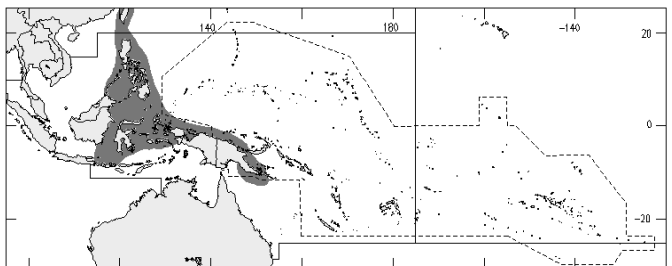


Diagnostic characters: A small species; body deep, its depth at first dorsal-fin origin 2.5 to 3.7 times in standard length. Head length 2.7 to 3.3 times in standard length. Eye diameter greater than snout length. Snout pointed; **posterior margin of maxilla rounded, not deep**; upper lip thin; lower lip moderate; **vomer edentate**; **anterior of tooth patch on palatine with medial arm**; **ectopterygoid tooth patch small**; width of band of teeth on premaxillae less than 2 times in space separating band of teeth on one premaxilla from other. Posterior margin of preopercle with less than 53 serrations. **Gill rakers on first gill arch 25 to 35** (mean 29). First dorsal fin with VIII spines; second dorsal fin with I spine and 12 or 13 (mean 13) soft rays; anal fin with III spines and 10 to 13 (mean 12) soft rays; anal-fin base about equal to second dorsal-fin base; caudal-peduncle length equal to or greater than length of anal-fin base; caudal-peduncle length greater than length of anal-fin base; about 11 to 16 procurrent caudal-fin rays in dorsal or ventral series; pectoral fins insert low on body; **pectoral fins with 12 to 15 (mean 13) rays**; usually **2 dorsalmost pectoral-fin rays simple, others branched**; **pectoral fins and pectoral filaments short**, 5 pectoral filaments, fifth pectoral filament, from ventralmost, the longest, less than head length, both pectoral fins and filaments extend to 1/3 to 3/4 of pelvic fins. Pelvic fins reach near or past anus. **Lateral-line scales 42 to 50** (mean 47); lateral line usually terminates between first and second lower rays of caudal fin; scale rows above lateral line 6 to 8 (mean 6); scale rows below lateral line 9 to 11 (mean 10). Basisphenoid contacts prootic. Ventral section of coracoid with foramina and anterior margin of this section greatly expanded. Vertebrae 10+14. Swimbladder simple, elongate, and highly variable in size. Pyloric caeca about 15. **Colour:** body white, with metallic golden and green reflections; **black spot behind opercle covers about second through eighth lateral-line scales** and diffusing over 1 row above and below; dorsal and caudal fins a pale dusky green; pectoral, pelvic, and anal fins dusky, with wash of yellow; pectoral fins dark mostly on medial surface and dorsolaterally.

Size: Maximum standard length at least 19 cm.

Habitat, biology, and fisheries: Catches of juveniles from the Labu estuary near the mouth of the Markham River in Papua New Guinea were associated with lunar phases. Thirty-five percent of the specimens taken in a collection from Palk Bay and Gulf of Mannar, Sri Lanka, were hermaphrodites.

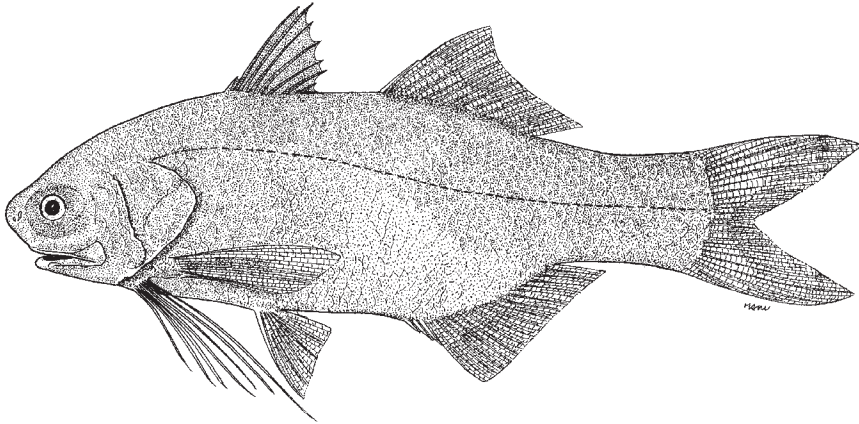
Distribution: Southeast India, Sri Lanka, and northeast Bay of Bengal; Taiwan Province of China south through Philippines, Borneo, eastern Indonesia to eastern New Guinea.



***Polydactylus multiradiatus* (Günther, 1860)**

Frequent synonyms / misidentifications: *Polynemus specularis* De Vis, 1883; *Polydactylus auratus* McKay, 1970 / *Filimanus heptadactyla* (Cuvier, 1829).

FAO names: En - Australian threadfin.

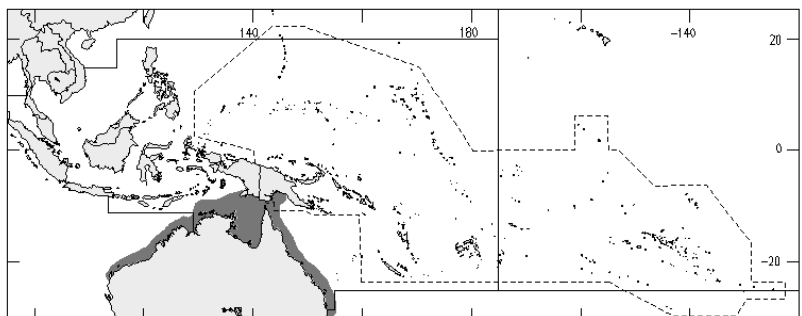


Diagnostic characters: A small species with a deep compressed body; **body depth greater than head length**, at first dorsal-fin origin 2.6 to 3.5 times in standard length. Head length 2.9 to 3.8 times in standard length. Eye diameter greater than snout length. Snout not markedly pointed. Mouth small; upper lip moderately thin; lower lip moderate; tooth patch on vomer rounded, wide "v" shape; anterior of palatine tooth patch expanded medially; width of band of teeth on premaxillae less than 2 times in space separating band of teeth on one premaxilla from other. Posterior margin of preopercle with less than 45 serrations. **Gill rakers on first gill arch 26 to 32** (mean 30). First dorsal fin with VIII spines; second dorsal fin with I spine and 13 or 15 (mean 14) soft rays; base of second dorsal fin long, 4.2 to 5.6 times in standard length; **base of anal fin long**, 3.5 to 5 times in standard length; **anal-fin ray count high**, **anal fin** with III spines and **14 to 18** (mean 17) **soft rays**; anal-fin base longer than second dorsal-fin base; **caudal peduncle short and deep**, caudal-peduncle length less than length of anal-fin base; about 11 to 16 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 14 to 16 (mean 15) simple rays, the fins insert low on body, reaching to posterior three-quarters of pelvic fins; **7** (rarely 6) **pectoral filaments**, seventh filament, from ventralmost, the longest, **extending to posterior three-quarters of pelvic fins or to anal origin**; pelvic fins reach near or past anus. **Lateral-line scales 50 to 58** (mean 54); lateral line usually terminates between first and second lower rays of caudal fin; scale rows above lateral line 6 to 9 (mean 8); scale rows below lateral line 13 to 16 (mean 14). Basisphenoid contacts prootic. Ventral section of the coracoid with foramina and anterior margin of this section greatly expanded. Vertebrae 10+14. Swimbladder not apparent. Pyloric caeca about 35. **Colour:** dorsal part of body and head golden, abdomen silvery pink, the 2 colours often sharply defined; dorsal fins dusky; anal and caudal fins greenish yellow or yellowish orange; pectoral fins yellowish with the middle or whole of fin black or bluish black; pectoral filaments pale yellow.

Size: Maximum standard length at least 18 cm.

Habitat, biology, and fisheries: Taken to a depth of at least 50 m in Gulf of Carpentaria. Feeds on prawns. Commonly taken in association with prawns of the genus *Penaeus*.

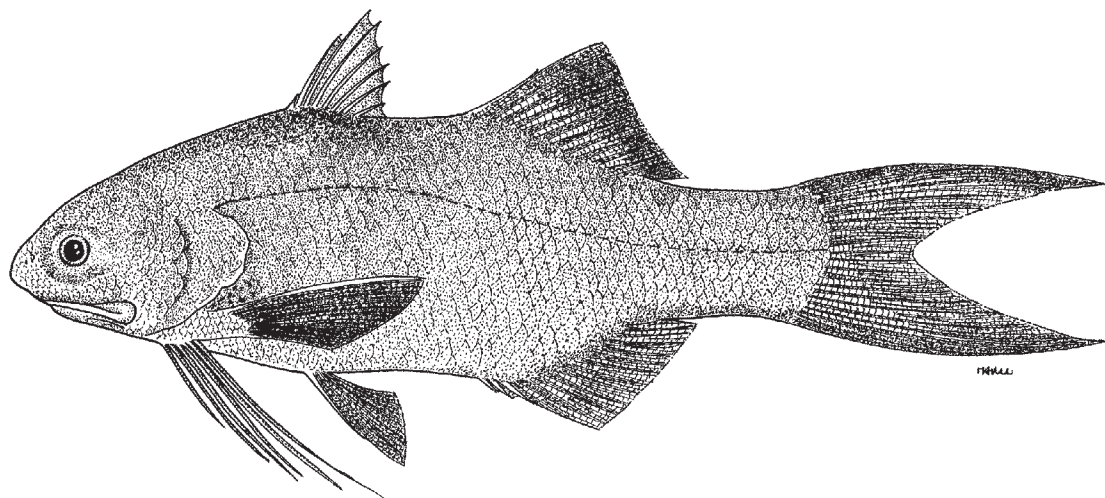
Distribution: South coast of New Guinea from Sandoe-mande through the Gulf of Papua; Exmouth Gulf (Western Australia) along north and east coast of Australia to Clarence River (New South Wales).



Polydactylus nigripinnis Munro, 1964

Frequent synonyms / misidentifications: None / None.

FAO names: En - Blackfin threadfin.

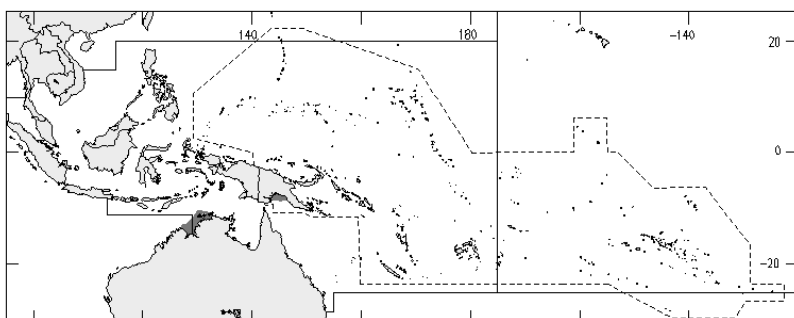


Diagnostic characters: A small species. Body depth at first dorsal-fin origin 2.8 to 3.8 times in standard length; body wide, width above pectoral-fin insertion 5.7 to 8.1 times in standard length. Head length 2.8 to 3.2 times in standard length. Snout protruding. Eye diameter about equal to snout length. Head wide; angle of posterior margin of opercle relatively ventral; upper lip very thin; lower lip thick; dentaries fit largely within premaxillae **when mouth completely closed; broad band of teeth cover ventral surface of premaxilla**; vomer edentate; palatine and ectopterygoid tooth plates narrow; width of band of teeth on premaxillae less than 2 times in space separating band of teeth on one premaxilla from other. **Posterior margin of preopercle with less than 10 serrations. Gill rakers on first gill arch 24 to 27** (mean 26). First dorsal fin with VIII spines; longest spine of first dorsal fin less than or equal to 2/3 of pectoral-fin length; second dorsal fin with I spine and 12 or 13 (mean 13) soft rays; anal fin with III spines and 11 to 13 (mean 12) soft rays; anal-fin base shorter than or equal to second dorsal-fin base; caudal-peduncle length greater than or equal to length of anal-fin base; about 12 to 14 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 16 to 18 (mean 17) simple rays; pectoral fins insert low on body, relatively long, being about 1/3 standard length, reaching to end of pelvic fins; **6 pectoral filaments**, sixth filament, from ventralmost, the longest, **extending to origin of anal fin**; bases of second dorsal fin and anal fin of equal length; pelvic fins reach near or past anus. **Lateral-line scales 48 to 51** (mean 50); lateral line terminates between first and second lower rays of caudal fin; scale rows above lateral line 6 to 8 (mean 7); scale rows below lateral line 11 or 12 (mean 11). Basisphenoid contacts prootic. Basisphenoid contacts prootic. Ventral section of the coracoid with foramina and anterior margin of this section greatly expanded. Vertebrae 10+14. Peritoneum with dark scattering of melanophores. No swimbladder apparent. Pyloric caeca about 25. **Colour:** body dusky blue dorsally, silver golden below; spot immediately above origin of pectoral fins; unpaired fins yellow with melanophores; pectoral fins, except uppermost ray and free filaments, intensely black on lateral surface.

Size: Maximum standard length at least 15 cm.

Habitat, biology, and fisheries: Usually taken off mouths of rivers. Has been taken at 150 m in the Gulf of Carpentaria, but typically at much shallower depths.

Distribution: Gulf of Papua (New Guinea), specifically Orokelo Bay; Cambridge Gulf (Western Australia) to Van Diemen Gulf (Northern Territory).

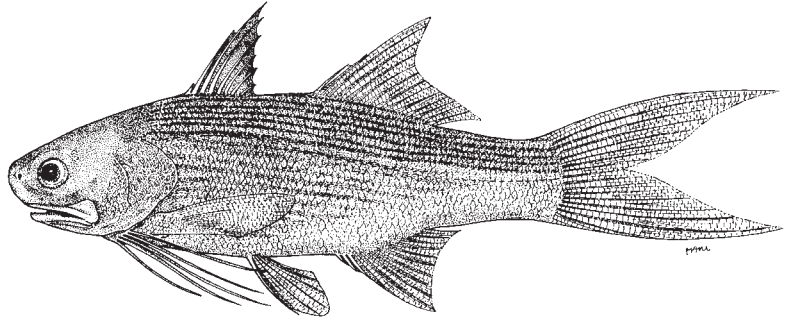


Polydactylus plebeius (Broussonet, 1782)

Frequent synonyms / misidentifications: None / *Polydactylus microstoma* (Bleeker, 1851).

FAO names: En - Common threadfin; Fr - Barbure rayé; Sp - Barbudo rayado.

Diagnostic characters: Medium-sized to large species. Body depth at first dorsal-fin origin 3.1 to 4.3 times in standard length, body depth at second dorsal-fin origin greater than distance from pelvic-fin origin to anal-fin origin. Head length 2.7 to 3.5 times in standard length. Eye diameter greater than or about equal to snout length. Snout moderately conical; upper lip thin; lower lip moderate; tooth patch on

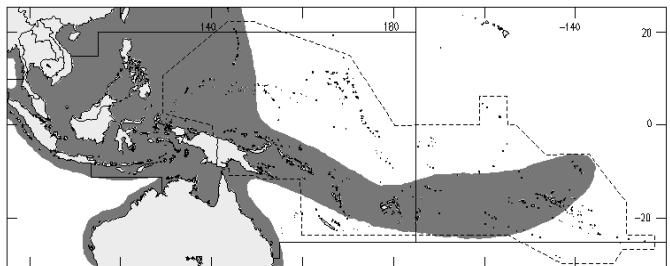


vomer a wide "v" shape changing to a rounded triangle; premaxillary, dentary, palatine and ectopterygoid tooth patches all wide; width of band of teeth on premaxillae less than 2 times in space separating band of teeth on one premaxilla from other; postorbital length greater than distance from anterior of snout to posterior margin of preopercle, postorbital length less than or equal to 3/4 of body depth at second dorsal-fin origin. Posterior margin of preopercle with less than 70 serrations. **Gill rakers on first gill arch 19 to 28** (mean 26). First dorsal fin with VIII spines; second dorsal fin with I spine and 12 to 14 (mean 13) soft rays; anal fin with III spines and 9 to 12 (mean 11) soft rays; anal-fin base about equal to second dorsal-fin base, 2 times length of anal-fin base greater than distance from pelvic-fin origin to anal-fin origin; caudal-peduncle length greater than length of anal-fin base; about 11 to 16 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 14 to 18 (mean 17) simple rays, the fins insert low on body, reaching to middle of pelvic fins or 3/4 of its length; **5 pectoral filaments**, fifth filament, from ventralmost, the longest, **extending to 3/4 of pelvic fins or past origin of anal fin**; pelvic fins reach near or past anus. **Lateral-line scales 59 to 69** (mean 62); lateral line terminates between first and second lower rays of caudal fin; scale rows above lateral line 7 to 12 (mean 9); scale rows below lateral line 11 to 14 (mean 13). Basisphenoid contacts prootic. Ventral section of coracoid with foramina and anterior margin of this section greatly expanded. Vertebrae 10+14. Swimbladder simple, elongate, and variable in size. **Colour:** body brown or dark olive dorsally, becoming lighter ventrally; adults with about 7 dark olive brown longitudinal lines above lateral line and about 10 below lateral line which are more faintly developed; sometimes reddish towards mouth and nose; dorsal, anal, caudal, and pectoral fins grey distally; pectoral fins often a dull yellowish; pelvic fins lighter or whitish; smaller specimens usually lack horizontal stripes; may be lighter in coloration, being more yellow or silvery; fish less than 8 cm may have a heavily pigmented first dorsal fin, pectoral fins, pelvic fins, anterior bases of second dorsal and anal fins, and lobes of caudal fin; fish less than 5 cm may have broad dark vertical bands passing through operculum, first dorsal fin and pelvic fins, caudal peduncle, and caudal-fin lobes, in addition to dark base of second dorsal and anal fins.

Size: Maximum standard length at least 45 cm. An average large fish attains 26 cm standard length. Fishes of 12 cm can be caught in large numbers.

Habitat, biology, and fisheries: Live off coasts over sand or mud flats. Caught in large numbers at mouths of rivers. Frequently caught in the surf, commonly enters estuaries, and occurs at a depth of 20 to 122 m. Specimens of 10 to 19 cm standard length feed mostly on crabs occurring on the muddy bottom near shore. Fish are also part of the diet. Taken in beach seines and trawls.

Distribution: Indian Ocean from South Africa, north along the east coast of Africa including Madagascar and Mauritius; Muscat, Oman, east along the coast of India; islands of the northern Indian Ocean; Malay Peninsula and Archipelago. Indonesia north through the Philippines, Taiwan Province of China to Korea and Mikawa Bay and Tokyo in Japan; Geraldton District (Western Australia) along the north coast to Port Stephens (New South Wales); New Guinea eastwards to Polynesia.



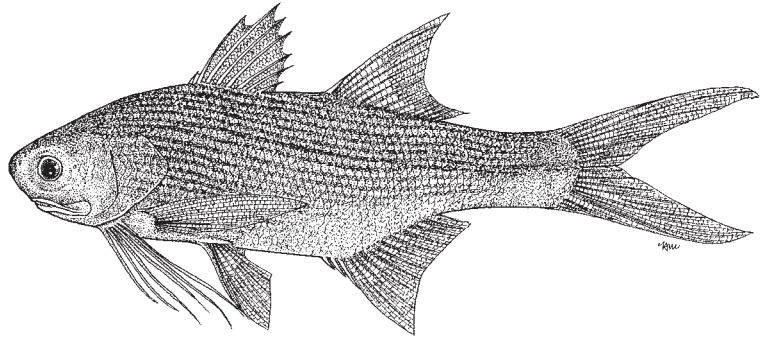
***Polydactylus sexfilis* (Valenciennes, 1831)**

Frequent synonyms / misidentifications: *Polynemus kuru* Bleeker, 1853 / *Filimanus xanthonema* (Valenciennes, 1831).

FAO names: En - Sixfinger threadfin.

Diagnostic characters:

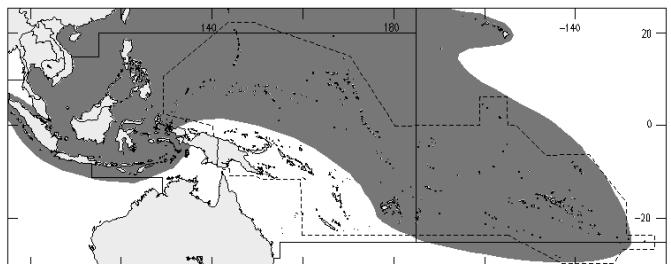
Medium-sized to large species. Body depth at first dorsal-fin origin 2.7 to 4.1 times in standard length, body depth at second dorsal-fin origin greater than distance from pelvic-fin origin to anal-fin origin. Head length 2.7 to 3.6 times in standard length. Eye diameter greater than snout length. Snout moderately conical; upper lip thin; lower lip moderate; tooth patch on vomer a wide "v" shape changing to a rounded triangle; premaxillary, dentary, palatine and ectopterygoid tooth patches all wide; width of band of teeth on premaxillae less than 2 times in space separating band of teeth on one premaxilla from other; postorbital length less than distance from anterior of snout to posterior margin of preopercle, postorbital length less than or equal to 3/4 of body depth at second dorsal-fin origin. Posterior margin of preopercle with less than 62 serrations. **Gill rakers on first gill arch 27 to 32** (mean 29). First dorsal fin with VIII spines; second dorsal fin with I spine and 11 to 13 (mean 13) soft rays; anal fin with III spines and 9 to 12 (mean 11) soft rays; anal-fin base about equal to second dorsal-fin base, 2 times length of anal-fin base greater than distance from pelvic-fin origin to anal-fin origin; caudal-peduncle length greater than length of anal-fin base; about 11 to 16 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 14 to 17 (mean 16) simple rays, the fins insert low on body, reaching to middle of pelvic fins or 3/4 of their length; **6 pectoral filaments**, fifth filament, from ventralmost, the longest, **extending to 3/4 of pelvic fins or past origin of anal fin**; pelvic fins reach near or past anus. **Lateral-line scales 58 to 70** (mean 63); lateral line terminates between first and second lower rays of caudal fin; scale rows above lateral line 6 to 10 (mean 9); scale rows below lateral line 11 to 15 (mean 13). Basisphenoid contacts prootic. Ventral section of the coracoid with foramina and anterior margin of this section greatly expanded. Vertebrae 10+14. Swimbladder simple, elongate, and variable in size. **Colour:** body brown or dark olive dorsally, becoming lighter ventrally, adults with **about 7 dark olive brown longitudinal lines above lateral line and about 10 below lateral line** which are more faintly developed; sometimes reddish towards mouth and nose; dorsal, anal, caudal, and pectoral fins are grey or black distally; pectoral fins sometimes appearing purplish; pelvic fins are lighter or whitish; smaller specimens usually lack the horizontal stripes; may be lighter in coloration, being more yellow or silvery; or fish less than 8 cm may have a heavily pigmented first dorsal fin, pectoral fins, pelvic fins, anterior bases of second dorsal and anal fins, and lobes of caudal fin; or fish less than 5 cm may have broad dark vertical bands passing through the operculum, the first dorsal fin and pelvic fins, the caudal peduncle, and the caudal-fin lobes, in addition to the dark base of second dorsal and anal fins.



Size: Maximum at least 40 cm standard length.

Habitat, biology, and fisheries: Found near reef areas. Not taken over the reef, but found in schools in lagoons and along sandy and rocky shores, often in zones of turbulence. Usually taken at depths of 20 to 50 m. A lunar spawning rhythm occurs close to shore. Sexual maturity as males occurs at 12 to 15 cm. They subsequently undergo sex reversal passing through a hermaphroditic stage, and becoming females between 18 and 24 cm. The potential of this species for aquaculture has been studied. The diet is comprised mostly of crustaceans followed by teleosts.

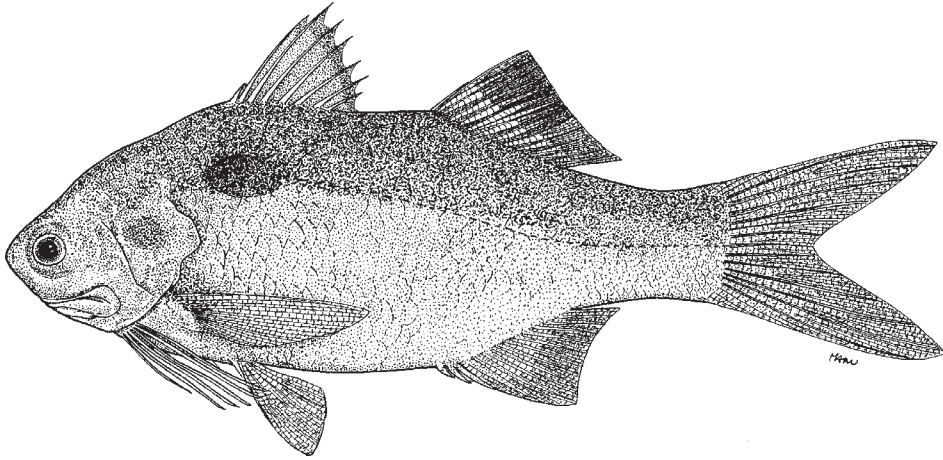
Distribution: Mauritius, Seychelles, Kenya, and many of the islands of the northern Indian Ocean; Indonesia north through the Philippines, Ryukyu Islands to Ogasawara and Yaeyama Islands east through the islands of the Pacific to Hawaii, and from Micronesia to Polynesia and Pitcairn Island.



Polydactylus sextarius (Bloch, 1801)

Frequent synonyms / misidentifications: None / *Filimanus heptadactyla* (Cuvier, 1829).

FAO names: En - Blackspot threadfin; Fr - Barbure tache noire; Sp - Barbudo de mancha.

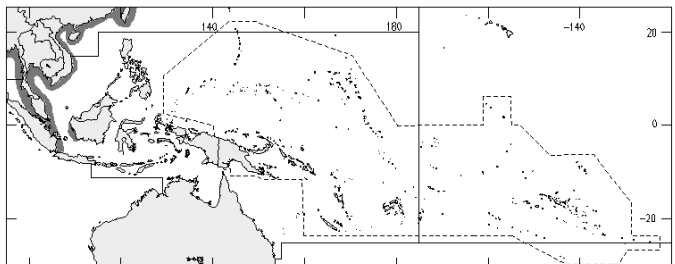


Diagnostic characters: A small species with a deep body; body depth at first dorsal-fin origin 2.7 to 3.5 times in standard length. Head length 2.6 to 3.4 times in standard length. Eye diameter greater than snout length. Snout pointed; **posterior margin of maxilla rounded and not deep**; upper lip thin; lower lip moderate; **vomer edentate**; **anterior of tooth patch on palatine with medial arm**; **ectopterygoid tooth patch small**; width of band of teeth on premaxillae less than 2 times in space separating band of teeth on one premaxilla from other. Posterior margin of preopercle with less than 50 serrations. **Gill rakers on first gill arch 25 to 33** (mean 28). First dorsal fin with VIII spines; second dorsal fin with I spine and 12 to 14 (mean 13) soft rays; anal fin with III spines and 11 to 13 (mean 12) soft rays; anal-fin base about equal to second dorsal-fin base; caudal-peduncle length greater than length of anal-fin base; about 11 to 16 procurent caudal-fin rays in dorsal or ventral series; **pectoral fins with 13 to 15 (mean 14) rays, usually 2 dorsalmost pectoral-fin rays simple, others branched; pectoral fins short**, insert low on body and reach to 1/3 to 3/4 of pelvic fins; **6 short pectoral filaments**, sixth filament, from ventralmost, the longest, less than head length, extending midway along or beyond end of pelvic fins; pelvic fins reach to between anus and anal-fin origin. **Lateral-line scales 43 to 49** (mean 47); lateral line terminates between first and second lower rays of caudal fin; scale rows above lateral line 5 to 7 (mean 6); scale rows below lateral line 8 to 12 (mean 11). Basisphenoid contacts prootic. Ventral section of the coracoid with foramina and anterior margin of this section greatly expanded. Vertebrae 10+14. Swimbladder simple, elongate, and highly variable in size. Pyloric caeca about 15. **Colour:** dorsally, body and head silvery or golden green to olivaceous; becoming silvery white on sides and ventrally; **dark spot present near origin of lateral line covering about second through eighth lateral-line scale** and diffusing over 1 row above and below; fins dusky; dorsal fins, pectoral fins, and caudal fin light brown; first dorsal fin black distally, remainder dusky; anal fin hyaline, becoming opaque medially; pelvic fins and pectoral filaments whitish.

Size: Maximum standard length at least 22 cm; an average large fish attains 14 cm standard length.

Habitat, biology, and fisheries: Frequently enters estuaries and is found over sand or sand-mud flats in depths of 19 to 73 m. Stomach samples included primarily crustaceans, sponges, and fish scales. The progression in this hermaphrodite is protandrous, changing from a juvenile to a hermaphrodite then a female. Taken with beach seines and trawls.

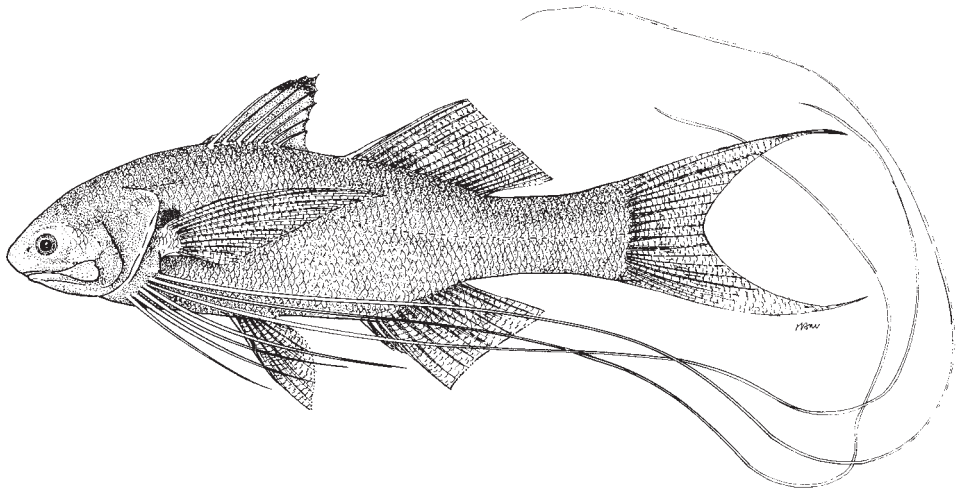
Distribution: Algoa Bay (South Africa) north along the east coast of Africa; east coast of India and Bay of Bengal; Malay Peninsula, coasts of Sumatra and Java, and Borneo; from the Gulf of Thailand northwards along the Asian coast, including Taiwan Province of China, to the Yellow Sea; possibly New Guinea.



***Polynemus dubius* Bleeker, 1851**

Frequent synonyms / misidentifications: *Polynemus longipectoralis* Weber and de Beaufort, 1922 / *Polynemus paradiseus* Linnaeus, 1758.

FAO names: En - Eastern paradise fish.

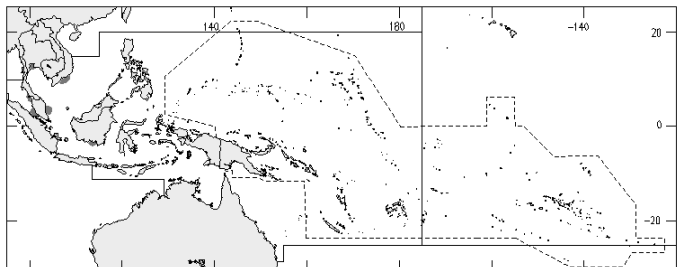


Diagnostic characters: A small, elongate species; body depth at first dorsal-fin origin 3.7 to 5.3 times in standard length. Head length 3.5 to 4.2 times in standard length. **Eye diameter 1.3 or more times in snout length**; small mouth, upper jaw length 2.1 to 2.6 times in head length, greater than caudal-peduncle depth; upper lip thin; lower lip thick; tooth patch on vomer a small band or thin "v" shape. Posterior margin of preopercle with serrations, but less than 25. **Gill rakers on first gill arch 23 to 33** (mean 28). First dorsal fin with VIII spines; second dorsal fin with I spine and 13 to 18 soft rays (mean 16); anal fin with III spines and 10 to 13 (mean 12) soft rays; anal-fin base shorter than second dorsal-fin base; caudal-peduncle length greater than length of anal-fin base; about 15 to 19 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 15 to 18 (mean 17) simple rays; **pectoral fins insert about at midpoint on side of body**, reaching to origin or midpoint of anal fin; **7 long pectoral filaments**, sixth or seventh filament, from ventralmost, the longest, **extending well past caudal fin**, may exceed $1\frac{1}{2}$ total length; pelvic fins seldom extend past anus. **Lateral-line scales 66 to 86** (mean 79); lateral line terminates between centre of caudal-fin fork and first lower caudal-fin ray; scale rows above lateral line 6 to 7 (mean 7); scale rows below lateral line 12 to 15 (mean 14). Vertebrae 10+15. No apparent swimbladder. Pyloric caeca about 9. **Colour:** body golden yellow with green or grey dorsally and yellow ventrally; fins hyaline to yellowish; spot immediately above origin of pectoral fins; finely scattered melanophores posterior to eyes; first dorsal, second dorsal, and caudal fins with light dusky covering, first dorsal fin may be black distally, pectoral fins usually not black or less than $\frac{1}{2}$ of posterior margin of fin black.

Size: Maximum standard length at least 17 cm.

Habitat, biology, and fisheries: Regularly enters fresh-water streams from estuaries during the spawning season, and probably at other times. Sometimes found in abundance as much as 40 km up the Mae Nam above Bangkok. Large numbers of adults and young caught during the rainy season in the Chao Phraya River and other rivers of that system using finely meshed seines. Small fish may be used as duck feed and fertilizer.

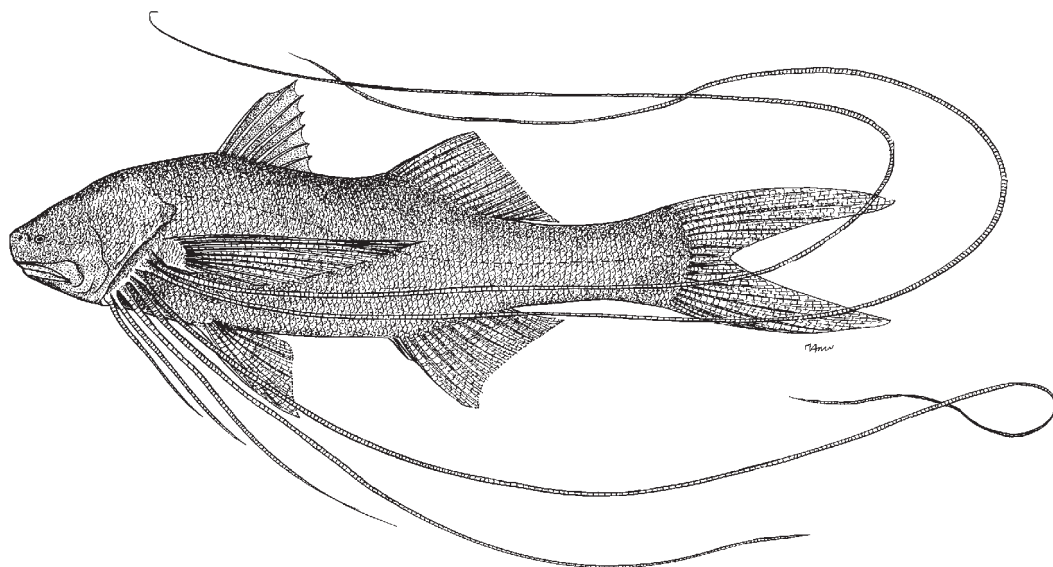
Distribution: Tonle Sap (Great Lake) in Cambodia, the lower Bassac and Mekong rivers; the Chao Phraya River system in Thailand, at least to Ayutthaya; the mouth of the Muar River, Malaysia, Bagan Siapi Api, Sumatra, and Banjarmasin in Borneo.



Polynemus hornadayi Myers, 1936

Frequent synonyms / misidentifications: None / *Polynemus paradiseus* Linnaeus, 1758.

FAO names: En - Hornaday's paradise fish.

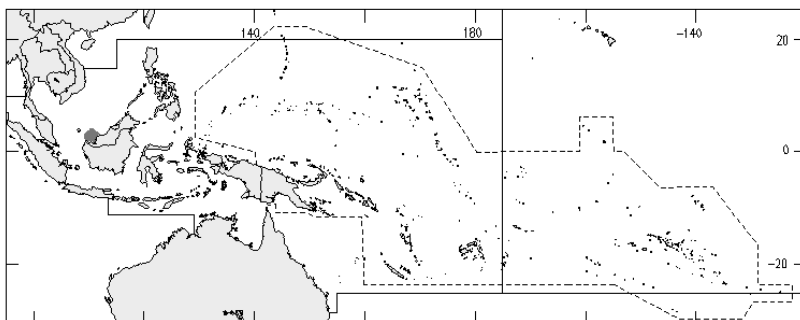


Diagnostic characters: A small, elongate species; body depth at first dorsal-fin origin 3.8 to 4.2 times in standard length. Head length 3.5 to 3.8 times in standard length. **Eye diameter 1.3 or more times in snout length;** upper jaw length 1.4 to 2 times in head length, greater than caudal-peduncle depth; upper lip thin; lower lip moderate to thick; tooth patch on vomer a small band or thin "v" shape. Posterior margin of preopercle with serrations, but less than 25. **Gill rakers on first gill arch 26 to 28** (mean 26). **First dorsal fin with VII spines;** second dorsal fin with I spine and 13 to 16 soft rays (mean 15); **anal fin with II spines** and 11 to 12 (mean 11) soft rays; anal-fin base shorter than second dorsal-fin base; caudal-peduncle length greater than length of anal-fin base; about 15 to 19 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 17 to 19 (mean 17) simple rays; **pectoral fins insert about at midpoint on side of body,** reaching to middle of anal fin; **7 long pectoral filaments,** fifth or sixth filament, from ventralmost, the longest, **extending well past caudal fin,** may exceed $1\frac{1}{2}$ total length; pelvic fins seldom extend past anus. **Lateral-line scales 90 to 99** (mean 95); lateral line terminates between centre of caudal-fin fork and first lower caudal-fin ray; scale rows above lateral line 9 to 11 (mean 10); scale rows below lateral line 13 to 18 (mean 16). Vertebrae 10+15. Swimbladder simple, elongate, and moderate in size. Pyloric caeca about 10. **Colour:** recently preserved in alcohol: yellowish grey or tan; dusky or grey dorsally; fine scattering of melanophores posterior to eyes; first dorsal, second dorsal, and caudal fins lightly pigmented; pectoral filaments white.

Size: Maximum standard length at least 19 cm.

Habitat, biology, and fisheries: Muddy, fast flowing rivers, 12 m wide and 3 m deep. Possibly in estuaries.

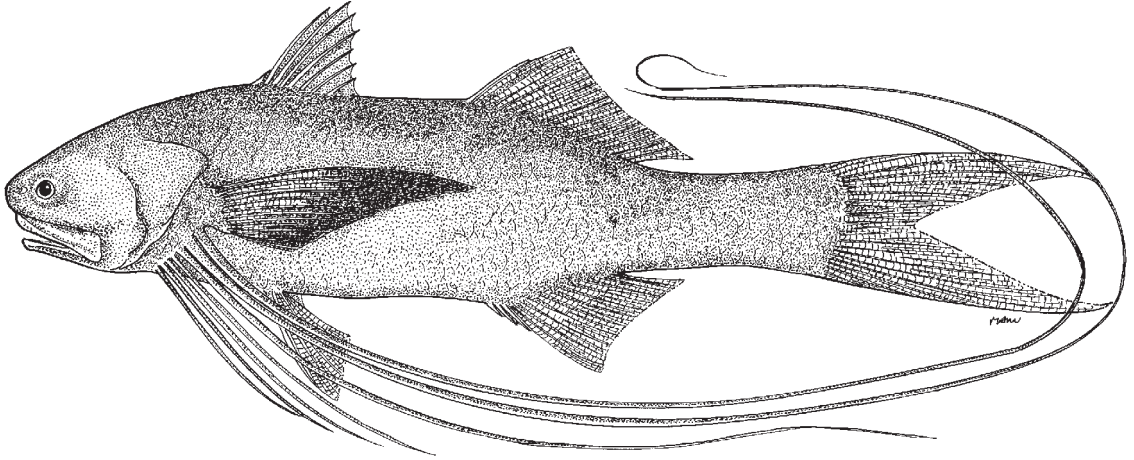
Distribution: Known only from Ensengi River of Sadong River system below Simujan, and Kuching market (south-west Sarawak).



Polynemus melanochir Valenciennes, 1831

Frequent synonyms / misidentifications: *Polynemus borneensis* Bleeker, 1860; *P. hilleri* (Fowler, 1905) / *Polynemus paradiseus* Linnaeus, 1758.

FAO names: En - Blackhand paradise fish.

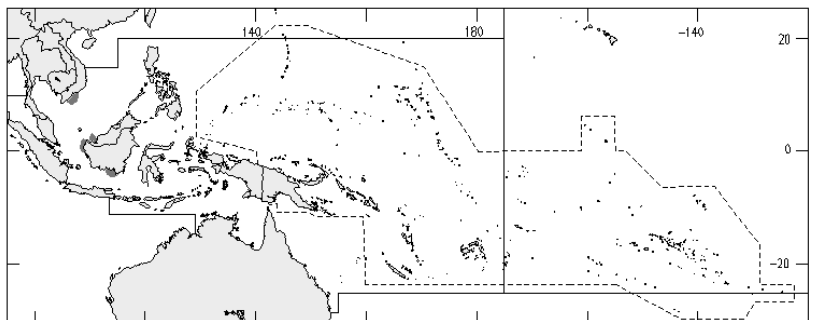


Diagnostic characters: A small, **elongate species**; body depth at first dorsal-fin origin 3.8 to 5.4 times in standard length. Head length 3.2 to 4.1 times in standard length. **Eye diameter 1.3 or more times in snout length**; upper jaw length 1.7 to 2.1 times in head length, greater than caudal-peduncle depth; upper lip thin; lower lip thick; vomer edentate. Posterior margin of preopercle with serrations, but less than 25. **Gill rakers on first gill arch 27 to 34** (mean 30). First dorsal fin with VIII spines; second dorsal fin with I spine and 14 to 17 soft rays (mean 16); anal fin with III spines and 11 to 13 (mean 12) soft rays; anal-fin base shorter than second dorsal-fin base; caudal-peduncle length greater than length of anal-fin base; about 15 to 19 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 15 to 18 (mean 17) simple rays; **pectoral fins insert about at midpoint on side of body**, reaching to origin or midpoint of anal fin; **7 long pectoral filaments**, sixth or seventh filament, from ventralmost, the longest, **extending well past caudal fin**, may exceed $1\frac{1}{2}$ total length; pelvic fins seldom extend past anus. **Lateral-line scales 65 to 74** (mean 71); lateral line terminates between centre of caudal-fin fork and first lower caudal-fin ray; scale rows above lateral line 6 to 8 (mean 7); scale rows below lateral line 12 to 15 (mean 14). Vertebrae 10+15. No apparent swimbladder. Pyloric caeca about 9. **Colour:** body greenish grey dorsally, ventrally pale yellow; first dorsal fin with narrow black border, second dorsal fin and anal fin dusky to black; **pectoral fins blue grey or black with yellow or white bases**; proximal end of pectoral fins and a few dorsal-fin rays and connecting membranes, especially distally, not black; size and intensity of the black area variable, but in adults usually dense black covering more than $\frac{1}{2}$ pectoral fins.

Size: Maximum standard length at least 18 cm.

Habitat, biology, and fisheries: Lower sections of rivers. Possibly in estuaries.

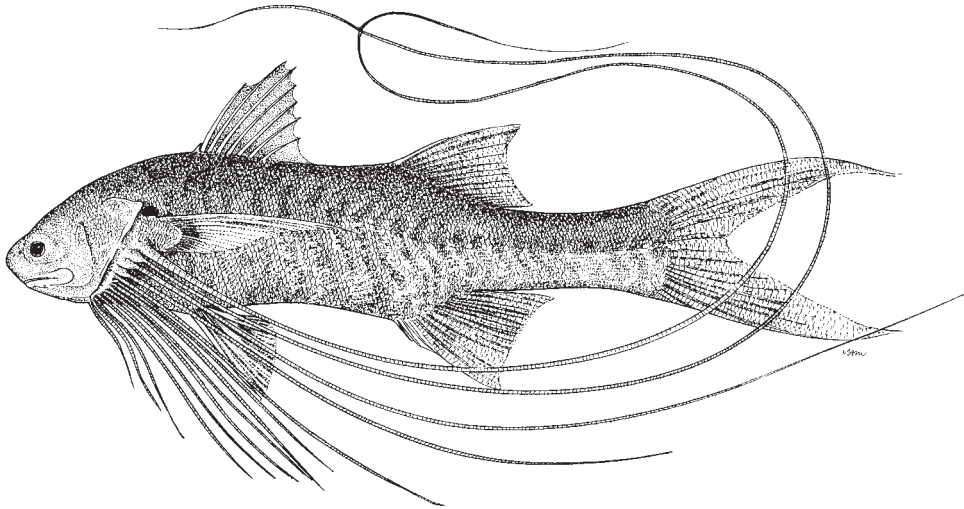
Distribution: The Mekong River system at least as far as Can Tho and the Bassac River at least as far as My Tho; the rivers of Borneo from Sarawak south to Banjarmasin.



Polynemus multifilis Schlegel, 1843

Frequent synonyms / misidentifications: *Polistonemus multifilis* Schlegel in Temminck and Schlegel, 1843 / None.

FAO names: En - Elegant paradiseus fish.



Diagnostic characters: A small, elongate species, body depth at first dorsal-fin origin 3.9 to 4.8 times in standard length. Head length 3.4 to 4.5 times in standard length. **Eye diameter 1.3 or more times in snout length; small mouth, upper-jaw length 2.2 to 2.8 times in head length**, less than or equal to caudal-peduncle depth; upper lip moderate to thick; lower lip thick; tooth patch on vomer a small band or thin "v" shape; posterior margin of preopercle with less than 25 serrations. **Gill rakers on first gill arch 24 to 29** (mean 27). First dorsal fin with VIII spines; second dorsal fin with I spine and 14 to 16 soft rays (mean 15); anal fin with III spines and 11 to 14 (mean 12) soft rays; anal-fin base shorter than second dorsal-fin base; caudal-peduncle length greater than length of anal-fin base; about 15 to 19 procurent caudal-fin rays in dorsal or ventral series; pectoral fins with 14 to 17 (mean 15) simple rays; **pectoral fins insert about at midpoint on side of body**, reaching to origin of anal fin; **14 to 16** (mean 15) **long pectoral filaments**, thirteenth or fourteenth filament, from ventralmost, the longest, **extending well past caudal fin**, may exceed $1\frac{1}{2}$ total length; pelvic fins seldom extend past anus, pelvic-fin origin to anal-fin origin relatively long, 2.8 to 3.9 in standard length. **Lateral-line scales 87 to 109** (mean 99); lateral line terminates between centre of caudal-fin fork and first lower caudal-fin ray; scale rows above lateral line 7 to 10 (mean 9); scale rows below lateral line 15 to 22 (mean 18). Vertebrae 10+15. Swimbladder elongate and large. Pyloric caeca about 12 to 14. **Colour:** recently preserved specimens (alcohol): yellow, yellowish grey, or tan, dorsally duskier, grey; spot immediately above origin of pectoral fins; finely scattered melanophores posterior and ventral to eyes, and over most of opercle; first dorsal, second dorsal, and caudal only lightly pigmented; dorsomedial and dorsolateral area of pectoral fins sometimes with a small faint spot.

Size: Maximum standard length at least 18 cm.

Habitat, biology, and fisheries: Middle and lower sections of larger rivers. Possibly in estuaries. A specimen collected in the Kapuas River (Borneo), with a standard length of 13.2 cm had pectoral filaments 51 cm in length.

Distribution: Koke Tong Canal, a tributary of Chao Phraya River (Thailand); Sumatra, in the Musi River at Moeara and the Hari River at Djambi; Borneo in the Kapuas River at least to Bunut and at Banjermassin.

