

Galeoides Günther, 1860

Galeoides Günther, 1860: 319, 332 [type species: *Polynemus polydactylus* Vahl, 1798, presently regarded as a junior synonym of *Galeoides decadactylus* (Bloch, 1795)].

Synonyms: None.

Species: The genus comprises a single species:

Galeoides decadactylus: West coast of Africa, Algeria to Namibia.

Remarks: To date, *Galeoides* has been considered to comprise 2 species, *G. decadactylus* (type species of the genus) and *G. microps* (e.g. Fowler, 1935; Myers, 1936; Springer, 1982), the latter being a poorly known threadfin originally described by Steindachner (1869a) on the basis of a single specimen (NMW 77568, 171 mm standard length) from China (probably erroneous). However, examination of the holotype of *G. microps* showed it to belong to the genus *Polynemus*, being a junior synonym of *P. melanochir melanochir* (see account of *P. m. melanochir*). Accordingly, *Galeoides* represents a monotypic genus (Motomura, Mikschi and Iwatsuki, 2001).

Galeoides has the following unique characters among the family: lateral line simple, extending from upper end of gill opening to lower end of upper caudal-fin lobe; a black spot present below anterior part of lateral line; and swimbladder extending beyond anal-fin origin.

Galeoides decadactylus (Bloch, 1795)

Fig. 59; Plate IIb

Polynemus decadactylus Bloch, 1795: 26, pl. 401 [type locality: Guinea; holotype (ZMB 569, 175 mm standard length)].

Synonyms: *Polynemus polydactylus* Vahl, 1798: 164 (type locality: near Tangier, Morocco; no types known). *Polynemus enneadactylus* Cuvier in Cuvier and Valenciennes, 1829: 392 (type locality: Tangier, Morocco; no types known). *Polynemus astrolabi* Sauvage, 1881: 102 [type locality: Mauritius (clearly erroneous, see Motomura, Iwatsuki and Kimura, 2001b); holotype (MNHN 9727, 190 mm standard length)].

FAO Names: **En** - Lesser African threadfin; **Fr** - Petit capitaine; **Sp** - Barbudo enano africano.

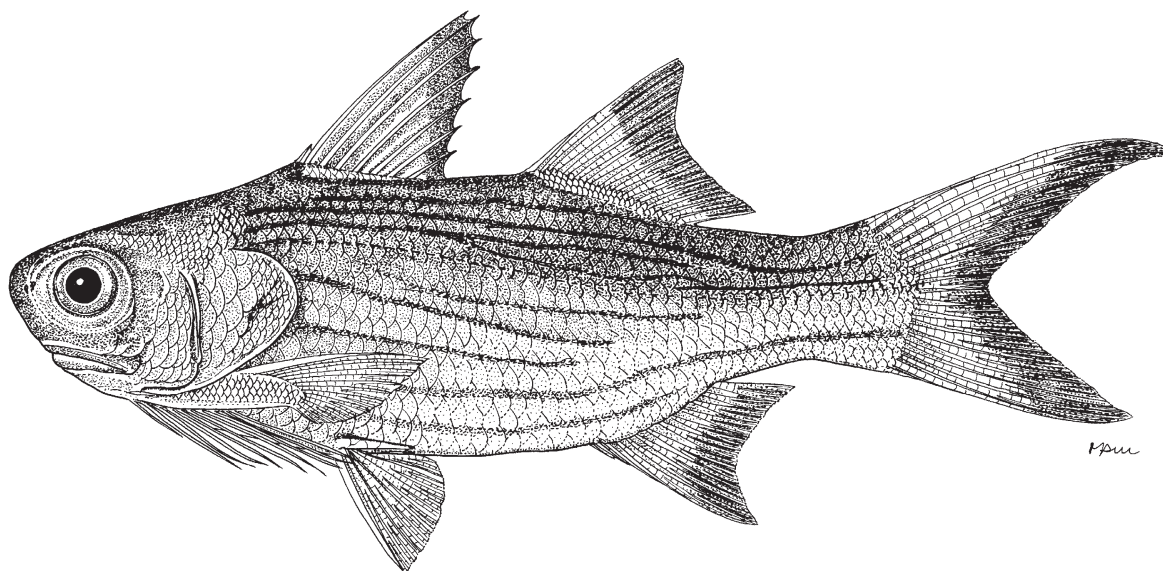


Fig. 59 *Galeoides decadactylus*

Diagnostic Features: A medium-sized species. Body moderately deep, body depth at first dorsal-fin origin 29 to 35% (mean 32%) of standard length; head length 31 to 36% (mean 33%) of standard length. Adipose eyelid well developed; eye diameter greater than snout length. Lip on lower jaw well developed, dentary teeth restricted to dorsal surface; width of tooth band on upper and lower jaws greater than space (on symphysis) separating tooth bands on opposing premaxillae; teeth villiform in broad bands on jaws, palatine and ectopterygoids, tooth plates on palatines longer than those on ectopterygoids; tooth plates on ectopterygoids conspicuously small; vomerine tooth plate covered with skin and teeth absent. Posterior margin of maxilla reaching to (or just short of) level of posterior margin of adipose eyelid; upper-jaw length 12 to 14% (mean

13%) of standard length; maxillary scales absent. Posterior margin of preopercle serrated. Basisphenoid in contact with prootic; sphenotics not visible dorsally between anterior margins of parietal and pterotic. First dorsal fin with VIII spines; second dorsal fin with I spine and 13 or 14 (mode 13) soft rays; anal fin with III spines and 10 or 11 (mode 11) soft rays, anal-fin base less than second dorsal-fin base; pectoral fin with 12 to 15 (mode 15) unbranched rays, its length 21 to 25% (mean 23%) of standard length, posterior tip just short of level of posterior tip of pelvic fin; pectoral-fin insertion well below midline of body; pectoral-fin base (including base of pectoral filaments) greater than or equal to upper-jaw length; pectoral filaments 9 to 11 (mode 9); first filament shortest, not reaching to level of pelvic-fin origin; uppermost filament longest, its length 21 to 33% (mean 27%) of standard length, reaching to or extending beyond level of pelvic-fin origin; caudal fin deeply forked, upper and lower caudal-fin lobes not filamentous, upper caudal-fin lobe 31 to 43% (mean 38%) and lower caudal-fin lobe 33 to 36% (mean 34%) of standard length. Pored lateral-line scales 45 to 50 (mode 46); lateral line simple, extending from upper end of gill opening to lower end of upper caudal-fin lobe; scale rows above lateral line 5 or 6 (mode 5), below 7 to 9 (mode 8). Gillrakers 9 to 14 on upper limb, 15 to 23 on lower limb, 24 to 36 total; gillrakers decreasing with fish growth. Vertebrae 10 precaudal and 14 caudal; supraneural bone 1. Swimbladder simple, extending beyond anal-fin origin. **Colour:** Upper sides of head and trunk with brown tinge, becoming silver on lower sides; posterior margins of first and second dorsal fins, and caudal fins dense black, remaining parts blackish; pelvic and anal fin white; pectoral fin mostly black; base of pectoral filaments white, becoming blackish on posterior tips; a black spot, its diameter approximately equal to eye diameter, present below anterior part of lateral line; several brown stripes along longitudinal scale rows above and below lateral line (disappeared in preserved specimens).

Geographical Distribution: Generally distributed from Morocco to Angola, west coast of Africa. In addition, the species has been reported from Algeria, northern Africa and Namibia, southern Africa (Fig. 60).

Habitat and Biology: Usually taken on muddy bottoms in shallow coastal waters from depths of 10 to 70 m, and frequently found in estuaries and lagoons. Generally feeds on crustaceans and small fishes (Longhurst, 1957: tables 1, 9). Longhurst (1960) examined the stomach contents of 630 specimens collected from the open sea and 1 437 specimens from estuaries, and found that detritus amounted to 31% of food contained in the stomachs of the estuarine specimens (versus 0% in open sea specimens).

Longhurst (1965) studied the biology, including sexuality and growth, of *G. decadactylus* in Lagos, Nigeria, finding that about 25% of females developed directly from the juvenile stages, the others developing female gonads after passing through a non-functional hermaphroditic stage arising in apparently normal males. He noted the sex composition of 25 357 adult specimens as: males 63.73%, hermaphrodites 22.22% and females 14.03%. Spawning of the species occurs in all months, peaking in the dry season, but almost ceasing during the rainy season in Nigerian waters. Derivation of lengths at first maturity for the species is complicated by the nature of the reproductive cycle. Lengths ranged from 150 mm total length for males to 255 mm for secondary females, the species growing rapidly during the first year. At 1 year old, the species averages 207 mm total length, 317 mm at 2 years old, and 390 mm at 3 years old. According to Longhurst (1965), it appears improbable that many individuals survive a fourth year of life.

Aboussouan (1966) described and illustrated larval developmental stages of *G. decadactylus* (as *G. polydactylus*) from Senegal.

Size: Maximum total length 45 cm, common to 30 cm (Allen *in* Fischer *et al.*, 1981).

Interest to Fisheries: In Nigeria, *G. decadactylus* is an important component in the commercial trawl fishery, constituting between 10 and 20% of the total landings by weight, the percentage differing from port to port (Longhurst, 1963).

Local Names: GUINEA: Barbinho, Sanis; MAURITANIA: Plexiglass, Sibat mba, Tiekem; SÃO TOMÉ AND PRÍNCIPE: Barbudo; SENEGAL: Barbo, Barudo de dez barbas, Cékém, Lesser African threadfin, Sikket mbàw; SIERRA LEONE: Shineose.

Literature: Allen *in* Fischer *et al.* (1981); Daget and Njock *in* Daget *et al.* (1986); Njock *in* Quéro *et al.* (1990); Motomura, Iwatsuki and Kimura (2001b).

Remarks: *Polynemus enneadactylus* and *P. polydactylus* have been treated as junior synonyms of *G. decadactylus* (e.g. Daget and Njock *in* Daget *et al.*, 1986; Njock *in* Quéro *et al.*, 1990). In the faunal work, Fricke (1999) synonymized *Polynemus astrolabi* with *Polydactylus sextarius*. However, the holotype (MNHN 9727, 190 mm standard length) of *Polynemus astrolabi* differs from the specimens including the holotype (ZMB 565, 125 mm standard length) of *Polydactylus*

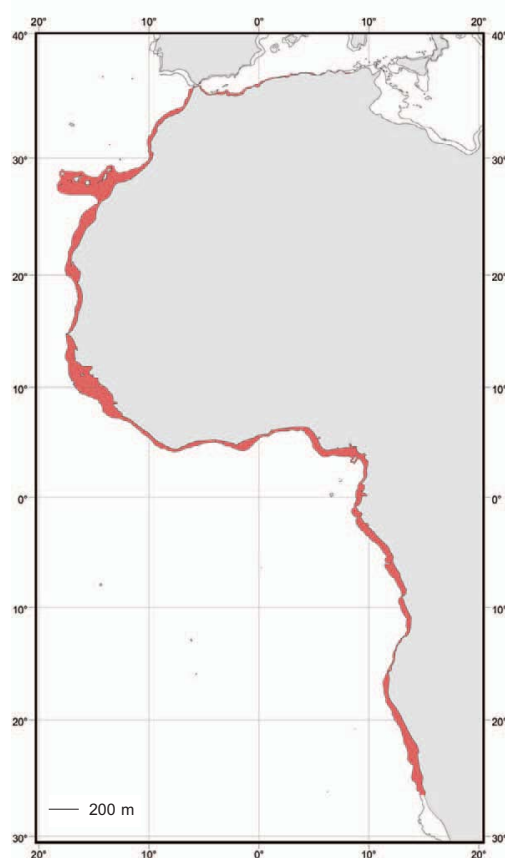


Fig. 60 *Galeoides decadactylus*
■ Known distribution

sextarius in having 9 pectoral filaments (6 in the latter), unbranched pectoral-fin rays (almost branched in the latter) and 1 supraneural bone (3 in latter), and in lateral-line squamation on the caudal-fin membrane. Recently, *Polynemus astrolabi* was regarded as a junior synonym of *G. decadactylus* by Motomura, Iwatsuki and Kimura (2001b).

Although Sauvage (1881, 1891) reported *Polynemus astrolabi* (= *G. decadactylus*) from Mauritius, Indian Ocean, the species is distributed along the west coast of Africa. Because the Equatorial current, which is the primary current influencing waters off Mauritius, flows from the equator to the Southwest Indian Ridge, it appears to be highly unlikely that the species can be transported from the west coast of Africa to Mauritius. Therefore, the type locality (Mauritius) of *Polynemus astrolabi* is considered to be erroneous.

Leptomelanosoma Motomura and Iwatsuki, 2001

Leptomelanosoma Motomura and Iwatsuki, 2001a: 13 (type species: *Polynemus indicus* Shaw, 1804).

Synonyms: None.

Species: The genus comprises a single species:

Leptomelanosoma indicum: Indo-West Pacific, Pakistan to Indonesia.

Remarks: *Leptomelanosoma* has been recently proposed for the polynemid fish, *Polynemus indicus*, previously identified as a member of *Polydactylus*. *Leptomelanosoma* differs from other genera in having the following characters: swimbladder with many appendages inserted into lateral walls of abdominal cavity (unique character among the family); anterior one-third of lower jaw with small teeth extending onto lateral surface, adjacent portion of lip poorly developed throughout life [this character also present in large specimens of *Parapolynemus* and *Polydactylus opercularis*]; ethmoid not covered dorsally by frontals; sphenotics visible dorsally between anterior margins of parietal and pterotic (unique character among the family); upper and lower caudal-fin lobes very long, filamentous (this character also present in *Parapolynemus*); greyish black body (this character also appears in *Polydactylus longipes*).

Leptomelanosoma indicum (Shaw, 1804)

Fig. 61; Plate IIc

Polynemus indicus Shaw, 1804: 155 [type locality: Vizagapatnam, India, based on "Maga Booshee" of Russell (1803: 68, fig. 184); no types known, see Motomura and Iwatsuki, 2001a].

Synonyms: *Polynemus sele* Hamilton, 1822: 226 (type locality: estuaries of Ganges, India; no types known, see Motomura and Iwatsuki, 2001a). *Polynemus uronemus* Cuvier 1829a: 155 (type locality: unknown; new name for *P. indicus* Shaw, 1804; no types known, see Motomura and Iwatsuki, 2001a). *Polynemus gelatinosus* McClelland, 1843: 181, pl. 6 (type locality: Bengal, India; new name for *P. sele* Hamilton, 1822; no types known, see Motomura and Iwatsuki, 2001a).

FAO Names: **En** - Indian threadfin; **Fr** - Barbure indien; **Sp** - Barbudo indio.

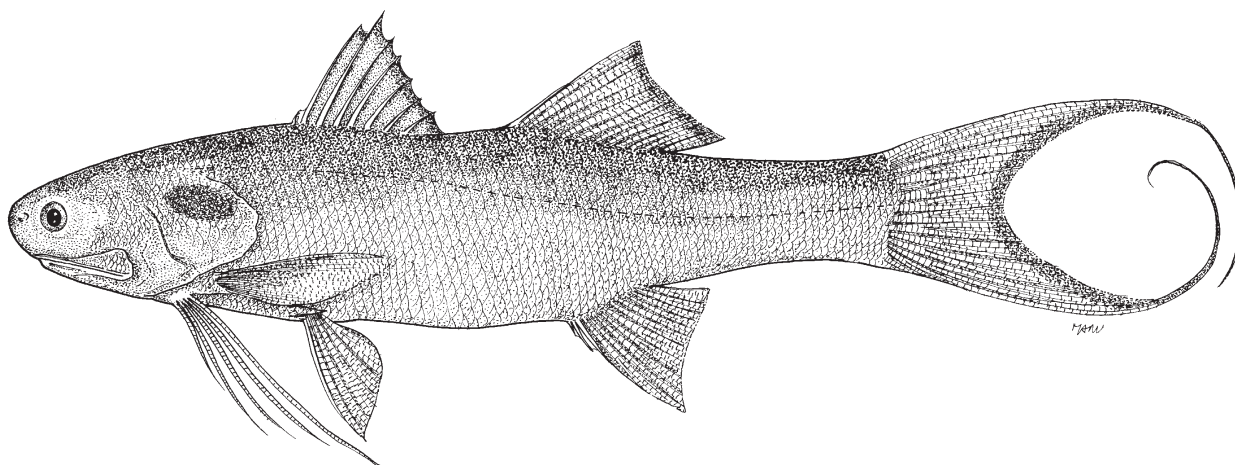


Fig. 61 *Leptomelanosoma indicum*

Diagnostic Features: A large species. Body and head elongate, body depth at first dorsal-fin origin 22 to 25% (mean 23%) of standard length; head length 30 to 34% (mean 32%) of standard length. Adipose eyelid moderately developed; eye diameter approximately equal to or greater than snout length. Anterior one-third of lower jaw with small teeth extending onto lateral surface, adjacent portion of lip poorly developed; width of tooth band on upper and lower jaws greater than space (on symphysis) separating tooth bands on opposing premaxillae; teeth villiform in broad bands on jaws, vomer, palatines and ectopterygoids, tooth plates on palatines longer than those on ectopterygoids; tooth plates on palatines well developed. Posterior margin of maxilla extending well beyond level of posterior margin of adipose eyelid; upper-jaw length 14 to 15% (mean 15%) of standard length; maxilla covered with deciduous scales. Posterior margin of preopercle serrated. Basisphenoid in contact with prootic; sphenotics visible dorsally between anterior margins of parietal and pterotic. First dorsal fin with VIII spines; second dorsal fin with I spine and 12 or 13 (mode 13) soft rays; anal fin with III spines and 10 or 11 (mode 11) soft rays, anal-fin base less than second dorsal-fin base; pectoral fin with 12 to 14 (mode 14) rays, its length 19 to 22% (mean 21%) of standard length, posterior tip not reaching to level of posterior tip of pelvic fin; pectoral-fin insertion well below midline of body; pectoral-fin base (including base of pectoral filaments) less than upper-jaw length; pectoral filaments 5; first filament shortest, not reaching to level of pelvic-fin origin; fifth filament longest, its length 28 to 45% (mean 37%) of standard length, extending well beyond level of posterior tip of pelvic fin; caudal fin deeply forked, upper and lower caudal-fin lobes very long, filamentous, upper caudal-fin lobe 39 to 71% (mean 58%) and lower caudal-fin lobe 36 to 78% (mean 60%) of standard length. Pored lateral-line scales 69 to 72 (mode 70); 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 9 to 12 (mode 10). Gillrakers 8 or 9 (mode 8) on upper limb, 10 to 12 (mode 11) on lower limb, 18 to 21 (mode 19) total. Vertebrae 10 precaudal and 14 caudal; supraneural bones 2. Swimbladder with many appendages inserted into lateral walls of abdominal cavity. **Colour:** Head and upper sides of trunk tinged slightly blackish brown, becoming deep black on lower sides; snout and abdominal regions blackish; membranes of first and second dorsal fins and caudal fin blackish, distal part of these fins black; pectoral-fin membrane deep black; origin of pectoral filaments dusky yellowish, grading to blackish posteriorly; pelvic-fin origin dusky yellowish, other parts dusky white.

Geographical Distribution: Although *Leptomelanosoma indicum* has been considered to be widely distributed in the Indo-West Pacific, ranging from South Africa to Indonesia (e.g. Smith, 1949; Smith *in* Smith and Heemstra, 1986; Menon and Babu Rao *in* Fischer and Banchi, 1984; Feltes *in* Carpenter and Niem, 2001), reports of the species from the east coast of Africa must presently remain unsubstantiated, owing to the examination of a specimen (SAIAB 19493, 325 mm standard length) from South Africa, previously identified and reported as *Polydactylus indicus* (= *L. indicum*), showing it to represent *Polydactylus plebeius*. The species is currently confirmed from Pakistan to Papua New Guinea (Fig. 62). The record from Papua New Guinea (Kerema Bay, Gulf of Papua) is based only on a single specimen (CSIRO A. 3028, 120 mm standard length).

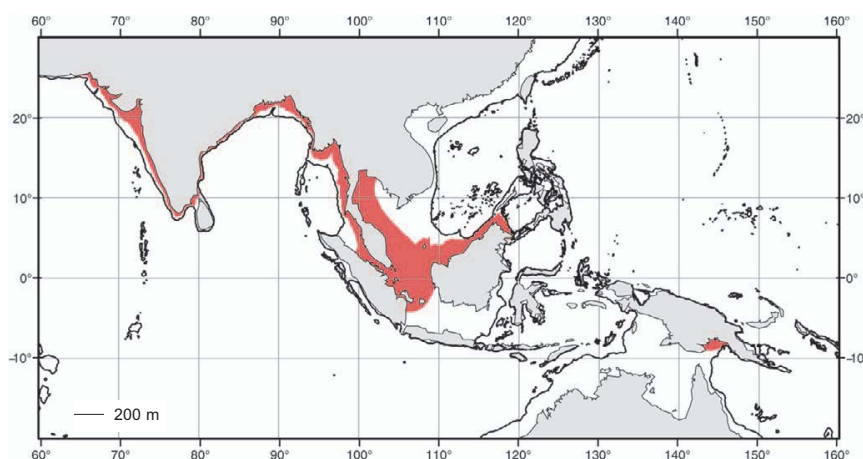


Fig. 62 *Leptomelanosoma indicum*
■ Known distribution

Habitat and Biology: Mainly occurs near estuaries, sometimes entering rivers, and is occasionally taken from depths to 100 m. Young of the species feed on small crustaceans, including shrimps and prawn larvae, but become piscivorous with increasing growth.

Kagwade (1969) noted the occurrence of hermaphroditism in *L. indicum* from India, reporting the sex composition of 83 specimens as: hermaphrodites 39.76%, males 19.28% and females 40.96%. According to Nayak (1959a), 1-year-olds attain 345 mm total length, 2-year-olds 545 mm total length and 3-year-olds 745 mm total length (based on trawl samples from Dwarka, India). Kagwade (1970) considered that specimens from 910 to 1000 mm total length (the dominant size group in the fishery) were 5-year-olds.

Nayak (1959a) found *L. indicum* to have 2 peak spawning periods, during April to June and October to December, around Mumbai, northwestern India, the first period being the major one. On the other hand, Kuthalingam (1960) recorded intensive spawning of the species around Chennai, southeastern India, during October to November. Karekar and Bal (1960) reported the size of *L. indicum* at first maturity to be about 800 mm standard length.

Nayak (1959a) and Karekar and Bal (1960) described the following ova sizes of *L. indicum* from India: immature ovaries with ova measuring up to 0.3 mm diameter, maturing ovaries with ova between 0.31 and 0.62 mm diameter, and mature ovaries with ova between 0.63 and 1.10 mm diameter. Oil globules in mature ova were 0.26 to 0.40 mm diameter. According to Kuthalingam (1960) and Kagwade (1970), planktonic eggs in this species averaged 1.3 mm diameter, with a large oil

globule of 0.5 mm diameter. Scale rudiments were apparent on larvae measuring 24.8 mm, post-larvae reaching the juvenile stage at 31.8 mm.

Size: Maximum total length at least 1.4 m (Kagwade, 1970).

Interest to Fisheries: One of the most important species in fisheries of India, Sri Lanka, Bangladesh, Myanmar, Thailand, Malaysia and Singapore, being caught by gill nets, trawls, handlines and beach seines. According to Nayak (1959a) and Kagwade (1970), during 1950 and 1951 and 1956 and 1957, catches of *L. indicum* in India accounted for between 0.89 and 26.0% of the total landings.

Local Names: BANGLADESH: Lakhua; INDIA: Indian threadfin; INDONESIA: Kurau hitam; MALAYSIA: Kurau, Kurow, Mancong, Senangin; MYANMAR: Ka ku yan; SRI LANKA: Tahlunkala.

Literature: Motomura and Iwatsuki (2001a).

Remarks: *Polynemus indicus* (= *Leptomelanosoma indicum*) was proposed by Shaw (1804), for the “Maga Booshee” of Russell (1803), whose description of the species included a correct figure (fig. 184), but lacked a formal scientific name and gave no indication of any type specimens. Although the description of *P. indicus* by Shaw (1804) and that earlier by Russell (1803) were very poor, Russell’s drawing clearly indicates 5 pectoral filaments, long caudal-fin lobes and a greyish black body. *Leptomelanosoma indicum* can be easily distinguished from other polynemid species by the combination of the characters. Subsequently, Hamilton (1822) described *Polynemus sele* as a new species from estuaries of the Ganges River, India. This description also gave no indication of any type specimens. However, the diagnostic characters of 5 pectoral filaments and long caudal-fin lobes given in the original description of *P. sele* are consistent with those of *L. indicum*. An initial unpublished plate of *P. sele*, subsequently published by McClelland (1843, pl. 6), also shows 5 pectoral filaments, long caudal-fin lobes and a greyish black body. Furthermore, Hamilton (1822) wrote; “The Maga booshee [= *P. indicus*] of Russell has certainly a strong resemblance to the Sele [= *P. sele*] of the Ganges.” Although *P. sele* was said to differ from the “Maga Booshee” of Russell (1803) in having 7 first dorsal-fin spines (versus 8 spines in the latter) and 14 second dorsal-fin rays (15 rays), the first spine of the first dorsal fin was apparently overlooked by Hamilton (1822) due to its very small size.

Cuvier in Cuvier and Valenciennes (1829) described *Polynemus uronemus*, as a new name for *P. indicus*. Furthermore, McClelland (1843) described *P. gelatinosus*, from Bengal, India, as a new name for *P. sele*, and included Hamilton’s (1822) unpublished plate. Both new names, *P. uronemus* and *P. gelatinosus*, are junior synonyms.

Parapolynemus Feltes, 1993

Parapolynemus Feltes, 1993: 207 (type species: *Polynemus verekeri* Saville-Kent, 1889).

Synonyms: None.

Species: The genus comprises a single species:

Parapolynemus verekeri: Northern Australia and southern Papua New Guinea.

Remarks: *Parapolynemus* has been recently proposed for the polynemid fish, *Polynemus verekeri*. According to Feltes (1993), *Parapolynemus* differs from other genera in having the following unique characters: highly porous skeleton; urohyal with several longitudinal ridges on lateral surface of lamella; 3 infraorbitals; haemal spine of eleventh vertebra with prominent medial anterior-posterior expansion.

Parapolynemus verekeri (Saville-Kent, 1889)

Fig. 63; Plate II d

Polynemus verekeri Saville-Kent, 1889: 234 [type locality: Ord River, Cambridge Gulf, northern Australia; lectotype (AMS I. 2770, 72 mm standard length) designated by Feltes, 1993; paralectotype (AMS I. 2771, 54 mm standard length)].

Synonyms: *Polynemus intermedius* Nichols, 1954: 3 [type locality: Merauke River, Papua New Guinea; holotype (AMNH 20114, 79 mm standard length); 16 paratypes (AMNH 20115, 74 mm standard length; AMNH 20116, 15 specimens, 37 to 79 mm standard length)].

FAO Names: En - Dwarf paradise fish; Fr - Barbure paradis nain; Sp - Barbudo paraíso enano.

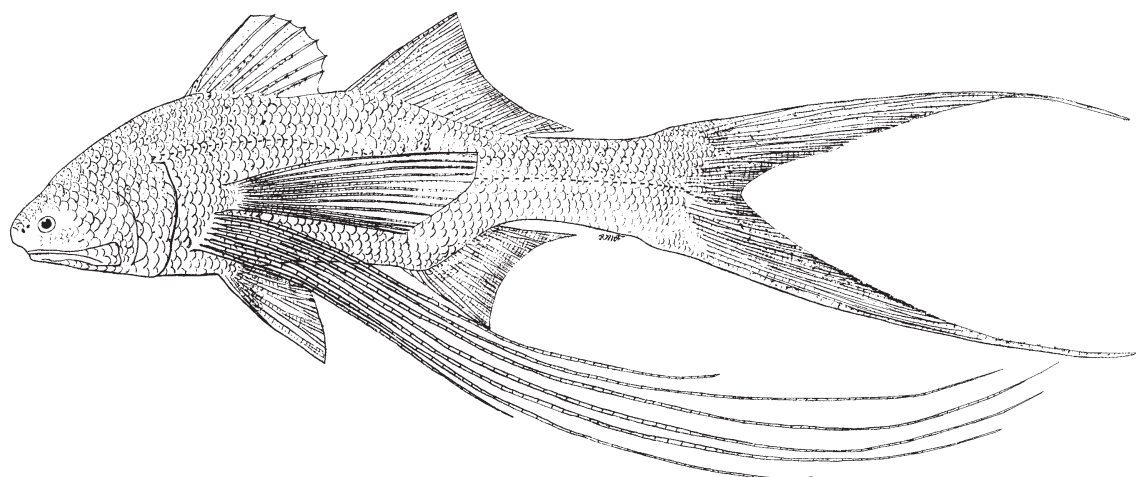


Fig. 63 *Parapolynemus verekeri*

Diagnostic Features: A small species. Body and head elongate, body depth at first dorsal-fin origin 20 to 32% (mean 25%) of standard length; head length 26 to 32% (mean 29%) of standard length. Interorbital concave in larger specimens. Adipose eyelid poorly developed; eye diameter less than snout length. Lip on lower jaw well developed, dentary teeth restricted to dorsal surface in smaller specimens, but in larger specimens (over about 70 mm standard length) anterior one-third of lower jaw with small teeth extending onto lateral surface, adjacent portion of lip poorly developed; width of tooth band on upper and lower jaws less than space (on symphysis) separating tooth bands on opposing premaxillae; teeth villiform in broad bands on jaws, palatines and ectopterygoids, tooth plates on palatines longer than those on ectopterygoids; vomerine teeth absent. Posterior margin of maxilla extending well beyond level of posterior margin of adipose eyelid; maxilla covered with deciduous scales. Posterior margin of preopercle not serrated, but with a single spine posteroventrally; upper-jaw length 16 to 19% (mean 18%) of standard length. Basisphenoid absent; sphenotics not visible dorsally between anterior margins of parietal and pterotic. First dorsal fin with VIII spines; second dorsal fin with I spine and 11 to 14 (mode 13) soft rays; anal fin with III spines and 10 to 12 (mode 11) soft rays, anal-fin base less than second dorsal-fin base; pectoral fin with 12 to 14 (mode 13) rays, its length 37 to 51% (mean 44%) of standard length, posterior tip extending beyond level of posterior part of anal-fin base; pectoral-fin insertion near midline of body; pectoral-fin base (including base of pectoral filaments) less than upper-jaw length; pectoral filaments 6 or 7 (mode 7); first filament shortest, extending beyond level of anal-fin origin; fifth filament longest, its length 47 to 104% (mean 79%) of standard length, extending well beyond level of posterior tip of caudal fin; caudal fin deeply forked, upper and lower caudal-fin lobes very long, filamentous, upper caudal-fin lobe 37 to 86% (mean 60%) of standard length. Pored lateral-line scales 50 to 60 (mode 56); lateral line simple, extending from upper end of gill opening to upper end of lower caudal-fin lobe; scale rows above lateral line 4 to 6 (mode 5), below 8 to 11 (mode 10). Gillrakers 30 to 43 (mode 40). Vertebrae 10 precaudal and 14 caudal; supraneural bones 2. Swimbladder not apparent. **Colour:** Head and body yellow; upper sides of trunk tinged slightly blackish brown; fins bright orange; pectoral filaments intense vermilion.

Geographical Distribution: Currently known from southern Papua New Guinea (Merauke River and Gulf of Papua) to northern Australia (Cambridge Gulf of Western Australia to Port Stuart of Northern Territory) (Fig. 64).

Habitat and Biology: Occurs in muddy estuaries and lower portions of rivers (Saville-Kent, 1889; Munro, 1964, 1967). According to Feltes *in* Carpenter and Niem (2001), hundreds of adults approaching breeding condition were taken in trawl on Medusa Banks at a depth of 9 m in January or February 1968.

Size: Maximum standard length at least 11 cm (Feltes, 1993).

Interest to Fisheries: None.

Local Names: PAPUA NEW GUINEA: Streamered tasselfish.

Literature: Feltes (1993); Feltes *in* Carpenter and Niem (2001).

Remarks: *P. verekeri* is one of the smallest polynemids. Munro (1964, 1967) suggested the possibility of *Polynemus intermedius* being a junior synonym of *Parapolynemus verekeri*. Feltes (1993) later confirmed that synonymy on the basis of the types.

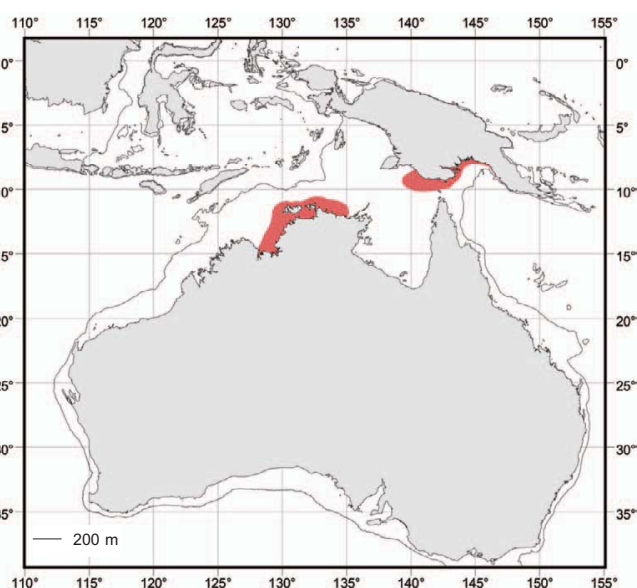


Fig. 64 *Parapolynemus verekeri*
■ Known distribution

***Pentanemus* Günther, 1860**

Pentanemus Günther, 1860: 330 (type species: *Polynemus quinquarius* Linnaeus, 1758).

Synonyms: None.

Species: The genus comprises a single species:

Pentanemus quinquarius: West coast of Africa, Senegal to Angola.

Remarks: Günther (1860) proposed *Pentanemus* for *Polynemus quinquarius* on the basis of internal and external characters. *Pentanemus* differs from other genera in having the following characters: anal-fin rays 24 to 30 (less than 18 in all other genera); anal-fin base greater than head length (unique character among the family); width of tooth band on upper and lower jaws less than space (on symphysis) separating tooth bands on opposing premaxillae (this character also present in *Filimanus*); posterior margin of preopercle not serrated (this character also present in *Parapolynemus*).

***Pentanemus quinquarius* (Linnaeus, 1758)**

Fig. 65; Plate IIe

Polynemus quinquarius Linnaeus, 1758: 317 [type locality: America (but clearly erroneous); no types known, see Daget and Njock in Daget *et al.*, 1986].

Synonyms: *Polynemus artedii* Bennett, 1831: 146 (type locality: Atlantic coast of north Africa; no types known). *Polynemus macronemus* Pel, 1851: 9 [type locality: Gold Coast, Gulf of Guinea; 4 syntypes (RMNH 6016, 116 to 169 mm standard length)].

FAO Names: **En** - Royal threadfin; **Fr** - Capitaine royal; **Sp** - Barbudo real.

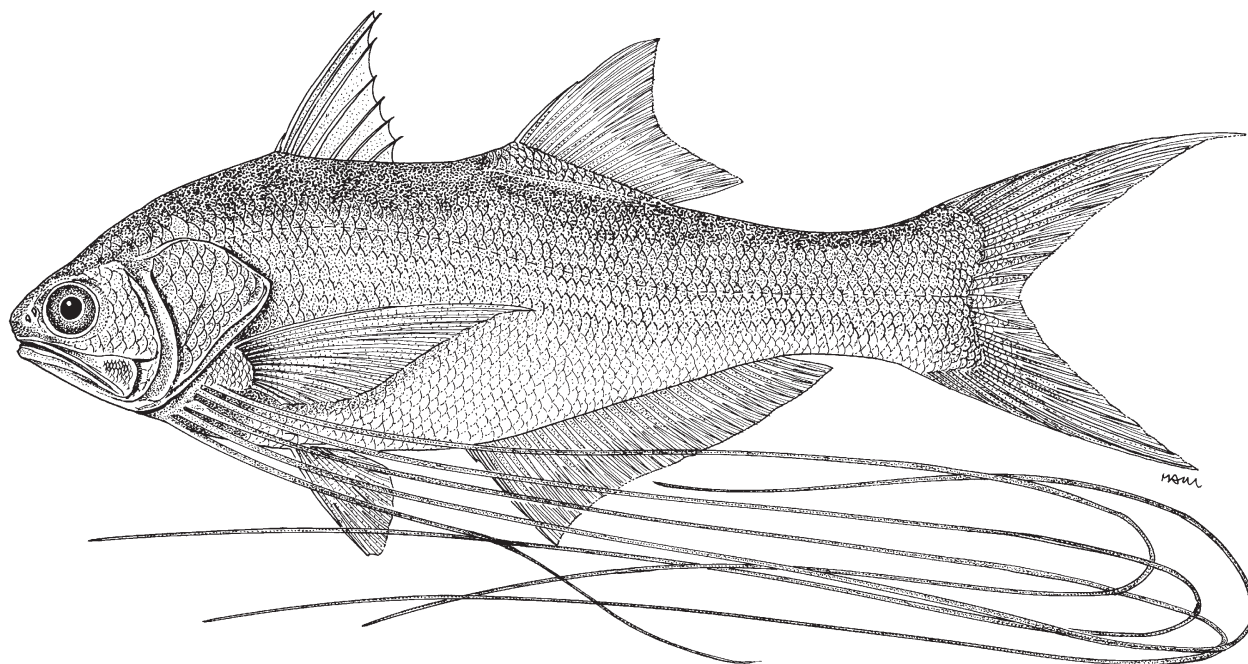


Fig. 65 *Pentanemus quinquarius*

Diagnostic Features: A medium-sized species. Body depth at first dorsal-fin origin 26 to 33% (mean 30%) of standard length; head length 27 to 31% (mean 30%) of standard length. Adipose eyelid poorly developed; eye diameter greater than snout length. Lip on lower jaw well developed, dentary teeth restricted to dorsal surface; width of tooth band on upper and lower jaws narrower than space (on symphysis) separating tooth bands on opposing premaxillae; teeth villiform in broad bands on jaws, palatines and ectopterygoids, tooth plates on palatines shorter than those on ectopterygoids; tooth plates on palatines conspicuously small; vomerine tooth plate covered with skin, teeth absent. Posterior margin of maxilla extending beyond level of posterior margin of adipose eyelid; upper-jaw length 14 to 15% (mean 14%) of standard length; maxillary

scales absent. Posterior margin of preopercle not serrated. Basisphenoid in contact with prootic; sphenotics not visible dorsally between anterior margins of parietal and pterotic. First dorsal fin with VIII spines; second dorsal fin with I spine and 14 or 15 (mode 15) soft rays; anal fin with III spines and 24 to 30 (mode 28) soft rays, anal-fin base longer than second dorsal-fin base; pectoral fin with 14 to 16 (mode 15) unbranched rays, its length 30 to 42% (mean 36%) of standard length, posterior tip reaching to or just short of level of midpoint of anal-fin base; pectoral-fin insertion well below midline of body; pectoral-fin base (including base of pectoral filaments) less than upper-jaw length; pectoral filaments 5; first filament shortest, just reaching to or extending beyond level of anal-fin origin; second to fifth pectoral filaments extending well beyond level of posterior tips of caudal-fin lobes; third pectoral filament longest, its length 242 to 296% (mean 266%) of standard length; caudal fin deeply forked, upper and lower caudal-fin lobes not filamentous, upper caudal-fin lobe 36 to 46% (mean 42%) and lower caudal-fin lobe 38 to 47% (mean 43%) of standard length. Pored lateral-line scales 68 to 76 (mode 72); lateral line simple, extending from upper end of gill opening to mid-distal margin of caudal-fin membrane; scale rows above lateral line 8 or 9 (mode 9), below 15 or 16 (mode 16). Gillrakers 18 to 23 on upper limb, 28 to 32 on lower limb, 47 to 53 total. Vertebrae 10 precaudal and 14 caudal; supraneural bones 3. Swimbladder present, well developed. **Colour:** Upper sides of head and trunk with golden tinge, becoming silver on lower sides; margins of first and second dorsal fins, and caudal fins black, remaining parts blackish; pelvic and anal fin white; pectoral fin yellow with melanophores; base of pectoral filaments white, becoming blackish on posterior tips.

Geographical Distribution: Generally distributed from Senegal to Angola, west coast of Africa (Fig. 66). Günther (1860) reported the species from Cuba, West Indies, on the basis of a single "half grown" specimen, but apparently no other western Atlantic specimens have been taken.

Habitat and Biology: Generally taken on muddy bottoms in shallow coastal waters from depths of 10 to 70 m, and frequently found in estuaries and lagoons. Generally feeds on crustaceans and small fishes (Longhurst, 1960: table 1).

Longhurst (1965) studied the biology, including sexuality and growth, of *P. quinquarius* in Lagos, Nigeria. The species has a normal bisexual reproductive cycle, the sex composition of 25 292 adult specimens: males 44.96%, hermaphrodites less than 0.01%, and females 55.04%. Spawning occurs in all months, peaking in the dry season and almost ceasing during the rainy season in Nigerian waters. Matures at less than 6 months of age (about 150 mm total length). At 3 months, the species averages 100 mm total length, 175 mm at 6 months and about 250 mm at 1 year. According to Longhurst (1965), it is unlikely that many individuals survive a second year of life.

Size: Maximum total length 35 cm, common to 25 cm (Allen in Fischer *et al.*, 1981).

Interest to Fisheries: One of the most important fisheries' species off the west coast of Africa. Caught mainly by trawl, but sometimes by gill net and beach seine.

Local Names: ANGOLA: Barbudo; CAPE VERDE: Barbudo-real; GHANA: Sikor, Threadfin; GUINEA: Gbalakassa; SENEGAL: Capitaine, Njaane, Njaane jaara; SIERRA LEONE: Bearbear, Beardfish.

Literature: Allen in Fischer *et al.* (1981); Daget and Njock in Daget *et al.* (1986); Njock in Quéro *et al.* (1990).

Remarks: *Polynemus artedii* and *P. macronemus* have been treated as junior synonyms of *Pentanemus quinquarius* (e.g. Daget and Njock in Daget *et al.*, 1986; Njock in Quéro *et al.*, 1990). Although Bennett (1831) gave no indication of any type specimens, he stated that *Polynemus artedii* has 25 anal-fin soft rays, which is diagnostic of *Pentanemus quinquarius* (this count not found in all other members of the family). Examination of types of *Polynemus macronemus* also showed them to be conspecific with *Pentanemus quinquarius*.

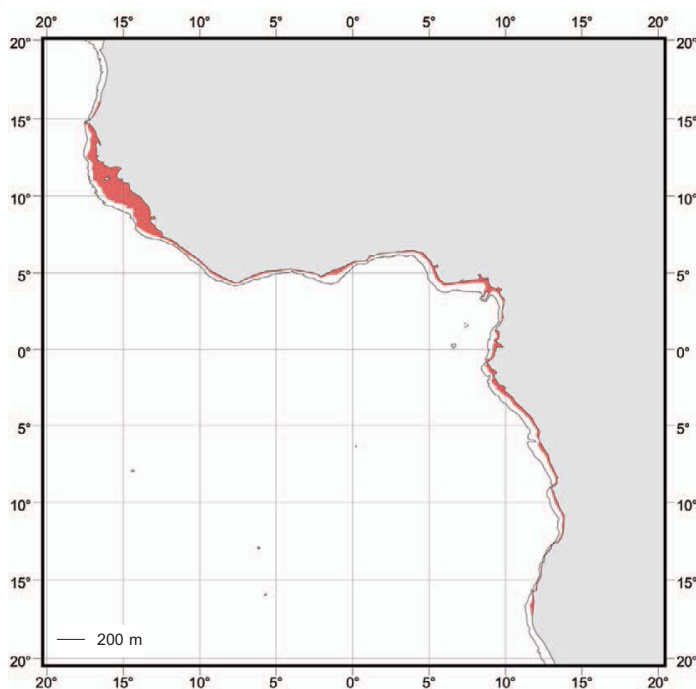


Fig. 66 *Pentanemus quinquarius*
■ Known distribution