

Diagnostic Features : Snout long, sharply pointed, 45 to 49% of head length, its anterolateral margin almost completely supported by bone (a narrow gap between median and lateral processes of nasal bone); terminal snout scute elongated, pointed; orbit diameter 26 to 28% of head length, equal to or usually greater than postorbital length (postorbital 1.0 to 1.1 times into orbit diameter), orbit diameter 1.6 to 1.88 times into snout; subopercle projecting as a narrow flap; mouth small, upper jaw length much less than orbit diameter; barbel about 4 times into orbit diameter; teeth in upper jaw in a broad short band that falls well short of end of rictus; lower jaw teeth in a long, moderately broad band that extends beyond angle of mouth; inner gill rakers on first and second arches 7 to 9 total; underside of head entirely naked; dorsal surfaces of head with broad areas behind anterolateral snout margins either naked or with small, thin scales; shelf below orbits also similarly naked or sparsely scaled; head ridges strong and coarsely spined. First dorsal fin with 2 spinous and 7 to 9 segmented rays, the fin much shorter than the postrostral length of head; pectoral fin rays i16 to i19. Light organ short, not externally visible; anus at anal fin. Body scales with a prominent median keel composed of overlapping triangular spinules, the largest set at an angle of about 45 degrees; 3 to 7 smaller, shorter, parallel rows on either side. **Colour**: overall greyish, underside of head pale; a prominent black ring around eye; mouth and gill cavities blackish; first dorsal fin uniformly dusky

Geographical Distribution : Eastern North Atlantic (Fig. 389).

Habitat and Biology : Benthopelagic in 460-2 220 m depth. Feeds primarily on small fish and bottom-living crustaceans.

Size : To more than 50 cm total length.

Interest to Fisheries : Currently of no commercial importance, as far as known.

Literature : Vaillant (1888); Koehler (1896); Farran (1924); Koefoed (1927); Marshall & Iwamoto (*in* Marshall 1973).

Remarks : Marshall & Iwamoto (*in* Marshall, 1973) erroneously synonymized the species with *C. occa*, but the two are quite distinct, as indicated in the key and in the description of *C. occa*.

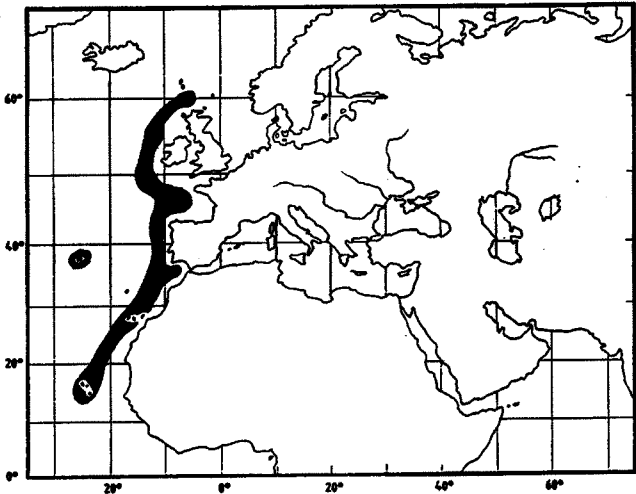


Fig. 389

Coelorinchus longicephalus Okamura, 1982

Fig. 390

MACROUR Coel 26

Scientific Name with Reference : *Coelorinchus longicephalus* Okamura, 1982, *Fishes of the Kyushu-Palau Ridge and Tosa Bay*, p. 176 (Kyushu-Palau Ridge, 27°54-2'N, 134°39.5'E, 700 m).

Synonyms : None

FAO Names : En- Longhead grenadier

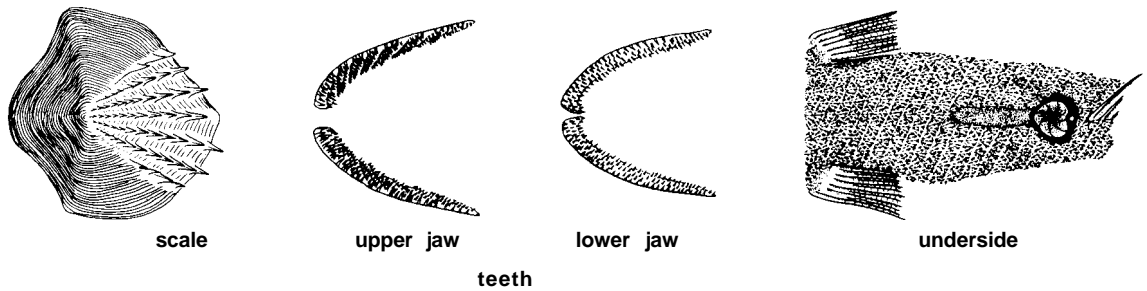
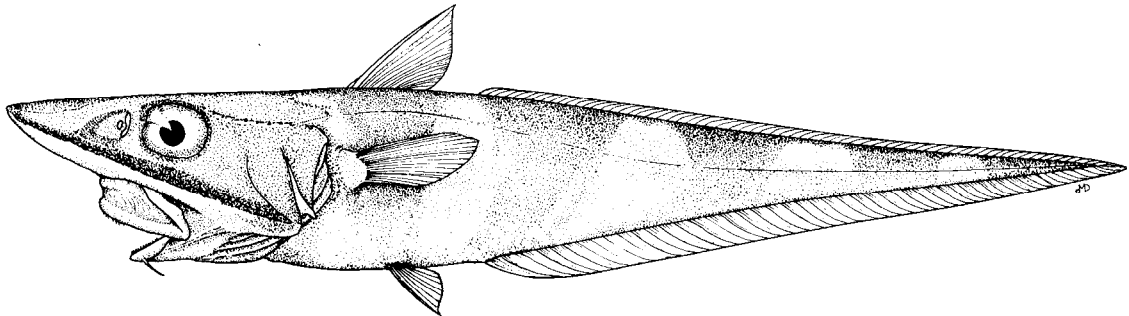
(from Okamura *in* Okamura *et al.*, 1982)(after Okamura, *in* Okamura *et al.*, 1982)

Fig. 390

Diagnostic Features : Head large, 3.4 to 3.7 times in total length; snout long (43 to 45% of head length), and tipped with a blunt tricuspid tubercle, its anterolateral margin incompletely supported by bone; orbit diameter 20 to 22% of head length; interorbital space 18 to 22% of head length, about equal to orbit diameter; mouth large, upper jaw 28 to 31% of head length, maxillary bone extends to below posterior end of orbit; barbel short, about 2/5 to 1/2 of orbit diameter; subopercle ends in a narrow protruding tip; teeth in long, rather broad bands in both jaws; inner gill rakers on first arch 2 + 6 to 8; head ridges well developed; underside of head naked except for a small patch below preopercular angle. First dorsal fin with 2 spines and 9 rays, its height much less than postrostral length of head; pectoral fin rays i17 to i18. Light organ small, externally apparent as a narrow blackish streak extending forward of anus to about midway between pelvic fin insertions and anal fin origin. Body scales with 5 to 7 divergent rows of stout, broad spinules, the lateral rows somewhat lower than median one; scale rows below midbase of first dorsal fin 5 to 5.5. Pyloric caeca 48 to 60. **Colour**: brown but bluish over trunk; 5 or 6 broad saddle marks on body extending below lateral line (indistinct in large specimens); fins blackish except for whitish base and tip of first dorsal; and mouth bluish grey, gill cavities black.

Geographical Distribution : Kyushu-Palau Ridge (Fig. 391).

Habitat and Biology : Benthopelagic in 336 to 700 m.

Size : To at least 89 cm total length.

Interest to Fisheries : The large size attained by this species suggests that there may be some potential for commercial exploitation.

Local Names : JAPAN: Zunaga-sokodara.

Literature : Okamura, Amaoka & Mitani, eds (1982).

Remarks : The description and illustrations are from Okamura's (1982) original description. See the description for *C. hexfasciatus* for a comparison with related species.

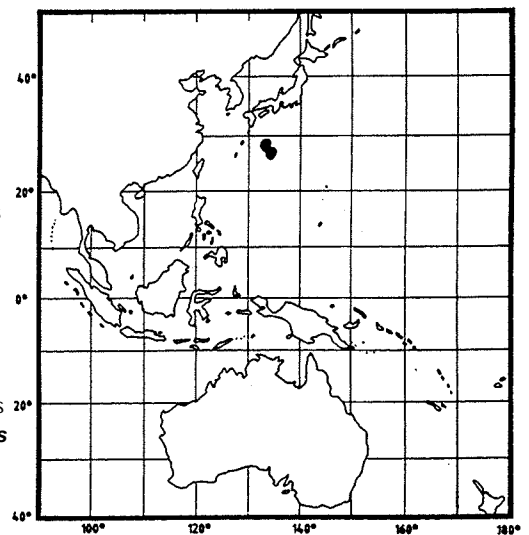


Fig. 391

Coelorinchus macrochir (Günther, 1877)

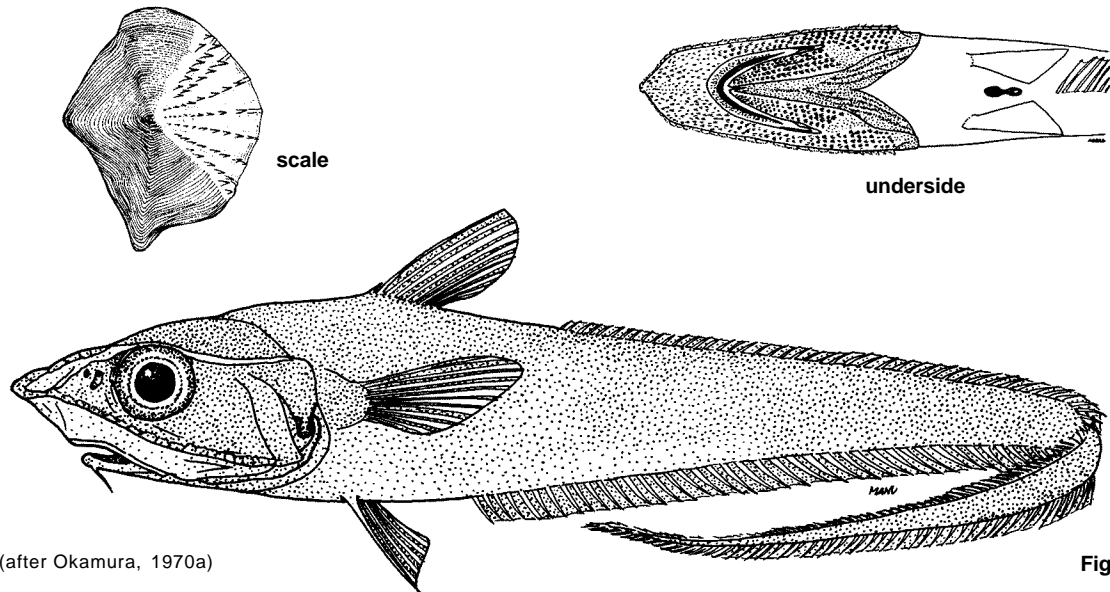
Fig. 392

MACROUR Coel 27

Scientific Name with Reference : *Macrurus macrochir* Günther, 1877, Ann.Mag.Nat.Hist., ser. 4,20:438 (Enoshima, Kagoshima Prefecture, Japan, in 631 m).

Synonyms : *Macrurus (Malacocephalus) macrochir* - Günther, 1887; *Abyssicola macrochir* - Goode & Bean, 1896; *Coelorhynchus (Abyssicola) macrochir* - Gilbert & Hubbs, 1916.

FAO Names : En - Longarm grenadier.



(after Okamura, 1970a)

Fig. 392

Diagnostic Features : Snout tipped with a blunt tubercular scute, its length about 2.8 to 3.4 times into head length; mouth moderate in size; upper jaw 34 to 42% of head length, extending to below posterior end of orbit; orbits large, their diameter 3 to 3.7 times into head length; interorbital space 0.8 to 1.1 times into orbit diameter; barbel 3.1 to 5.6 times into orbit diameter; premaxillary teeth in about three series, the outermost slightly enlarged; mandibular teeth biserial, the inner series enlarged; inner gill rakers on first arch 1 or 2 + 9 or 10; underside of head completely scaled except for gill and gular membranes; head ridges well developed. First dorsal fin with 2 spines and 9 to 11 rays; pectoral fin rays i16 to i20. Anus about midway between pelvic and anal fins; a naked fossa of light organ immediately anterior to, but separated from periproct region. Scales covered with short, rather broad spinules arranged in 4 to 9 widely divergent rows; scales below midbase of first dorsal fin 4.5 to 6. **Colour**: overall brownish, bluish ventrally over abdomen; mouth and gill cavities blackish, but latter with whitish hyoid area and along posterior margin; fins dusky or blackish.

Geographical Distribution : Japan and East China Sea (off Kagoshima Prefecture) (Fig.393).

Habitat and Biology : Benthopelagic, in 235 to 830 m (5 to 10°C). Feeds chiefly on euphausiids, prawns, and small fishes (e.g., myctophids). Spawning occurs from winter to spring (Okamura, 1970a).

Size : To 68 cm total length.

Interest to Fisheries : The relatively large size attained and the fairly common occurrence of this species makes it of potential interest to commercial fisheries off Japan and the East China Sea.

Local Names : JAPAN: Tenaga-dara.

Literature : Okamura (1970a); Okamura (in Okamura & Kitajima, 1984).

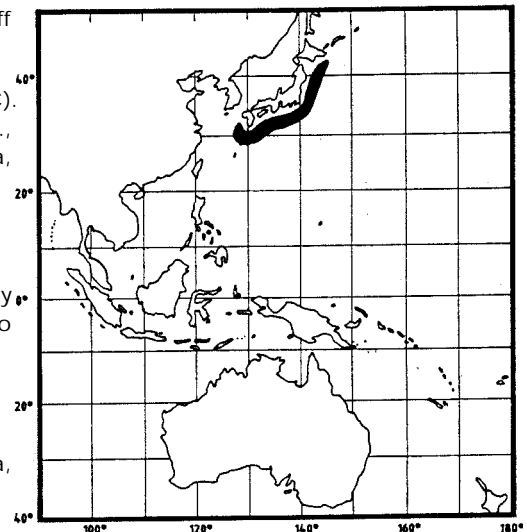


Fig. 393

Remarks : Osamu Okamura, who has studied this species and other members of the genus *Coelorhynchus* in considerable detail, has informed the author (January 1986) that the genus *Abyssicola* should be treated as a synonym of *Coelorhynchus*.

Coelorhynchus marinii Hubbs, 1934

Fig. 394

MACROUR Coel 3

Scientific Name with Reference : *Coelorhynchus marinii* Hubbs, 1934, Occas. Pap. Mus. Zool. Univ. Michigan (298): 1-9, pi. 1 (off Buenos Aires, 38°52'5, 56°20'W).

Synonyms : *Coryphaenoides barattinii* Fowler, 1943; *Coelorhynchus coelorhynchus marinii* -- Marshall & Iwamoto, 1973.

FAO Names : **En** - Marini's grenadier; **Fr** - Grenadier de Marini; **Sp** - Granadero de Marini.

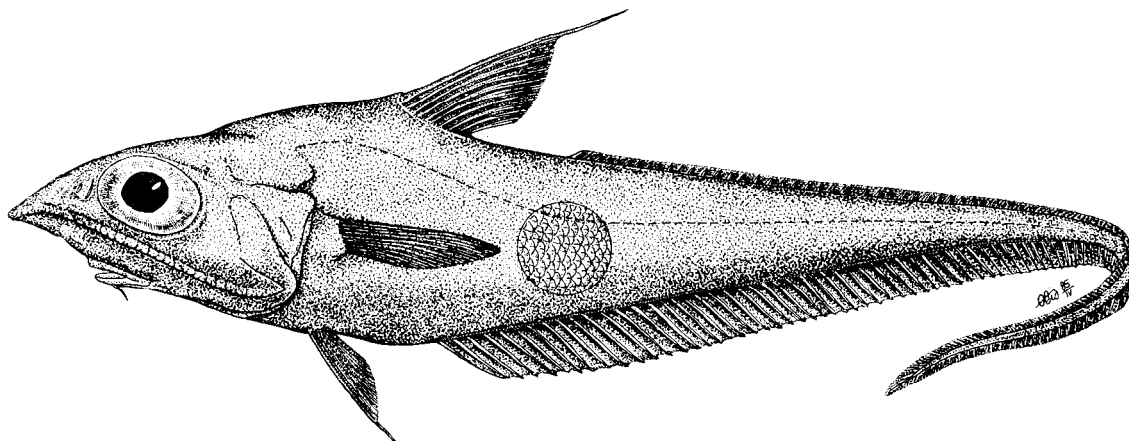


Fig. 394

Diagnostic Features : Head low, slightly deeper than broad; subopercle margin rounded, without a posteroventral projection; snout moderately pointed, 31 to 34% of head length; terminal snout scute of moderate size, not especially set off by its size or spines from adjacent scales of suborbital ridge; anterolateral margin of snout not supported by bone; orbit diameter 34 to 39% of head length; upper jaw 28 to 34% of head length; inner gill rakers on first arch 13 or 14 total; outer rakers on second arch 10 to 12 total; underside of snout with a median naked area, but most of snout and suborbital space otherwise scaled; head ridges moderately strengthened with coarse scales. First dorsal fin with 2 spines and 9 or 10 segmented rays, its height about equal to postrostral length of head; second dorsal fin rudimentary over most of its length; interspace between dorsals equal to about 1/3 length of head; outer pelvic ray slightly elongated. Scale rows below second dorsal fin origin about 6 to 6.5; most body scales covered with small fine, reclined spinules arranged in an irregular quincunx to subparallel pattern. Black naked fossa of light organ between and slightly anterior to pelvic fin bases. **Colour**: overall medium brown to swarthy, darker over abdomen and chest; underside of head peppered with small melanophores; pectoral fins dusky, their inner bases black; pelvic fins black except for whitish outermost ray; anal fin blackish, paler at base; mouth, lips and barbel pale.

Geographical Distribution : Southwestern Atlantic, from southern Brazil (about 29°S) to Antarctic (South Georgia) (Fig. 395).

Habitat and Biology : Benthopelagic in about 200 to 600 m depth.

Size : To at least 38 cm total length.

Interest to Fisheries : A bycatch of hake trawlers on the Patagonian slope.

Local Names : USSR : Dolgokhvost marini.

Literature : Marshall & Iwamoto (in Marshall, 1973); Iwamoto & Geistdoerfer (1985).

Remarks : Considered by Marshall & Iwamoto (1973) as a subspecies of *Coelorinchus coelorhincus*, but *C. marinii* can be distinguished by the more numerous gill rakers, longer outer pelvic fin ray (more than half head length), deeper body (56 to 80% of head length), and absence of distinctive body or fin markings

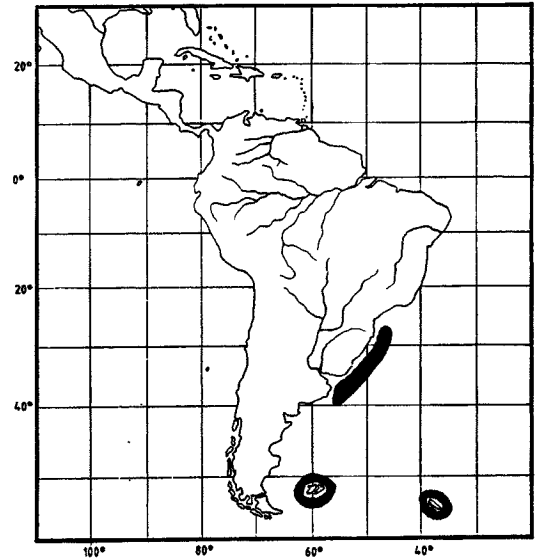


Fig. 395

Coelorinchus matamua (McCann & McKnight, 1980)

Fig. 396

MACROUR Coel 28

Scientific Name with Reference : *Mahia matamua* McCann & McKnight, 1980, *New Zeal. Oceanogr. Inst. Mem.*, 61:53 (New Zealand; 38°42.0'S, 178°33.3'E, 828 to 839 m).

Synonyms : None

FAO Names : En - Mahia whiptail.

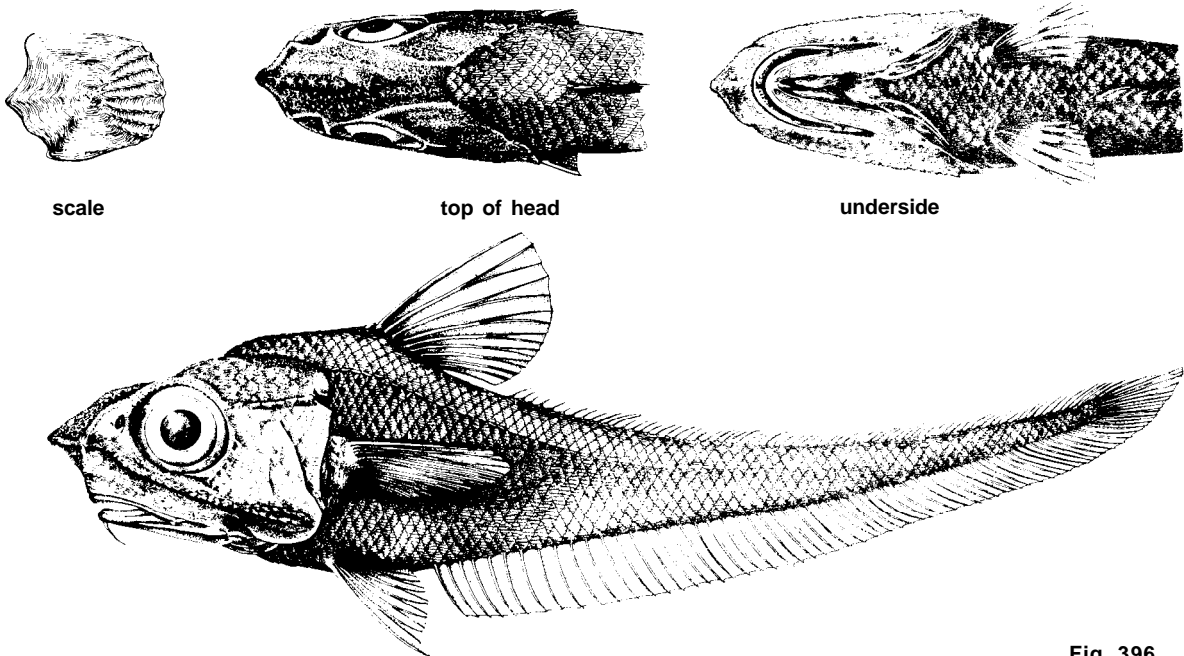


Fig. 396

(from Iwamoto, in Smith & Heemstra, 1986)

Diagnostic Features : Snout bluntly pointed, high, narrow, its anterolateral margin incompletely supported by bone; orbits large, their diameter about 34% of head length or more, about equal to snout length; mouth rather large, unrestricted laterally; upper jaw about 35 to 40% of head length; small teeth in long, tapered bands in both jaws; head ridges with modified thickened scales but not especially spiny; suborbital ridge well defined; underside of head entirely scaled except lips and gill membranes. First dorsal fin with 2 spines and 9 rays, its height about half of head length; pectoral fin rays i16 to i17; inner gill rakers on first arch 2 + 10. Light organ a small globular gland adjacent to anus, not externally visible; anus immediately anterior to anal fin origin or removed from same by 1 or 2 scale rows. Scales large, thin; imbricate spinules in low, slightly divergent ridgelike rows (as many as 11 rows in body scales of large individuals); scales below midbase of first dorsal fin about 4.5 to 5.5. **Colour**: grey to greyish pink; a conspicuous dark blue band around abdominal area; fins and gill membranes blackish.

Geographical Distribution : New Zealand, southeastern Australia, Tasmania, southern Africa (Fig. 397).

Habitat and Biology : Benthopelagic in 450 to 1 000 m depth. Apparently feeds on fishes (myctophids) and crabs, among other items.

Size : To at least 65 cm total length.

Interest to Fisheries : Frequently taken as bycatch by trawlers in 450 to 1 000 m off Tasmania (Last *et al.* 1983); very abundant off continental slope of southern Africa.

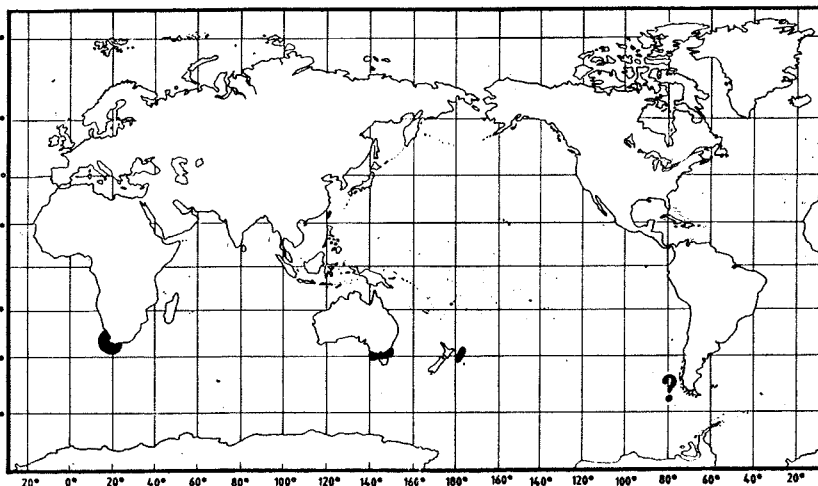


Fig. 397

Local Names : AUSTRALIA: Blue-banded whiptail, Mahia rattail.

Literature : McCann & McKnight (1980); Last *et al.* (1983).

Remarks : Large catches of *C. fasciatus* reported off southern Africa by Gilchrist (1921, 1922) and Gilchrist & von Bonde (1924), may, in fact, have been of *C. matamua*. If true, the species is of considerable importance as a primary prey item for the commercially valuable "stockfish" (*Merluccius capensis*) of that area. Nakamura (1986) reported the species from southern Chile, but the specimen figured is not *C. matamua* and his description does not agree with that species. The presence of *C. matamua* in Chile must therefore be considered as doubtful.

Coelorhynchus multispinosus Katayama, 1942

Fig. 398

MACROUR Coel 29

Scientific Name with Reference : *Coelorhynchus multispinosus* Katayama, 1942, *Zool.Mag.*, 54(8):332, fig. 1 (San-in District, Japan).

Synonyms : *Coelorhynchus vermicularis* Matsubara, 1943; *Coelorhynchus japonicus* - Mori, 1952 (non Temminck & Schlegel, 1842).

FAO Names : En - Spearnose grenadier

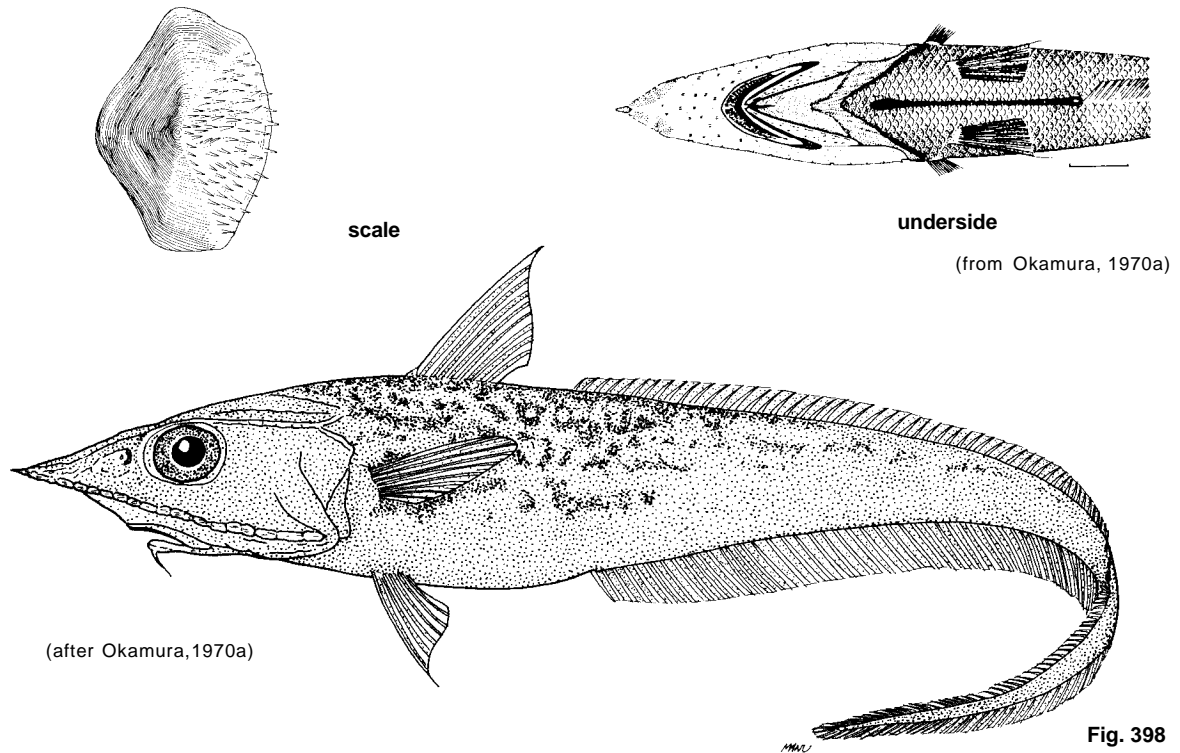


Fig. 398

Diagnostic Features : Snout long, 40 to 45% of head length, tipped with an acutely pointed scute, its anterolateral margin incompletely supported by bone; orbits moderate-sized; their diameter 22 to 27% of head length; upper jaw 27 to 31% of head length; small teeth in bands in both jaws, those in lower jaw may be in only 2 or 3 irregular series; inner gill rakers on first arch 1 or 2 + 6 to 8; head ridges not excessively spiny or coarsely developed; broad naked areas above snout; underside of head naked except for characteristic crescent-shaped patch below anterolateral margin of snout. First dorsal fin with 2 spines and 8 to 10 rays, second spinous ray less than postrostral length of head; pectoral fin rays i13 to i17. Blackish streak of light organ long, extending from anus to near isthmus. Scales thin, relatively adherent, body scales with small, slender, weak spinules (15 to 73) in quincunx order; scales below midbase of first dorsal fin 3.5 to 4.5. Pyloric caeca 11 to 20. **Colour**: greyish-brown overall, with prominent greyish vermiculations and blotches dorsally on body and nape; gular, thoracic, and perianal regions densely covered with blackish pigments; mouth whitish; gill cavity blackish, fins dusky; membrane behind second spine blackish.

Geographical Distribution : Southern Japan to East China Sea (Fig. 399).

Habitat and Biology : Benthopelagic in 150 to 300 m depth over sandy mud bottoms.

Size : To 38 cm total length.

Interest to Fisheries : An abundant species taken by trawlers, but no separate statistics maintained.

Local Names : JAPAN: Yari-hige.

Literature : Okamura (1970a); Yatou (in Okamura & Kitajima, 1984).

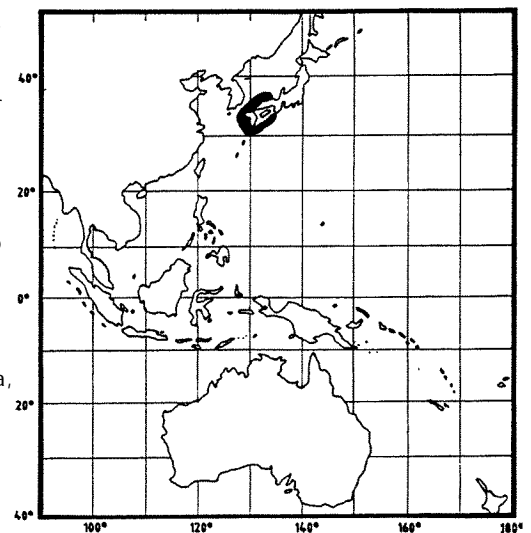


Fig. 399

Coelorinchus occa (Goode & Bean, 1885)

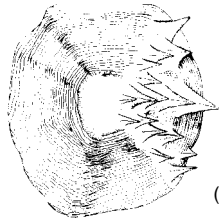
Fig. 400

MACROUR Coel 30

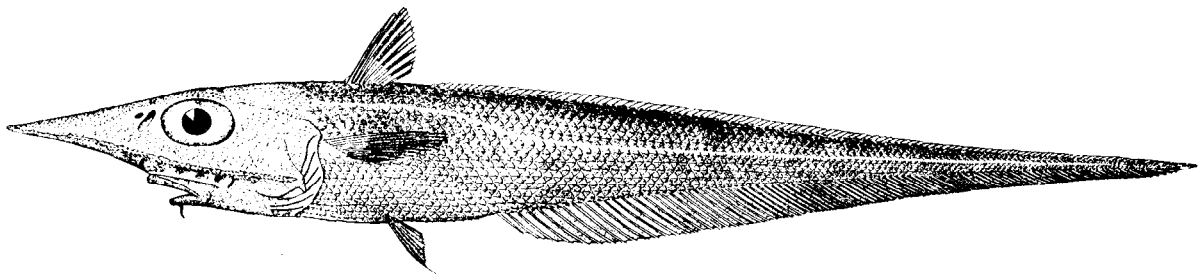
Scientific Name with Reference : *Macrurus occa* Goode & Bean, 1885, Proc. U.S. Natl. Mus., 8:595 (n. Gulf of Mexico; 28°34'N, 86°48'W; 613 m).

Synonyms : *Coelorhynchus occa* -- Goode & Bean, 1896; *Coelorhynchos (Oxygadus) occa* -- Gilbert & Hubbs, 1920; *Oxygadus occa* -- Parr, 1946.

FAO Names : En - Swordsnout grenadier



scale
(from Parr, 1946)



(from Goode & Bean, 1896)

Fig. 400

Diagnostic Features : Snout long, sharply pointed, 44 to 47% of head length, its anterolateral margin almost completely supported by bone (a narrow gap between median and lateral processes of nasal bone); orbit diameter 23 to 27% of head length, usually less than postorbital length, 1.74 to 2.10 times into snout length; subopercle projecting as a narrow flap; inner gill rakers on first and second arches 7 to 9 total; teeth in upper jaw in a broad, short band that does not extend the entire length of rictus; lower jaw teeth in a long, moderately tapered band extending beyond angle of mouth; head ridges strong and coarsely spined; terminal snout scute elongated, pointed, without lateral protuberances; dorsal surfaces of head completely scaled except for nasal fossa, scales atop head with spinules set in divergent rows; underside of head naked except for small isolated scales above angle of mouth and below end of preopercle ridge of occasional individuals. First dorsal fin with 2 spinous and 7 to 9 segmented rays, the fin height much shorter than postrostral length of head; pectoral fin rays i16 to i19. Body scales coarse, rough, with a prominent median keel composed of several stout triangular spinules, the largest set at 60 to 70 degrees from the horizontal; 2 to 4 much lower, subparallel to divergent rows on either side of median keel, these lateral rows often short, with some not extending to edge of scale. Light organ short, not externally visible; anus immediately before anal fin. **Colour:** swarthy to brownish, ventrally darker on abdomen, no prominent markings; mouth and gill cavities blackish; first dorsal fin uniformly dusky.

Geographical Distribution : Central North Atlantic from Florida Straits to northeastern South America; one record from Bermuda; recorded also from southeastern Atlantic (Fig. 401).

Habitat and Biology : Benthopelagic in about 400 to 2 200 m depth Feeds primarily on small fish and bottom-living crustaceans.

Size : To more than 50 cm total length.

Interest to Fisheries : Taken in fairly large numbers in 600 to 1000 m in some areas, but of no current commercial importance.

Local Names : JAPAN: Nishi-toujin

Literature : Parr (1946); Marshall & Iwamoto (in Marshall 1973) (in part); ?Trunov (1984).

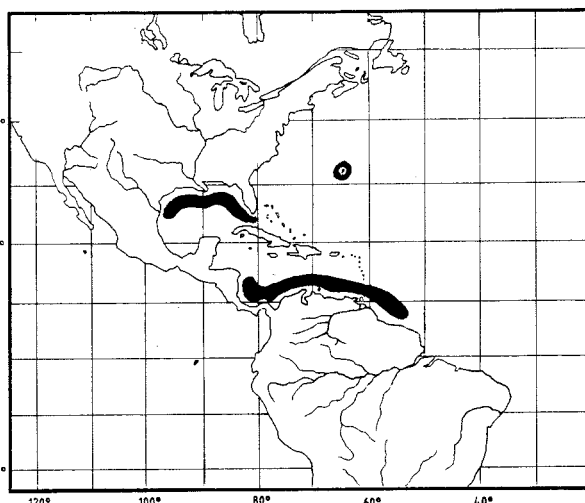


Fig. 401

Remarks : Marshall & Iwamoto (in Marshall, 1973) synonymized *C. labiatus* with this species, but suggested that it may be necessary to recognize eastern and western subspecies when additional material are compared from the two sides of the Atlantic. Examination of fresh material from the northeastern Atlantic taken by the FFS WALTHER HERWIG leaves no doubt as to the specific distinctness of the two populations. The squamation of *C. occa* is much coarser than that in *C. labiatus*, the individual spinules on body scales are set at a higher angle (60 to 70 degrees from horizontal compared with about 45 degrees), and there are fewer rows lateral to the enlarged median row (2 to 4 in *C. occa* vs. 3 to 7 in adults of *C. labiatus*). Furthermore, broad areas dorsolaterally on the snout and below the orbit are naked or sparsely scaled with thin, weak, nonspinulated scales in *C. labiatus*, whereas in *C. occa* these same areas are densely covered with small scales having erect spinules. A most notable character in fresh specimens is the prominent black eye ring in *C. labiatus* that is lacking in *C. occa*.

The distribution of *C. occa* south of northeastern South America is uncertain. Trunov's (1984) identification of specimens taken off southern Africa must be confirmed.

Coelorinchus oliverianus Phillipps, 1927

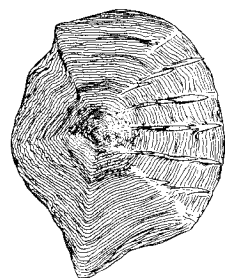
Fig. 402

MACROUR Coel 31

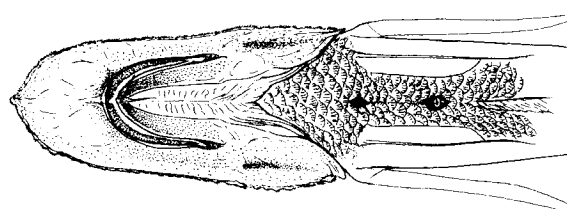
Scientific Name with Reference : *Coelorhynchus oliverianus* Phillipps, 1927a, Trans.New Zeal.Inst., 58:125 (Island Bay, New Zealand).

Synonyms : None

FAO Names : En -Hawknose grenadier



scale



underside

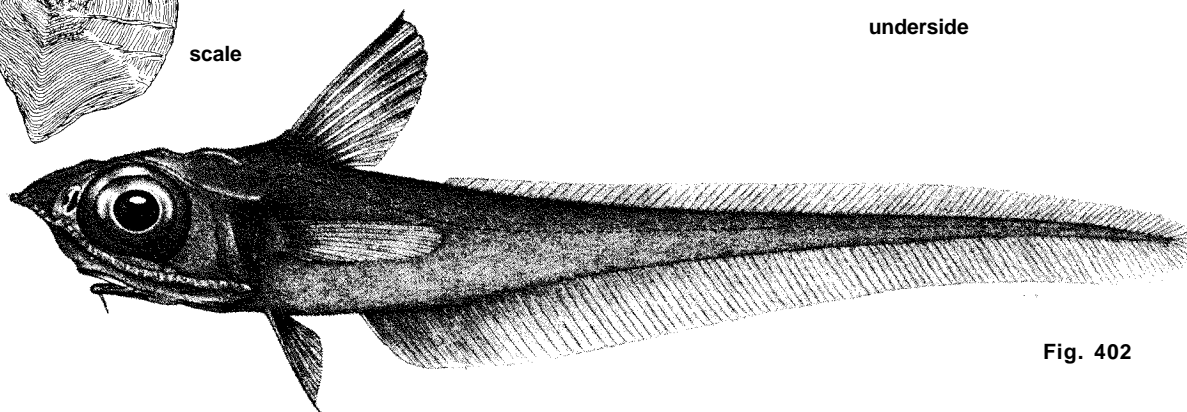


Fig. 402

Diagnostic Features : Snout bluntly pointed, high, a pronounced arch in dorsal profile, its anterolateral margin incompletely supported by bone; orbits huge, usually more than 40% of head length, much longer than snout and upper jaw, which are about 1/3 of head length; small teeth in long tapered bands in both jaws, the mandibular band about half width of premaxillary band; both extend posteriorly over 4/5 of rictus; inner gill rakers on first arch 2 + 10; head ridges narrow, conspicuous but not especially spiny except over parietal and postorbital ridges; underside of head completely naked. First dorsal fin with 2 spines and 8 to 10 rays; its height about equal to postrostral length of head; pectoral fin rays i14 to i17. Black naked fossa of light organ oval, between pelvic fin bases, separated from anus by several scale rows; anus remote from anal fin origin, separated by about 3 scale rows. Scales large, thin, rather deciduous; spinules on body scales short, conical, in 5 to 7 sparse divergent rows in large individuals; scales below midbase of first dorsal fin about 3 or 4. Pyloric caeca about 10. **Colour**: grey to grey-brown overall; head covering translucent, undersurface blackish and heavily punctate, especially around mouth and gill cover; fins dusky to blackish; mouth pale, gill cavity blackish.

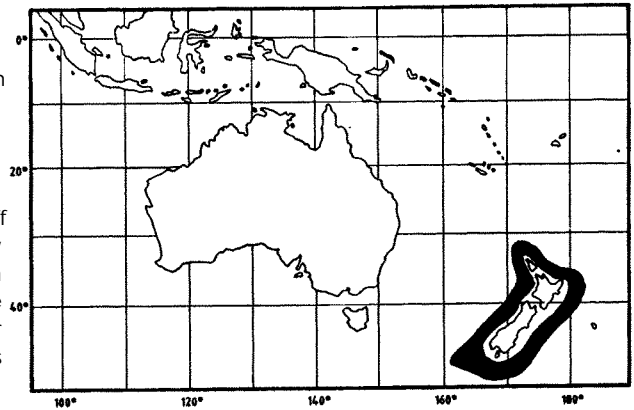
Geographical Distribution : New Zealand (Fig. 403).

Habitat and Biology : Benthopelagic in 85 to 1 245 m depth, but adults most common in 400 to 600 m.

Size : To at least 35 cm total length.

Interest to Fisheries : Common in upper slope waters off New Zealand where they are frequently caught by commercial and research vessels (Peter McMillan, in literature). McCann & McKnight (1980) recorded the species in 47 of 169 trawl catches off New Zealand, by far the most frequent occurrence of the 25 macrourid species studied by them.

Literature : McCann & McKnight (1980)



Coelorinchus parallelus (Günther, 1877)

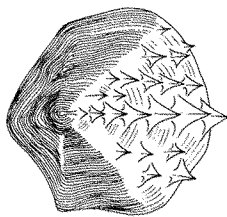
Fig. 404

MACROUR Coel 32

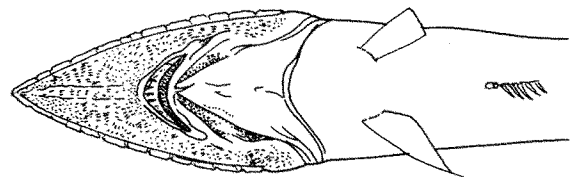
Scientific Name with Reference : *Macrurus parallelus* Günther, 1877, *Ann.Mag.Nat.Hist.*, ser. 4,20:439 (Enoshima, Japan).

Synonyms : *Macrurus (Coelorhynchus) parallelus* - Günther, 1877 (in part, specimens from Japan).

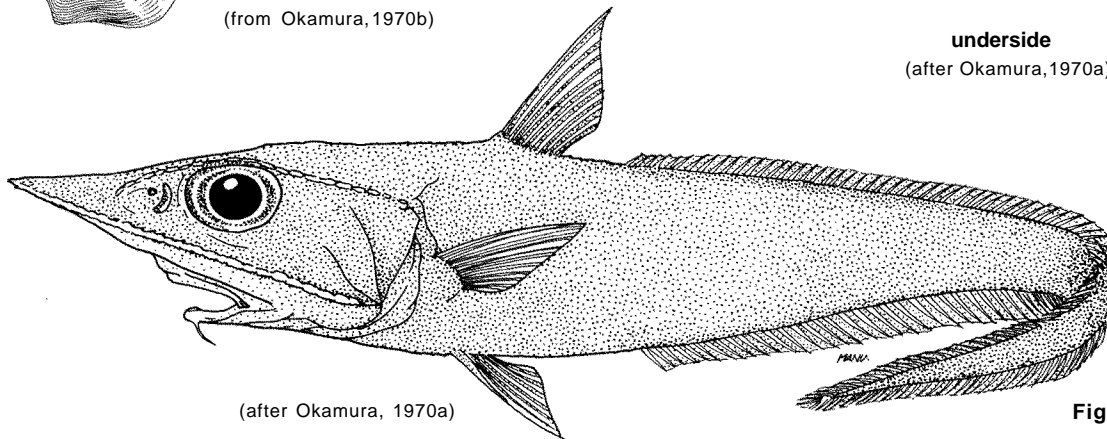
FAO Names : En - Spiny grenadier.



scale
(from Okamura, 1970b)



underside
(after Okamura, 1970a)



(after Okamura, 1970a)

Fig. 404