

Nezumia liolepis (Gilbert, 1890)

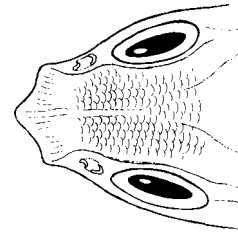
Fig. 633

MACROUR Nez 9

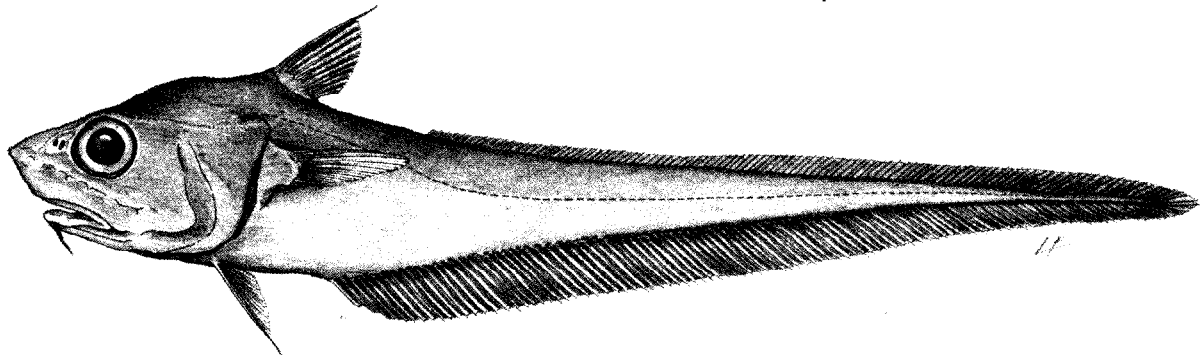
Scientific Name with Reference : *Macrurus (Lionurus) liolepis* Gilbert, 1890, Proc. U.S. Natl. Mus. 13: 117 (east of Santa Cruz I., California, USA; 33°49'45"N, 119°24'30"W; 1103 m; ALBATROSS sta. 2980).

Synonyms : *Lionurus liolepis* -- Goode & Bean, 1896; *Macrurus barbiger* Garman, 1899; *Lionurus (Lionurus) liolepis* - Gilbert & Hubbs, 1916; *Lionurus (Lionurus) barbiger*-- Gilbert & Hubbs, 1916; *Nezumia liolepis* -- Fitch & Lavenberg, 1968; *Ventrifossa barbiger* -- Marshall, 1973.

FAO Names : En - Smooth grenadier



top of head



(after Iwamoto, 1979)

Fig. 633

Diagnostic Features : Snout narrow, bluntly rounded, barely protruding beyond rather large mouth; terminal snout scute small, inconspicuous; suborbital ridge rounded and shallow in cross section, without scutelike scales; snout and suborbital region almost entirely naked, but sometimes a narrow wedge of small scales extends forward from preopercle region onto lower portion of suborbital; mandibular rami with a narrow row of small loose scales posteriorly along midline of each ramus, but otherwise naked; ventral margin of preopercle broadly naked. Cephalic pores of lateralis system indistinct, but sensory papillae densely dispersed over head. Teeth minute, in narrow bands in premaxillary, outer series slightly enlarged; mandibular teeth in a moderate band; teeth extend posteriorly almost to end of rictus. Inner gill rakers on first arch 1 to 3 + 7 to 10 (9 to 12 total). First dorsal fin with 2 spines and 8 to 11 rays, serrations on second spine few or absent; pectoral fin rays i19 to i24; pelvic rays 10 or 11 (rarely 12). Measurements in percentages of head length: snout length 24 to 28; orbits 25 to 31; interorbital 21 to 27; upper jaw 31 to 40; orbit to angle of preopercle 36 to 44; barbel 10 to 20. Pyloric caeca 25 to 37. Body scales small, highly deciduous, mostly without spinules, but some with a few small, greatly reclined conical spinules; scales below origin of second dorsal fin 7 to 10. **Colour**: greyish brown tinged with violet overall; abdominal region, gill membranes, and gill cover blackish; oral and gill cavities and fins dusky to blackish.

Geographical Distribution : Central California (36°49'N to southern Mexico (17°24'N) and Gulf of California (Fig. 634).

Habitat and Biology : Benthopelagic in 768 to 1 655 m depth.

Size : To about 30 cm total length.

Interest to Fisheries : This species is occasionally taken by trawlers fishing for Dover sole in deep waters off central California, but is otherwise of no commercial value.

Local Names : USA: Smooth grenadier.

Literature : Gilbert (1890); Garman (1899); Iwamoto & Stein (1974); Iwamoto (1979); Merrett *et al.* (1983).

Remarks : *Nezumia liolepis* is provisionally included in *Nezumia*, although doing so stretches the definition of the genus. General features of the fish suggest a relationship with *N. stelgidolepis* and *N. pulchella*. The highly reduced squamation, extensive naked areas on the head, reduced or obsolescent serrations on the spinous dorsal fin ray, and small periproct that lacks an associated anterior fossa are presumably reductive characters -- ones that are more strongly developed in other members *Nezumia*. These and other features, however, suggest relationship with other genera such as *Asthenomacrus*, *Pseudonezumia*, *Parakumba*, and *Macrosmia*, as well as *Nezumia japonica* (Matsubara, 1943) and *N. tinro* Sazonov, 1985. In discussing the affinities of *Macrosmia*, Merrett *et al.* (1983:551) stated that "based on external morphological characters, relationships among macrourid genera are obscure. Indeed, the relative importance of characters used is apparently unequal in different generic groups." It is apparent to the present author that much research must be done before we have a firm understanding of generic relationships within macrouroids. *Nezumia liolepis* is one of those problematic species that has yet to find a proper "home."

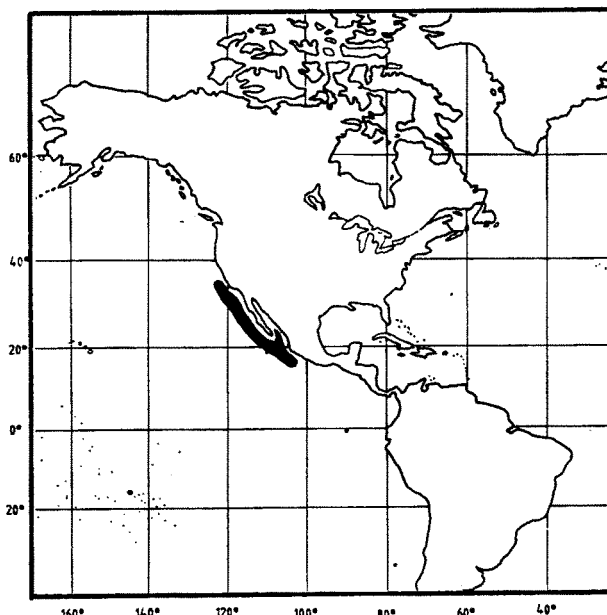


Fig. 634

Nezumia loricata (Garman, 1899)

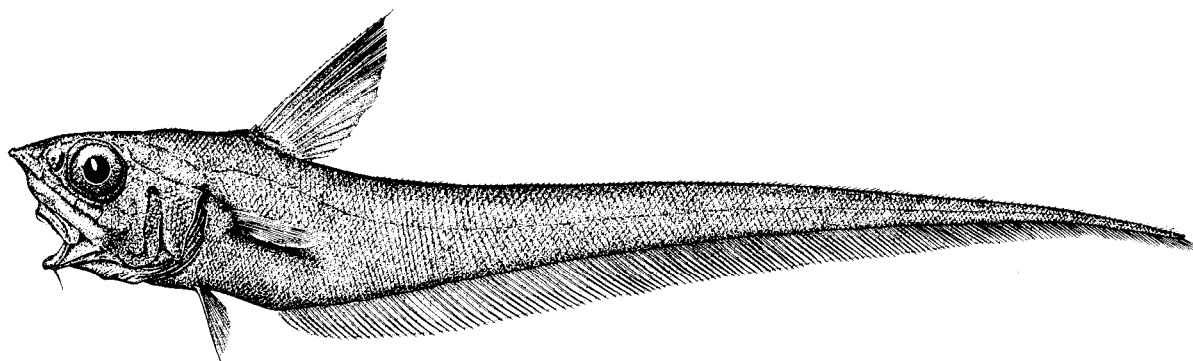
Fig. 635

MACROUR Nez 10

Scientific Name with Reference : *Macrus loricata* Garman, 1899, *Mem. Mus. Comp. Zool. Harvard*, 24: 208-209, pl. 47, figs 2,2b (Galapagos; 598 to 605 m; ALBATROSS sta. 3409, 3410).

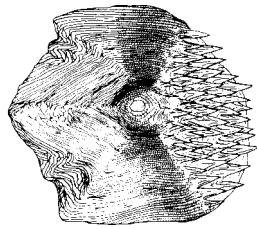
Synonyms : *Lionurus (Nezumia) loricatus* -- Gilbert & Hubbs, 1916; *Nezumia loricata* -- Makushok, 1967

FAO Names : En - Parrot grenadier



(from Iwamoto, 1979)

Fig. 635



scale

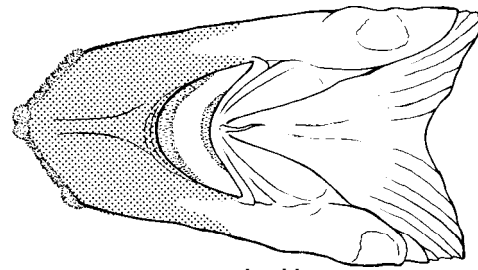
underside
(after Iwamoto, 1979)

Fig. 635

Diagnostic Features : Head about 17 to 20 percent of total length, with a strongly developed, angular suborbital ridge; snout moderately pointed, with spiny tubercular scales at the tip and lateral angles; scales absent on underside of snout and along part of suborbital region, but mandibles covered with small deciduous scales; upper jaws extend to slightly behind vertical through midorbit; orbits about 1/3 of head length; interorbital narrow, its width going 1.3 to 1.7 into orbit diameter. Teeth small, in moderate bands in both jaws, outer series of upper jaws slightly enlarged. Inner gill rakers on first arch 9 to 14 total. First dorsal fin with 2 spines and 9 to 12 segmented rays, the second spine serrated, its height 80 to 100% of head length; pectoral fin rays 20 to 25; pelvic fin rays 10 to 12, the outermost slightly prolonged, extending to 3rd or 4th anal ray. Measurements in percentages of head length: preoral length 25 to 30; upper jaw 29 to 33; outer gill slit 14 to 17; barbel length 10 to 17. Pyloric caeca 20 to 32. Body scales adherent, covered with dagger-shaped to narrowly triangular spinules arranged in somewhat convergent rows; 6.5 to 7.5 rows below midbase of first dorsal, 7.5 to 9 below origin of second dorsal. Anus closer to origin of pelvic fins than to that of anal fin. **Colour**: swarthy to medium brown, darker ventrally; fins blackish; mouth dusky.

Geographical Distribution : Galapagos Islands, off central Chile, and temperate Australia (Victoria and Western Australia) (Fig. 636).

Habitat and Biology : Benthopelagic in about 600 to 800 m depth in the Galapagos population, and to almost 1 500 in the Chilean population.

Size : To about 30 cm total length.

Interest to Fisheries : Taken as bycatch in trawl fisheries.

Literature : Garman (1899); Iwamoto (1979); Paxton *et al.* (1989).

Remarks : Two subspecies are recognized, *N. loricata loricata* from the Galapagos and *N. loricata atomos* from Chile. The species was recently listed from Australian waters (Paxton *et al.* 1989), but no subspecific designation was given. The Chilean and Australian records suggest a broad temperate distribution across the South Pacific.

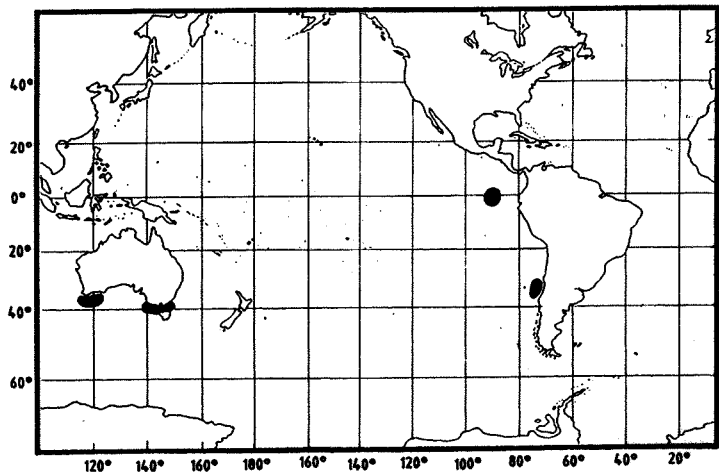


Fig. 636

***Nezumia micronechodon* Iwamoto, 1970**

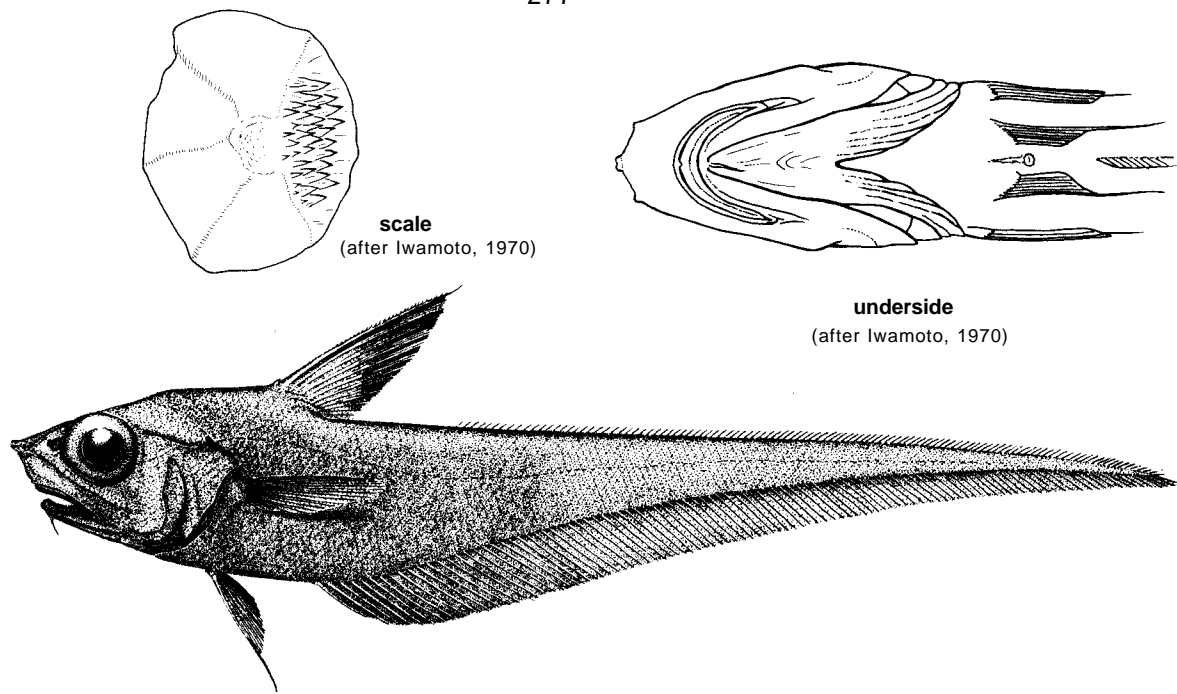
Fig. 637

MACROUR Nez 11

Scientific Name with Reference : *Nezumia micronechodon* Iwamoto, 1970, *Stud. Trop. Oceanogr. Miami*, (4)(pt. 2): 385, figs. 17a, 18-19, 20a, 21a, 22-23. (Gulf of Guinea, off Congo, 3°34'S, 9°58'E, 823 m).

Synonyms : None.

FAO Names : En - Smalltooth grenadier.



(from Iwamoto, in Smith & Heemstra, 1986)

Fig. 637

Diagnostic Features : Snout short, narrow, bluntly acute, tipped with a small bifid scute; underside naked, head otherwise completely scaled; gill membranes not broadly connected over isthmus; gill openings extend forward to below hind margin of orbits. Teeth small, conical, recurved, in wide bands; no enlarged premaxillary series. Inner gill rakers on first arch 1 or 2 + 11 to 15 (13 to 17 total). First dorsal fin with 2 spines and 10 or 11 rays; pectoral fin rays i19 to i24 (usually i20 to i22); pelvic fin rays 8 to 10. Measurements in percentages of head length: snout length 27 to 32; preoral length 17 to 20; orbit diameter 30 to 35; upper jaw 33 to 36; barbel 7 to 10. Pyloric caeca about 20. Scale spinules broad, shield-shaped (more slender in juveniles); scales below origin of second dorsal fin 6. **Colour**: brownish to swat-thy; trunk bluish to violet; fins blackish; mouth and gill cavities grey to blackish.

Geographical Distribution : West Africa, from Western Sahara (about 24°N) south to Angola (Fig. 638).

Habitat and Biology : Benthopelagic in 366 to 1 620 m depth, but in greatest abundance around 500 to 600 m. Investigation by Merrett & Marshall (1981) showed that specimens from northwestern Africa feed primarily on infaunal organisms, especially polychaetes (90% of contents) and a variety of small crustaceans. Smaller individuals (30 to 40 mm head length) feed mostly on epibenthic organisms, especially the copepod *Aetidopsis carinata*.

Size : To 34 cm total length.

Interest to Fisheries : Fairly abundant in the Gulf of Guinea, but not currently utilized, as far as known.

Literature : Iwamoto (1970).

Remarks : *Nezumia micronychodon* is readily distinguished from all other members of the genus by its high gill-raker count and the relatively unrestricted gill openings.

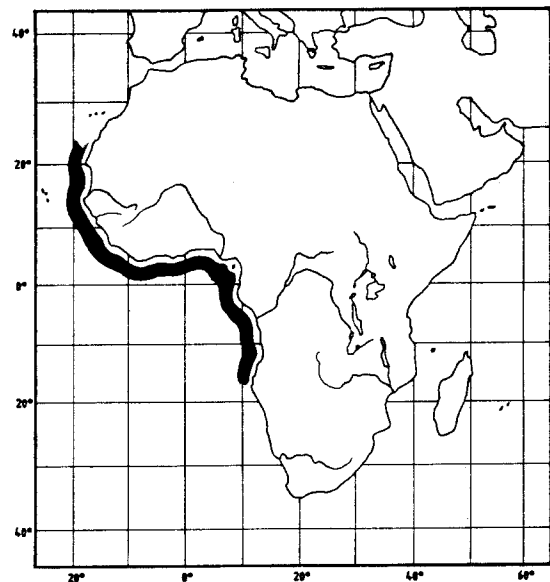


Fig. 638

Nezumia milleri Iwamoto, 1973

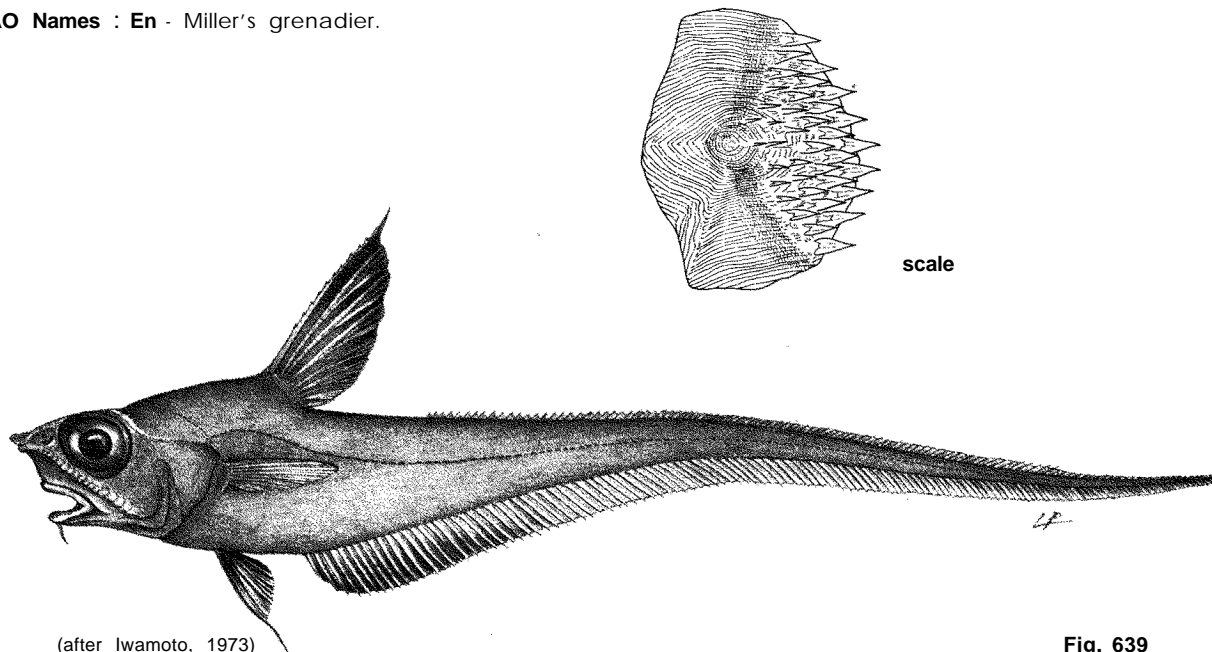
Fig. 639

MACROUR Nez 12

Scientific Name with Reference : *Nezumia milleri* Iwamoto, 1973, Proc. Biol. Soc. Wash., 86 (31): 373, figs. 1-4 (Angola, 17°23'5, 11°20'E. 366-412 m).

Synonyms : None

FAO Names : En - Miller's grenadier.



(after Iwamoto, 1973)

Fig. 639

Diagnostic Features : Snout short, acute, ventral surfaces in front of premaxillary symphysis naked, otherwise head surfaces completely scale-covered. Teeth small, in moderately wide bands. Inner gill rakers of first arch 2 + 8 or 9. First dorsal fin with 2 spines and 9 or 10 rays; pectoral fin rays 17 to 20; pelvic fin rays 8. Measurements in percentages of head length: snout length 25.5 to 27; orbit diameter 40 to 42; interorbital space 16 to 23; upper jaw length 29 to 33; orbit to angle of preopercle 30.5 to 35; barbel 11 to 14. Scale spinules moderately slender, lanceolate; scales below second dorsal fin 6 or 7; lateral-line scales over a distance equal to predorsal length 31 to 37. **Colour**: greyish brown to swarthy; trunk dark, violet tinged, fading on tail to medium brown; fins pale to blackish; first dorsal fin black on distal half; mouth blackish, gill cavity mostly black.

Geographical Distribution : Off Angola and probably Namibia (Fig. 640).

Habitat and Biology : Benthopelagic in 366 to 450 m depth.

Size : To 18 cm total length.

Interest to Fisheries : Species probably too small to be of interest to commercial fisheries.

Literature : Iwamoto (1973).

Remarks : Closely related to *N. aequalis* (Günther) but distinguishable from that species in having the combination of shorter snout and larger orbit.

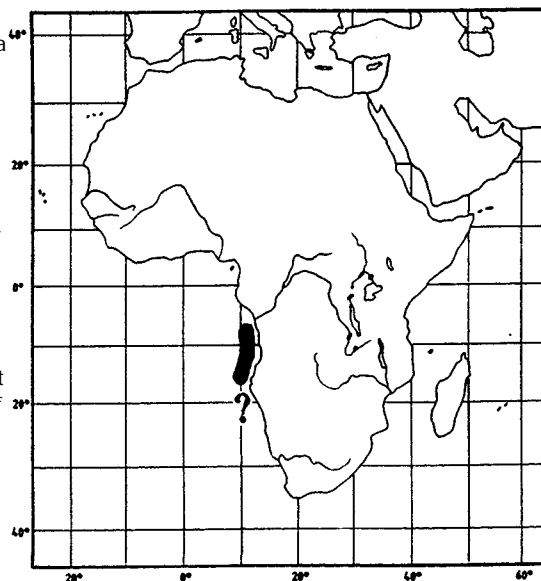


Fig. 640

Nezumia orbitalis (Garman, 1899)

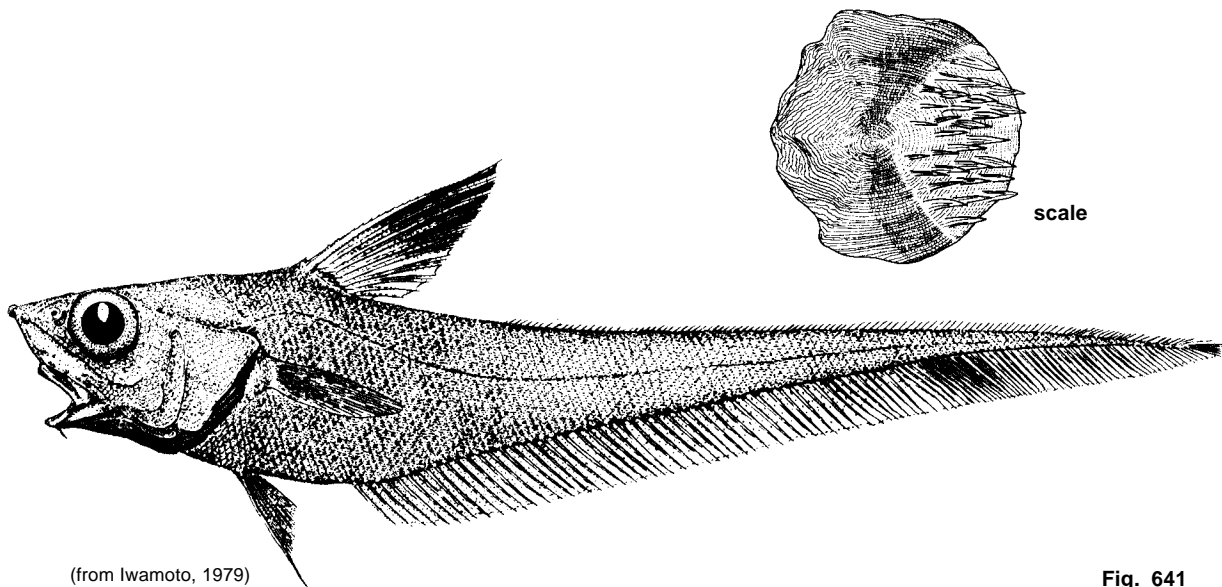
Fig. 641

MACROUR Nez 13

Scientific Name with Reference : *Macrurus orbitalis* Garman, 1899, *Mem. Mus. Comp. Zool. Harvard*, 24: 207, pl. 47, fig. 1, 1 b (Gulf of Panama, 7° 32'36"N, 79° 16'W, 523 m; ALBATROSS sta. 3385).

Synonyms : *Lionurus (Nezumia) orbitalis* -- Gilbert & Hubbs, 1916; *Nezumia orbitalis* -- Makushok, 1967

FAO Names : En - Spectacled grenadier.



(from Iwamoto, 1979)

Fig. 641

Diagnostic Features : Snout short, conical, terminal snout scute small but stout; underside of snout and suborbital region mostly naked; mandibular rami with loose scales along midline of each ramus; cephalic pores of lateralis system indistinct. Teeth small, in moderately wide bands in both jaws, bands fall short of posterior end of rictus; outer premaxillary teeth slightly enlarged. Inner gill rakers on first arch 1 or 2 + 8 to 10 (10 to 11 total). First dorsal fin with 2 spines and 9 or 10 rays, serrations on second spine numerous, closely overlapping; pectoral fin rays 19 to 21; pelvic fin rays 9. Measurements in percentages of head length: snout length 25 to 30; orbit 29 to 34; interorbital space 17 to 19; upper jaw 27 to 32; orbit to angle of preopercle 33 to 40; barbel 6 to 12. Pyloric caeca 17 to 23. Body scales fairly large, densely covered with conical to narrowly lanceolate spinules aligned in as many as 15 convergent rows; scales below midbase of first dorsal fin 4.5 to 5.5, below second dorsal origin 6.5 to 7. **Colour**: reddish brown, abdominal region bluish black, head paler grey; orbit ringed with black; oral and gill cavities blackish; fins light, first dorsal fin black distally.

Geographical Distribution : Gulf of Panama to northern Peru (Fig. 642).

Habitat and Biology : Benthopelagic in 523 to 800 m depth.

Size : To about 20 cm total length.

Interest to Fisheries : This small species is occasionally taken in the bycatch of trawlers off Panama and Peru, but no catch statistics are maintained for the species and it is presumably not utilized.

Literature : Garman (1899); Iwamoto (1979).

Remarks : *Nezumia orbitalis* is likely to be confused only with *N. latirostrata*, with which it shares a similar range and depth distribution, but it can be distinguished from that species by the dorsal fin being distinctly black-blotched distally (vs. blackish overall), the prominent black-rimmed orbits (vs. lacking black rim), and its generally paler colour.

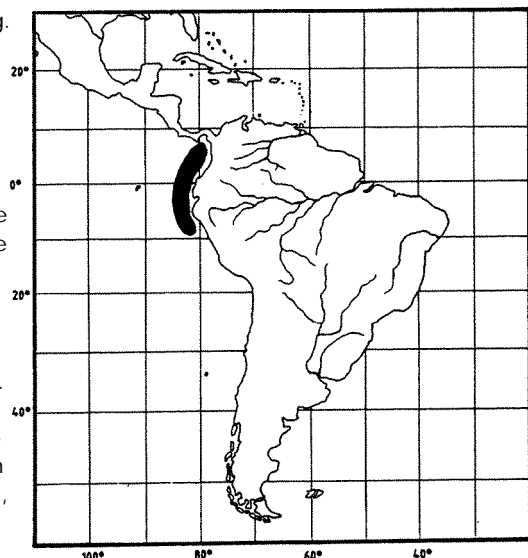


Fig. 642

Nezumia propinqua (Gilbert & Cramer, 1897)

Fig. 643

MACROUR Nez 14

Scientific Name with Reference : *Macrourus propinquus* Gilbert & Cramer, 1897: Proc. U.S. Natl. Mus. 19: 424, pl. 42, fig. 2 (Kaiwi Channel, Hawaiian Islands, 351 fms [642 ml]).

Synonyms : *Lionurus propinquus* -- Gilbert & Hubbs, 1916; *Nezumia propinquus* -- Marshall & Iwamoto, in Marshall, 1973.

FAO Names: En - Aloha grenadier

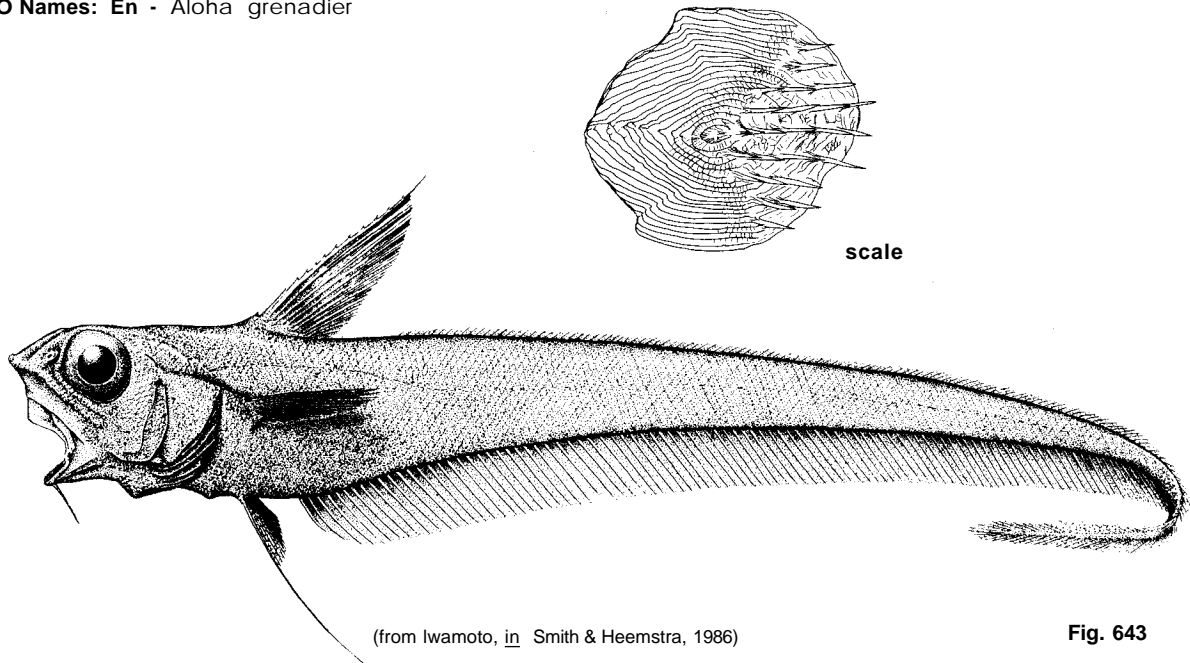


Fig. 643

Diagnostic Features : Snout rather blunt; terminal and lateral snout scutes large, blunt; undersides of snout, mandible, most of suborbital, and part of lower margin of preopercle naked. Teeth in moderately wide bands, outer series in upper jaw slightly enlarged. Inner gill rakers on first arch usually 2 + 7 or 8 (9 or 10 total), outer gill rakers on second arch 1 or 2 + 7 or 8. First dorsal fin with 2 spines and 11 or 12 rays, serrations on second spine slender, rather widely spaced; pectoral fin rays i18 to i23; pelvic fin rays 13 to 17. Measurements in percentages of head length: snout length 28 to 32; orbit diameter 31 to 37; interorbital space 22 to 28; upper jaw 31 to 36; orbit to angle of preopercle 28 to 35; barbel 14 to 22. Pyloric caeca 22 to 32. Spinules on body scales sharp, needlelike, in parallel rows; scales below second dorsal fin 9 to 12; lateral-line scales over distance equal to predorsal length 33 to 34. **Colour**: brownish overall, violaceous over abdomen; gill membranes blackish; fins dusky, first dorsal blackish distally.

Geographical Distribution : Hawaiian Is., southern Africa off Mozambique, Kyushu-Palau Ridge, and Sala y Gomez Ridge (southeastern Pacific) (Fig. 644).

Habitat and Biology : Benthopelagic in 523 to 870 m depth. Off Hawaii Gilbert (1905) reported individuals taken in June by the ALBATROSS had been feeding exclusively on small eggs; mature eggs were found in a specimen taken in August.

Size : To about 27 cm total length.

Interest to Fisheries : Occasionally taken in trawls fished in deep waters off Hawaii, but of no commercial interest.

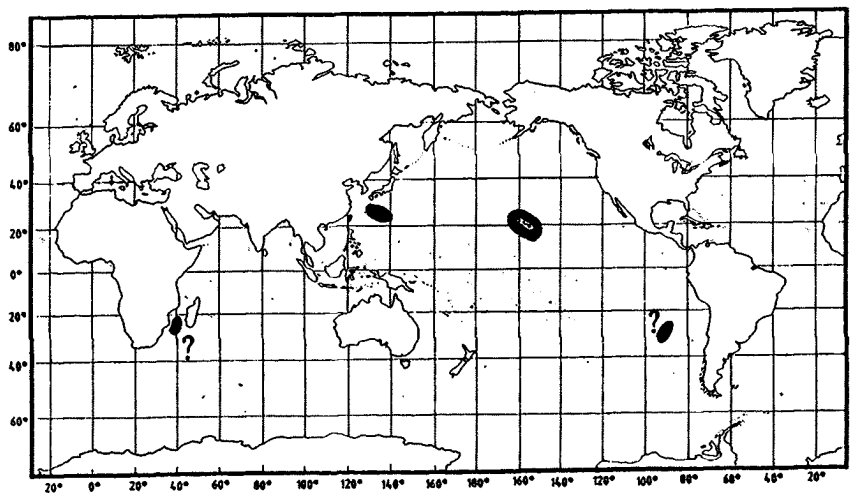


Fig. 644

Local Names : USA: Kaiwi Channel grenadier.

Literature : Gilbert (1905); Iwamoto (in Smith & Heemstra, 1986)

Remarks : This species is close to *N. condylura* from Japan. Differences between the two appear to lie in the steeper dorsal profile of the nape in *N. propinqua*; its slightly higher pelvic fin ray count; somewhat longer pectoral and pelvic fins (60 to 67% head length and 79 to 107% head length, respectively, compared with about 55 to 61% and 68 to 81%); and anus closer to pelvic fin bases (distance anus to anal fin 25 to 32% of head length, compared with 15 to 20% in *N. condylura*).

***Nezumia proxima* (Smith & Radcliffe, 1912)**

Fig. 645

MACROUR Nez 15

Scientific Name with Reference : *Macrourus proxima* Smith & Radcliffe, 1912, Proc. U.S. Natl. MUS. 43: 119, pl. 26, fig. 2 (Sogod Bay, Leyte, Philippines; 502 fms [918 m]; ALBATROSS sta. 5202).

Synonyms : *Macrourus nasutus* (non *Coryphaenoides nasutus* Günther); *Lionurus proximus* -- Gilbert & Hubbs, 1920; *Lionurus abei* Matsubara, 1943; *Nezumia proximus* -- Okamura, 1970a.

FAO Names : En - Short-tail grenadier

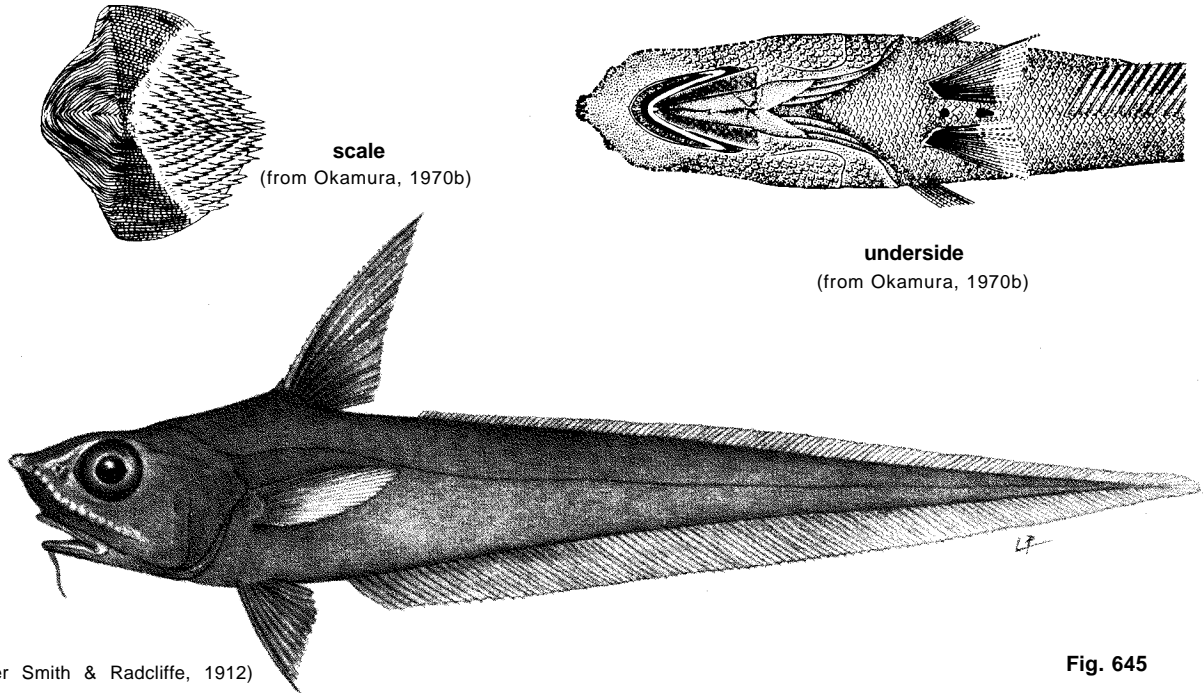


Fig. 645

Diagnostic Features : Snout short, conical; terminal and lateral snout scutes broad, spiny; underside of snout and part of infraorbital region naked; mandibular rami with small deciduous scales posteriorly; pores large and prominent on head. Teeth in broadly tapered bands in both jaws, outer series of premaxillary slightly enlarged. Inner gill raker on first arch usually 2 + 7 or 8. First dorsal fin with 2 spines and 9 to 11 rays, serrations on second spine widely spaced, non-overlapping, varying from 6 in 133 mm specimens to 18 in 249 mm specimens; pectoral fin rays i17 to i19; pelvic fin rays 9 (rarely 8 or 10). Measurements in percentages of head length: snout length 23 to 31; orbit diameter 28 to 33 (35); interorbital space 15 to 25; upper jaw 31 to 34; orbit to angle of preopercle 27 to 39; barbel 15 to 23. Pyloric caeca 24 to 31. Scales small, those on body covered with long slender spinules aligned in 4 to 26 discrete parallel rows (number of spinule rows size dependent; fewest in smallest specimens); spinules range from conical to hastate; scales below midbase of first dorsal 6 or 7; below second dorsal origin 7 to 9. **Colour**: overall dark brown, abdominal region blackish; mouth cavity greyish, gill cavity whitish with blackish margins; pelvic fins blackish, other fins dusky.