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## Two New Species of the Previously Monotypic Congrid Eel Genera *Poeciloconger* and *Macrocephenchelys* from Eastern Australia

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ABSTRACT. *Poeciloconger kapala* n.sp. (Congridae, Bathymyrinae), described from a single 540 mm SL specimen trawled in about 50 m north of Sydney, differs from the only other species of the genus, *P. fasciatus* Günther, 1871 (tropical Indo-Pacific), in having tan body colouration and small ovoid light spots anteriorly rather than dark spots and irregular bars on a light background, generally molariform rather than sharp vomerine teeth, and fewer vertebrae (148 rather than 154–158). *Macrocephenchelys soela* n.sp. (Congridae, Congrinae), described from five specimens 259 to 298 mm SL trawled in 350 m off the north-east Queensland coast, is distinct from the unique *M. brachialis* Fowler, 1934 (Philippines, Mozambique Channel) in having a more robust rather than slender body, a more anterior dorsal origin, a larger branchial aperture, a longer snout, molariform vomerine teeth, and fewer vertebrae (150–151 rather than 179–182).

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Some 160 genera of eels (Anguilliformes) are currently recognised. Of these about one-third are monotypic, though this possibly reflects imperfect knowledge of the genera concerned on a worldwide basis rather than excessive generic splitting within the Anguilliformes generally. Monotypic genera are more a feature of the Ophichthidae (i.e. 18 out of 55) and Chlopsidae (four out of seven) though these families include many small, cryptic, fossorial forms and for that reason are almost certainly incompletely known. Judging by the diversity of their larvae, which are more accessible to collecting, further genera and species can be expected to be described in

these families. The Synphobranchidae and Congridae include rather many monotypic genera which could be explained by incomplete collecting of these generally deep water eels in many parts of the world.

This paper reports a second species of *Poeciloconger* Günther, 1871 and of *Macrocephenchelys* Fowler, 1934, two hitherto monotypic genera of Congridae. Both new species were collected on the Australian east coast, the former in shallow, inshore water north of Sydney, the latter in deeper water further to the north, off Townsville.

*Poeciloconger* was originally reported from an

approximately 300 mm TL specimen of *P. fasciatus* Günther, 1871 from Sulawesi (Celebes), and again by Günther (1910) from an approximately 508 mm TL specimen from Tahiti. Günther did not state why he considered the genus to be distinct from other congrid, though he must have noted the rather stiff caudal tip and reduced caudal fin, as well as the conspicuous spotted to banded body colouration. However, the caudal tip in species of other congrid genera (*Ariosoma* Swainson, 1839 and *Gnathophis* Kaup, 1860) as well as variously in the so-called 'garden eels' of the congrid subfamily Heterocongrinae, is also abbreviated and somewhat stiffened. Furthermore, while most congrid species have rather nondescript body colouration, several species of Heterocongrinae are distinctively marked. Though not as obviously coloured as *P. fasciatus*, the congrid eel described here is also distinctive in this family in having a body colouration of profuse, small, ovoid, light-coloured spots on a dark background. It has the terminal few centimetres of the caudal region firm rather than flexible, and an abbreviated caudal fin. In these characters it generally agrees with *P. fasciatus*. More profoundly, it agrees in having unsegmented dorsal and anal fin rays (as readily determined microscopically or from a radiograph), a feature which distinguishes the subfamily Bathymyrinae from the Congrinae, in which the fin rays are segmented. The osteology of *Poecilococong* has not yet been studied but the character of the fin rays indicates that it should be aligned with the Bathymyrinae rather than with the Congrinae as Smith (1984) implies. The maxillary bands of teeth meet anteriorly in the midline, thus enclosing the premaxillary-ethmoverine band wholly within the mouth. In effect, this band does not freely project as it does in many of the approximately 30 genera of Congridae, though to a varying degree. A disagreement between the new species and *P. fasciatus* is that in the latter the premaxillary-ethmoverine teeth are relatively sharp and slightly recurved ("villiform" in Günther's terminology) while those of the new species, for the most part, are low, rounded and molariform. They are thus rather similar to those of *Ariosoma* (Bathymyrinae) and *Gnathophis* (Congrinae). The nature of the teeth on the roof of the mouth ("vomer") is often, though not always, a useful discriminatory character of most genera of congrid. Despite this difference in dentition, the overall similarities between the new species and *P. fasciatus* are considerable, but insufficient in my opinion to justify separation of the new species at the generic level.

*Macrocephenchelys* is known only from *M. brachialis* Fowler, 1934, originally reported from two specimens collected in 670 m from the Macassar Strait, Indonesia by the *Albatross* in 1909. Because its snout and cephalic morphology is so unusual, the genus and species has had a chequered history amongst the eel families though it has for some time now been regarded as the single representative of the congrid family Macrocephenchelyidae. McCosker, Böhlke & Böhlke (1989) recently referred this family to the Congridae and Smith (1989) discussed the relationship of

*Macrocephenchelys* itself to members of the subfamily Congrinae, to which the genus was more specifically referred. There would seem to be good reasons for accepting these views. Robins & Robins (1971) reviewed the osteology and relationships of *M. brachialis* while Karrer (1982) reported a third specimen from the Mozambique Channel (exact locality in doubt since there were two labels with the specimen indicating either south-western Madagascar in 550 to 555 m or further north in 1200 m). The five specimens reported here from off Townsville in 345 to 350 m readily agree with *Macrocephenchelys* in having a distinctively short, bulbous snout with swollen, protruding plicae (folds) overhanging the mouth and a long, narrow, pectoral fin directed obliquely upwards. Though somewhat reminiscent of *Simenchelys* Gill (Synphobranchidae, Simenchelyinae) and the Ilyophin synphobranchids in the character of the snout, *Macrocephenchelys* is highly distinctive and cannot readily be mistaken for any other genus of eels. In having a much more robust form, the dorsal origin over the middle of the pectoral (i.e. much further forward than in *M. brachialis*), fewer pores before anus (29–30 compared with 33–34), a shorter tail, and fewer vertebrae (i.e. 150–151 compared with 179–182), the new species is readily distinguished from *M. brachialis* and is described here as new.

## Materials and Methods

Institutional abbreviations are as given in Leviton *et al.* (1985). Measurements were made with dial calipers. Total lengths are used throughout since the caudal fin length is insignificant as a proportion of TL; preanal length is straight line distance between tip of snout and middle of anus; predorsal is snout tip to base of first dorsal ray; head is from snout tip to uppermost extremity of branchial aperture; snout is from snout tip to anterior margin of fleshy orbit; eye is greatest (horizontal) diameter of orbit; interorbital is least distance between dorsal margins of orbits; mouth is from snout tip to extremity of exposed maxilla where it becomes covered by integument; branchial aperture is distance between upper and lower extremities; pectoral is measured from middle of base to its tip; depth is greatest depth of body, usually at pectoral base. Pectoral rays are counted on right side after integument has been turned back from base to expose the rays; preanal pores are counted to a vertical from anus; total vertebrae exclude urostyle as a separate element. Cephalic pores include those from tip of snout before and above anterior nostril to above eye (supraorbital canal, though the most anterior pore of this series should strictly be termed an ethmoid pore), from behind anterior nostril along edge of upper jaw (infraorbital canal), behind eye (postorbital canal, though this is strictly part of the infraorbital series), along lower jaw onto preopercular region (preoperculo-mandibular canal) and occipital region (supratemporal canal, inclusive of a median dorsal pore). Radiographs were made with a soft X-ray machine and developed normally.

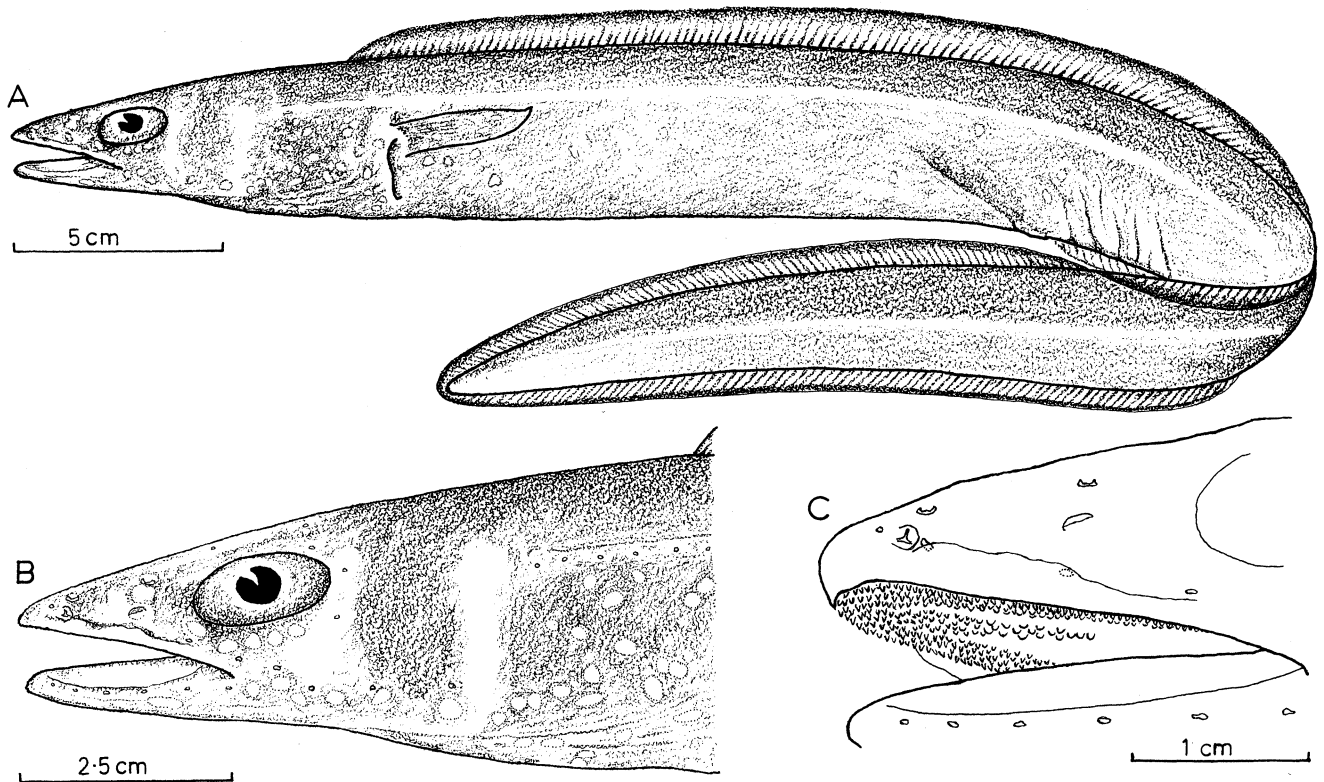
*Poeciloconger kapala* n.sp.

Figs 1A–C, 2, Table 1

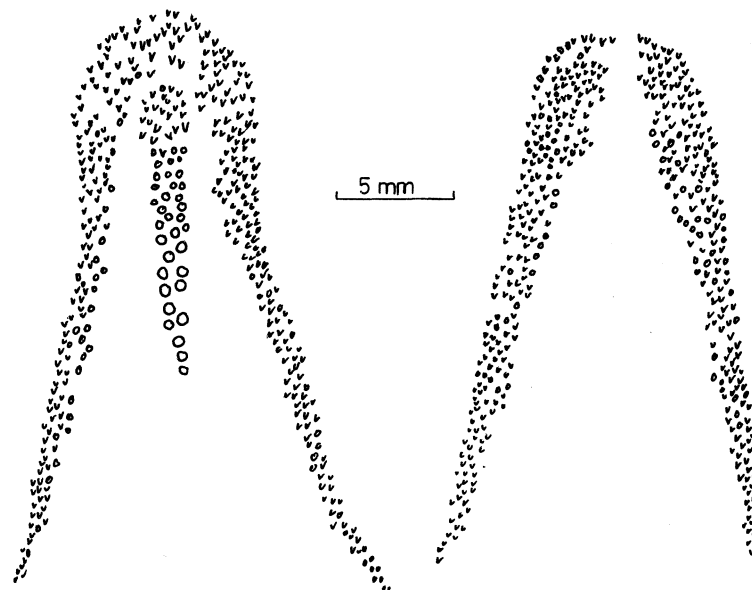
Wales Fisheries Research Vessel *Kapala*, 11 Apr. 1985, 32°41'S 152°16'E to 32°44'S 152°15'E (off Port Stephens, New South Wales, Australia), capture depth 46–64 m, bottom trawl.

**Material examined.** HOLOTYPE: AMS I.25923-005, 540 mm SL, maturing female, collected by the New South

**Comparative material.** *Poeciloconger fasciatus* (5 specimens): holotype BMNH 1871.7.20.63 (305 mm TL),



**Fig.1.** *Poeciloconger kapala*, holotype, 540 mm SL, AMS I. 25923-005. A: lateral view to show overall body form and colouration; B: lateral view of head detail; C: ventrolateral view to show maxillary and premaxillary-ethmovomerine teeth.



**Fig.2.** *Poeciloconger kapala*, holotype, 540 mm SL, AMS I. 25923-005: pattern of upper (left) and lower (right).

BPBM 29210 (140 mm TL), BPBM 29233 (217 mm TL), ANSP 135440 (581 mm TL), SMF 10931 (414 mm TL, radiograph only).

**Diagnosis.** Mid-greyish brown background body colour, covered with small, discrete, ovoid light spots, particularly over head, trunk and dorsal and pectoral fins; precaudal vertebrae 74; total vertebrae 147. Other distinctive characters include preanal 2.2 in TL, eye 5.1 in head, vomerine teeth on posterior half of bone molariform.

**Description.** Morphometric and meristic characters of the new species and *P. fasciatus* are given in Table 1. Other descriptive details of the holotype are as follows: body moderately elongate, caudal region firm, not delicate, and tapering to the caudal tip noticeably along posterior quarter of body length; snout relatively sharp (though probably more fleshy in life); lower jaw subequal to snout; anterior nostril weakly tubular, placed well back from snout tip, its rim complete; posterior nostril an inconspicuous narrow aperture well before and below horizontal diameter of eye, its upper margin free, the lower incorporated into snout; mouth cleft reaching to below anterior margin of

pupil; well-developed upper and lower lips present; eye relatively large, oval; interorbital broad; branchial aperture vertical, large, extending from middle of pectoral base nearly to meet ventral profile; pectoral rather long and narrow, rounded posteriorly; dorsal origin somewhat before level of pectoral base and branchial aperture; preanal length almost half of total; dorsal fin equal in height along its length and about one quarter of body depth; anal fin similar but lower; caudal fin present but with very short rays and supported by a very firm, narrow, caudal tip; lateral line pores minute but relatively conspicuous, fewer than vertebrae, present to within 21 mm of caudal tip; cephalic pores present but inconspicuous, as follows: in supraorbital canal 1 small pore anterodorsal to anterior nostril followed by 2 larger pores, each with a flap-like rim, and then 2 small pores above orbit; in infraorbital canal 5 pores, the first immediately behind anterior nostril and partly hidden by front of upper lip, second pore hidden by lip, fourth and fifth below eye; in postorbital series 3 small pores; in preoperculo-mandibular series 9 pores; in supratemporal series 2 pores and a median dorsal pore.

Teeth on maxillary and dentary generally in 4–5 longitudinal rows, though reducing to 2–3 rows posteriorly (Figs 1C, 2); teeth in outermost rows conical, relatively

Table 1. Comparison of *Poeciloconger kapala* and *P. fasciatus*

	P. kapala	P. fasciatus	
	AMS I.25923-005 Holotype	BPBM 29210	BPBM 29233
TL (mm)	543	140	217
SL (mm)	540	138	216
Preanal (% total)	45.5	40.7	42.9
Predorsal (% total)	14.5	13.9	14.2
Head (% total)	17.0	16.8	17.9
Snout (% head)	21.6	22.1	23.2
Eye (% head)	19.4	15.3	15.3
Interorbital (% head)	13.2	8.5	13.5
Mouth (% head)	29.1	31.1	31.4
Branchial aperture (% head)	17.1	9.4	14.5
Pectoral (% head)	33.6	29.4	29.3
Depth (% head)	43.6	26.0	30.1
Pectoral rays	14	–	–
Dorsal rays before anus	68	64	81
Dorsal rays (total)	204	–	about 246
Anal rays (total)	152	–	about 180
Predorsal 1.1. pores	4	4	4
Preanal 1.1. pores	52	54	53
Total 1.1. pores	139	149	–
Precaudal vertebrae	74	85	80
Total vertebrae	147	158	154
Cephalic pores:			
Supraorbital	5	5	5
Infraorbital	5	5	5
Postorbital	3	3	3
Preoperc.-mandibular	9	10*	10*
Supratemporal	1+1	2+1	2+1

\* several smaller pores are present in these small specimens.

sharp, especially anteriorly, in inner row some teeth low, rounded and molariform; teeth on premaxillary-ethmovomer in 4–5 rows anteriorly, tapering to 1–2 rows posteriorly, teeth subconical anteriorly but mostly (i.e. for posterior two-thirds) low, rounded and molariform on remainder of roof of mouth; maxillary bands meeting in front of premaxillary-ethmovomerine patch so that the latter does not project.

**Colour of holotype.** In alcohol, generally mid-greyish brown on head and above lateral line, lighter below and behind pectoral fin; on head the darker ground colour broken by 2 lighter bands immediately behind eye and at midpostorbital; on head, trunk, dorsal fin and pectoral fin scattered, small (average 3 mm), largely discrete, ovoid, light spots, more numerous on branchial region; a few similar spots on anal fin; dorsal and anal fins with broad, dusky outer portions for the whole of their lengths, the actual margins black. Colour when fresh similar to above, but pectoral fin grey black, dorsal fin with more obvious light spots, body above lateral line rather dark with positions of myosepta lighter so that the muscle segmentation above lateral line is very obvious.

Holotype a maturing female, heavily packed with ova, each about 0.7 mm diameter. Condition of holotype: generally rather dehydrated; a ventral incision in body wall made to determine sex of specimen.

**Remarks.** This species is named for the New South Wales State Fisheries research vessel *Kapala* from which the holotype was collected and which has added substantially to collections of fishes from the east coast of Australia over recent years. The species name is to be considered a noun in apposition.

The holotype was collected by bottom trawl in relatively shallow water off the New South Wales coast north of Sydney. The bottom there is described verbally as "...trawlable..." (K. Graham, N.S.W. State Fisheries) and is very likely to be sand as it is offshore of extensive dune beaches. There is, however, no precise information available on the area of capture. *Poecilocoonger fasciatus* was reported by Klausewitz (1971) from a single 414 mm TL specimen (SMF 10931) buried tail first in the sandy bottom off Nosy Iranja, Madagascar in 15 m. Randall (1986) recorded this species from a 217 mm TL specimen (BPBM 29233) in sand at Enewetak lagoon, Marshall Islands in 2.5 m and a small specimen (BPBM 29210) from sand off Kailua, Hawaiian Islands in 32 m. During February, 1989 Randall and colleagues observed and photographed on several occasions a large *P. fasciatus* on about 20 m at Molokini, Maui, Hawaiian Islands. When first observed the specimen was lying more or less vertically in a hole in the sandy bottom, the diameter of the hole being larger than that of the eel. Only a small portion of the head projected from the entrance to the hole. The eel was induced to leave the hole and swam freely and quietly in front of the observers where it was photographed. The species also occurs at Tahiti (Günther, 1910) and at Mauritius (ANSP 135440, 581 mm TL, Flic-en-Flac, west

coast, collected by D. Pelecier, 1973). The two *Poecilocoonger* species clearly live in rather similar conditions, and as judged from the caudal structure of *P. kapala*, i.e. a stiff caudal tip and reduced caudal fin, it is likely that the Australian species exhibits similar "...tail first..." burrowing behaviour to that of *P. fasciatus*. Similar behaviour is known to occur for the congrids *Ariosoma anago* (Asano, 1962) and *Gnathophis habenatus* (Castle, 1963), the garden eels (Congridae, Heterocongrinae – numerous records) and certainly many Ophichthidae, in which the caudal structures are moderately to greatly reduced or even absent, being replaced in nearly all Ophichthinae by a hard, finless caudal tip. *Poecilocoonger kapala* is warm temperate in distribution, while *P. fasciatus* is clearly tropical (Sulawesi, Tahiti, Madagascar, Mauritius, Marshall Islands, Hawaiian Islands). However, because these eels are fossorial and seemingly rare, further detailed information on their distribution may not be forthcoming for some time.

*Poecilocoonger kapala* differs markedly from the only other species of the genus, *P. fasciatus*, in colour pattern and less obviously in vertebral number, shape of vomerine teeth and in several body proportions. *Poecilocoonger fasciatus* is conspicuously marked with small to moderate sized, closely packed darkish brown spots on the head and postorbital, merging on the body to form partial to complete but dorsally divided vertical bars, these dark markings on head and body on a cream to pale yellow body ground colour. The juvenile 141 mm TL specimen from Hawaii is almost completely marked by wide, simple, vertical dark brown bars. The difference in total vertebral numbers (148 in *P. kapala*, 154–158 in four specimens of *P. fasciatus*) is not great but is comparable to differences recorded between species in other congrid genera, the number in *P. fasciatus* being consistently higher. Further specimens of *P. kapala* are required to establish the fuller extent of this disparity. *Poecilocoonger kapala* also has molariform teeth on the posterior half of the vomerine portion of the premaxillary-ethmovomer (Figs 1C, 2) while those of *P. fasciatus* are notably sharper (Fig. 2, Klausewitz, 1971), confirmed also in the holotype, in the larger of the two BPBM specimens from the Marshall Islands and in the ANSP specimen from Mauritius. The preanal length appears to be somewhat greater in *P. kapala* (2.2 in total) than in *P. fasciatus* (2.4 in total), the head is shorter (5.9 versus 5.7–5.8 in total) and the eye larger (5.1 versus 5.9 in head).

#### *Macrocephenchelys soela* n.sp.

Figs 3A–C, 4

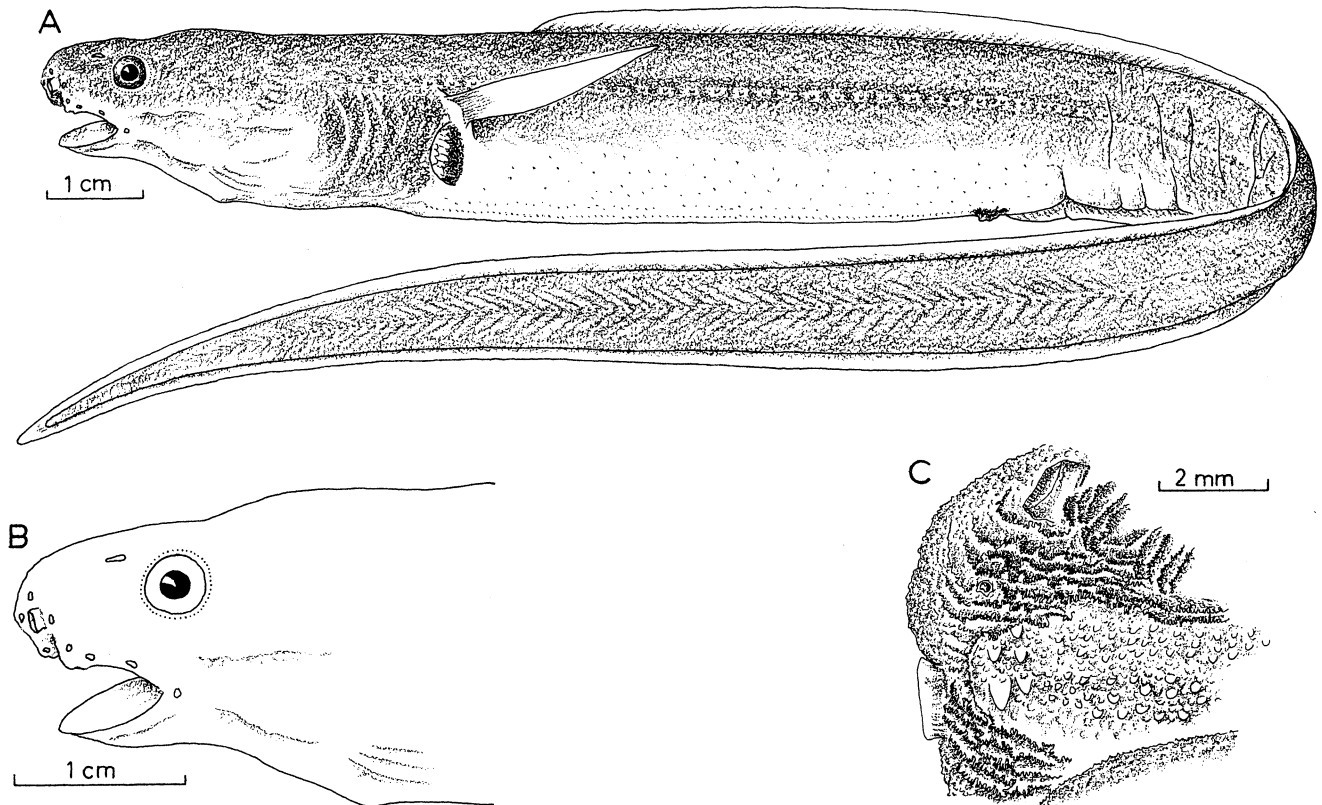
**Material examined.** HOLOTYPE: CSIRO H1668-07, 288 mm SL, maturing male, CSIRO Fisheries Research Vessel *Soela*, Station SO6/85/04, 17 Nov. 1985, 22°35'3"S 153°46'7"E to 22°36'3"S 153°50'1"E (south of Saumarez Reef, Saumarez Plateau area, Queensland, Australia), capture depth 345–350 m, scampi demersal net trawl, 0220 hrs, CSIRO radiograph 432D. PARATYPES: CSIRO

H1668-04 (259 mm SL, female), same data as holotype, CSIRO radiograph 432A; H1668-05 (298 mm SL, male) same data as holotype, CSIRO radiograph 432B; USNM 307832 (298 mm SL, female), same data as holotype, formerly CSIRO H1668-06, CSIRO radiograph 432C; AMS I.29995-001 (271 mm SL, female) same data as holotype, formerly CSIRO H1668-05, CSIRO radiograph 432E.

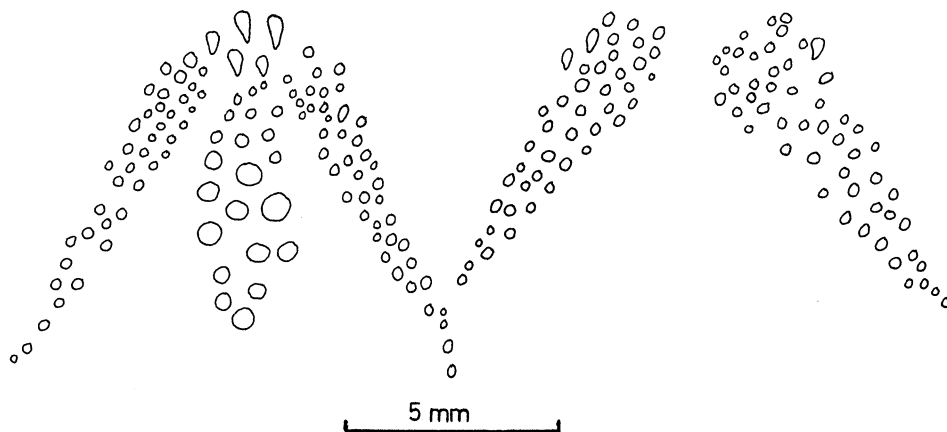
**Comparative material.** *Macrocephenchelys brachialis* (1 specimen): holotype USNM 92347 (492

mm TL).

**Diagnosis.** Body rather robust, depth at anus 19% preanal length, dorsal origin over middle of pectoral, branchial aperture large and in front of pectoral base, rather simple snout plicae (folds), numerous, molariform vomerine teeth; 150–151 vertebrae and lateral line pores before anus 28–30; numerous, minute, sensory structures scattered over ventrolateral and ventral surface of trunk.



**Fig.3.** *Macrocephenchelys soela*, holotype, 288 mm SL, CSIRO H1668-07. A: lateral view to show overall body form and ventrolateral papillae on trunk; B: lateral view of head detail; C: ventrolateral view to show maxillary and premaxillary-ethmovomerine teeth and snout plicae.



**Fig.4.** *Macrocephenchelys soela*, holotype, 288 mm SL, CSIRO H1668-07: pattern of upper (left) and lower (right) dentition.

**Description.** Holotype (paratypes): total vertebrae 150 (150–151), predorsal vertebrae 10 (10–11), preanal vertebrae 29 (29–30), precaudal vertebrae 42 (41–43). Lateral line pores before pectoral 5 (5), lateral line pores before dorsal origin 9 (9–11), lateral line pores before level of anus 28 (29–30), dorsal rays before level of anus 51 (47–53), total and anal rays not countable in radiographs. Total length 293 (263–302) mm, standard length 288 (259–298) mm, preanal 35.2 (32.4–33.3)% TL, predorsal 18.8 (16.9–18.5)% TL, head 15.6 (14.3–15.0)% TL, depth at anus 6.7 (5.4–6.5)% TL, snout 21.9 (19.2–22.0)% HL, eye 10.1 (9.8–11.5)% HL, interorbital 16.2 (14.0–16.6)% HL, mouth 27.1 (23.8–28.3)% HL, branchial aperture 16.4 (10.1–16.5)% HL, branchial interspace 28.0 (29.3–34.2)% HL, pectoral 51.0 (43.8–51.0)% HL.

Body elongate but not markedly so, preanal portion rather deep, caudal region narrow and delicate; snout bulbous, broad when viewed from above, underside with complex folds and papillae partly covering anteriormost teeth; lower jaw much shorter than snout, with weak folds; anterior nostril a short tube, subterminal, its rim complete; posterior nostril a simple aperture with a raised rim, placed high on snout well before anterodorsal corner of eye; mouth cleft short, barely reaching to below anterior margin of eye; no significant upper lip, a well-developed lower lip; eye relatively small, round; interorbital broad; branchial aperture vertical, curved, moderately large, its upper extremity placed just below middle of pectoral base; pectoral noticeably very long, narrow, pointed, the base oblique so that fin is directed dorsally; dorsal origin behind branchial aperture, about level with midpoint of pectoral; preanal length about one-third of total; dorsal fin height about one-seventh of body depth; anal fin somewhat lower; caudal fin present; lateral line pores inconspicuous, ending (in holotype) about 40 mm before caudal tip; cephalic pores present, moderately developed, in holotype as follows: in supraorbital canal 1 small (ethmoid) pore on ventral surface of snout, with 2 larger pores anterodorsal to anterior nostril; in infraorbital canal 5 pores close to ventral edge of snout; no postorbital pores, in preoperculo-mandibular canal 2 anterior pores only; no supratemporal pores.

Teeth on maxillary and dentary generally short and bluntly conical, in bands (Figs 3C, 4); on maxillary in 3 rows of about 16 teeth in each, on dentary in 5 rows anteriorly of about 19 teeth in each, those along medial row larger; teeth on 'premaxillary' portion of premaxillary-ethmovomer placed forward of anterior ends of maxillary bands, larger, sharply conical, 12 in the group (in holotype); vomerine teeth molariform, 22 (in holotype) in about 3 longitudinal rows, forming an elongate patch, the anterior 9 or so teeth noticeably smaller and less rounded than those following. Snout plicae and papillae continue between teeth of upper series.

**Colour of holotype.** In alcohol, generally medium-tan grey on upper half of body anterior to anus, this colour continuing ventrally behind anus to cover most of lateral body surface; belly and lower surface of head creamy white; inner surface of branchial aperture dark, the dark

colour showing through branchial region; fins creamy white, extreme tail tip dark; parietal peritoneum black. Colour when fresh unknown. Belly and ventral surface of head with numerous small, low papillae, set in depressions, the most ventral papillae in 2 longitudinal rows from anus to throat.

Holotype a maturing male with well developed but not yet folded testes. Condition of holotype: generally good, though body somewhat twisted from original preservation.

**Remarks.** This species is named for the CSIRO Fisheries Research Vessel *Soela* from which the holotype and paratypes were collected and which has contributed substantially to collections of fishes around Australia in recent years. The species name is to be considered a noun in apposition.

The five specimens of *M. soela* were collected in 350 m off the north-east coast of Queensland. Other hauls in this general area revealed a diverse eel fauna including several genera of congrid (*Rhechias*, *Gnathophis*, *Rhynchoconger*, *Bathyroconger*), *Coloconger*, *Saurenhelys*, *Dysomma* and *Synaphobranchus*. These collections have yet to be studied in detail but could be usefully compared with similar collections made on the continental slope elsewhere (e.g. Mozambique Channel, Philippines, Bay of Bengal). *Macrocephenchelys brachialis* was collected in 670 m in the Macassar Strait (Fowler, 1934) and in greater than 550 m in the Mozambique Channel (Karrer, 1982). Fowler's (1934) description and figure do not properly represent the unique morphology of *M. brachialis*, the only other species of *Macrocephenchelys*. Robins & Robins (1971) redescribed the holotype, emphasising in their figure the complex nature of the plicae and folds of the snout (a feature only barely mentioned by Fowler), and described the osteology from the cleared and stained paratype. Karrer (1982) described a third specimen, again pointing out the unusual morphology of the species. From these redescriptions and my own study of the holotype of *M. brachialis* it is clear that *M. soela* differs markedly from it in morphology, body proportions and meristics. *Macrocephenchelys soela* is essentially a rather robust eel, not greatly elongate or slender (depth of body at anus 19% preanal length, but only 13% in *M. brachialis* – data from Karrer, 1982), the dorsal origin is much further forwards (i.e. over middle of pectoral, but well behind pectoral in *M. brachialis* – data from Robins & Robins, 1971), the branchial aperture is much larger (its upper extremity level with pectoral base, the whole aperture shorter and below pectoral base in *M. brachialis*), the snout folds are much less complex, and the vomerine teeth are more numerous and distinctly molariform, rather than sparse and sharper as in *M. brachialis*. Vertebrae are fewer in *M. soela* (150–151 total, compared with 179–182 in *M. brachialis*) and lateral line pores before anus are also fewer (29–30 versus 33–34), reflecting the generally less attenuated body shape. Finally, none of the previous descriptions mention the numerous, small, surface, possibly sensory structures set in pits which are a feature



of the ventral surface of *M. soela*, nor in my re-examination of the holotype have I identified these. These structures would warrant further study as to their possible function, if any.

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