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STUDIES ON THE ZOARCIDAE (TELEOSTEI: PERCIFORMES) OF THE SOUTHERN HEMISPHERE. IV. NEW RECORDS AND A NEW SPECIES FROM THE MAGELLAN PROVINCE OF SOUTH AMERICA

by

M. Eric Anderson and Atila E. Gosztonyi

ABSTRACT

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New data on the eelpouts of the Magellan Province of South America are presented to include accounts of 10 of the 25 species presently known from the area. *Aiakas zini*, a second species for *Aiakas* Gosztonyi, 1977, is described as new. On the basis of material collected since the authors last published on the eelpouts of this region (1977 and 1988), enhanced descriptions are provided for *Aiakas kreffti*, *Crossostomus chilensis*, *Lycenchelys bachmanni*, *Notolycodes schmidti*, *Oidiphorus brevis*, *Ophthalmolycus macrops* and *Pogonolycus marinae*. Placed in synonymy are *Crossostomus sobrali* Lloris and Rucabado, 1987 with *C. chilensis* Regan, 1913, *Iluocoetes facali* Lloris and Rucabado, 1987 with *I. fimbriatus* Jenyns, 1842 and *Haushia* Lloris, 1988 with *Pogonolycus* Norman, 1937. Shorter accounts are provided for data from new specimens of *Lycodonus malvinensis* and *Piedrabuenia ringueleti*.

A key to all of the species of Zoarcidae from the Magellan Province is included.

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STUDIES ON THE ZOARCIDAE (TELEOSTEI: PERCIFORMES) OF THE SOUTHERN HEMISPHERE. IV. NEW RECORDS AND A NEW SPECIES FROM THE MAGELLAN PROVINCE OF SOUTH AMERICA

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INTRODUCTION

Gosztonyi's (1977) review of the Zoarcidae of temperate South America (Magellan Province; Briggs, 1974), the first since Norman (1937), added five new species to the fauna bringing the total to 20. Anderson (1988a) added two new genera and one new species to the Magellan Province zoarcid fauna. In addition, Anderson (1988b) re-evaluated the monotypic *Maynea* Cunningham, a Magellanic endemic, suggesting that its sister group relationship was with *Phucocoetes* Jenyns, rather than *Crossostomus* Lahille, as proposed by Lloris and Rucabado (1987a) for the previously recognized, paraphyletic *Maynea* of McAllister and Rees (1964).

The present contribution, fourth in the series, is a further report on the zoarcids taken by the U. S. Antarctic Research Program and the Federal Republic of Germany's Institut für Seefischerei, Hamburg (ISH). In addition, we add new data obtained on these rare fishes by the junior author from a Japanese fisheries vessel, and specimens examined by the senior author at the Zoological Institute, Academy of Sciences, Leningrad, USSR. Among the Soviet material is a single specimen that represents a new species of *Aiakas* Gosztonyi, 1977. Recent collections of zoarcids in Beagle Channel, Tierra del Fuego, by the Centro Austral de Investigaciones Cientificas, Ushuaia, Argentina, and by the Instituto de Ciencias del Mar, Barcelona, Spain, are discussed.

The composition of genera and the distribution of the species of Magellanic zoarcids was extensively discussed by Gosztonyi (1977). All species, and 4 of the 9 genera treated herein, are endemic to the Magellan Province. All are benthic slope-dwellers except the littoral *Crossostomus chilensis* and *Pogonolycus marinae*.

METHODS AND MATERIALS

Measurements were made with an ocular micrometer or dial calipers to the nearest 0.1 mm. Osteological observations were made on cleared and stained specimens, and drawings were made with the aid of a camera lucida. Definitions of characters, their observation, measurement, and quantification follow those of Gosztonyi (1977) and Anderson (1982, 1984) repeated in the previous parts of this series (Anderson, 1988a, 1988c, 1990). Museum abbreviations follow Leviton et al. (1985) as corrected by Leviton and Gibbs (1988). Measurements throughout in standard length (SL) except as noted in total length (TL). Additional abbreviations are: HL, head length; WH, fisheries research vessel WALTHER HERWIG.

KEY TO MAGELLAN PROVINCE ZOARCIDAE

1a. Pelvic fins present 2
1b. Pelvic fins absent 18
2a. Branchiostegal rays 5 3
2b. Branchiostegal rays 6 11
3a. Gill slit extending to or below mid-pectoral height; flesh firm; lateral line present 4
3b. Gill slit a small pore above pectoral fin; flesh gelatinous; lateral line absent ..... *Melanostigma bathium* Bussing, 1965 [specimens with 5 branchiostegal rays]
4a. Vomerine teeth present, palatine teeth present or absent; scales absent on nape and cheek; scales on tail rounded; chin pad absent; pelvic fins less than one eye diameter; P13-19 5
4b. Vomerine and palatine teeth absent; scales present on nape and cheek; scales on tail ovoid; thick, fleshy chin pad present at mandibular symphysis; pelvic fins equal to eye diameter or longer; P 18-21 ..... *Notolycodes schmidti* Gosztonyi, 1977
5a. Facial papillae or cirri absent 8
5b. Facial papillae or cirri present 6
6a. Fringed cirri present on lower jaw and snout; P 13-17; vertebrae 15-20 + 46-73 = 63-93 7
6b. Simple, triangular or pyramidal papillae present on lower jaw and snout between head pores; P 17-18; vertebrae 24-25 + 95-101 ..... *Pedrabuenia ringueleti* Gosztonyi, 1977
7a. First mandibular pores at dentary symphysis joined to form single, oval pore in pocket; P 13-14; vertebrae 15-17 + 46-50 = 63-66; C 6-7; pseudobranch absent ..... *Pogonolycus marinae* (Lloris, 1988)
7b. First mandibular pores separate; P 17; vertebrae 20 + 70-72 = 90-92; C 9; pseudobranch present ..... *Pogonolycus elegans* Norman, 1937
8a. Body height 3.5-5 in SL; vertebrae 110-126; pelvic rays 2; first dorsal fin pterygiophore associated with vertebrae 11-12 9
8b. Body height 7-14 in SL; vertebrae 82-104; pelvic rays 3; first dorsal fin pterygiophore associated with vertebrae 2-8 10
9a. Bases of median fins with bony scutes (lateral expansions of pterygiophores); rayless dorsal pterygiophores 6-9; vertebrae 18-21 + 92-93 = 110-113 ..... *Lycodonus malvinensis* Gosztonyi, 1981
9b. Bases of median fins normal, no scutes; no rayless dorsal pterygiophores; vertebrae 23-24 + 97 = 121-126 ..... *Lycenchelys bachmanni* Gosztoni 1977

10a. Body height 7-8 in SL; vertebrae 102-104; first dorsal fin pterygiophore associated with vertebra 8 ..... *Ophthalmolycus macrops* (Günther, 1880)

10b. Body height 9-14 in SL; vertebrae 82-99; first dorsal fin pterygiophore associated with vertebrae 2-3 ..... *Iluocoetes fimbriatus* Jenyns, 1842

11a. Facial papillae or cirri absent 14

11b. Facial papillae or cirri present 12

12a. Teeth conical; lips furrowed, forming lobules; scales present; postorbital pores 2; suborbital pores 5 (rarely 6) 13

12b. Teeth incisiform; lips smooth; scales absent except in small patch on tail in large adults; single postorbital pore above gill slit; suborbital pores 6 ..... *Dadyanos insignis* (Steindachner, 1898)

13a. Vomerine and palatine teeth absent; nostril tubes not reaching upper lip; lobules of lips scalloped ..... *Crossostomus chilensis* (Regan, 1913) [specimens with pelvic fins]

13b. Vomerine and palatine teeth present; nostril tubes overlapping upper lip; lobules of lips smooth ..... *Crossostomus fasciatus* (Lönnberg, 1905)

14a. Gill slit extending ventrally to or below lower margin of pectoral fin base; precaudal vertebrae 19-24 15

14b. Gill slit not extending ventrally to lower pectoral fin rays; precaudal vertebrae 24-33 16

15a. Pyloric caeca absent; suborbital pores 6; postorbital pores 3; C 9-10 ..... *Plesienchelys stehmanni* (Gosztonyi, 1977)

15b. Pyloric caeca present; suborbital pores 7; single postorbital pore above gill slit; C 7-9 ..... *Iluocoetes* [illegible] (Smitt, 1898)

16a. Pyloric caeca present; suborbital pores 5-6; postorbital pores 2; precaudal vertebrae 24-27; whitish stripe extending from snout to upper angle of gill slit ..... *Phucocoetes latitans* Jenyns, 1842

16b. Pyloric caeca absent; suborbital pores 6-7; single postorbital pore above gill slit; precaudal vertebrae 27-33; no whitish strip on snout and head 17

17a. Pelvic fins not reaching, or just reaching, vertical through pectoral fin base; caudal vertebrae 72-79 ..... *Austrolycus depressiceps* Regan, 1913

17b. Pelvic fins extending well beyond vertical through pectoral fin base; caudal vertebrae 80-89 ..... *Austrolycus laticinctus* (Berg, 1895)

18a. Simple papillae present on jaws, snout, cheeks, branchiostegal membrane or above eye 19

18b. Papillae absent 20

19a. Scales absent; flesh gelatinous; lips smooth; vertebrae 15-17 + 43-50 = 58-65; lower pharyngeal teeth absent ..... *Oidiphorus brevis* (Norman, 1937)

19b. Scales present; flesh firm; lips with furrows; vertebrae 28-31 + 67-72 = 95-101; lower pharyngeal teeth present ..... *Crossostomus chilensis* (Regan, 1913) ..... [specimens without pelvic fins]

20a. Scales absent; flesh gelatinous 21

20b. Scales present; flesh firm 23

21a. Gill slit a small pore entirely above pectoral base; preoperculomandibular pores 4-5 22

21b. Gill slit extending ventrally to isthmus; preoperculomandibular pores 6-7 ..... *Lycodapus australis* Norman, 1937

22a. Postorbital pore 1; P 7-9; adults whitish-yellow; matures at about 18 cm SL ..... Melanostigma gelatinosum Günther, 1881

22b. Postorbital pore absent; P 5-8 (usually 6-7); adults dark brown; matures at about 9 cm SL ..... *Melanostigma bathium* Bussing, 1965 [specimens with 6 branchiostegal rays]

23a. Lower lip joined to mandibular symphysis; nostril tubes not overlapping upper lip; oral valve and vomerine and palatine teeth present 24

23b. Lower lip continuous across symphysis; nostril tubes overlapping upper lip; oral valve and vomerine and palatine teeth absent 25

24a. P 18-19; interorbital pore absent; suborbital pores 6 ..... *Aiakas kreffti* Gosztonyi, 1977

24b. P 14-15; interorbital pore present; suborbital pores 5 ..... *Aiakas zinorum* sp. n.

25a. Branchiostegal rays 6-7; P 9-14; suborbital bones 4-5; vertebrae 24-27 + 67-77 = 93-101 26

25b. Branchiostegal rays 5; P 13-16; suborbital bones 8; vertebrae 27-31 + 87- 100 = 117-130 ..... *Maynea puncta* (Jenyns, 1842)

26a. Preoperculomandibular pores 6; suborbital pores 4-5; postorbital pores 2; occipital pore absent; P9-10; gill slit above pectoral fin base ..... *Letholycus microphthalmus* (Norman, 1937)

26b. Preoperculomandibular pores 8; suborbital pores 5-6; postorbital pores 3; single (mesial) occipital pore present; P 13-14; gill slit extending ventrally to lower pectoral fin rays ..... *Letholycus magellanicus* Anderson, 1988

Aiakas zinorum sp.n.

(Figs. 1-2)

HOLOTYPE: ZIN 39893 (juvenile female, 87 mm); Argentine slope (49°16'00"S, 57°01'09"W); AKADEMIK KNIPOVICH, sta. 215, trawl 19; 630-550 m. Coll.: Yuri Permitin, 24 Mar. 1965.

DIAGNOSIS: A species of *Aiakas* Gosztonyi, 1977, with 14-15 pectoral fin rays, one interorbital pore, and five suborbital pores.

DESCRIPTION: Meristic data: Vertebrae 28 + 63 = 91; D 88; A 65; C 9; P 14/15; pelvics absent; vomerine and palatine teeth absent; gill rakers 2 + 8; branchiostegal rays 6; pseudobranch filaments 2; pyloric caeca 2.

Measurements in percent SL: head length 13; head width 8; pectoral length 9; predorsal length 15; preanal length 42; body height 8; caudal fin length 3. Measurements in percent HL: head width 60; upper jaw length 50; pectoral length 74; snout length 16; eye diameter 32; gill

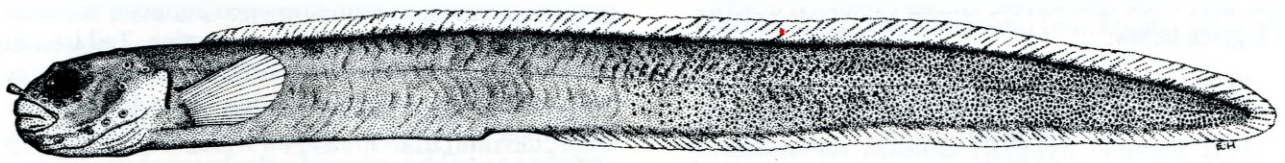

Figure 1. *Aiakas zinorum*, sp. n. Holotype, ZIN 39893, 87 mm SL.

slit length 27; interorbital width 10; interpupillary width 29. Pectoral base/length ratio 40.

Head small, broadly rounded anteriorly, wide, lower jaw massive. Body elongate, ovoid in cross section. Tail laterally compressed, especially posteriorly; tail robust along entire length. Skin firm, without subdermal lipid layers. Body lateral line mediolateral, complete to tail tip; naked area about 1-2 scale diameters present dorsal and ventral to lateral line, more pronounced on tail. Scales moderate, cycloid, imbedded, extending anteriorly in typical wedge-shaped pattern to vertical through posterior third of body in this young specimen; no scales on head, vertical or pectoral fins. Microscopic prickles present on lips, but not face, chin or head. Eye large, rounded. Gill slit approximately vertical ventrally, extending to mid-height of pectoral base (to opposite sixth pectoral ray). Single pair of nostrils at snout tip; nasal tube elongate, overhanging upper lip considerably (Fig. 2). Pectoral fins with posterior margin rounded; origin just below body midline, insertion on abdomen; posterior margin evenly rounded; ventralmost rays slightly thickened and exserted; dorsalmost rays somewhat exserted also, but this region partially damaged.

Mouth terminal; jaws equal, lower deep and thick; upper jaw extending posteriorly to vertical through anterior quarter of eye. Upper and lower lips continuous at symphysis, narrow, without fleshy lobes. Teeth small, conical, those in jaws in single row. Vomerine and palatine teeth absent.

Cephalic lateralis pore system relatively complete, pores moderately large, rounded (Fig. 2). Two pairs of nasal (anterior supraorbital) pores set posteromesial and anteromesial to nasal tubes. Single interorbital pore set just anterior to horizontal through center of pupil. First, third, and fourth postorbital pores present, arising from frontal (first), pterotic (third) and lateral extrascapular (fourth). Three occipital (supratemporal) pores across nape. Preoperculomandibular canal with 4 dentary, 1 anguloarticular and 3 preopercular pores. Mandibular and preopercular branches joined. Six suborbital bones, with

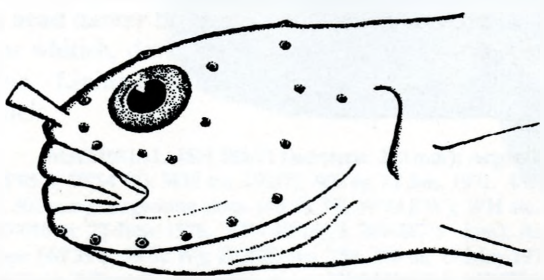

Figure 2. *Aiakas zinorum*, sp.n. Holotype, ZIN 39893. Left lateral view of head showing elongate nasal tubes.

4 pores arising from ventral ramus (fourth set high) and 1 from ascending ramus located behind eye (pattern appears semicircular, as in gymneline eelpouts; Anderson, 1982).

Some osteological observations made from radiographs and superficial dissection. Palatopterygoid series (palatal arch) well ossified, with ectopterygoid and mesopterygoid overlapping more than half anterior and dorsal surfaces, respectively, of quadrate. Hyomandibula posterior ramus not elongate. Ceratohyal-epihyal juncture with bones interdigitating dorsally. Branchiostegal rays 6: 4 articulating with ceratohyal and 2 with epihyal. Ceratobranchial 5 (lower pharyngeal) dentate. Three pairs of dentate pharyngobranchials (upper pharyngeals). Gill rakers blunt, triangular, with 2 on first epibranchial and 8 on first ceratobranchial. Scapular foramen enclosed by bone. Four well developed pectoral actinosts bearing 14 (left) or 15 (right) fin rays. Pelvic fins absent; pelvic bone a mere nub. Postcleithrum a slender, slightly bowed splint. Epipleural ribs evident in radiograph only on vertebrae 1-4. Pleural ribs on third through penultimate precaudal vertebrae. Pterygiophore of first dorsal fin ray associated with third vertebra, with no free pterygiophores. Last dorsal ray associated with fourth preural vertebra. Anal fin origin associated with ultimate precaudal vertebra, with 2 pterygiophores set anterior to haemal spine of first caudal vertebra. Last anal ray associated with third precaudal vertebra. Caudal fin rays 9, with 2 epural, 3 upper hypural and 4 lower hypural rays.

Oral valve (palatine membrane) absent. Pseudobranch filaments 2, very short. Pyloric caeca 2, just less than one eye diameter in length, probably smaller in adults, as in other zoarcids.

Colour uniformly light pinkish-brown in alcohol, darker on dorsum and head; abdomen possibly red in life. Tail with light variegations. Pectorals and margins of vertical fins yellowish. Eye blue. Lining of orobranchial chamber and peritoneum pale in alcohol.

ETYMOLOGY: Name taken for the acronym "ZIN" (a shortened form of "ZIAN," the abbreviation for Zoological Institute, Academy of Sciences, USSR, in Russian; ZIL elsewhere), to honor the ichthyologists there who study the fishes of the Southern Ocean, and who have helped the senior author with many problems during his two visits, and who graciously permitted us to describe this new species.

REMARKS: Adults of this species, when encountered, can be expected to be more fully scaled, have smaller eyes in relation to head length, and more teeth. This is the second species for the Magellanic endemic genus *Aiakas* Gosztonyi, 1977. New specimens of the type

species, *A. kreffti*, also originally described from one specimen, have been discovered, and an expanded description is given below.

Aiakas kreffti Gosztonyi, 1977
(Fig. 3)

Aiakas kreffti Gosztonyi, 1977: 199-200, fig. 2; Menni et al., 1984:130, fig. 111.

DIAGNOSIS: A species of *Aiakas* Gosztonyi, 1977 with 18-19 pectoral fin rays, no interorbital pore, and six suborbital pores.

DESCRIPTION: Meristic data: Vertebrae 26-27 + 65-69 = 91-95; D 88- 91; A 67-71; C 10; P 18-19; pelvics absent; vomerine and palatine teeth absent; gill rakers 2-4 + 10-12 = 12-15; branchiostegal rays 6; pseudobranch filaments 2-3; pyloric caeca 2.

Measurements in percent SL: 13-14; head width 10; pectoral length 8-9; predorsal length 16; preanal length 39-41; body height 10; caudal fin length 3. Measurements in percent HL: head width 76; upper jaw length 41-43; pectoral length 63-67; snout length 20-21; eye diameter 22-26; gill slit length 35-38; interorbital width 9-10. Pectoral base/length ratio 49-50.

Head small, broadly rounded anteriorly, and relatively wide owing to well developed adductor mandibulae. Body elongate, ovoid in cross section. Tail laterally compressed, especially posteriorly; tail robust along entire length, never sharply tapering. Skin firm, without subdermal lipid layers. Body lateral line mediolateral, complete to tail tip; unusual naked area about 1-2 scale diameters dorsal and ventral to lateral line. Scales minute, cycloid, imbedded, extending anteriorly to near vertical through pectoral base; no scales on head or pectoral fins. Microscopic prickles on face, lips, chin (in patches; absent in 2 individuals), and interorbital region extending to just behind posterior margin of eye. Eye moderately large, rounded. Gill slit approximately vertical ventrally, extending to mid-height of pectoral base, or just below it. Single pair of nostrils at snout tip, set relatively close together; nasal tube elongate, overhanging upper lip considerably. Origin of pectoral fin just below body midline, insertion on abdomen; posterior margin of fin evenly rounded; ventralmost rays slightly thickened, not exserted at tips.

Mouth terminal; upper jaw extending posteriorly to vertical through middle of eye or its anterior quarter. Upper and lower lips continuous at symphysis, narrow, without fleshy lobes. Teeth small, conical, those in upper

Figure 3. *Aiakas kreffti*, ISH 274/78, 301 mm SL. A) right lateral view; B) head and anterior portion of body.

jaw in 2 irregular rows continuing to posteriormost point; lower jaw teeth in 2-4 irregular rows anteriorly, merging into single row of 5-6 teeth posteriorly. Vomerine and palatine teeth absent.

Cephalic lateralis pore system relatively complete, pores small, rounded. Two pairs of nasal (anterior supraorbital) pores set posteromesial and anteromesial to nasal tubes. No interorbital pores. First, third, and fourth postorbital pores present, arising from frontal (first), pterotic (third) and lateral extrascapular (fourth). Three occipital (supratemporal) pores across nape. Preoperculomandibular canal with 4 dentary, 1 anguloarticular, and 3 preopercular pores. Mandibular and preopercular branches joined. Six suborbital bones, with 5 pores arising from ventral ramus and 1 from ascending ramus located just behind eye.

Osteological observations made from radiographs and superficial dissection of ISH 274/78. Neurocranium relatively short and high, but bone articulations not observed. Palatopterygoid series well ossified, with ectopterygoid and mesopterygoid overlapping more than half anterior and dorsal surfaces, respectively, of quadrate. Hyomandibula posterior ramus not elongate. Ceratohyal-epihyal juncture with bones interdigitating dorsally. Branchiostegal rays 6: 4 articulating with ceratohyal and 2 with epihyal. Ceratobranchial 5 (lower pharyngeal) dentate. Three pair of dentate infrapharyngobranchials (upper pharyngeals). Gill rakers blunt, triangular (but longer in smallest specimen), with 2-4 on first epibranchial and 10-12 on first ceratobranchial. Posttemporal ventral ramus a small nub. Scapular foramen enclosed by bone. Four well developed pectoral actinosts bearing 18-19 rays. Pelvic fins absent, pelvic bone a small splint. Postcleithrum a slender splint, slightly bowed in center. Epipleural ribs on vertebrae 1-18 or 20. Pleural ribs on third through ultimate or antepenultimate precaudal vertebrae. Pterygiophore of first dorsal fin ray associated with second vertebra, with no free pterygiophores. Last dorsal ray associated with third or fourth preural vertebrae. Anal fin origin associated with ultimate precaudal vertebra, with 3 pterygiophores set anterior to haemal spine of first caudal vertebra. Last anal ray associated with second or third precaudal vertebra. Caudal fin rays 10, with 2 epural, 4 upper hypural and 4 lower hypural rays.

Oral valve (palatine membrane) absent, a mere trace of skin fold anterior to vomer. Pseudobranch filaments 2, relatively short. Pyloric caeca 2, about 1 eye diameter in length.

Colour uniformly light grayish-brown, dorsal area of head darker brown. Pectorals and margins of vertical fins whitish, darkening somewhat in alcohol. Eye dark blue. Lining of orobranchial chamber and peritoneum black.

MATERIAL: ISH 385/71 (holotype; 243 mm); Argentine slope (46°05'S, 59°54'W); WH sta. 191/71; 800 m; 17 Jan. 1971. ISH 274/78 (1; 301 mm); Argentine slope (43°52.7'S, 59°34.8'W); WH sta. 675/78; 680-640 m; 22 June 1978. ZIN 45528 (2; 229-247+ mm); Argentine slope (46°39'S, 59°52'W); ZUND sta. 134; 700 m; 19 May 1974. ZIN 45529 (1; 268 mm); Argentine slope; PROFESSOR MESYACHEV, trawl 152; 10 Aug. 1974.

Crossostomus chilensis (Regan, 1913)

Lycodes (Iluocoetes) fimbriatus (non Jenyns, 1842): Steindachner 1898: 322.

Crossostomus fimbriatus: Lahille 1908: 410, fig. 2

Crossolycus chilensis Regan 1913: 247

Crossostomus chilensis (Regan): Norman 1937: 106; Gosztonyi 1977: 205, fig. 4; Menni et al., 1984: 131.

Crossostomus sobrali Lloris and Rucabado, 1987a: 264, fig. 1.

DIAGNOSIS: A species of *Crossostomus* Lahille, 1908, without vomerine and palatine teeth; nostril tubes short, not reaching upper lip; lobules of lips scalloped; pelvic fins usually absent.

DESCRIPTION: Meristic data: Vertebrae 28-31 + 67-72 = 95-101; D 96- 99; A 69-71; C 7-10; P 15-17; pelvics 0-2; vomerine and palatine teeth absent; gill rakers 2-3 + 7-9 = 10-13; branchiostegal rays 6; pseudobranch filaments 5-6; pyloric caeca 2.

Measurements in percent SL: head length 15-19; head width 10- 11; pectoral length 11-13; predorsal length 17-19; preanal length 46-51; body height 11-13; caudal fin length 2-4. Measurements in percent HL: head width 56-64; upper jaw length 33-43; pectoral fin length 62-74; snout length 18-31; eye diameter 14-21; gill slit length 14-22; interorbital width 8-11; interpupillary width 18-23. Pectoral base/length ratio 35-45.

Head fleshy, dorsal profile gently rounded at snout; profile of occipital region flattened. Body short, ovoid in cross section. Tail laterally compressed, especially posteriorly, not dorsoventrally tapering anteriorly. Skin firm, thickened, without subdermal gelatinous layer. Body lateral line with mediolateral branch traceable to very near tail tip, not observable in most faded specimens. Scales minute, cycloid, imbedded, extending in larger specimens to nape; scales present on pectoral base and axil, abdomen and vertical fins to about half their height; scales absent on abdomen and most of vertical fins in smallest specimens. Eye small, rounded, generally larger in relation to head in smallest specimens. Gill slit restricted, nearly vertical ventrally, extending to opposite third through eighth pectoral fin ray; moderate siphonal fold formed at posterodorsal margin of gill slit. Single pair of nostrils at snout tip, nasal tube short, not reaching upper lip. Large, finger-like or triangular cirri present between anterior suborbital and mandibular pores; fleshy, proboscis-like process at snout tip overhanging upper lip, this better developed in smallest specimens. Posterior margin of pectoral fin evenly rounded; origin just below body midline, insertion on abdomen; ventralmost rays thickened; rays very slightly exserted at tips (except dorsalmost three), or not at all.

Mouth small, subterminal; no sexual dimorphism noted in upper jaw lengths, but adults with longer jaws than juveniles. Lips continuous at symphysis, enlarged, with deep, vertical grooves forming characteristic, scalloped lobules (Gosztonyi 1977, fig. 4). Teeth in jaws small, conical, retrorse. Premaxilla usually with 2-3 irregular rows of teeth near symphysis in juveniles, but 2 specimens (males) with single row throughout; adults with 3-4 rows anteriorly on premaxilla. Dentary with 2 rows of teeth near symphysis, except 1 male with single

row throughout. Outermost teeth well developed, about 3 times larger than innermost. No vomerine or palatine teeth.

Cephalic lateralis pore system reduced, pores very small, rounded. Two pairs of nasal (anterior supraorbital) pores set anteromesial and posteromesial to nasal tube. Only first and fourth postorbital pores present, arising from frontal (first) and lateral extrascapular (fourth). Interorbital and occipital (supratemporal) pores absent. Preoperculomandibular canal with 4 dentary, 1 anguloarticular and 3 preopercular pores. Five (6 on one side in 1 specimen) suborbital pores, all arising from ventral branch of suborbital bone chain.

No osteological preparations made of this rare species, however, limited observations were made from radiographs and superficial dissection and compared to reports on *C. fasciatus* by Gosztonyi (1977, fig. 5) and Anderson (1984). Palatopterygoid series well developed, with ectopterygoid and mesopterygoid broadly overlapping quadrate. Hyomandibula posterior ramus elongate. Ceratohyal-epihyal juncture with bones interdigitating. Branchiostegal rays 6: 4 articulating with ceratohyal, 2 with epihyal. Ceratobranchial 5 dentate. Three pairs of dentate infrapharyngobranchials. Scapular foramen enclosed by bone. Postcleithrum present. Pectoral actinosts 4, bearing 15-17 rays. Pelvic fins absent, except in ZMB 15693 (mistakenly referred to as "holotype" by Gosztonyi 1977: 205- 206), in which they are minute (probably an atavism). First dorsal fin ray associated with first vertebra, or occasionally with 1-3 pterygiophores anterior to neural spine of first vertebra. Last dorsal ray associated with fourth preural vertebra. Anal fin origin associated with ultimate precaudal vertebra, with 1-3 pterygiophores set anterior to haemal spine of first caudal vertebra. Last anal ray associated with second or third preural vertebra. Caudal-fin rays 7-10, with 1-2 epural, 3-4 upper hypural and 3-4 lower hypural rays.

Oral valve well developed, completely overlapping vomer in small specimens; with sensory papillae proximally. Pseudobranch relatively well developed, with 5-6 filaments. Two elongate pyloric caeca, both longer than eye diameter except in smallest (53 mm) specimen, in which they are nub-like.

Colour of juveniles dark brown, with 8-10 yellowish, vertical bars extending from nape to tail tip. Bars represented only by 5 large whitish spots on tail of smallest (53 mm) specimen; bands becoming wider and extending farther ventrally in larger juveniles (Lloris and Rucabado, 1987a, fig. 1); ventral regions of brown areas becoming reticulate. Adults uniformly dark brown or blackish (Gosztonyi, 1977). Ventral areas of head and abdomen light, probably yellowish in life. Lining of orobranchial chamber and peritoneum pale.

DISTRIBUTION: Southern Chile, throughout Tierra del Fuego, and off Staten Island from the intertidal zone (adults and juveniles) to the upper slope (one juvenile from 438-548 m). Adults probably spawn in the littoral zone.

MATERIAL: ZMB 16693 (holotype, 252 mm TL; radiograph); Cape Espiritu Santo, Tierra del Fuego; PLATE Exped. LACM 10724-2 (1; 76 mm); Straits of Magellan, off Isla Desolación, Chile (52°40'S, 74°58'W); ELTANIN sta. 960; 64 m; 6 Feb. 1964. USNM 197772 (1; 59 mm); Straits of Magellan, Punta Arenas, Chile (ca. 53°30'S, 71°30'S); T. Cekąlovick (from Lowell Thomas). IIPB 14/1987 (holotype of C. sobrali; 130 mm); Ushuaia Penin., Tierra del Fuego (54°50.8'S, 68°19.2'W); intertidal; 27 Feb. 1987. LACM 38214-1 (1; 53 mm); Straits of Magellan, cove So. of Punta Askew; 16-19 Nov. 1975. MACN 4403 (2; 110-165 mm); Tierra del Fuego, Argentina; Sr. Reynolds. MACN 2687 (1; 220 mm); Bahia Ushuaia, Beagle Channel, Argentina; BAHIA BLANCA; 17 Apr. 1941. LACM 43724-1 (1; 152 mm); off Staten Id., Argentina (54°59.9'S, 64°50.0'W); HERO sta. 895; 438-548 m; 3 Nov. 1971.

REMARKS: Lloris and Rucabado (1987a) described a juvenile exhibiting the typical barred colour pattern of the young of this species as new to science and considered the genus close to *Maynea* Cunningham. Anderson (1988a) redefined *Maynea* and showed its sister-group relationship to *Phucocoetes* Jenyns. Lloris and Rucabado cited Gosztonyi's (1977) paper on South American zoarcids, although they seem not to have critically read the *Crossostomus* accounts, repeating a few errors. On the basis of our additional material and re-examination of the holotype of *C. sobrali*, we find no significance in the meristic or morphometric characters that Lloris and Rucabado reported as different from *C. chilensis*. These include preanal length, eye diameter and interorbital width (latter two are ontogenetically variable), and meristics (dorsal-fin rays 96 [incorrectly given as 80], anal- fin rays 70 [incorrectly given as 75], branchiostegal rays 6 [incorrectly given as 5], pectoral-fin rays 16 [incorrectly given as 14]). Colour differences noted by Lloris and Rucabado as a specific character are individually variable and ontogenetically dependent in this species.

Crossostomus fasciatus (Lönnberg, 1905) is the only other species recognized in the genus, and it is also endemic to the Magellan Province (Gosztonyi, 1977). Both species are littoral and spawn in the intertidal zone.

Lycenchelys bachmanni Gosztonyi, 1977

Lycenchelys bachmanni Gosztonyi, 1977: 218, figs. 10-11.

DIAGNOSIS: A species of *Lycenchelys* Gill, 1884 with 5 branchiostegal rays; postorbital pores 3 (rarely 4); preoperculomandibular pores 8-9; interorbital and occipital pores absent; pelvic fin rays 2; no free dorsal pterygiophores; vertebrae 23-24 + 99-103 = 121-126.

DESCRIPTION: Meristic data: Vertebrae 23-24 + 97-103 = 121-126; D 107-113; A 100-107; P 16-18; pelvics 2; C 7-8; vomerine teeth 3- 10; palatine teeth 6-12; gill rakers 2 + 9-10 = 11-12; pseudobranch filaments 4; pyloric caeca 2.

Measurements in percent SL: head length 13-14; head width 4- 7; pectoral length 6-9; predorsal length 17-20; preanal length 25-30; body height 4-5; tail length 70-75; caudal fin length 1-2. Measurements in percent HL: head width 39-53; upper jaw length 33-41; pectoral length 46-66; snout length 22-31; eye diameter 28-37; interorbital width 3-6. Pectoral base/length ratio 30-51.

Head small, rounded anteriorly. Body elongate, subcylindrical, profile evenly tapering. Tail elongate, laterally compressed, especially posteriorly. Skin firm without subdermal lipid layers. Scales minute, cycloid, imbedded, extending anteriorly to vertical through pectoral base, or slightly beyond; no scales on head or pecto-

ral fins. Scales on vertical fins present only on last one-fifth of tail. Gill slit extending to lower end of pectoral base or a little below it. Nasal tube just reaching upper lip. Pectoral fin origin just below body midline. Posterior margin of pectoral rounded, eight ventralmost rays thickened, exserted at tips.

Mouth subterminal; upper jaw extending posteriorly to vertical through anterior quarter of eye; its rear portion extended in conspicuous ventrally directed flap. Upper lip continuous along symphysis. Lower lip thickened, interrupted at a distance from symphysis just behind first mandibular pore. Skin on mandible thickened in transverse crest between cephalic lateralis pores. Teeth small, conical, in 2 irregular rows anteriorly, merging into single row laterally in both jaws. Teeth in upper jaw about 12-17, smaller than those in lower jaw, their tips slightly retrorse; lower jaw teeth 12-15, their tips directed slightly forward. Vomerine teeth in irregular patch; palatine teeth in irregular row.

Cephalic lateralis pore system with relatively large (as typical in *Lycenchelys*) mandibular and suborbital pores in younger specimens, becoming smaller in large adults. Anterior supraorbital canal with 2 pores set posteromesial and anteromesial to nasal tubes. First, third, and fourth (second in one specimen) postorbital pores present, arising from frontal (first), pterotic (second and third) and lateral extrascapular (fourth). No occipital (supratemporal) or interorbital pores. Preoperculomandibular canal with 4 dentary, 1 anguloarticular and 3 or 4 preopercular pores. Preopercular and mandibular canals usually separate, but connected in one specimen. Suborbital canal with 7 bones and 7 pores arising from ventral ramus and 0-1 pores arising from ascending ramus behind eye. Body lateral line with only mediolateral branch detectable in present material, originating behind fourth postorbital pore, passing over gill slit and pectoral base then turning obliquely toward lower third of body, and running in zigzag pattern to tail tip.

Osteological observations made from radiographs of 3 specimens (including holotype), and superficial dissection of 2. Palatopterygoid series weak, with ectopterygoid and mesopterygoid not contacting half anterior and dorsal surfaces, repectively, of quadrate, but mesopterygoid unusually strongly developed in one specimen, extending over more than two-thirds the anterodorsal margin of quadrate. Ceratohyal-epihyal juncture smooth (bones not interdigitating). Branchiostegal rays 5, with 3 articulating with ceratohyal and 2 with epihyal. Ceratobranchial 5 (lower pharyngeal) dentate. Three pairs of infrapharyngobranchials (upper pharyngeals). Gill rakers short, blunt, with 2 on first epibranchial and 9-10 on first ceratobranchial. Posttemporal ventral ramus a small nub. Four well developed pectoral actinosts bearing 16-18 rays. Scapular foramen enclosed by bone. Postcleithrum a slender splint, slightly bowed in center. Epipleural ribs on vertebrae 1-12 (at least). Pleural ribs on third through penultimate precaudal vertebrae. Pterygiophore of first dorsal fin ray associated with vertebra 12. Last dorsal ray associated with fourth preural vertebra. Anal fin origin associated with ultimate or penultimate precaudal vertebrae, with 3-4 pterygiophores inserted anterior to haemal spine of first caudal vertebra. Caudal fin rays 8, with 1 epural, 4 upper hypural and 3 lower hypural rays.

Oral valve well developed, its proximal margin strongly papillose, its distal margin smooth. Pseudobranch filaments 4. Pyloric caeca 2 small nubs.

Colour uniformly unpigmented in younger specimens, or light brown to black in adults. Adults also with 5-7 pale, saddle-like bands extending from upper margin of dorsal fin to body midline or just below. Head either unpigmented, or with variable amounts of brownish or black. Orobranchial chamber and peritoneum black (faded in some).

DISTRIBUTION: Slope off central Argentina south to Burdwood Bank at depths of 370-840 m.

MATERIAL: ISH 306/71 (holotype; 315 mm SL); Argentine slope (41°05'S, 57°15'W); WH sta. 331/71; 800 m; 23 Feb. 1971. ISH 381/78 (1; 234 mm SL); Burdwood Bank (54°57.2'S, 56°56.4'W); WH sta. 815/78; 370 m; 18 Aug. 1978. ISH 382/78 (1; 176 mm SL); off Falkland Islands (52°33.4'S, 57°25'W); WH sta. 823/78; 445 m; 20 Aug. 1978. ISH 385/78 (1; 213 mm); Argentine slope (49°07.4'S, 59°16.4'W); WH sta. 871/78; 485 m; 1 Sept. 1978. MLP 1-6-88-1 (1; 202 mm); Argentine slope (49°04.7'S, 59°52'W); SHINKAI MARU sta. 61; 394 m; 2 May 1978. MLP uncat. (1; 97 mm TL); Argentine slope (47°04'S, 60°06'W); SHINKAI MARU sta. 38; 695 m; 23 Apr. 1978. ZIN 45520 (1; 225 mm); Argentine slope (43°09'S, 52°59'W); GIZHIGA sta. 243; 805 m; 22 Sept. 1975. ZIN uncat. (2; 267-268 mm); Argentine slope (48°51'S, 56°53'W); EVRIKA sta. 3, haul 114; 840 m; 10 Aug. 1973. FAKU AP-22 (1; 214 mm); Argentine slope (48°00'S, 60°00'W); net 41; 598 m; 9 Jan. 1970.

REMARKS: Only one other species of the cosmopolitan genus *Lycenchelys* has been reported for the Magellan Province: *L. antarctica* Regan, known from the Peru-Chile Trench and the Scotia Sea (Anderson, 1988c).

Lycodonus malvinensis Gosztonyi, 1981

Lycodonus malvinensis Gosztonyi, 1981: 153, fig. 1, 2; Menni et al., 1984: 132.

DIAGNOSIS: A species of *Lycodonus* Goode and Bean, 1883 with 6-9 free (rayless) dorsal-fin bony scutes; anteriormost dorsal scute closer to pectoral base than to pectoral margin; posteriormost scutes of unpaired fins with blunt central spines; neural spines of anteriormost caudal vertebrae short, less than one-half vertebral centrum depth.

DESCRIPTION: Meristic data: Vertebrae 18 + 92 = 110; D 98; A 96; P 15/16; pelvics 2; C 7; vomerine teeth 9; palatine teeth 6/7; gill rakers 2 + 10; branchiostegal rays 5; pseudobranch filaments 2; pyloric caeca 2; first dorsal fin pterygiophore associated with vertebra 11; free dorsal pterygiophores 8; anal fin origin associated with vertebra 16; anal pterygiophores anterior to first caudal vertebra 4; preoperculomandibular pores 8; postorbital pores 2; supraorbital (nasal) pores 2; suborbital ("postocular" in Gosztonyi, 1981) pores 7; occipital and interorbital pores absent.

Measurements in percent SL: head length 13; head width 5; pectoral fin length 10; predorsal length 23; preanal length 26; body height 3.5; caudal fin length 2. Measurements in percent HL: head width 41; upper jaw length 34; pectoral fin length 73; snout length 31; eye diameter 23; gill slit length 27; interorbital width 7; interpupillary width 21. Pectoral base/length ratio 27.

DISTRIBUTION: Continental slope off Falkland Islands and Burdwood Bank in 800-2044 m.

MATERIAL: Type series listed in Gosztonyi (1981) plus: LACM 11066-2 (1, female; 196 mm); Scotia Ridge, eastern base of Burdwood Bank (54°43'S, 55°30'W); ELTANIN sta. 1592; 1647-2044 m; 14 Mar. 1966.

REMARKS: As the original description of *L. malvinensis* is rather detailed and includes anatomical comparisons and a key to all species, we add here only counts and proportions of a fourth specimen.

Lycodonus presently contains 4 species, 2 from the North Atlantic, 1 from off South Africa and *L. malvinensis*. All are benthic, continental slope inhabitants.

Notolycodes schmidti Gosztonyi, 1977

(Figs. 4-8)

Notolycodes schmidti Gosztonyi, 1977: 224, figs. 13-14; Menni et al., 1984: 133, fig. 119.

DIAGNOSIS: Body robust; tail relatively short; frontal bones squared-off, completely fused; ceratohyal-epihyal juncture with bone interdigitating; branchiostegal rays 5, with third articulating at ceratohyal-epihyal juncture; mandibular symphysis with thick chin pad; pelvic fins equal to or longer than eye diameter; suborbital bones 8, with 7 small pores; scales on tail ovoid; vomerine and palatine teeth absent; P 18-21; vertebrae 23-26 + 66-69 = 89-94.

DESCRIPTION: Meristic data: Vertebrae 23-26 + 66-69 = 89-94; D 84- 89; A 68-72; C 11; P 18-21; pelvics 2; vomerine and palatine teeth absent; gill rakers 1-2 + 8-9 = 10-11; branchiostegal rays 5; pseudobranch filaments 6-7; pyloric caeca 2.

Following measurements in percent SL: head length 16-21; head width 11-14; pectoral length 10-14; predorsal length 19-23; preanal length 39-47; body height 10-12; caudal fin length 5. Following measurements in percent HL: head width 57-88; upper jaw length 35-42; pectoral length 62-78; snout length 22-31; eye diameter 19-28; gill slit length 45.5-49; interorbital width 6- 10. Pectoral base/length ratio 39-49.

Head squared-off in lateral view in larger specimens; occiput and ventral surface of head nearly parallel; snout steeply sloping. Sexual dimorphism in head and jaw structures not evident in poor sample (n = 7). Body elongate, laterally compressed, but this less pronounced in largest adults. Tail greatly elongated, increasingly laterally compressed posteriad. Skin firm, covering vertical fins. Scales relatively large, cycloid, imbedded, covering entire body, proximal half of pectoral fin, abdomen, tail, nape to anterior interorbital space, cheeks, and vertical fins from half their height to margin; scales on tail ovoid, pointed posteriorly. Lateral line mediolateral, complete, extending from fourth postorbital pore to near tail tip, not greatly bowed anteriorly. Eye large, ovoid, longer in relation to head in juvenile than in adults. Nostrils single, at snout tip, nasal tube not reaching upper lip. Posterior margin of pectoral fin rounded; middle rays longest, ventralmost thickened and exserted at tips; pectoral origin just ventral to body midline; pectoral base extending ventrally to abdomen; juvenile with relatively longer fin than adults. Gill slit long, extending ventrally to pelvic fin insertion (Gosztonyi 1977, fig. 13).

Mouth subterminal, lips without lateral lobes; mouth moderately large, upper jaw extending to, or almost to, vertical through middle of eye. Teeth absent on vomer and palatine bones. Jaw teeth small, conical, sharp; outermost rows larger than inner rows. Premaxilla with 5-6 irregular rows of teeth near symphysis, merging into single row posteriorly. Dentary with 4-5 irregular rows anteriorly, merging into single row posteriorly.

Cephalic lateralis pores small, rounded; system numerically reduced. Occipital and interorbital pores absent. Two pairs of nasal (anterior supratemporal) pores, one set anteromesial to nasal tube, the other set posteromesial. Eight preoperculomandibular pores, 4 arising from large foramina in dentary, 1 from juncture between anguloarticular and anteroventral end of preopercle, and 3 from main body of preopercle (Fig. 4). Eight suborbital bones with 7 small pores arising from large foramina along ventral branch of bone chain and none from ascending branch (Fig. 5). Postorbital pores 1 and 4 present, arising from frontal (pore 1) and second lateral extrascapular (pore 4).

Neurocranium well ossified, box-like, canals and foramina passing lateralis system cavernous (Fig. 6). Frontal bones squared-off, completely fused (no trace of suture), a unique character state in Zoarcidae. Parietals elongate, separated from midline by large supraoccipital. Supraoccipital with long, low mesial crest. Sphenotic excluded from parietal by frontal and pterotic. Prootic relatively small, foramen for hyomandibular nerve enlarged. Two lateral extrascapulars present. Parasphenoid wing reaching above mid-height of trigeminofacialis foramen. Intercalar large, posteriorly positioned. Ethmoid cartilage moderately extensive, filling part of anterior myodome.

Palatopterygoid series strong, ectopterygoid and mesopterygoid with posterior surfaces overlapping more than half anterior and dorsal margins of quadrate (Fig. 4). Metapterygoid somewhat compressed, subequal to quadrate. Hyomandibular posterior ramus not elongate. Opercular bones well ossified; subopercle enlarged, subequal to opercle.

Ceratohyal-epihyal juncture with bone interdigitating dorsally; ventral area cartilage-filled (Fig. 7). Branchiostegal rays 5: 2 articulating with ceratohyal, 1 at ceratohyal-epihyal juncture, and 2 with epihyal; this pattern unique in Zoarcidae. Ceratobranchial 5 (lower pharyngeal) dentate; 3 pairs of pharyngobranchials and tooth plates (upper pharyngeals). Gill rakers 10-11, blunt, triangular; largest specimens with 1-2 epibranchial rakers and 9 on ceratobranchial.

Posttemporal ventral ramus weak (Fig. 8). Supracleithrum forked anteriorly. Cleithrum with small dorsal lamina. Scapular foramen large, enclosed by bone. Single postcleithrum present; fusiform, slightly bowed in center. Four ossified actinosts bearing 18-21 pectoral fin rays. Pelvic fins of 3 rays each, longer than eye diameter in length except in largest specimens.

Precaudal vertebrae asymmetrical anteriorly; caudal vertebrae and posterior precaudals symmetrical.

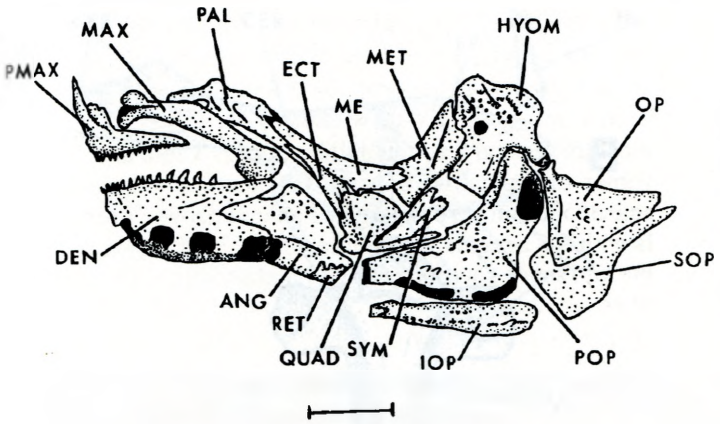

Figure 4. *Notolycodes schmidti,* MPL 1.6.88.2. Left lateral view of jaws, suspensorium, and opercular bones. Abbreviations: ANG, anguloarticular; DEN, dentary; ECT, ectopterygoid; HYOM, hyomandibular; IOP, interopercle; MAX, maxilla; ME, mesopterygoid; MET, metapterygoid; OP, opercle; PAL, palatine; PMAX, premaxilla; POP, preopercle; QUAD; quadrate; RET, retroarticular; SOP, subopercle; SYM, symplectic. Space bar = 10 mm.

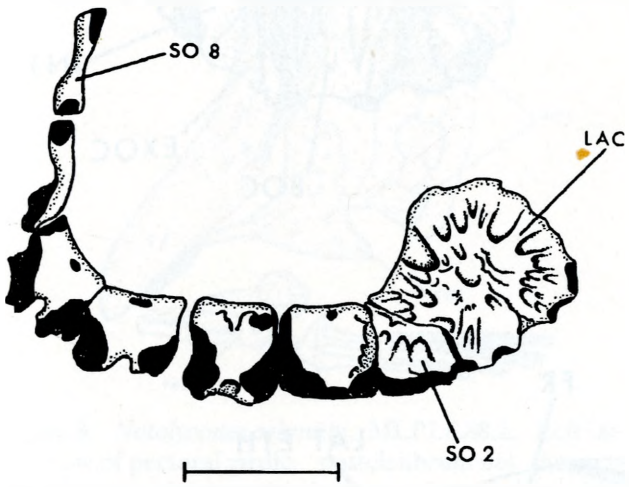

Figure 5. *Notolycodes schmidti,* MLP 1.6.88.2. Right lateral view of suborbital bones. Abbreviations: LAC, lacrimal; SO2, second suborbital; SO8, eighth suborbital. Space bar = 10 mm.

Epipleural ribs beginning on vertebrae 1-2, extending to vertebrae 12-13. Pleural ribs beginning on vertebrae 3-4, extending to ultimate precaudal vertebra. Pterygiophore of first dorsal fin ray associated with vertebrae 3-5, with no free pterygiophores. Three anal pterygiophores anterior to haemal spine of first caudal vertebra. Last dorsal ray associated with fourth preural vertebra. Last anal ray associated with second preural vertebra. Caudal fin rays 11, with 2 epural rays, 4 upper hypural, and 5 lower hypural rays.

Oral valve well developed, its posterior margin reaching vomer, its anterior region papillose. Pseudobranch filaments 6- 7, rather thick and long. Two nub-like pyloric caeca.

Fresh colouration dark brown or blackish, with darker vermiculations above body midline except in the only juvenile, ISH 1977/68. Adults also with blackish band between eye and upper jaw. Orobranchial chamber (faded in alcohol) and peritoneum black.

DISTRIBUTION: Slope off Cabo de São Tomé, Brazil (22°30'S, 40°07'W), south to off Mar de la Plata, Argentina, at depths of 400-800 m.

MATERIAL: Type series listed in Gosztonyi (1977), plus: ISH 391/78 (1; 386 mm); off Rio de la Plata (37°07.6'S, 54°13.9'W); WH sta. 926/78; 602 m; 28 Sept. 1978. MLP 1.6.88.2 (1; 427 mm TL); Argentine slope (38°59.0'S, 55°25.7'W); SHINKAI MARU sta. 14/78; 430-420 m; 15 Apr. 1978.

REMARKS: *Notolycodes* Gosztonyi, 1977 is a monotypic, Magellanic endemic genus.

Oidiphorus brevis (Norman, 1973)

Maynea brevis Norman, 1937: 108, fig. 57.
Oidiphorus brevis McAllister and Rees, 1964: 104, fig. 1. Gosztonyi, 1977: 228, fig. 17; Menni et al., 1984: 133, fig. 120.

DIAGNOSIS: A species of *Oidiphorus* McAllister and Rees, 1964 lacking pelvic fins; preoperculomandibular pores 8; suborbital pores 6; pectoral-fin rays 17-19; precaudal vertebrae 15-17; pterygiophore of first dorsal fin ray associated with vertebrae 1-3.

DESCRIPTION: Meristic data: Vertebrae 15-17 + 43-50 = 58-65; D 56- 61; A 45-50; C 7-9; P 17-19; pelvics absent; vomerine teeth 3-10; palatine teeth 4-16; gill rakers 0-1 + 6-10 = 7-11; branchiostegal rays 6; pseudobranch filaments and pyloric caeca absent.

Measurements in percent SL: head length 22-29; head width 13- 14; pectoral fin length 14-16; predorsal length 25-29; preanal length 43-49; body height 12-14; caudal fin length 5-9. Measurements in percent HL: head width 51-54; upper jaw length 48-55; pectoral fin length 52-64; snout length 17-21; eye diameter 29-39; gill slit length 38-51; interorbital width 8-11; interpupillary width 28-37. Pectoral base/length ratio 47-59.

Head relatively long owing to very short tail, dorsoventrally depressed somewhat, ovoid; snout steeply sloping; eye entering dorsal profile. Neurocranium broad, its width across sphenotics 82-84% its length (Anderson, 1988b). Body relatively short, ovoid in cross section (but much material damaged). Skin pliable, heavily pigmented, body gelatinous, owing to thick subcutaneous lipid layer, as in other deep-sea zoarcids (cf. *Melanostigma*). Scales absent. Body lateral line of 2 branches; mediolateral branch originating behind postorbital pore 4, coursing down body under pectoral fin to just under body midline and running to near tail tip, though not traceable in most material beyond one-half tail length posterior to anus; dorsolateral branch originating variably from just anterior to rear margin of pectoral fin to about one-third pectoral fin length posterior to pectoral rear margin, coursing in a straight line to tail tip just under dorsal fin base. As in other zoarcids, lateral line inconspicuous except in recently preserved, unfaded specimens. Eye moderate, ovoid; skin covering eye somewhat thickened. Single pair of nostrils at snout tip; nasal tube

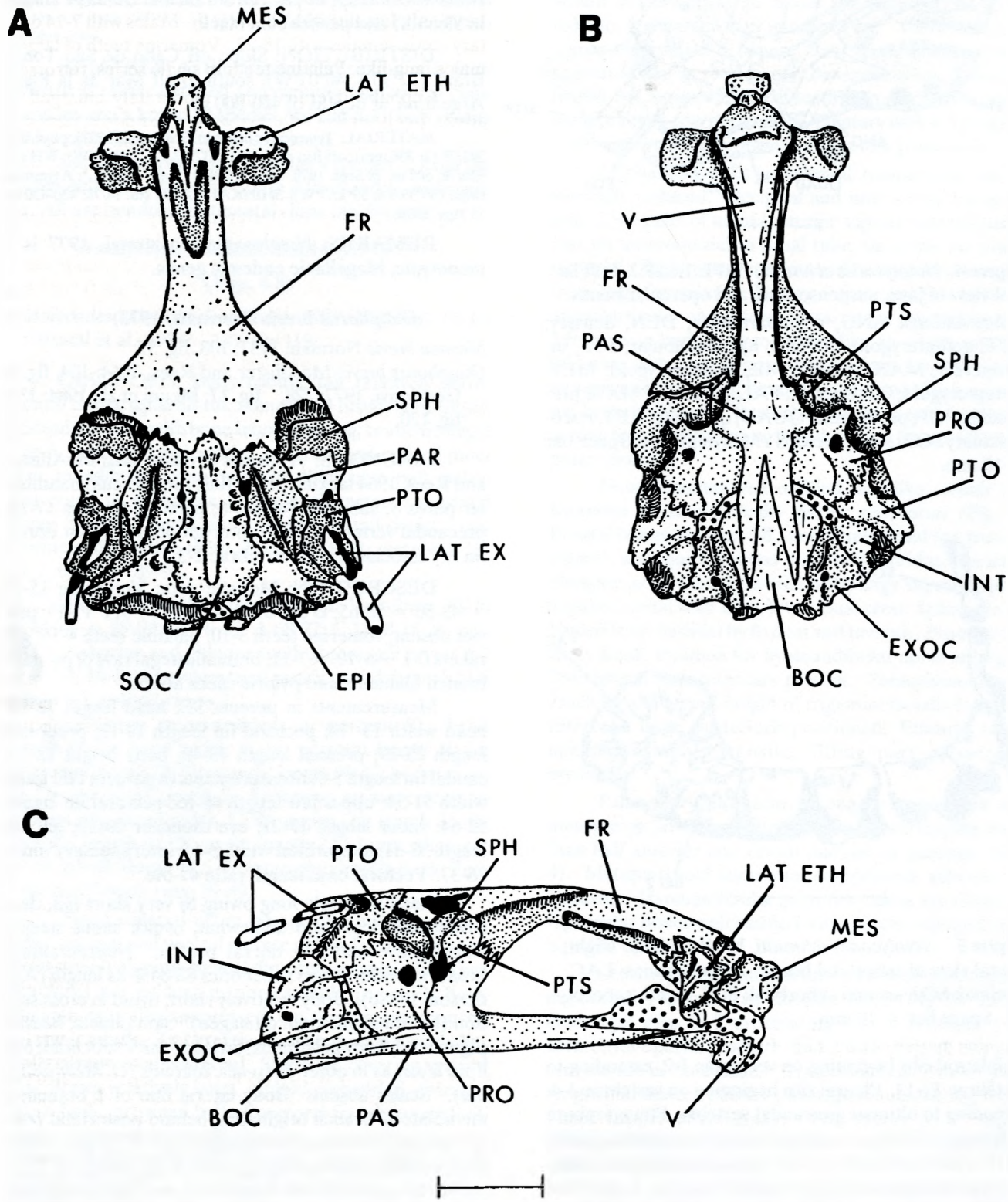

Figure 6. *Notolycodes schmidti,* MLP 1.6.88.2. Three views of neurocranium: A) dorsal; B) ventral; C) right lateral. Abbreviations: BOC, basioccipital; EPI, epioccipital; EXOC, exoccipital; FR, frontal; INT, intercalar; LAT RETH, lateral ethmoid; LAT EX, lateral extrascapulars; MES; mesethmoid; PAR, parietal; PAS, parasphenoid; PRO, prootic; PTO, pterotic; PTS, pterosphenoid; SOC, supraoccipital; SPH, sphenotic; V, vomer. Space bar = 10 mm.

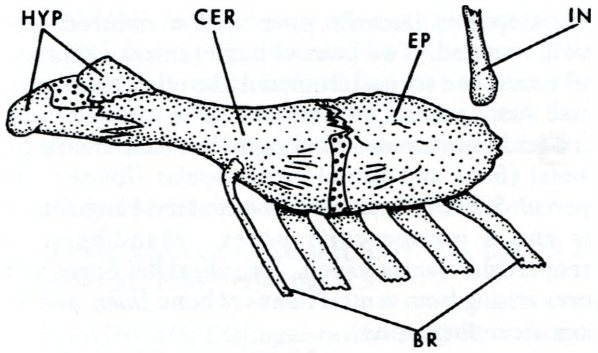

Figure 7. *Notolycodes schmidti*, MLP 1.6.88.2. Medial view of right hyoid bar, urohyal not shown.

Abbreviations: BR, branchiostegal rays; CER, ceratohyal; EP, epihal; HYP, dorsal and ventral hypohyals; IN, interhyal.

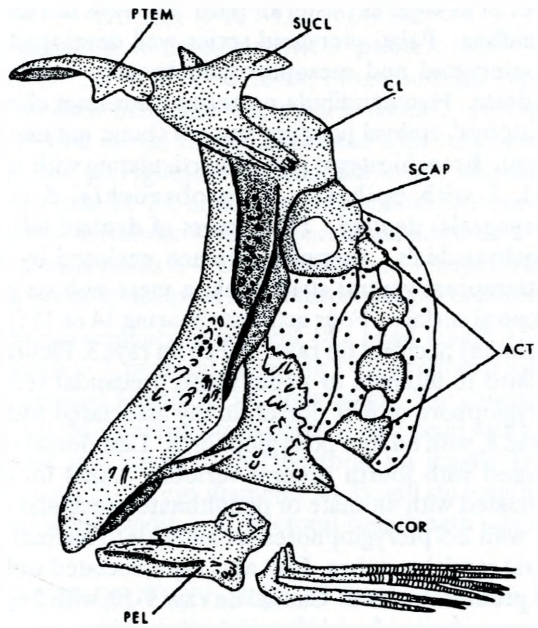

Figure 8. *Notolycodes schmidti*, MLP1.6.88.2. Left lateral view of pectoral girdle, postcleithrum not shown; specular view of right pelvic bone and fin rays.

Abbreviations: ACT, actinosts; CL, cleithrum; COR, coracoid; PEL, pelvic bone; PTEM, posttemporal; SCAP, scapula; SUCL, supracleithrum.

reaching margin of upper lip. Pectoral fin wedge-shaped when expanded; middle rays longest; its origin slightly below body midline; pectoral base extending ventrally to abdomen; lowermost pectoral rays thickened and slightly exserted. Gill slit extending ventrally to mid-height of pectoral base or just below it. Dorsal end of subopercle, with opercle, forming an elongated opercular flap, appearing as "horns" when pulled forward.

Mouth subterminal; lower lip with well developed lateral lobes and adnate to dentary symphysis; upper lip free across symphysis. Low, pyramidal papillae on lower jaw between lateralis pores, cheek and above eye in most specimens over 80 mm; however, in ISH material, stored in propanol, papillae and skin have lost tumescence and therefore good definition. Most of this material was also damaged during preservation (flattened). Mouth small, no sexual dimorphism in jaw length detected. Few anterior jaw teeth caniniform in males; teeth small, conical and more numerous in females. Males with 8-15 premaxillary teeth, females with 16-24 teeth. Males with 7-14 dentary teeth, females with 18-22. Vomerine teeth of largest males fang-like. Palatine teeth in single series, retrorse.

Cephalic lateralis pores moderately enlarged in adults, but juveniles with relatively larger pores; pore system numerically reduced. Occipital and interorbital pores absent. Two pairs of nasal pores (anterior supraorbitals), one set just anteromesial to nasal tube above upper lip, the other set posteromesially. Eight preoperculomandibular pores, 4 arising from dentary, 1 from anguloarticular and 2 from preopercle. Suborbital pores 6, all arising from ventral branch of bone chain (which has 6 bones). Two postorbital pores (numbers 1, arising from frontal, and 4, arising from lateral extrascapular).

Vertebrae symmetrical. Caudal fin rays 7-9, with 1 epural ray, 3-4 upper hypural and 3-4 lower hypural rays. Gill rakers small and blunt, absent on upper limb (epihyal) in one specimen; denticles absent. Branchiostegal rays 6: 4 articulating with ceratohyal and 2 with epihyal. Two pairs of pharyngobranchials (upper pharyngeals). Ceratobranchial 5 (lower pharyngelas) dentate. Limited osteological observations were reported by Anderson (1988b).

Oral valve moderately developed, just reaching anterior edge of vomer. Pseudobranch and pyloric caeca absent. Pterygiophore of first dorsal fin ray associated with vertebrae 1-3; no free pterygiophores. All dorsal fin elements soft rays, first one not segmented, but bilaterally divided. One or two anal fin pterygiophores inserted anterior to haemal spine of first caudal vertebrae (none in one specimen).

Colour of juveniles darker than adults, but all sizes with dark brown mottling over yellowish-white background. Dorsal surface of head solid brown. Pectoral fins yellowish. Abdomen and eye blue. Lining of orobranchial chamber pale, peritoneum black.

DISTRIBUTION: Slope off central Argentina south to Burdwood Bank at depths of 133-1000 m.

MATERIAL: All specimens in Gosztonyi (1977: 228) plus: ISH 175/78 (3; 64-107 mm); Argentine slope (45°54.7'S, 59°43.9'W); WH sta. 533/78; 900 m; 15 May 1978. ISH 263/78 (1; 56 mm); Argentine slope (47°02'S, 60°21'W); WH sta. 658/78; 560-570 m; 18 June 1978. ISH 390/78 (1; 104 mm); Argentine slope (47°02.9'S, 60°24.3'W); WH sta. 892/78; 550 m; 5 Sept. 1978. ISH 379/78 (5; 79-97 mm); Argentine slope (47°28.3'S, 60°24.9'W); WH sta. 765/78; 495 m; 2 Aug. 1978. ISH 387/78 (1; 68 mm); Argentine slope (48°46.8'S, 63°02.6'W); WH sta. 878/78; 140 m; 2 Sept. 1978. ISH 384/78 (1; 80 mm); Argentine slope (49°07.4'S, 59°16.4'W); WH sta. 871/78; 485 m; 1 Sept. 1978. ISH 394/78 (1; 62 mm); off Falkland Islands (50°11'S, 61°31.7'W); WH sta. 1016/78; 159 m; 16 Oct. 1978. ISH 396/78 (1; 83 mm); Burdwood Bank (54°21'S, 61°37.3'W); WH sta. 1031/78; 210 m; 25 Oct. 1978. ISH 395/78 (1; 111 mm); Burdwood Bank (54°27.2'S, 62°19.3'W); WH sta. 1030/78; 350 m; 25 Oct. 1978. ISH 380/78 (1; 88 mm); off Tierra del Fuego (53°51.6'S, 63°43.9'W); WH sta. 799/78; 450 m; 9 Aug. 1978.

REMARKS: We redescribe this species here on the basis of all known specimens (n = 25). *Oidiphorus mcallisteri* Anderson, 1988 is the only other species recognized in the genus and was described from 2 specimens

from the lower slope of the Scotia Sea (the Antarctic Region of Briggs, 1974).

Ophthalmolycus macrops (Günther, 1880)

Lycodes macrops Günther, 1880: 21, pl. XI, fig. B; Brauer, 1906: 348, pl. XIV, fig. 5; Lahille, 1908: 412.
Ophthalmolycus macrops (Günther). Regan, 1913: 243; Pozzi and Bordalé, 1935: 175; Norman, 1937: 98; Buen, 1959: 46; Ringuelet and Aramburu, 1960: 78; Gosztonyi, 1977: 229; Menni et al., 1984: 134, fig. 121.

DIAGNOSIS: A species of *Ophthalmolycus* Regan, 1913 with P 14-15; branchiostegal rays 5; pterygiophore of first dorsal fin ray associated with vertebra 8; gill rakers 10-11 (subadults).

DESCRIPTION: Meristic data: Vertebrae 23-24 + 78-81 = 102-104; D 91- 95; A 79-83; P 14-15; pelvics 3; C 9-10; vomerine teeth 2-4; palatine teeth 0-3; gill rakers 1 + 9-10; branchiostegal rays 5; pseudobranch filaments 2; pyloric caeca 2.

Measurements in percent SL: head length 16-19; head width 7-9; pectoral length 8-9; predorsal length 21-27; preanal length 37- 40; body height 7-8; caudal fin length 3-4. Measurements in percent HL: head width 40-52; upper jaw length 40-51; pectoral length 48-59; snout length 18-22; eye diameter 30-36; gill slit length 33-41; interorbital width 5-6; interpupillary width 26-31. Pectoral base/length ratio 43-47.

Head and snout relatively long and gradually tapering in largest specimen, shorter and steeply sloping anteriorly in smallest. Body moderately elongate, ovoid in cross section. Tail laterally compressed, especially posteriorly; tail short owing to low caudal vertebral count, robust along entire length (not sharply tapering). Skin firm, without subdermal lipid layers, except head around lateralis canals. Body lateral line mediolateral, not traceable in present faded material posterior to pectoral fin margin. Scales minute, cycloid, imbedded, extending anteriorly to occiput; no scales on head or pectoral base. Scales on unpaired fins extending to three- fourths their height. Eye large, ovoid, covered by transparent skin. Gill slit extending ventrally to pectoral fin insertion or just above it. Single pair of nostrils at snout tip; nasal tube small, its tip separated from upper lip by a distance equal to 1- 3 times its length. Pectoral fins moderately large, origin just below body midline, insertion on abdomen; posterior margin wedge- shaped (middle rays longest); ventralmost rays thickened, exserted at tips.

Mouth large, subterminal; upper jaw extending posteriorly from vertical through middle of eye (smallest specimen) to its anterior quarter. Single adult male known, its upper jaw length 51% HL; five adult females with upper jaw lengths 40-42% HL. Upper lip continuous; lower lip connected at dentary symphysis, with small, fleshy, lateral lobe. Teeth small, conical, retrorse anteriorly. Teeth in upper jaws of both sexes in 2 rows anteriorly, merging into single, posterior row; those of outer row 3-4 times larger than inner row. Teeth in lower jaws of both sexes in 3 rows anteriorly, merging into single, posterior row; those of outer row 2-3 times larger than inner row. Vomerine teeth large, few (above). Palatine teeth few, absent in one specimen.

Cephalic lateralis pore system reduced, pores small, rounded. Two pairs of nasal (anterior supraorbital) pores; one set posteromesial, the other anteromesial small nasal tubes. No interorbital or occipital pores. First and fourth postorbital pores present, arising from frontal (first) and lateral extrascapular (fourth). Preoperculomandibular canal with 4 dentary, 1 anguloarticular and 3 preopercular pores. Mandibular and preopercular canals joined. Six suborbital bones with 6 pores arising from ventral ramus of bone chain, and none from ascending ramus.

Osteological observations made from radiographs of all specimens and one cleared and stained from LACM 11759-4. Parasphenoid wing low, extending only to mid-height of trigeminofacialis foramen or just below it. Frontal and parasphenoid narrowly articulating anteriorly; pterosphenoid large. Sphenotic and parietal separated by frontal and pterotic. Pterotic with anterior half narrower or as wide as posterior part. Parietals not meeting in midline. Palatopterygoid series well developed, with ectopterygoid and mesopterygoid broadly overlapping quadrate. Hyomandibula posterior ramus not elongate. Ceratohyal-epihyal juncture smooth (bone not interdigitating). Branchiostegal rays 5: 3 articulating with ceratohyal, 2 with epihyal. Ceratobranchial 5 (lower pharyngeals) dentate. Three pairs of dentate infrapharyngobranchials. Scapular foramen enclosed by bone. Posttemporal ventral strut weak, a mere nob on posteroventral surface. Four actinosts bearing 14 or 15 (in one specimen) pectoral fin rays. Pelvic fin rays 3. Pleural ribs on third to ultimate or penultimate precaudal vertebra. Pterygiophore of first dorsal fin ray associated with vertebrae 8, with no free pterygiophores. Last dorsal ray associated with fourth preural vertebra. Anal fin origin associated with ultimate or penultimate precaudal vertebra, with 2-5 pterygiophores set anterior to haemal spine of first caudal vertebra. Last anal ray associated with second preural vertebra. Caudal fin rays 9-10, with 2 epural, 3-4 upper hypural, and 4 lower hypural rays.

Oral valve (palatine membrane) well developed, papillose, reaching to, or almost to, anterior edge of vomer. Pseudobranch filaments 2, relatively short. Pyloric caeca 2; barely projecting nubs in 3 specimens, but moderately developed (for this rudimentary feature) in 4 specimens.

Colour faded in alcohol to a uniformly pinkish-brown (LACM 11759-4, in isopropanol); holotype retains 7 brown, saddle-shaped markings on dorsum. Günther (1880: 21) reported the ground color as yellowish, with broad dark brown bands on the dorsum extending onto the dorsal fin, forming the saddle-shaped markings. Brown band on snout running to dorsoposterior edge of gill slit, interrupted by eye. Branchiostegal membrane and abdomen blackish.

DISTRIBUTION: Southern Chile and Straits of Magellan at depths of 73-552 m. Known from only 2 captures.

MATERIAL: BMNH 1879.5.14:48 (holotype; 127 mm SL); near Puerto Bueno, Chile (50°56'S, 74°15'-14'W); CHALLENGER sta. 309; 73-256 m; Jan. 1876. LACM 11759-4 (6; 118.5-146 mm; one cleared and stained); Strait of Magellan, Chile (52°51'S, 74°13'W); ELTANIN cr. 21, sta. 22A; trawl, 494-552 m; 7 Jan. 1966.

REMARKS: The composition of *Ophthalmolycus* Regan, 1913 was briefly discussed by Anderson (1990). Five species were recognized, all from the southern hemisphere, except *O. conorhynchus* (Garman, 1899) from the Gulf of Panama. The genus is currently in review.

Piedrabuenia ringueleti Gosztonyi, 1977

Piedrabuenia ringueleti Gosztonyi, 1977: 236, figs. 19-21; Menni et al., 1984: 134, fig. 123.

DIAGNOSIS: Distinguished from all other Zoarcidae in having body and tail relatively slender and elongated (vertebrae 120-126); lower jaw with double row of triangular papillae, single row of papillae between anterior suborbital pores; suborbital pores 9; branchiostegal rays 5; pelvic-fin rays 2; C 8; scales, vomerine and palatine teeth present.

DESCRIPTION: Meristic data: Vertebrae 24-25 + 95-101 = 120-126; D 107-113; A 98-102; C 1 + 7; P 17-18; pelvics 2; vomerine teeth 4-8; palatine teeth 6-13; gill rakers 2-3 + 8-11 = 10-14; branchiostegal rays 5; pseudobranch filaments 4-5; pyloric caeca 2; pterygiophore of first dorsal fin ray associated with vertebrae 8-11 (no free pterygiophores); anal fin origin associated with vertebrae 22-24; anal fin pterygiophores anterior to first caudal vertebrae 4-5; preoperculomandibular pores 8; postorbital pores 3-4; suborbital pores 9; supraorbital (nasal) pores 2; occipital and interorbital pores absent.

Measurements in percent SL: head length 15-16; head width 5- 7; pectoral fin length 7-10; predorsal length 20-22; preanal length 32-33; body height 5-6; caudal fin length 1-2. Measurements in percent HL: head width 34-46; upper jaw length 29-34; pectoral fin length 49-63; snout length 21-23; eye diameter 30-35; gill slit length 22-25; interorbital width 6-7. Pectoral base/length ratio 37-45.

DISTRIBUTION: Slope off Puerto Deseado, Argentina at depths of 480-570 m. Undoubtedly more widely distributed than present samples indicate (captured 5 times).

MATERIAL: Type series listed in Gosztonyi (1977) plus: ISH 378/78 (4; 139-219 mm); Argentine slope (47°28.3'S, 60°24.9'W); WH sta. 765/78; 495 m; 2 Aug. 1978. ISH 389/78 (1; 235 mm); Argentine slope (47°02.9'S, 60°24.3'W); WH sta. 892/78; 500 m; 5 Sept. 1978. ISH 262/78 (1; 242 mm); Argentine slope (47°02'S, 60°21'W); WH sta. 658/78; 560-570 m; 18 June 1978.

REMARKS: This species was described from two specimens, adults of each sex. As the original description is rather detailed and compares both specimens, we add here only counts and proportions of 6 additional individuals, including an immature male. *Piedrabuenia* is a monotypic, Magellan Province endemic genus.

Pogonolycus marinae (Lloris, 1988)

(Fig. 9-10)

Haushia marinae Lloris, 1988: 246, fig. 1.

DIAGNOSIS: A species of *Pogonolycus* Norman, 1937 with first mandibular pores (at dentary symphysis) joined to form single, oval pore; palatine teeth and pseudobranch absent; pectoral-fin rays 13-14; caudal-fin rays 6-7; vertebrae 15-17 + 46-50 = 63-66; suborbital pores 5.

DESCRIPTION: Meristic data: Vertebrae 15-17 + 46-50 = 63-66; D 61- 65; A 48-52; C 6-7; P 13-14; pelvics 2; vomerine teeth 0-5; palatine teeth absent; gill rakers 0-1 + 6-7 = 7-8; branchiostegal rays 5; pseudobranch filaments absent; pyloric caeca 2.

Measurements in percent SL: head length 18-25; head width: 7- 12; pectoral fin length 8-13; predorsal length 18-24; preanal length 42-47; body height 9-12; caudal fin length 3-8. Measurements in percent HL: head width 38-59; upper jaw length 34-45; pectoral fin length 42-52; pelvic fin length 13-21; snout length 12-17; eye diameter 21-26; gill slit length 18-22; interorbital width 7-10; interpupillary width 19-29. Pectoral base/length ratio 36-53.

Head moderately large, robust, longer in relation to standard length in smallest specimens. Snout high and broad, steeply curved anteriorly. Body short, nearly circular in cross section in largest specimen, more ovoid in smaller individuals. Tail laterally compressed, especially posteriorly, not dorsoventrally tapering anteriorly. Skin firm without subdermal gelatinous layer. Largest female (LACM 43714-1) with bulbous, soft cyst on right side of dorsum on vertical through anus. Lateral line with mediolateral branch traceable to near tail tip. Scales absent in these juveniles. Eye large, rounded, longer in relation to head in smallest specimens than late juveniles. Gill slit restricted, nearly vertical ventrally, extending to opposite fourth pectoral ray or entirely above pectoral base; slight siphonal fold formed at posterodorsal margin. Single pair of nostrils at snout tip, nasal tube moderately long, just reaching upper lip. Cirri present on snout, lips, jaws, and on face under eye in largest specimens; present in early juveniles only as low, tuberculate papillae on lower jaw; cirri of lower jaw fringed, as in *P. elegans*, broad, usually tri- or bifurcated; cirri of upper jaw usually bifurcated (Fig. 10). Posterior margin of pectoral fin evenly rounded; origin just below body midline, insertion on abdomen; ventralmost 5-6 rays thickened, very slightly exserted at tips.

Mouth small, terminal; no sexual dimorphism noted in upper jaw lengths; all specimens are juveniles. Teeth in jaws and palate small, conical, retrorse posteriorly; young females with more and smaller jaw teeth than males at equivalent sizes. Largest specimen (69 mm SL male) with jaw teeth in 3 irregular rows near symphysis, merging into single, posterior row; smallest specimens with single row of teeth in both jaws. Vomer with 1-3 caniniform teeth in specimens over 40 mm, except largest female which has 5, stublike teeth. Palatine teeth absent, contrary to original description.

Cephalic lateralis pore system numericially reduced, pores relatively large, especially suborbitals and mandibulars. Two pair of nasal (anterior supraorbital) pores set anteromesial and posteromesial to nasal tube. First and fourth postorbital pores present only, arising from frontal (first) and lateral extrascapular (fourth). Interorbital and occipital (supratemporal) pores absent. Preoperculomandibular canal with 4 dentary, 1 anguloarticular, and 3 preopercular pores; first dentary pores set

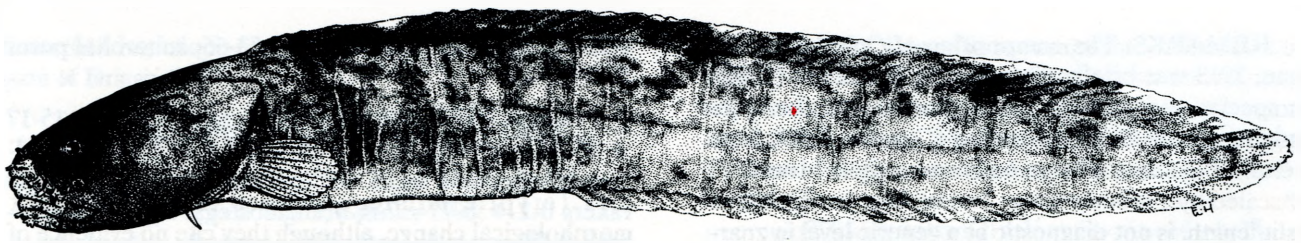

Figure 9. *Pogonolycus marinae*. LACM 43714-1, 68 mm SL, Dawson Island, Chile.

in recessed, ovoid pocket (Fig.10), with thin membrane partially separating each pore, similar to condition found in *Paraliparis tetrapteryx* (Andriashev 1986, fig. 61C). Original description incorrectly gives 7 preoperculomandibular pores, Lloris (1988: 246) having overlooked the fused, imbedded condition of the first pores, unique in Zoarcidae. Five suborbital pores, all arising from ventral branch of suborbital bone chain; six suborbital bones.

Osteological observations were made on one damaged specimen in LACM 43713-2. Palatopterygoid series well developed, with ectopterygoid and mesopterygoid overlapping half of anterior and dorsal surfaces of quadrate. Hyomandibular anterior and posterior rami elongate, as in *Maynea* and *Austrolycus* (Anderson 1984, 1988a). Ceratohyal-epihyal juncture smooth, with cartilage interspace. Branchiostegal rays 5: 3 articulating with ceratohyal and 2 with epihyal. Ceratobranchial 5 dentate. Single, epibranchial gill raker in 3 specimens, ceratobranchial rakers 6- 7. Three pairs of dentate pharyngobranchials. Postcleithrum present, slightly curved at midsection. Pterygiophore of first dorsal fin ray associated with second vertebra, with no free pterygiophores. Last dorsal ray associated with third or fourth preural vertebra. Anal fin origin associated with ultimate precaudal vertebra, with 1-3 pterygiophores set anterior to haemal spine of first caudal vertebra. Last anal ray associated with second or third preural vertebra. Caudal fin rays 6-7, with 1 epural, 2-3 upper hypural and 3 lower hypural rays. All fin rays soft except anteriormost dorsal element, a "flexible spine" (unbranched and unsegmented, but bilaterally divided near base).

Oral valve (palatine membrane) weakly developed, not absent as given in original description, usually a mere fold of skin anteriorly in largest specimens, weakly undershot laterally in all sizes. Pseudobranch absent. Two nub-like pyloric caeca present, relatively longer in smallest specimens.

Colour in alcohol light brown; largest female with dark brown mottling on dorsum and unpaired fins, head uniformly dark brown (Fig. 8); juveniles with saddle-shaped brown marking over head owing to whitish snout, lower jaw, and nape; anterior edge of snout and lips whitish in largest specimen, but light brown pigment interrupts these regions. Lining of orobranchial chamber and peritoneum light brown.

DISTRIBUTION: Tierra del Fuego from littoral channels and kelp beds to outer shelf in depths to 137 m.

MATERIAL: LACM 43714-1 (1; 68 mm); Harriss Bay, Dawson Island, Chile (53°51'32"S, 70°25'52"W); USARP shore coll., sta. 69-22; 1.5-3.1 m; 13 May 1969. LACM 43713-2 (2; both 69 mm; 1 cleared and stained); same as LACM 43714-1, except sta. 69-24, 18 May 1969. LACM 10445-2 (1; 51 mm); Fuegian slope (53°32'S, 64°57'W); EL-TANIN sta. 974; 119-124 m; 12 Feb. 1964. LACM 43720-1 (3; 18.5-47.5 mm); No. of Staten (Estados) Isl., Argentina (54°39'S, 63°50'W); HERO sta. 874; 135-137 m; 26 Oct. 1971. LACM 11771-1 (2; 44-48 mm); No. of Staten Isl. (54°29'S, 63°50'W); HERO sta. 876; 112 m; 27 Oct. 1971. IIPB 104/1987 (holotype of Haushia marinae; 51 mm); Staten Isl. (54°46.3'S, 63°48.0'W); RASTRO; 130 m; 17 Mar. 1985. SIO 74-110 (1; 54 mm); eastern tip of Tierra del Fuego (54°54.0'S, 65°28.6'W); in kelp bed; 11 May 1973. LACM 43727-1 (1; 46 mm); off Tierra del Fuego, Argentina; (53°06'S, 67°04'W); HERO sta. 450; 86 m; 5 Mar. 1970. LACM 43712-2 (1; 27.5 mm); So. of Staten Isl. (54°55'S, 64°00'W); HERO sta. 875; 0-903 m (probably surface capture); 7 Oct. 1971.

REMARKS: Lloris (1988) described this species on the basis of a single early juvenile, creating a new genus, *Haushia*, on the basis of 13 characters, all of which characterize *Pogonolycus elegans* or are primitive within Zoarcidae except: 1) absence of oral valve; 2) restricted gill slit; 3) absence of scales; 4) absence of pseudobranch. The first character was misinterpreted. In this species, the oral valve is present as a weak fold laterally in the young, but is better developed, although still weak, and present anteriorly in adults. The second character is not diagnostic at the generic level (Anderson, 1984) and, in any case, the gill slit passes below the upper pectoral margin, extending ventrally to opposite pectoral rays 2-4 in a few specimens (opposite pectoral ray 2 in holotype). The

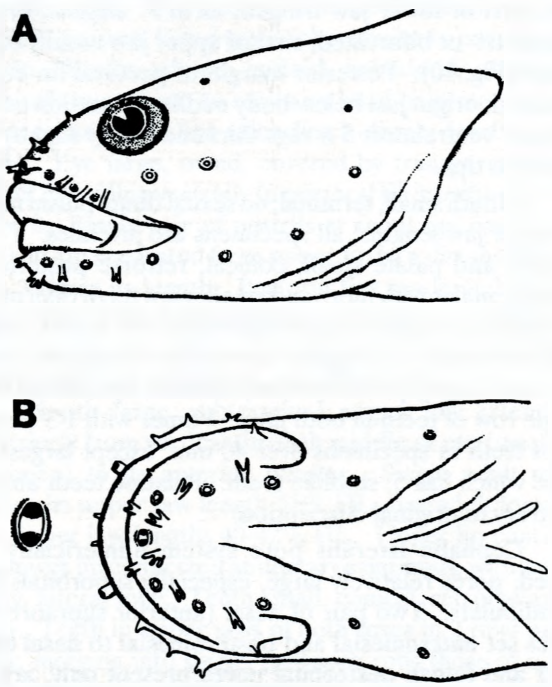

Figure 10. *Pogonolycus marinae* , LACM 43714-1.
A) left lateral view of head showing pores and cirri;
B) ventral view (inset: enlargement of first preoperculomandibular pores in common, oval cavity).

third and fourth characters are partially ontogenetic features and were not used alone to diagnose genera (Anderson, 1984). As all the present material consists of young, *P. marinae*, unlike its congener, may become fully scaled by about 90-100 mm (*P. elegans* appears to become fully scaled by about 60 mm). The fourth character, like gill slit length, is not diagnostic at a generic level in zoarcids. Indeed, absence of a pseudobranch is species- specific in some zoarcids. Thus, this form is considered a second species of *Pogonolycus* characterized particularly by its unusual, fused first mandibular pore.

DISCUSSION

Among recent Magellan Province zoarcid collections are those made in Beagle Channel and off Staten Island, Tierra del Fuego, by Spain's Consejo Superior de Investigaciones Científicas in cooperation with Argentina's Consejo Nacional de Investigaciones Científicas y Técnicas in 1985 and 1987. Among the material collected were the holotypes of *Crossostomus sobrali* and *Haushia marinae* synonymized above. Yet another juvenile zoarcid was reported by Lloris and Rucabado (1987b) from these collections as new: *Iluocoetes facali*. Characters cited by Lloris and Rucabado (as with *Crossostomus sobrali*) to distinguish this form do not justify the identification of a third species of *Iluocoetes*.

As with their other specimens, we have examined the holotype of *I. facali* and conclude that it possesses no characters of diagnostic value to separate it from the type species of *Iluocoetes*, *I. fimbriatus* Jenyns, 1842. Diagnostic characters given by Lloris and Rucabado (in their abstract and discussion sections) for *I. facali* to differentiate it from *I. fimbriatus* include: 1) pyloric caeca absent; 2) sparser squamation and; 3) different colouration (light blotches not in a circular or subcircular shape). The first character was misinterpreted. Juvenile zoarcids often have less distinct pyloric caeca than adults, but the opposite is true for some species. Some species have pyloric caeca only as low swellings that are obliterated with full stomachs, whereas other species express them in the typical, but not much better defined "nub- like" state. This is the case with the holotype of *I. facali*, and the pyloric caeca measure one-half eye diameter in length. In any case, pyloric caeca are rudimentary in Zoarcidae and therefore of little systematic importance (Anderson, 1984). The second character, like the purported absence of scales in *Pogonolycus marinae*, is ontogenetically variable, and the sparser scale density in *I. facali* is a reflection of its status as a juvenile (105 mm TL) of a species (*I. fimbriatus*) that attains at least 575 mm TL (Lahille, 1908). The third character given as diagnostic for *I. facali*, presented in the abstract, a different colour pattern, is difficult to assess as their text explanation of this was inadvertently interrupted by the printer for a column inclusion of their table of counts and measurements. Matching what part of the text remains as a colour description can be misleading, as their figure of the specimen, a photograph, was reproduced upside down. In any case, pigment patterns are individually variable in *Iluocoetes* and several other zoarcids, and have little or no diagnostic value (Anderson, 1982, 1984), especially for the more brightly coloured juveniles of littoral species.

In defense of naming new species to the Magellan Province (i.e., *C. sobrali* and *I. facali*), Lloris and Rucabado (1987b) proposed an hypothesis of evolution that we consider fiction. They suggested that speciation pressures on intertidal zoarcids favored behavioural parameters (cryptic mimicry) rather than significant morphological change, although they cite no evidence of behavioural differences among their (preserved) material. The parameters they cite to support their "new" taxa are the product of misinterpreted data owing to an analysis of the variable Zoarcidae based on a sketchy review of the literature, some of it in error, and lack of comparative material. Pigment patterns producing undocumented "mimicry," we believe, are better viewed as colour polymorphism providing camoflauge within these species.

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