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Observations on Some Tasmanian Fishes

Part V

By

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(Read 10th November, 1941)

PLATE VII

The present paper follows the general plan of previous contributions under the same title (1934, 1935, 1936, 1939): the term Fishes is interpreted broadly to include Selachians.

The dimensions standard length and total length are represented throughout by the symbols LS, LT, respectively.

Registration numbers are those of the Queen Victoria Museum, Launceston.

Family GALEIDAE

Genus **Carcharhinus** Blainville, 1816

Carcharhinus brachyurus (Günther, 1870)

(Plate VII)

?Galeolamna greyi Owen, *Descr. Cat. Osteol. Roy. Coll. Surgeons*, i, 1853, p. 96. *?Id.* Whitley, *Rec. Aust. Mus. Sydney*, 1932, xviii, 6, p. 324. *?Id.* Whitley, *Fish. Aust.*, I, 1940, p. 102, fig. 88, no. 4 (not fig. 88, no. 5) and fig. 95; and p. 273, fig. 303 (not fig. 5).

Carcharias brachyurus Günther, *Cat. Fish. Brit. Mus.*, viii, 1870, p. 369 (specimens *c* and *d* doubtful). Not *carcharias brachyurus* Waite, *Rec. Aust. Mus. Sydney*, vi, 3, 1906, p. 226, pl. xxxix.

?Carcharinus macrurus Waite, *Rec. S. Aust. Mus. Adelaide*, III, 3, 1927, p. 224. *?Id.* McCulloch, *N.Z. Journ. Sc. Tech.* vi, 5-6, 1924, p. 261, fig. 4.

?Carcharhinus brachyurus Waite, *Fish, S. Aust.*, 1923, p. 27 and fig.

?Carcharhinus macrurus Waite, *Rec. S. Aust. Mus. Adelaide*, III, 3, 1927, p. 224. *?Id.* Phillipps, *Mem. Aust. Mus. Sydney*, v, I, 1929, p. 10 (South Australian record only). Not *Carcharias macrurus* Ramsay and Ogilby, *Proc. Linn. Soc. N.S.W.*, (2), II, I, 1887, p. 163 and p. 624. Not *Carcharhinus macrurus* McCulloch, *Proc. Linn. Soc. N.S.W.*, XLVI, 4, 1921, p. 457, pl. XXXVII, figs 1-4.

?Carcharinus lamia Phillipps, *N.Z. Journ. Sc. Tech.*, VI, 5-6, 1924, p. 260 and fig. Not *Carcharhinus lamia* de Blainville, *Bull. Sci. Soc. Philom.*, 1816, p. 121.

Galeolamna brachyurus Whitley, *Fish. Aust.*, I, 1940, p. 102, fig. 97.

Record. A mounted Tasmanian *Carcharhinus* that has been in the Museum collections for over forty years is here provisionally determined as *C. brachyurus* (Günther).

First record for Tasmania.

Remarks. The systematics of this genus are in a parlous state. To the known handicaps that limit our knowledge of several species to information based on casts, disassociated jaws, or juvenile (even foetal) individuals, I may add two further complications—first, that information received (*in litt.*, 6/8/'37) from Mr J. R. Norman, Ichthyologist, British Museum, Natural History, leads me to suspect that Günther's type-specimens of *C. brachyurus* may not be conspecific; secondly, that tables of dimensions of specimens accessible to Waite, kindly furnished by Mr H. M. Hale, Director, South Australian Museum, Adelaide, appear to suggest that certain features commonly accepted as diagnostic criteria may be subject to a degree of individual variation hitherto unrecognized. In view of the urgent need for additional data, a description and figure of the present specimen are here given.

Description. Body moderate, fusiform, its depth at pectoral origin 7·9, at first dorsal origin (max. depth) 6·4, in length to origin of lower lobe of caudal; or 10·5, 8·6, respectively, in LT. Length to vent 1·5 in LT.

Head (to first gill-slit) 6·6 in LT; postorbital portion slightly, preorbital portion strongly, depressed. Snout 2·4 in head; obtusely pointed in horizontal plane; in profile acute, with tip about at, or slightly above, level of superior border of orbit. Preoral length 1·4 in width of mouth, which is 2·0 in head, and about twice length of mouth. A short indistinct groove extending forward on each side of gonidial angle. Nostril fairly large; near, but not quite reaching, inferolateral margin of snout; length to it 1·5 in preoral length, 1·3 in interarial distance. Eye about 2·5 in height of first gill-slit, about 10·6 in head; its anterior margin barely in advance of middle of mouth. Measured obliquely, distance from anterior margin of eye to tip of snout is about 1·3 in distance from posterior margin of eye to first gill-slit. Last two gill-slits above base of pectoral: fifth subequal to first, about 0·7 of third.

About 30 teeth in upper jaw (those in lower jaw inaccessible). Anterior teeth of upper jaw (Plate VII, fig. 3) as long (11 mm.) as high, erect, or slightly recurved: base compressed, half as high as long, its inferior margin so boldly excavated as to suggest incipient bifurcation: crown compressed, biconvex: both margins obtusely crenulated throughout their entire length; along borders of the crown the crenulations subrectangular, closely apposed, along borders of the base, particularly posteriorly, more distinctly separated, with a tendency to become bilobed or trilobed, and more acute.

Pectoral large, narrow, acuminate, with a pronounced postaxial internal flap; its length rather more than twice its maximum width, 3·7 times its width at middle, 1·2 in length to its origin, the latter being 1·8 times as far from tip of snout as from origin of first dorsal. First dorsal moderate, anterior border gently sigmoid, posterior angle produced as an acute lobe more than one-fifth as long as base of fin; its origin, located at 0·32 of LT, nearer to tip of snout than its termination is to origin of lower caudal lobe; its base half length of pectoral, 1·3 times its own vertical height. Interdorsal space 0·8 of length to origin of first dorsal, 3·3 times distance between termination of second dorsal and origin of upper caudal lobe. Second dorsal small, low, posterior angle produced into a slender lobe two-thirds as long as base of fin; its origin, located at 0·66 of LT, slightly behind level of anal origin; its base 2·5 in base of first dorsal, 2·2 times its own vertical height. Ventral subquadrangular; its origin, located at 0·49 of LT, slightly nearer to anal origin than to first dorsal origin; its base a little longer than its anterior border. Claspers subcylindrical, extending about two-thirds of the distance between their origin and anal origin. Anal small, having the appearance of being composed of

two lobes, the oblique, moderately acute anterior one about twice as wide as the slender, almost horizontal lanceolate one; its origin, located at 0·65 of LT, slightly nearer to origin of lower caudal lobe than to termination of ventral base; its base subequal to base of second dorsal, 1·8 times its own height. Caudal moderate, set (perhaps as result of mounting) only slightly obliquely to main axis of body: upper lobe originating at 0·77 of LT, about an eye-diameter behind origin of lower lobe; its terminal inferior flap, near free margin of which, at 0·6 of length of flap, the downwardly curving certebral column terminates, one-fourth length of lobe: lower lobe broad, obscurely pointed, with anterior border strongly convex, subequal to base of first dorsal, posterior border concave. Apparently a pit present at base of each caudal lobe.

Lateral line system appears to originate at level of middle of pectoral base, about one-sixth of depth of body below dorsal profile, and, proceeding caudad, sweeps gently and evenly down till on caudal peduncle it is equidistant from dorsal and ventral profiles; the oblique inferior tubules, of which there are 24 below first dorsal base, average twice as long as their interspaces.

General colour dark brownish grey (perhaps originally slatey) above, gradually lightening to palish grey below. No indications of dark tips to any of the fins.

Described and figured (Plate VII) from a mounted male specimen (Q.V.M. Reg. No. 962 *y*) of LT 2835 mm., and 2137 mm. long to origin of lower caudal lobe; caught in the River Tamar by G. T. Collins and R. J. Irvine in 1897.

Family MYLIOBATIDAE

Genus **Myliobatis** Cuvier, 1816

Myliobatis australis Macleay, 1818

Myliobatis australis Macleay, *Proc. Linn. Soc. N.S.W.*, VI, 2, 1881, p. 380.

This species is common, at any rate in summer, on Northern Tasmanian beaches, where it is a source of much inconvenience in seine-netting.

Females probably exceed males in size. Of seven specimens caught at Ulverstone in January, 1941, four females measured (width of disk, in mm.) 1022, 1050, 975, 866; three males 814, 780, 850. The smallest female and largest female thus exceeded the largest male by 2%, 24%, respectively, and the average value for females that for males by 20%. In both sexes length of tail slightly exceeds combined length of head and body, which is 0·5-0·6 of width of disk.

Family ANGUILLIDAE

Genus **Anguilla** Shaw, 1803

Anguilla australis Richardson, 1841

Anguilla australis Richardson, *Proc. Zool. Soc. London*, IX, 1841, p. 22.

A xanthic specimen of LS 525 mm., dorsal index (Schmidt, 1928) 3·8, was caught in the Macquarie River, at *Rokeby*, on 21st December, 1938, by Mr C. Willoughby. Xanthism is virtually complete, extending even to all the fins, and being not evident only in the eye; and is tolerably uniform, with, however, some tendency towards the assumption of a deeper, more orange tint above the lateral line.

Family AULOPIDAE

Genus **Aulopus** Cloquet, 1816

Aulopus purpurissatus Richardson, 1843

Aulopus purpurissatus Richardson, *Icones Piscium*, 1843, p. 6, pl. ii, fig. 3.
Aulopus milesii Cuvier and Valenciennes, *Hist. Nat. Poiss.*, XXII, 1849, p. 385.

Record. A male specimen (Q.V.M. Reg. No. 1939. 119) of LS 279 mm. was caught at Ulverstone on 2nd November, 1939, and donated to the Museum by Mr F. Stephens. Two other individuals have since come to hand—a male (Q.V.M. Reg. No. 1940. 210), of LS 351 mm., from Blue Rock, Flinders Island (Mrs V. T. Hammond, 14th May, 1940), and a female (Q.V.M. Reg. No. 1941. 211), of LS 370 mm. from Rowella, West Tamar (Mr T. Cannon, 20th May, 1941).

Lord and Scott (1924, p. 35) note this species, but remark 'it is doubtful if' it 'can be classed as a Tasmanian form', and do not include it in their definitive list: not recorded as Tasmanian in the Check-List. The specimens here noted thus appear to provide the first definite records for Tasmania.

Remarks. Sexual dimorphism is well-marked. Taking the length of the 1st (simple) dorsal ray as unity, the relative lengths of the 2nd, 3rd, 4th rays are: smaller male 4·7, 4·3, 2·0; larger male 6·1, 3·0, 2·6; female 2·3, 2·0, 1·9. In the males the length of the two elongated rays (2nd, 3rd), relative to length of 1st ray, is thus 2·1 times the value for the female.

In the Ulverstone specimen the enlarged dorsal rays bear secondary rays, not unusual in this species, the 2nd ray (103 mm. long) giving rise, at 54 mm. from its base, to a sub-ray 7 mm. in free length, the 3rd ray (93 mm. long) giving rise, first, at 45 mm. from its base, to a double sub-ray 1·5 mm. in free length, and, secondly, at 45 mm. from its base, to a single sub-ray 7 mm. in free length: all these secondary rays originate from the posterior surface of the primary ray.

The female is of interest in having 14, instead of the usual 13, rays in the anal.

Family HYPOPLECTRODIDAE

Genus **Nannoperca** Günther, 1861

Nannoperca australis Günther, 1861

Nannoperca australis Günther, *Proc. Zool. Soc. London*, 1861, p. 116, pl. XIX, fig. 2.
Microperca tasmaniae Johnston, *Pap. Proc. Roy. Soc. Tasm.*, 1882 (1883), p. 110; and *ibid.* 1890 (1891), p. 30.
Nannoperca tasmaniae Lord, *Pap. Proc. Roy. Soc. Tasm.*, 1922 (1923), p. 67. *Id.* Lord and Scott, *Synopsis Vert. Anim. Tasm.*, 1924, pp. 10 and 54. *Id.* McCulloch, *Mem. Aust. Mus. Sydney*, V, 1929, p. 157, *Id.* Scott, *Pap. Proc. Roy. Soc. Tasm.*, 1934 (1935), p. 66.

Status. In a key to the genus McCulloch and Waite (1918) failed to distinguish between *N. australis* and *N. tasmaniae*, and later Waite (1921) listed Johnston's species as a queried synonym of Günther's: the implied identity, probably based on the consideration of descriptions, is not accepted in the Check-List.

A comparison of Tasmanian specimens from Mella and Victorian specimens from Kororoit Creek, Seaholme, fails to reveal any constant differences of specific value.

Tasmanian Distribution. Johnston's original comment (1883) 'abundant in the rivers of the South and North Esk', virtually repeated in his memoranda redacted by Whitley (1929, *a*), was formerly interpreted by me as representing all that was known of the Tasmanian distribution, and I called attention (1936) to a record from the Rubicon River at Dunorlan: numerous specimens have since been collected (April, 1936) by Mr B. Burnley in drains at Mella. I find, however, I have overlooked a short paper by Johnston (1888) on the fauna of King Island, in which he incidentally notes this species 'also inhabits the waters of the northern rivers of Tasmania'.

Juvenile. Numerous juvenile specimens were obtained by Mr H. J. King in November, 1941 from a pool at Perth. In an individual of LS 11·1 mm. (Q.V.M. Reg. No. 1941. 356) assumption of the adult facies, including scale-formation, was virtually complete, save for the attainment of only an elementary stage of pigmentation, which permitted a clear view of the beating of the heart.

Family RHOMBOSOLEIDAE

Genus **Ammotretis** Günther, 1862

Ammotretis tudori McCulloch, 1914

Ammotretis tudori McCulloch, *Biol. Res. Endeavour*, ii, 3, 1914, p. 125, fig. 9.

Waite (1923) observes 'as five specimens are known, all exhibiting' the peculiarity that the first ray of the small left pectoral bears a large fleshy knob at its tip, 'it cannot be looked upon as an abnormality'. McCulloch (1914) thought it probable the species would 'be found to be sufficiently abundant to form a valuable addition to the list of edible Australian flounders'.

In the course of fairly extensive netting carried out at Ulverstone in January, 1941, I found *A. tudori* abundant, perhaps one in three specimens of flounders caught belonging to this species. Curiously enough, however, it apparently does not reach the local market; at any rate, I have never observed it displayed in Launceston fish-shops.

Family POMACENTRIDAE

Genus **Parma** Günther, 1862

Parma viola Whitley, 1929

Parma viola Whitley, *Mem. Queensl. Mus.*, IX, III, 1929, p. 231, pl. XXVIII, fig. 2.

Known only from the holotype, of LS 170 mm., forwarded in 1904 from this Institution to the Australian Museum, Sydney, where it remained (Whitley, 1929, *b*) for a third of a century labelled *Glyphisodon victoriae*. The receipt on 20th July, 1940 of a second specimen, of LS 154 mm. (Q.V.M. Reg. No. 1940. 292), caught at George Town, not only affords information on minor variations in proportion, but provides the first available data on coloration.

Proportions. Depth of body 1·9, of caudal peduncle 6·0, in LS. Head 3·7 in LS. Eye 1·2 in snout, 1·6 in interorbital space, 1·7 in head. Longest dorsal spine (5th, 6th) 1·8, longest dorsal ray (6th) 1·2, second anal spine 2·0, longest (8th) anal ray 1·4, longest (4th) pectoral ray 0·9, longest (2nd) pelvic ray 1·1, in head. Radial formulae agree with those of holotype.

Coloration. General colour of body above midlateral line bronzy brown, becoming purplish in parts, especially towards base of caudal; below midlateral line dingy pearl, with some purplish flushes. Head in general dark bronze; snout and nape dark brown, the latter almost black; scaleless marginal strip of preoperculum pearl, with pale bluish iridescence; operculum very dark brown anteriorly, becoming pearly brown at middle, posteriorly dingy silver with marginal streak of dark brown; lips dark brown; immediately below lower lip, a small patch of bright bronze, followed by two oblique chin-bars of silver, the first reaching nearly to angle of mouth, the second, whose width is subequal to its distance from the first, extending on to anterior portion of preoperculum; a hemispherical patch of pale copper arising from infero-anterior border of eye; a subrectangular patch of bluish purple shortly below, and partly in advance of, eye: pupil very dark blue, iris almost black; buccal cavity, including tongue, whitish.

Spinous dorsal: membrane pale bronze, becoming pale olivaceous towards free margin; spines rather darker. Soft dorsal: membrane dark olive; rays slightly lighter. Anal: membrane dark olive, with faint submarginal band of paler olive; rays rather lighter, five or six of the posterior ones with narrow dark-brown cross bar at two-thirds of their length; spines peacock blue. Caudal: membrane dark, somewhat yellowish olive, with a narrow band (marginal mesially, submarginal laterally) of lighter, more yellowish colour; rays about concolorous with membrane. Pectoral: membrane almost hyaline, slightly greenish above; rays olivaceous, the upper somewhat more greenish, the lower somewhat more yellowish. Pelvic: membrane brownish olive; rays mostly whitish, the anterior one somewhat dusky distally; spine dark peacock blue.

Family CORIDAE

Genus **Austrolabrus** Steindachner, 1883

Austrolabrus maculatus (Macleay, 1881)

Labrichthys maculata Macleay, *Proc. Linn. Soc. N.S.W.*, vi, 7, 1881, p. 89.

Record. A specimen (Q.V.M. Reg. No. 1939. 162), of LS 84 mm., LT 106 mm., was secured in a trawl at the mouth of the River Tamar, at a depth of 10-20 feet, by Mr E. H. Smith on 2nd December, 1939.

First record for Tasmania.

Coloration. The description of the holotype, four inches long, from King George's Sound, was drawn up after preservation of the specimen in spirits, and Macleay's (1881) colour-notes are meagre, as also are those of McCulloch (1913), who figures a specimen, 140 mm. long, from St Vincent's Gulf, South Australia. The following notes were made on receipt, shortly after capture, of the present specimen. General colour pale yellowish-green, with purplish tinges on and near head. Four or five dark brownish spots, about half size of scale, or less, above pectoral. On head, particularly on chin, which is bluish green, and on operculum, a few narrow reticulated reddish-brown markings: narrow dark bar immediately behind posterior border of preoperculum. Pupil dark greenish. Iris bluish green, with very narrow internal annulus of gold. Pectoral with membrane hyaline, rays pale purplish. Pelvic yellowish green at base, thereafter dusky purplish pink: whitish band on 3rd-5th rays. Dorsal with dusky, somewhat purplish areas, which, near middle of fin, cover virtually the whole of the membrane, and are reduced, in front and behind, to a subtriangular region (broadest proximally) between each

two adjacent rays; membrane between 1st and 3rd rays dark purplish-brown, small spots and slips of yellowish at bases and flanking basal half of spinous rays; a conspicuous dark-brown, almost black spot, about two-thirds diameter of eye, centring on proximal half of penultimate ray. Anal much like dorsal, but without anterior dark purplish-brown area, and with smaller hinder blackish spot, located here almost wholly on membrane between last two rays. Caudal with indications of dusky subvertical bars.

Family URANOSCOPIDAE

Genus **Kathetostoma** Günther, 1860

Kathetostoma laeve (Bloch and Schneider, 1801)

Kathetostoma laeve Bloch and Schneider, *Syst. Ichth.*, 1801, p. 47, pl. VIII.

Stomach-contents. A specimen of LS 246 mm. (Q.V.M. Reg. No. 1941. 91) netted near Rowella, River Tamar, by Mr T. Hinds on 27th February, 1941, had in the stomach two well-preserved specimens of *Ammotretis rostratus* Günther, 1862 of LS 70, 73 mm.; and two undigested, and two partly digested specimens of a flathead (*?Platycephalus bassensis* Cuvier and Valenciennes, 1829), the two former specimens measuring 60, 67 mm. in LS.

Fishermen state that this species secures its prey by leaping vertically, the leap frequently exceeding a foot.

Family SCORPAENIDAE

Genus **Neosebastes** Guichenot, 1867

Neosebastes nigropunctatus McCulloch, 1915

Neosebastes nigropunctatus McCulloch, *Biol. Res. Endeavour*, iii, 3, 1915, p. 157, pl. xxx.

Record. A beach-dried, but readily determinable, specimen of LS about 280 mm. was collected by the writer at West Ulverstone in December, 1938.

First record for Tasmania.

Neosebastes thetidis (Waite, 1899)

Sebastes thetidis Waite, *Mem. Aust. Mus. Sydney*, iv, 1, 1899, p. 100, pl. xx.
Sebastodes thetidis Waite, *Mem. Nat. Club N.S.W.*, 2, 1904, p. 47.

Not recognized as Tasmanian in the Check-List. Apparently, however, it should be included in the local list, being noted in the *Endeavour* Report as being 'very abundant in waters of 60-100 fathoms deep off the eastern coast of Tasmania' (McCulloch, 1915, *a*): see also Lord and Scott (1924).

Genus **Scorpaena** Linné, 1758

Scorpaena ergastulorum Richardson, 1842

Scorpaena ergastulorum Richardson, *Ann. Mag. Nat. Hist.*, IX, 1842, p. 217.

Appears in all local lists as *S. cruenta* Richardson, 1842 (*ex* Solander MS; New Zealand). New Zealand and Australian examples are considered to be conspecific; and *S. ergastulorum* has line priority.

Genus **Helicolenus** Goode and Bean, 1895

Helicolenus papillosus (Bloch and Schneider, 1801)

Synanceja papillosus Bloch and Schneider, *Syst. Ichth.*, 1801, p. 196: *ex Scorpaena cottoides* Forster MS.
Sebastes percoides Richardson, *Ann. Mag. Nat. Hist.*, IX, 1842, p. 217: *ex* Solander MS. *Id.* Johnston, *Pap. Proc. Roy. Soc. Tasm.*, 1882 (1883), pp. 79 and 114: and *ibid.* 1890 (1891), p. 31. *Id.* Lord, *Pap. Proc. Roy. Soc. Tasm.*, 1922 (1923), p. 70. *Id.* Lord and Scott, *Synopsis Vert. Anim. Tasm.*, 1924, pp. 13 and 84.
Helicolenus papillosus McCulloch, *Mem. Aust. Mus. Sydney*, v, III, 1929, p. 385.

The above table of synonymy covers the principal local references: for extra-Tasmanian references see McCulloch (1929).

McCoy (1879) observes 'Rather rare on the Victorian coast'. Not at all uncommon in Launceston and Hobart fish-shops. Average total length 250-300 mm.

Usually figured (*e.g.*, McCoy, 1879; Waite, 1923) with dorsal fin terminating at last ray. I find, however, perfect individuals normally have half, or more, of last dorsal ray connected by membrane to caudal peduncle.

Family APLOACTIDAE

Genus **Aploactisoma** Castelnau, 1872

Aploactisoma milesii (Richardson, 1850)

Aploactis milesii Richardson, *Proc. Zool. Soc. London*, 1850, p. 60 Pisces, pl. I, figs 1-2.
Aploactisoma schomburgki Castelnau, *Proc. Zool. Acclim. Soc. Vict.*, I, 1872, p. 244.

The two features on which Castelnau found *Aploactisoma*, a series of palatine teeth, and two teeth on an anterior median longitudinal ridge on the upper jaw, have been shown to be non-existent (McCulloch, 1915, *b*). However, differences in cephalic architecture, notably the presence across the cheek of a series of pro-turberances, instead of a continuous ridge as in the extra-limital genotype of *Aploactis* Temminck and Schlegel, 1843, *A. aspersa* (Richardson, 1845), perhaps warrant generic distinction of the Australian fish.

Whitley (1933) has recognized a New South Wales and Victorian subspecies, *A. milesii horrenda*, distinguished from typical *A. milesii* from Western Australia (type-locality King George's Sound) and South Australia (type-locality of *Aploactisoma schomburgki* St Vincent's Gulf) by larger size ('up to nearly 7 inches', as against 'to 5 inches'), deeper body, villi blunt, papillose (fine and pointed in typical subspecies), colour more uniform and darker brownish than in *milesii*. A Tasmanian specimen of LS 130 mm., LT 160 mm. (Q.V.M. Reg. No. 1939. 147), caught at Low Head, in 5 fathoms, by Mr G. P. Smith on 26th November, 1939, is intermediate in character between the two subspecies, having the fine villi, and lighter brown coloration with indistinct darker spots and marblings of *A. m. milesii* (but not the whitish spots usually described as occurring in the caudal region), and the deeper body (depth at vent 3·8, maximum depth 2·7, in LS), and larger size of *A. milesii horrenda*.

Fin-counts of the vertical fins of the Tasmanian specimen fall outside the range found by McCulloch (1915) in an examination of 8 specimens from New South Wales, South Australia, and Western Australia, the dorsal formula being xiv, 16, the anal i, 14.

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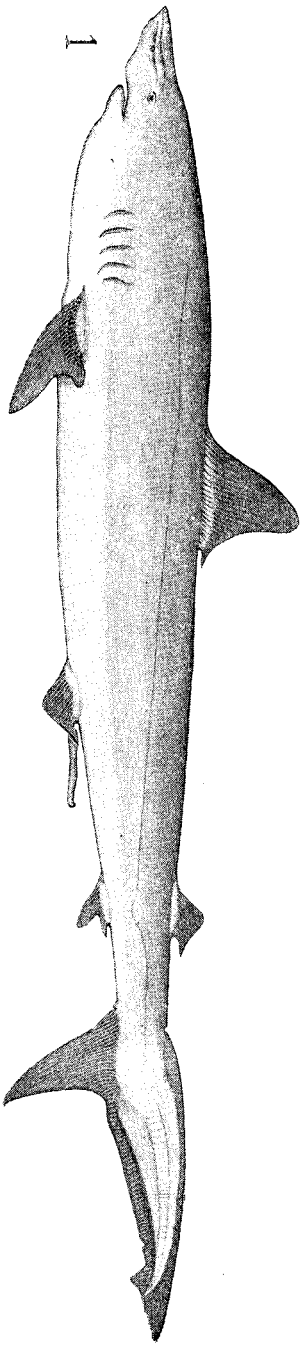
PLATE VII

Carcharhinus brachyurus (Günther, 1870)

A Tasmanian *Carcharhinus* (Q.V.M. Reg. No. 962 *y*) provisionally determined (see text) as *C. brachyurus* (Günther, 1870). Male. Total length 2835 mm. Caught in River Tamar by G. T. Collins and R. J. Irvine in 1897.

FIG. 1.—Lateral aspect. One-sixteenth natural size.
FIG. 2.—Ventral aspect of head. One-eighth natural size.
FIG. 3.—External aspect of two teeth from anterior part of upper jaw. Twice natural size.



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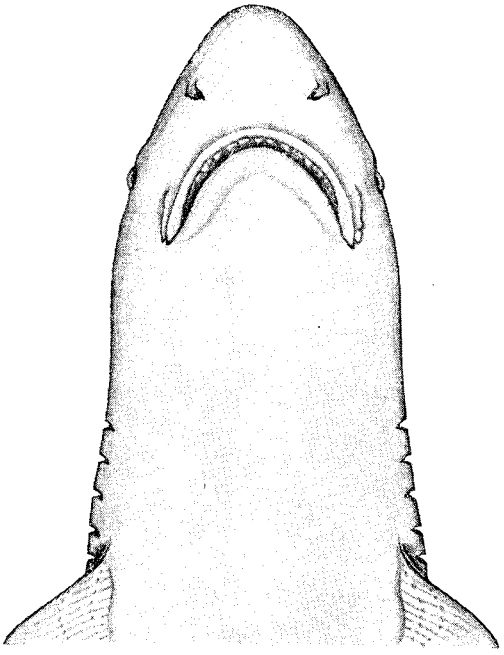

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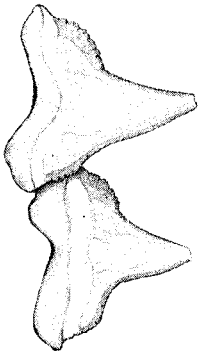

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