

KEY TO GENERA OF ARTEDIDRACONIDAE

- 1a First dorsal fin above base of pectoral fin; first dorsal-fin spines 2-7
..... *Artedidraco* Lönnberg, 1905
- 1b First dorsal fin above operculum; first dorsal-fin spines 1-3 2
- 2a Posttemporal ridges absent (upper limb of posttemporal bone straight, not arched
upward to form a prominent curved ridge); middle lateral line without tubular
scales; anal-fin rays 13-16; pectoral-fin rays 16-18; caudal-fin rays 8-10
..... *Dolloidraco* Roule, 1913
(This is a monotypic genus; *Dolloidraco longedorsalis* Roule, 1913.)
- 2b Posttemporal ridges often well developed (upper limb of posttemporal bone
arched upward to form a prominent curved ridge); middle lateral line often with
tubular scales posteriorly; anal-fin rays 15-19; pectoral-fin rays 17-22;
caudal-fin rays 9-10 3
- 3a Interorbital region narrow (bony width 2.2-3.9% SL); first dorsal fin
usually with 3 spines, their length 15-32% SL *Histiodraco* Regan, 1914
(This is a monotypic genus; *Histiodraco velifer* Regan, 1914.)
- 3b Interorbital region wide (bony width 3.8-9.0% SL); first dorsal fin
usually with 2 spines, their length 4.5-14.0% SL *Pogonophryne* Regan, 1914

KEY TO THE SPECIES OF THE GENUS *ARTEDIDRACO* LÖNNBERG, 1905

- 1a Upper lateral line with 6 or more tubular scales, the row of tubular scales extending
to below 2 or more rays of second dorsal fin 2
- 1b Upper lateral line with 2-9 tubular scales, the row of tubular scales not extending
beyond first ray of second dorsal fin 4

- 2a Second dorsal-fin rays 26-30 3
- 2b Second dorsal-fin rays 23-26 5
- 3a Mental barbel tapered to a point; tubular upper lateral-line scales extending to below 7 or more rays of second dorsal fin; pectoral fin extending beyond origin of anal fin *A. shackletoni* Waite, 1911
- 3b Mental barbel expanded distally; tubular upper lateral-line scales not extending beyond seventh ray of second dorsal fin; pectoral fin not reaching origin of anal fin *A. glareobarbatus* Eastman & Eakin, 1999
- 4a Depth of caudal peduncle 19-23% HL; length of pectoral fin 60-72% HL
..... *A. loennbergi* Roule, 1913
- 4b Depth of caudal peduncle 23-30% HL; length of pectoral fin 73-88% HL
..... *A. skottsbergi* Lönnberg, 1905
- 5a Upper lateral line with 18-22 tubular scales *A. orianae* Regan, 1914
- 5b Upper lateral line with 6-16 tubular scales *A. mirus* Lönnberg, 1905

KEY TO SPECIES GROUPS OF THE GENUS *POGONOPHRYNE* REGAN, 1914

- 1a Head and body without dark markings "*albipinna*" (unspotted) group
- 1b Head and body with dark markings 2
- 2a Top of head without conspicuous dark markings relative to sides of head; ridges on top of head (supraorbital, parietal, supratemporal, posttemporal) well developed; second dorsal-fin rays 23-27 (usually 24-26); vertebrae 35-37; bony interorbital width usually greater than 7% SL; usually a dark saddle-shaped marking extending from anterior base of second dorsal fin to upper lateral line

- **“scotti”** (dorsally-unspotted) group
 (At the present time the “scotti” group consists of a single species, *P. scotti* Regan, 1914.)
- 2b Top of head with conspicuous dark markings as on sides of head; ridges on top of head not well developed or only posttemporal ridges well developed; second dorsal-fin rays 25-29 (usually 26-28); vertebrae 36-39; bony interorbital width usually less than 7% SL; no dark saddle-shaped marking between anterior base of second dorsal fin and upper lateral line (spotted groups) 3
- 3a Posttemporal ridges well developed; eye not filling orbit anteriorly; pectoral-fin rays usually fewer than 20; second dorsal-fin rays usually 26-27 **“marmorata”** group
- 3b Posttemporal ridges not well developed; eye filling orbit anteriorly; pectoral-fin rays usually at least 20; second dorsal-fin rays usually 27-28 4
- 4a Spots on top of head predominantly uniformly small, round and densely distributed (covering more than half the surface); lower jaw not projecting or projecting slightly beyond upper jaw; snout sloping steeply (greater than 45° from the horizontal) in lateral view **“barsukovi”** group
- 4b Spots on top of head predominantly large, round or irregular, and sparsely distributed (covering less than half the surface) or in the form of sparsely or densely distributed vermiculations; lower jaw projecting well beyond upper jaw; snout sloping gradually (45° or less from the horizontal) in lateral view **“mentella”** group

KEY TO “*MENTELLA*” GROUP OF *POGONOPHRYNE*

- 1a Ventral surface of head and abdomen with large, conspicuous dark spots
 *P. ventrimaculata* Eakin, 1987

- 1b Ventral surface of head and abdomen without large, conspicuous dark spots 2
- 2a Terminal expansion of mental barbel with overlapping, bluntly palmate (resembling a cat's paw) processes or flattened, jagged processes arranged mainly in rows 3
- 2b Terminal expansion of mental barbel not as in 2a 4
- 3a Terminal expansion of mental barbel with bluntly palmate processes arranged in a densely-packed, overlapping scale-like pattern
. *P. squamibarbata* Eakin & Balushkin, 2000
- 3b Terminal expansion of mental barbel with flattened, jagged processes arranged mainly in rows *P. fusca* Balushkin & Eakin, 1998
- 4a. Terminal expansion of mental barbel wider than stalk and without fingerlike processes; not orange colored in fresh condition 5
- 4b Terminal expansion of mental barbel barely wider than stalk and with somewhat flattened, fingerlike processes, some of which may be branched; orange colored in fresh condition *P. orangiensis* Eakin & Balushkin, 1998
- 5a Stalk of mental barbel relatively stout; longest spine of first dorsal fin usually less than 60% as long as longest ray of second dorsal fin 7
- 5b Stalk of mental barbel relatively slender; longest spine of first dorsal fin usually more than 60% as long as longest ray of second dorsal fin 6
- 6a Terminal expansion of mental barbel usually less than one-third of barbel length . . 8
- 6b Terminal expansion of mental barbel usually more than one-third of barbel length *P. lanceobarbata* Eakin, 1987
- 7a Terminal expansion of mental barbel with irregular, tapered processes, its length greater than 60% of barbel length *P. macropogon* Eakin, 1981

- 7b Terminal expansion of mental barbel with brainlike convolutions, its length
less than 60% of barbel length *P. cerebropogon* Eakin & Eastman, 1998
- 8a Terminal expansion of mental barbel with interconnected, irregular flattened folds
oriented longitudinally *P. eakini* Balushkin, 1999
- 8b Terminal expansion of mental barbel with unconnected, bluntly palmate (resembling
a cat's paw) processes *P. mentella* Andriashev, 1967

KEY TO "MARMORATA" GROUP OF *POGONOPHRYNE*

- 1a Terminal expansion of mental barbel paddle shaped, usually with
membranous folds *P. platypogon* Eakin, 1988
- 1b Terminal expansion of mental barbel club shaped, with
brainlike convolutions *P. marmorata* Norman, 1938

KEY TO "BARSUKOVI" GROUP OF *POGONOPHRYNE*

- 1a Mental barbel usually tapered and without a prominent terminal expansion;
processes, if present, not branched *P. barsukovi* Andriashev, 1967
- 1b Mental barbel with a terminal expansion composed of fingerlike processes,
some of which may be branched *P. permitini* Andriashev, 1967

KEY TO “ALBIPINNA” GROUP OF *POGONOPHRYNE*

(This is a little-known, completely unspotted group of three species with relatively high numbers of second dorsal-fin rays (27-28) and vertebrae (37), each represented by only a single type-specimen. Additional specimens are required to establish the ranges of intra- and interspecific variation. Two of the holotypes are from deep water (1600-2500 m) which may account for the “rarity” of this group.)

- 1a Fins light in color; gill rakers on first gill arch 18-21; jaw width (distance between posterior extension of maxillaries with mouth closed) about 18% SL; terminal expansion of mental barbel about 40% barbel length, composed of rounded, unbranched processes 2
- 1b Fins dark basally, light distally; gill rakers on first gill arch 12; jaw width about 25% SL; (mental barbel structure unknown due to damaged holotype); depth 2500 m *P. immaculata* Eakin, 1981
- 2a Fins largely white; gill rakers on first gill arch 21; upper lateral-line pores (tubular scales) 12; mental barbel about 17% SL, its terminal expansion about three times as wide as stalk; depth 1600 m *P. albipinna* Eakin, 1981
- 2b Fins not white; gill rakers on first gill arch 18; upper lateral-line pores (tubular scales) 19; mental barbel about 22 %SL, its terminal expansion about twice as wide as stalk; depth less than 1000 m *P. dewitti* Eakin, 1988

REFERENCES

[The basis for the key was Eakin’s (1990) chapter on the Artedidraconidae in *Fishes of the Southern Ocean* (Gon and Heemstra, 1990). Additions and updates were necessitated by the description of new species in the intervening years. Those attempting to key out artedidraconids, especially species of *Pogonophryne*, should be aware that every species studied in detail exhibits considerable intraspecific variation in barbel structure.]

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