Zootaxa 3199: 60–65 (2012)
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

Alloblennius frondiculus, a new species of blenny from the Andaman Islands (Teleostei: Blenniidae: Salariini)

WILLIAM F. SMITH-VANIZ[1] & GERALD R. ALLEN[2]

[1]*Research Associate, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611-7800, USA.*
E-mail: smithvaniz@gmail.com
[2]*Department of Aquatic Zoology, Locked Bag 49, Western Australian Museum, Welshpool DC., Perth, WA 6986.*
E-mail: tropical_reef@bigpond.com

Abstract

A new species of blenniid fish, tribe Salariini, is described based on a 23.8 mm SL specimen collected from the Andaman Islands, eastern Indian Ocean. It differs from other species of *Alloblennius* in having a pinnately branched supraorbital cirrus about equal to eye diameter in height; lower jaws with relatively large, darkly pigmented labial flap anteriorly on each side of chin; pectoral fin with 10 or 11 distinct, small dark spots; and anteriormost preopercular pore position with a vertical pair of pores. The distribution of the new species is notable because the four previously described species of the genus are known only from the western Indian Ocean and Red Sea. A table comparing the five species of *Alloblennius* is presented.

Key words: Blenniidae, *Alloblennius frondiculus*, new species, Andaman Is.

Introduction

The purpose of this paper is to describe a new species of the blenny genus *Alloblennius* based on a single specimen collected from the Andaman Islands so its scientific name will be available for inclusion in a book nearing completion by G. R. Allen and M. V. Erdmann. The new *Alloblennius* is the fifth species of the genus and its occurrence in the northeastern Indian Ocean is notable because the genus was previously known only from the western Indian Ocean and Red Sea. *Alloblennius jugularis* (Klunzinger 1871) is known from only from the Gulf of Aqaba and Red Sea; *A. pictus* (Lotan 1970) occurs in the Gulf of Aqaba, Red Sea and Djibouti, Gulf of Tadjoura; *A. parvus* Springer and Spreitzer 1978 has the widest distribution and is known from the Comoro Is., Mauritius, Madagascar, South Africa (Sodwana Bay), Mosambique and southern Oman (Kuria Muria Is.); and *A. anuchalis* (Springer and Spreitzer 1978), is known from only five specimens (Springer *et al.* 1998), three from Mauritius and two from the southern Arabian Sea (coast of Oman).

In their synopsis of the tribe Salariini, Smith-Vaniz and Springer (1971) described the new genus *Alloblennius* (type-species: *Blennius jugularis* Klunzinger 1871), redescribed the type-species and *Alloblennius pictus* (Lotan), and distinguished their new genus from three others to which they believed it was most closely related: *Rhabdoblennius* Whitley 1930 (type-species: *Blennius rhabdotrachelus* Fowler and Ball 1924); *Antennablennius* Fowler 1931 (type-species: *Blennius hypenetes* Klunzinger 1871); and the monotypic *Hirculops* Smith 1959 (type-species: *Blennius cornifer* Rüppell 1830). These four genera, with inclusion of the new species described herein, total 20 species (Patzner *et al.* 1990). All of these species have low numbers of relatively immovable teeth (20–44 dentary and 25 –58 premaxillary) in adults, upper lip without free dorsal margin (except in *Alloblennius frondiculus*); terminal dorsal- and anal-fin rays connected to caudal peduncle by a membrane; dorsal fin spines typically XII (XI–XIII); and segmented caudal-fin rays 13, with 7–9 branched.

In his review of the Blenniidae (Norman 1943) considered *Rabdoblennius* and *Antennablennius* so closely related that he recognized them only as subgenera. Chapman (1951:348) also failed to appreciate some of the

 Accepted by M.T. Craig: 23 Dec. 2011; published: 20 Feb. 2012

salient features of *Hirculops cornifer* (Rüppell), and regarded it as a species of *Rhabdoblennius*. In her original description of *Alloblennius pictus*, Lotan (1970) also incorrectly assigned her new species to *Rhabdoblennius*. In their paper describing *Alloblennius parvus* and *Antennablennius anuchalis*, Springer and Spreitzer (1978) stated that the generic assignment of *A. anuchalis* (then known only from the holotype) was provisional; they also said there was a possibility that it either should be assigned to *Alloblennius* or, because of the possible intermediate nature of the species' characters, *Alloblennius* should be synonymized with *Antennablennius*. In a subsequent revision of *Antennablennius*, Bath (1983) determined that *A. anuchalis* was in fact a species of *Alloblennius*, primarily because it lacks canines posteriorly on each side of the lower jaw, which are present in all species of *Antennablennius*. Springer *et al.* (1998) cautioned that the only other character (color pattern) Bath believed to consistently distinguish the two genera applies only to preserved specimens. They noted that species of *Antennablennius* have "dark bands or large dark blotches on the body, often with continuations onto the dorsal fin (versus lack of such bands and blotches)" in *Alloblennius*, but that underwater photographs of *A. anuchalis* show the presence of brown or reddish brown bands that enter the dorsal fin basally but these are lost after preservation. Bath (1983) also hypothesized that *Mimoblennius* Smith-Vaniz and Springer 1971, together with *Antennablennius*, are the closest relatives of *Alloblennius*. However, *Mimoblennius* differs from *Alloblennius* in usually having XIII (versus XII) dorsal-fin spines and minute posterior dentary canines. In his revision of *Rabdoblennius*, Bath (2004) recognized five valid species and distinguished them from species of other superficially similar genera.

Because of the difficulty with generic assignments mentioned above and the somewhat scattered literature that addresses these issues, abbreviated comparisons of *Alloblennius*, *Antennablennius*, *Rabdoblennius* and *Hirculops* are presented in Table 1. Bath (2001) described the dentition and complex modes of tooth replacement in these and other salariine genera.

TABLE 1. Characters in selected genera of the tribe Salariini.

Characters	*Alloblennius*	*Antennablennius*	*Hirculops*	*Rhabdoblennius*
Vomerine teeth	absent	absent	present	present
Posterior dentary canines	absent	present, minute to well developed	present well developed	present well developed
Premaxillary teeth replacement mode	entering functional row from above through connective tissue band	like *Alloblennius*	like *Alloblennius* anteriorly but with foramina laterally	entering functional row through foramina in bone
Precaudal vertebrae	10	10	11	10
Epineurals	11-16	12-15	25-27	19-22
Nape cirri	present or absent	present	present	absent
Supraorbital cirri	typically present, except absent in *A. anuchalis*	absent	present	present

Materials and methods

The holotype is deposited in the Western Australian Museum, Perth (WAM). Methods and format of the description mostly follow Springer and Spreitzer (1978). Detection of cephalic sensory pores was facilitated by temporary staining with a cyanine blue solution (Saruwatari *et al.* 1997). Without application of this stain it would have been virtually impossible to detect many of the pores present on the head of the holotype. Specimen lengths are given as both standard length (SL) and total length (TL).

***Alloblennius frondiculus* new species**
Figures 1–3, Table 2.

Holotype. WAM P.33265-004, 23.8 mm SL (27.9 TL), female, Andaman Islands, South Cinque I., SW coast, 11°16'N, 92°41'E, 0–3 m, in strong turbulent area near shore with algal-covered rocks, Mark V. Erdmann and Mercy Paine, sta. AND-10-029, 2 April 2010.

Diagnosis. A species of *Alloblennius* with pinnately branched, supraorbital cirrus about equal eye diameter in height; small nape cirrus; lower jaws with relatively large, heavily pigmented labial flap on either side of chin; and innermost (third), segmented pelvic-fin ray obvious externally.

Description. Dorsal fin XII, 18, terminal ray bound by membrane to caudal peduncle. Anal fin II, 20, terminal ray bound by membrane to caudal peduncle. Caudal fin: segmented rays 13 (7+6), three dorsal most and three ventral most rays simple, other rays branched once; procurrent rays 5+5; ventral hypural plate and hypural 5 autogenous; epurals 2. Pectoral-fin rays 14. Pelvic fin I, 3; innermost ray readily apparent. Vertebrae: precaudal 10 + caudal 27. Posteriormost epineurals and pleural ribs on vertebra 11. Infraorbital bones 5 (dissected, right side only). Dentary and premaxillary incisiform teeth immovable or nearly so, numbering 20 total in lower jaw (no posterior canines) and 31 total in upper jaw. Lateral line tubular, continuous, with short, paired side branches each with a single pore (type B anterior pattern of Bath, 2004), and terminating below vertical between VII–VIII or VIII (right side) dorsal-fin spines. Median supratemporal commissural pores 16. Anterior (first) preopercular pore position with a vertical pair of pores. Upper lip with shallow free dorsal margin anteriorly. Lower lip incomplete, not continuous across chin, with relatively large labial flap on each side of chin. Gill membranes forming free fold across isthmus (gill opening not restricted to side of head).

Color pattern in preservation (Fig. 1): Sides of body with six, evenly spaced, poorly defined bands that extend to base of dorsal fin and a dusky blotch on dorsal half of caudal peduncle; area between bands speckled with melanophores. Venter immaculate; pre-pectoral area and chest adjacent to and under gill membrane margin heavily pigmented. Head tan with pale spots and dark speckles and a wedge-shaped, broad bar extending from lower front corner of eye across middle of upper jaw (posterior third of jaw immaculate); head strongly mottled ventrally with lower jaws pale except for conspicuously dark labial flaps. Dorsal fin with submarginal black spot between first two spines; remainder of fin pale except some spines heavily pigmented and a few dark spots on segmented rays. Anal and pectoral fins pale except for some scattered dark spots on rays. Pelvic fin with middle third of inner two segmented rays brown. Caudal fin with three dusky bands.

FIGURE 1. *Alloblennius frondiculus*, holotype (right side reversed) WAM P.33265-004, 23.8 mm SL, female, Andaman Islands; insert is slightly enlarged ventral view of head. Photographs by S. R. Raredon.

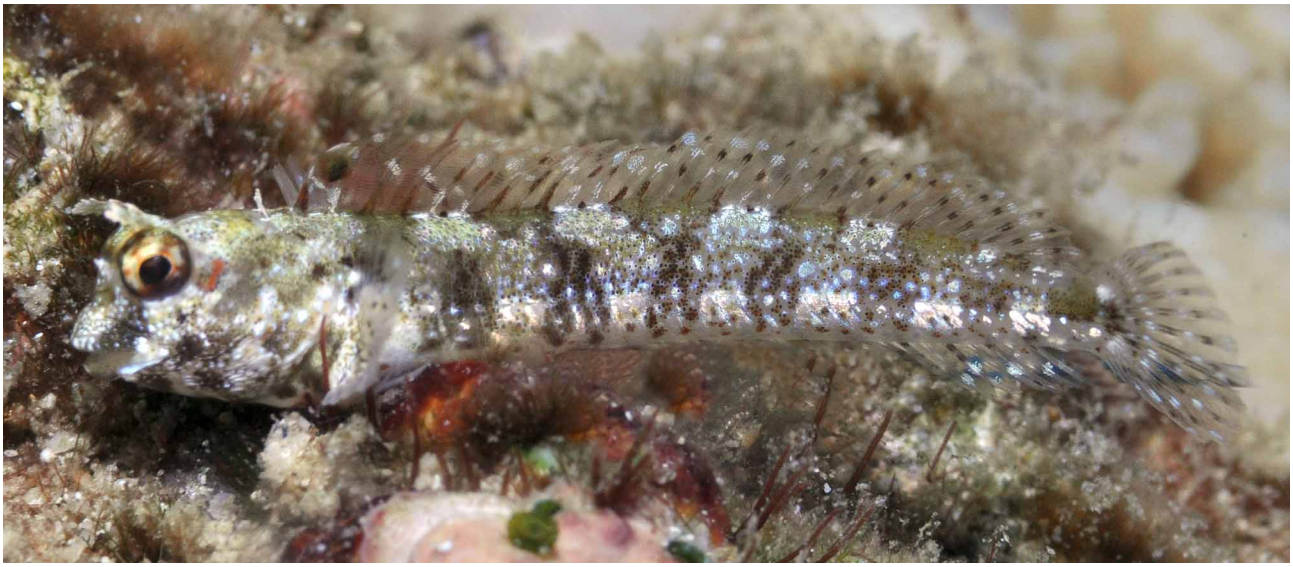

FIGURE 2. *Alloblennius frondiculus*, holotype. Photograph by G. R. Allen.

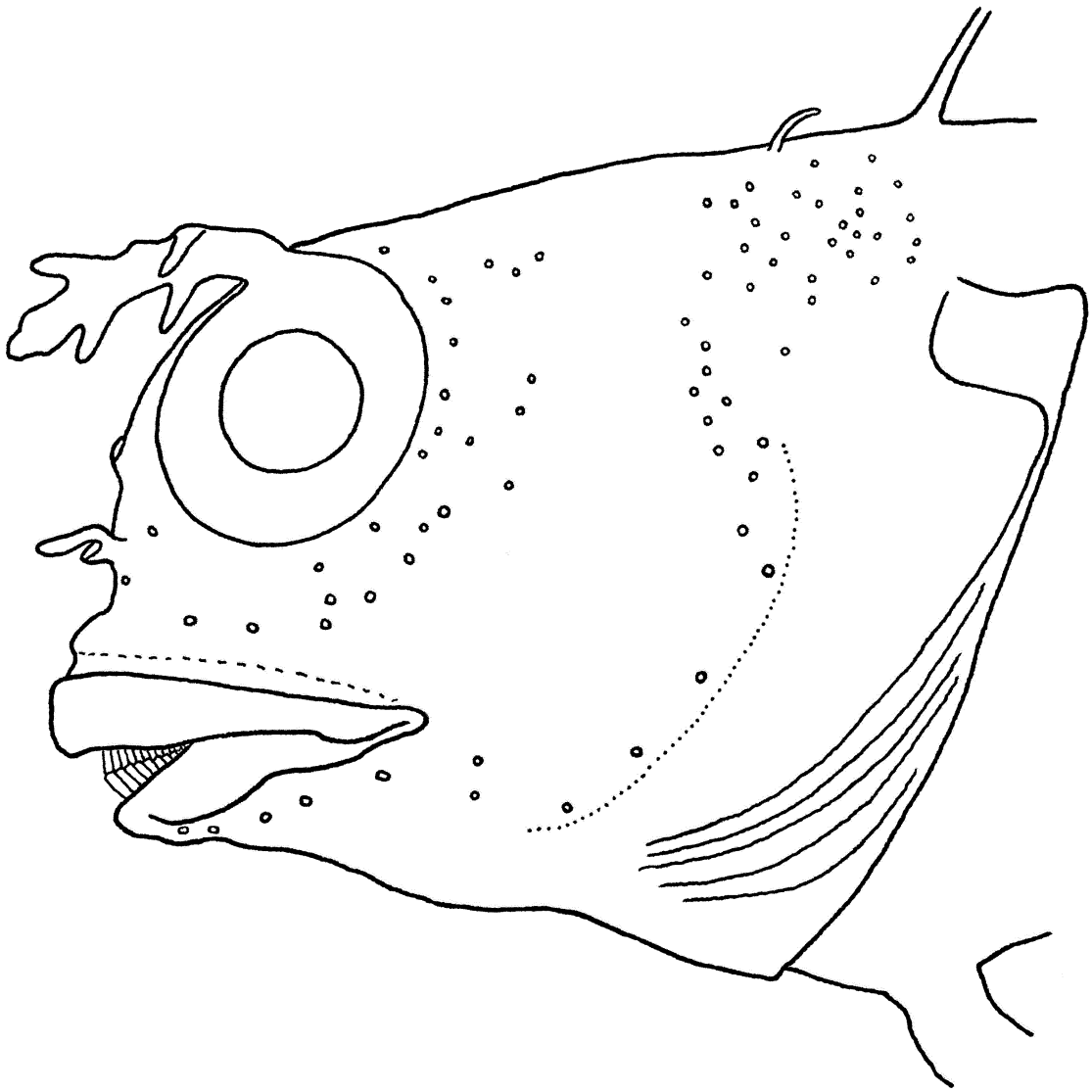

FIGURE 3. *Alloblennius frondiculus*, holotype, showing cephalic sensory pores (lateral line pores not shown).

Color in life (Fig. 2): Sides of body with six evenly spaced, brown bands, weakly connected to olive saddles, including an olive blotch on dorsal half of caudal peduncle; remainder of sides pale olive becoming white ventrally with dense sprinkling of small white spots, replaced by irregular, double row of orange-brown spots ventrally. Head pale white to olive with a few irregular dusky blotches and a narrow, reddish postorbital bar. Dark bar, wider ventrally, extending from lower front corner of eye across middle of upper jaw; posterior end of upper jaw white. Iris yellow with about six reddish-orange bars radiating from pupil. Dorsal fin with black submarginal spot between first two spines, remainder of fin pale with scattered white spots and small brown spots or dashes centered on rays, forming diagonal rows posteriorly. Caudal fin mostly pale with several rows of brown bands alternating with narrower white spots on rays.

TABLE 2. Comparison of selected characters in species of *Alloblennius*.

Characters	*frondiculus*	*parvus*	*pictus*	*jugularis*	*anuchalis*
Maximum known size	23.8 mm SL	25.7 mm SL	32.6 mm SL	48.8 mm SL	32.9 mm SL
(N)	(1)	(37)	(104)	(50)	(5)
Supraorbital cirrus	present (pinnately branched)	present (simple)	present (simple)	present or rarely absent (simple)	absent
Nape cirri	present	absent	absent	usually present	absent or minute
Anterior nostril cirri	on posterior rim only	on anterior and posterior rims	like *frondiculus*	like *frondiculus*	like *frondiculus*
Cirrus on anterior rim of posterior nostril	absent	present (slender)	absent	present (broad flap)	absent
Innermost pelvic-finray	obvious externally	not obvious externally	like *parvus*	like *frondiculus*	like *frondiculus*
Caudal vertebrae	27	28-30	26-28	27-29	28-30
Dentary teeth (total)	20	30-35	32-36	30-34	27-29
Premaxillary teeth (total)	31	25-28	34-38	30-36	28-31
Lower jaws with labial flaps relatively broad and dark	yes	no	no	no	no
Upper lip dorsal margin anteriorly	with free margin	no free margin	no free margin	no free margin	no free margin
Anteriormost preopercular canal pore position	vertical pair of pores	single pore	single pore	single pore	single pore
Eye with ring of spots at least dorsally	absent, in life short bars radiate from pupil	present, at least in life; see Springer et al. (1998, Figs. 5-6)	absent	present well developed	absent
Pectoral fin with distinct small dark spots	yes	no	no	no	no

Comparisons. All species of *Alloblennius* are briefly compared in Table 2. Some of this information was taken from Smith-Vaniz and Springer (1971), Springer and Spreitzer (1978) and Springer *et al.* (1998). These publications should be consulted for more detailed descriptions, especially of color patterns. Externally, the most obvious distinguishing feature of *A. fondiculus* is the relatively large, pinnately branched supraorbital cirrus, which in other species of *Alloblennius* is either absent or minute (*A. anuchalis*) or typically simple and short (occasionally absent in *A. jugularis*). The new species is also exceptional in having only 20 total dentary teeth (27–29 in four *A. anuchalis*, 23.5–31.2 mm SL), each side of the lower lip terminating in a broad labial flap with the intervening space between the flaps relatively narrow (versus labial flaps scarcely developed and widely separated in other spe-

cies of *Alloblennius*), and the anterior (first) preopercular pore position with a vertical pair of pores (versus a single pore).

Habitat. The type locality was situated next to shore along a wave-exposed coast in 0–3 m depth. The bottom consisted of large algal-covered boulders in an area of very strong surge.

Etymology. From the Latin *frondiculus* (a small leaf) in reference to the shape of the orbital cirrus. The name is here treated as an appositional noun.

Acknowledgements

Digital x-rays and photographs of the preserved holotype were kindly provided by Sandra J. Raredon. The manuscript were critically reviewed by William N. Eschmeyer. Collection of the holotype was made possible by support from the Paine Family Trust.

References

Bath, H. (1983) Revision der Gattung *Antennablennius* Fowler 1931 mit Beschreibung einer neuen Art und Untersuchung der taxonomischen Stellung von *Antennablennius anuchalis* Springer & Spreitzer 1978. *Senckenbergiana Biologica*, 64 (1/3), 47–80.

Bath, H. (2001) Osteology and morphology of fishes of the subfamily Salariinae and its junior synonym Parablenniinae (Pisces: Blenniidae). *Stuttgarter Beiträge zur Naturkunde*, Serie A, 628, 1–42.

Bath, H. (2004) Revision of the genus *Rhabdoblennius* Whitley (Pisces: Blenniidae: Salariinae), with descriptions of two new species. *Stuttgarter Beiträge zur Naturkunde*, Serie A, 669, 1–26.

Chapman, W.M. (1951) Family Blenniidae. *In*: De Beaufort, L.F., *Fishes of the Indo-Australian Archipelago*, 9, 242–355.

Fowler, H.W. (1931) The fishes obtained by the De Schauensee South African Expedition,1930. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 83, 233–249.

Fowler, H.W. & Ball, S.C. (1924) Descriptions of new fishes obtained by the Tanager Expedition of 1923 in the Pacific islands west of Hawaii. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 76, 269–274.

Klunzinger, C.B. (1871) *Synopsis der Fische des Rothen Meeres*. II. Theil. Verhandlungen der K.-K. zoologisch-botanischen Gesellschaft in Wien, 21, 441–688.

Lotan, R. (1970) Systematic remarks on fishes of the family Salariidae in the Red Sea. *Israel Journal of Zoology,*18 (4) [1969], 363–378.

Norman, J.R. (1943) Notes on the Blennioid fishes. I. A provisional synopsis of the genera of the family Blenniidae. *Annals and Magazine of Natural History*, series 11, 10 (72), 793–812.

Patzner, R.A., Hastings, P.A., Springer, V.G., Wirtz, P. & Gonçalves, E.J. (2009) List of valid species of blennies, 443–473 *In*: Patzner, R.A. *et al.* (eds) *The Biology of Blennies*. Science Publishers, Enfield, New Hampshire, USA, 482 pp.

Rüppell, W.P.E.S. (1830) Atlas zu der Reise im nördlichen Afrika. *Fische des Rothen Meers*, 16 (3), 95–141, Pls. 25–35.

Saruwatari, T., Lopez, J.A. & Pietsch, T.W. (1997) Cyanine blue: a versatile and harmless stain for specimen observation. *Copeia* 1997 (4), 840–841.

Smith, J.L.B. (1959) Fishes of the families Blenniidae and Salariidae of the western Indian Ocean. *Ichthyological Bulletin of the J. L. B. Smith Institute of Ichthyology*, 14, 229–252, pls. 14–18.

Smith-Vaniz, W. F. & Springer, V.G. (1971) Synopsis of the tribe Salariini, with description of five new genera and three new species (Pisces: Blenniidae). *Smithsonian Contributions to Zoology*, 73, 1–72.

Springer, V.G. & Spreitzer, A.E. (1978) Five new species and a new genus of Indian Ocean blenniid fishes, Tribe Salariini, with a key to the genera of the tribe. *Smithsonian Contributions to Zoology*, 268, 1–20.

Springer, V.G., Bath, H. & Randall, J.E. (1998) Remarks on the species of the Indian Ocean fish genus *Alloblennius* Smith-Vaniz & Springer 1971, (Blenniidae). *aqua, Journal of Ichthyology and Aquatic Biology*, 3 (1), 19–24.

Whitley, G.P. (1930) Ichthyological miscellanea. *Memoirs of the Queensland Museum*, 10 (1), 8–31.