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FULL PAPER

A new species of the clingfish genus *Apletodon* (Teleostei: Gobiesocidae) from the Cape Verde Islands, Eastern Central Atlantic

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Abstract The clingfish *Apletodon barbatus* sp. nov. is described on the basis of 22 specimens and color photos from Santiago and Sal Islands, Cape Verde Islands, eastern central Atlantic Ocean. The species is very small, apparently not exceeding 18 mm total length; it is characterized by having a conspicuous maxillary barbel in males, 4–5 incisors in the upper jaw, numerous brown spots on the head and body in males, and a double white spot near the anus. The new species is compared with other species of the genus; a key to the males of the 5 known species of the eastern Atlantic genus *Apletodon* is presented. A checklist is provided for the species of *Apletodon* and their synonyms. Several new records are included in the present paper: *Apletodon dentatus* and *A. incognitus* are recorded from the Canary Islands, and *A. wirtzi* is recorded from Cameroon.

Keywords Gobiesocidae · *Apletodon* · *Apletodon barbatus* sp. nov. · Cape Verde Islands

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Introduction

The clingfishes of the family Gobiesocidae are distributed worldwide in tropical and temperate seas, some also living in freshwater streams of the tropics. They occur on hard substrata, usually on rocky bottom or in coral reefs, mostly in shallow waters. Clingfishes are characterized by possessing an adhesive disk formed by the pelvic fins, the head depressed, the skin naked, one dorsal and anal fin each, and several specialized osteological characters. The family was revised by Briggs (1955), who distinguished 9 species from the eastern Atlantic and the Mediterranean, all belonging to the subfamily Lepadogastrinae (Table 1). Briggs (1957) described 2 additional species of clingfishes from West Africa. Smith (1964) described *Apletodon knysnaensis* from South Africa, which was later found to be a junior synonym of *Apletodon pellegrini* (Chabanaud 1925). Blache et al. (1970) distinguished 2 species of clingfishes from tropical West Africa (Table 1). Briggs (1986a) found that *Lepadogaster microcephalus* Brook 1890 is a junior synonym of *Apletodon dentatus* (Facciola 1887); he distinguished 8 nominal species of clingfishes from the northeastern Atlantic and Mediterranean, some having several subspecies. Briggs (1990) recorded 8 species of clingfishes from the eastern tropical Atlantic. Hofrichter and Patzner (1997) described *Apletodon incognitus* from the northwestern Mediterranean Sea and the Azores. Vakily et al. (2002) listed 5 clingfish species from northwestern Africa. Henriques et al. (2002) synonymized *Lepadogaster zebrinus* Lowe 1839 with *Lepadogaster lepadogaster* (Bonnaterre 1788) and recognized *Lepadogaster purpurea* (Bonnaterre 1788) as a valid species, based on their revisional study of this species group. *Lepadogaster candolii* Risso 1810 was recently reclassified as *Mirbelia candolii* by Almada et al. (2008: 1155, as *Mirbelia candollei*) (see Table 1).

Table 1 History of eastern Atlantic and Mediterranean lepadogastrine classification since 1955

Publication	Region	Species described/reported
Briggs (1955)	MS, NEA	*Apletodon microcephalus* (Brook 1890)
Briggs (1955)	ECA	*Apletodon pellegrini* (Chabanaud 1925)
Briggs (1955)	MS, NEA	*Diplecogaster bimaculata* (Bonnaterre 1788)
Briggs (1955)	CI	*Diplecogaster ctenocrypta* Briggs (1955)
Briggs (1955)	MS	*Gouania wildenowi* (Risso 1810)
Briggs (1955)	MS, NEA	*Lepadogaster candollei* Risso 1810
Briggs (1955)	MS, NEA	*Lepadogaster lepadogaster* (Bonnaterre 1788)
Briggs (1955)	CI, MA	*Lepadogaster zebrinus* Lowe 1839
Briggs (1955)	MS	*Opeatogenys gracilis* (Canestrini 1864)
Briggs (1957)	ECA	*Lecanogaster chrysea* Briggs 1957
Briggs (1957)	ECA	*Opeatogenys cadenati* Briggs 1957
Smith (1964)	SE	*Apletodon knysnaensis* Smith 1964, later synonymized with *Apletodon pellegrini*
Blache et al. (1970)	ECA	*Apletodon pellegrini* (Chabanaud 1925)
Blache et al. (1970)	ECA	*Opeatogenys cadenati* Briggs 1957
Briggs (1986a)	MS, NEA	8 nominal species and subspecies; *Lepadogaster microcephalus* Brook 1890 is a junior synonym of *Apletodon dentatus* (Facciola 1887)
Briggs (1990)	ECA	8 species
Hofrichter and Patzner (1997)	AZ, MS	*Apletodon incognitus* Hofrichter and Patzner 1997
Vakily et al. (2002)	ECA	5 species
Henriques et al. (2002)	CI, MA	*Lepadogaster zebrinus* Lowe 1839 is a junior synonym of *Lepadogaster lepadogaster* (Bonnaterre 1788); *Lepadogaster purpurea* (Bonnaterre 1788) is a valid species
Fricke (2007)	ST	*Apletodon wirtzi* Fricke 2007
Almada et al. (2008)	MS, NEA	*Lepadogaster candolii* reclassified as *Mirbelia candolii*

AZ Azores Islands, *CI* Canary Islands, *ECA* Eastern Central Atlantic, *MA* Madeira, *MS* Mediterranean Sea, *NEA* Northeastern Atlantic, *SA* South Africa, *ST* São Tomé and Principe

The clingfish genus *Apletodon* was first described by Briggs (1955) on the basis of *Lepadogaster microcephalus* (a junior synonym of *Apletodon dentatus*) as the type species. Hofrichter and Patzner (1997) found that *Apletodon* species have often been confused with the closely related genus *Diplecogaster*; they distinguished *Apletodon* by its 3 pores of the lacrymal canal (2 in *Diplecogaster*), the first anal-fin ray usually situated below the first and second dorsal-fin ray (usually below third dorsal-fin ray in *Diplecogaster*), the presence of anal papillae (absent in *Diplecogaster*), the presence of caniniform and incisiform teeth (absent in *Diplecogaster*), and the thickening and dark pigmentation of the fin membrane of the anterior part of the dorsal and anal fin (normal in *Diplecogaster*). Briggs (1986a, b) and Hofrichter and Patzner (1997) distinguished 3 species of *Apletodon* from the eastern Atlantic Ocean and Mediterranean: *A. dentatus*, Mediterranean and Black Seas to Scotland; *A. incognitus*, northwestern Mediterranean Sea and Azores; *A. pellegrini*, Madeira and Canary Islands along the west coast of Africa to Port Alfred, South Africa. *Apletodon pellegrini* was listed by Briggs (1990) from Cape Verde, Canary, and Annobon Islands, north to Madeira, and south to South Africa, and by Vakily et al. (2002) from Cape Verde Islands and Senegal. Hofrichter et al. (2000) described the habitat and ecological aspects of *Apletodon dentatus*, and found the species off Brittany, France in hollow bulbs of the seaweed *Saccorhiza polyschides*. *Apletodon incognitus* was recorded from the eastern Mediterranean by Bilecenoğlu and Kaya (2006). A fourth species, *Apletodon wirtzi* Fricke 2007 was described from São Tomé and Principe, tropical eastern Atlantic (Fricke 2007: 69; Wirtz et al. 2007: 17). A fifth, previously unknown, species from the Cape Verde Islands is described in the present paper.

Materials and methods

Methods follow Briggs (1955) and Hofrichter and Patzner (1997). The abbreviation SL refers to the standard length (measured from the tip of the snout to the middle of the caudal fin base) and the abbreviation TL refers to the total length (measured from the tip of the snout to the end of the

caudal fin). The adhesive disk is divided into 3 different areas: region A is the anterior portion, region B is the posterior portion, and region C is the center of the disk (as illustrated by Briggs 1955). In the description, data for the holotype are given first, followed by data for the paratypes in parentheses. Fin rays are counted using the method of Fricke (1983), where spines are expressed as Roman numerals, unbranched soft rays are expressed as lower-case Roman numerals, and branched rays as Arabic numerals. Specimens cited in the present paper are deposited in the following collections: CCML, Colección Ictiologica, Departamento de Biología Animal (Ciencias Marinas), Facultad de Biología, Universidad de La Laguna, Tenerife, Spain; MGAB, Muzeul de Istorie Naturala 'Grigore Antipa', Bucharest, Romania; MNHN, Muséum National d'Histoire Naurelle, Paris, France; NMW, Naturhistorisches Museum Wien, Austria; SAIAB, South African Institute for Aquatic Biodiversity, Grahamstown, South Africa (formerly J.L.B. Smith Institute of Ichthyology, Rhodes University); SMNS, Staatliches Museum für Naturkunde Stuttgart, Germany; USNM, National Museum of Natural History, Smithsonian Institution, Washington, DC, USA.

Results

Key to the species of the genus *Apletodon*. The key to species mainly identifies male specimens; females are often difficult to distinguish. Specimens are sexed by the shape of their ovaries, and sexes are often distinguishable by their head shape.

1a. Maxilla with a conspicuous white barbel in male; upper jaw with 4–5 incisors …*Apletodon barbatus* sp. nov.
1b. Maxilla without a barbel in male; upper jaw with 1–3 incisors 2
2a. Mandibular-canal pores 0; head length 2.4–3.0 (mean 2.7) in SL ..... *Apletodon dentatus*
2b. Mandibular-canal pores 3; head length 2.2–2.8 (2.4) in SL 3
3a. Males: head width 3.6–4.0 (mean 3.8) in SL; snout long, more or less pointed, conical, preorbital length 3.1–4.0 in head length (Fig. 2d) …..*Apletodon wirtzi*
3b. Males: head width 2.4–3.4 in SL; snout short, rounded, preorbital length 2.7–3.4 in head length (Fig. 2a–c) 4
4a. Males: head width 2.9–3.4 (mean 3.3) in SL; anal papillae small, indistinct; both sexes: anal-fin length in distance between anus and anal-fin origin 1.0–1.7 (1.4) ..... *Apletodon incognitus*
4b. Males: head width 2.4–3.0 (2.7) in SL; anal papillae large, distinct; both sexes: anal-fin length in distance between anus and anal-fin origin 1.5–2.3 (1.9) ..... *Apletodon pellegrini*

***Apletodon barbatus* sp. nov.** (New English name: barbel clingfish) (Figs. 1–3)

Holotype. SMNS 26427, male, 14.2 mm SL, King Bay, at Tarrafal, Santiago/São Tiago Island, Cape Verde Islands, 15°16′31″N, 23°45′45″E, 5–8 m depth, P. Wirtz, 2008.

Paratypes. Twenty-one specimens: MNHN 2009-1592, 1 male, 13.5 mm SL; SMNS 26428, 6 males (8.2–11.4 mm SL) and 13 females (6.3–11.3 mm SL); USNM 396967, 1 male, 13.5 mm SL; collection data as for holotype.

Additional material. SMNS 24604, 1 male, 13.5 mm SL, Cape Verde Islands, Sal Island, Santa Maria, 16°36′N 22°54′W, 11 m depth, coarse sand and coralline algae, A. Brito, October 1998; SMNS 24605, 1 male, 15.0 mm SL, same data as SMNS 24604, 15 m depth, coarse sand and coralline algae, A. Brito, October 1998.

Diagnosis. A small species of *Apletodon* with 4–5 dorsal-fin rays, 5–6 anal-fin rays, 23–25 pectoral-fin rays; head width in males 2.4–2.8 in SL; anus in males with distinct papillae; anal-fin length in distance between anus and anal-fin origin 1.4–1.7; snout in both sexes blunt, broadly rounded; preorbital length 3.2–5.3 in head length; conspicuous white maxillary barbel in males; head and body with numerous dark brown spots in life; double white spot near the anus.

Description. Dorsal-fin iv (iv–vi); anal-fin vi (v–vi); pectoral-fin xxiv–xxv (xxiii–xxv); caudal-fin xi (xi–xii). Gill rakers on third arch 6 (6).

Upper jaw with 3 (3) canines and 5 (4–5) incisors, surrounded by several undifferentiated conical teeth. Lower jaw with 2 (1–2) canines and 3 (3) incisors, surrounded by undifferentiated conical teeth.

Head lateral-line system with 2 pores in nasal canal, 1 pore in postorbital canal, 3 pores in lacrymal canal, 1 upper and 1 lower pore in preopercular canal, and 3 pores in mandibular canal (Fig. 2).

Head broad, depressed. Head length 41.5 (35.1–37.0) % SL (2.4–2.9 in SL). Maximum body depth 23.9 (15.8–21.5) % SL (4.2–6.3 in SL). Maximum head width 33.1 (24.6–28.2) % SL (3.0–4.1 in SL). Maximum (horizontal) orbit diameter 10.6 (8.1–11.4) % SL (3.1–4.9 in head length). Snout short, broadly rounded (Fig. 1b). Preorbital length 7.7 (7.9–12.1) % SL (3.2–5.3 in head length), in males not much longer than in females. Interorbital distance 9.9 (9.6–11.8) % SL (3.0–4.2 in head length). Upper jaw length 22.5 (17.7–18.5) % SL. Lower jaw length 15.5 (14.8–15.8) % SL. Maxillary barbel present in males only, its length 9.9 (6.5–8.2) of % SL. Anus situated near the middle between disc and anal-fin origin, usually slightly closer to disc; male

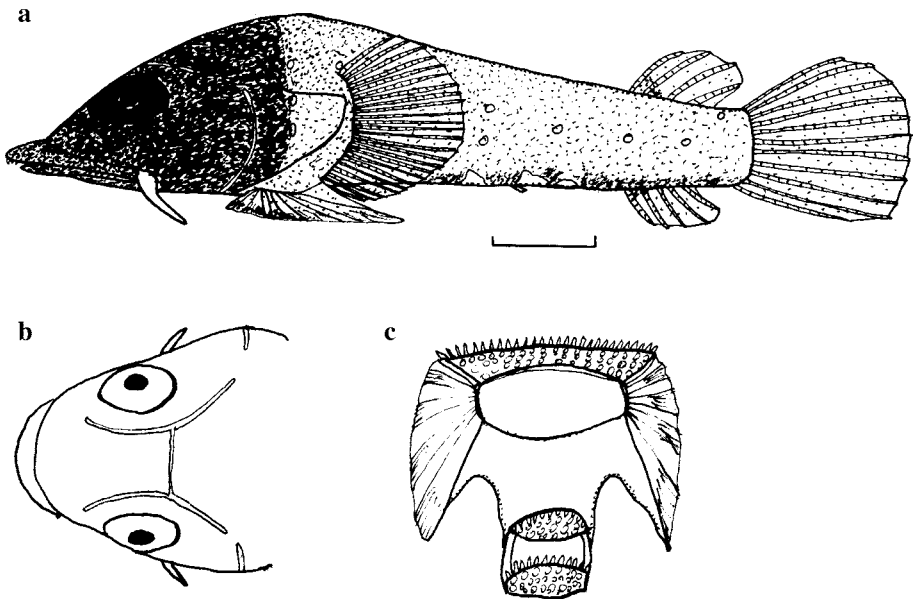

Fig. 1 *Apletodon barbatus* sp. nov., SMNS 26427, holotype, male, 14.2 mm SL, King Bay, Tarrafal, Santiago Island, Cape Verde Islands. **a** Lateral view; **b** dorsal view of head showing lateral-line system; **c** sucking disc. *Bar* 2 mm

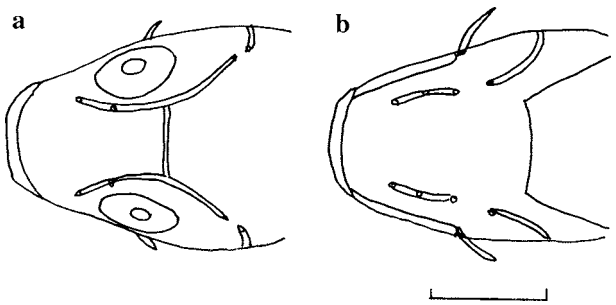

Fig. 2 *Apletodon barbatus* sp. nov., SMNS 26428, paratype, male, 11.4 mm SL. **a** Dorsal view of head showing lateral-line system; **b** ventral view of head showing lateral-line system. *Bar* 2 mm

with a short urogenital papilla; distance between disc and anus 16.9 (15.6–17.8) % SL, distance between anus and anal-fin origin 19.0 (13.2–18.5) % SL. Preanus length 68.3 (64.9–68.1) % SL (1.4–1.6 in SL). Caudal–peduncle length 11.2 (8.8–14.7) % SL (6.8–11.4 in SL). Caudal–peduncle depth 11.2 (7.9–10.4) % SL (8.9–12.7 in SL).

Predorsal-fin length 85.9 (75.4–82.2) % SL (1.16–1.32 in SL). Preanal-fin length 84.5 (71.9–82.2) % SL (1.2–1.4 in SL). First rays of dorsal and anal fins basally slightly thickened in males. Prepectoral-fin length 39.4 (35.3–42.2) % SL (2.3–2.6 in SL). Prepelvic-fin length 32.4 (21.0–36.0) % SL (2.8–4.8 in SL). Predisc length 28.2 (16.7–26.7) % SL (3.6–6.0 in SL). Disc length 24.6 (22.8–28.2) % SL (3.6–4.4 in SL). Disc membrane inserting at base of 23rd (20th to 23rd) pectoral-fin ray. Disc with 3 rows of papillae in region A, 3 rows of weak papillae in region B, and 3 rows of weak papillae in region C (Fig. 1c). No lateral papillae in disc region A. Caudal-fin length 22.5 (9.8–16.3) % SL (5.1–7.1 in SL).

Color in life. Ground coloration depending on bottom color, either dark brown, reddish brown or greenish. In color photos taken by A. Brito and P. Wirtz (e.g., Fig. 3), the specimen is reddish brown, head and body covered with numerous small dark-brown spots. The eyes are black. The maxillary barbel is conspicuously white. The fins are basally spotted with dark brown, distally translucent. In photos taken by P. Wirtz at the type locality (including Fig. 4), the specimens are marbled with reddish brown, olive green, and creamy white, with numerous olive green spots and a lateral horizontal row of white blotches; cheeks and throat with larger dark-brown blotches; eyes reddish brown; maxillary barbel white. Coloration of females often light green.

Color in alcohol. Freshly preserved specimens are reddish brown, some with broad vertical brown bars; large males including the holotype with the head dark reddish brown (Fig. 1), the remaining parts of the body much lighter, the lower sides dark grey; belly of the holotype dusky, with light blotches; eye dark grey; maxillary barbel white; fins translucent. Anus with a double white blotch. Disc orange.

Distribution. Cape Verde Islands (Santiago/São Tiago Island; Sal Island). This new species is known only from

Fig. 3 *Apletodon barbatus* sp. nov., male, Cape Verde Islands, Santiago Island. Photo by P. Wirtz, July 2008

Fig. 4 *Apletodon barbatus* sp. nov., presumed female, Cape Verde Islands, Santiago Island, habitat with *Caulerpa peltata*, 5 m depth. Photo by P. Wirtz, July 2008

the region. It was collected at 5–15 m depth, and was common on hard substrate.

Etymology. The name of the new species, *barbatus*, refers to the maxillary barbels which are quite conspicuous in males, and characteristic for the species.

Comparisons. This new species is distinguished from the species of *Diplecogaster* by the characters of the genus [lacrymal canal with 3 pores (2 pores in *Diplecogaster*), anal-fin length in distance between anus and anal-fin origin 1.4–1.7 (0.83–1.23), anal papillae distinct (absent), canines and incisors present (absent)]. Within the genus *Apletodon*, the new species is characterized by the male having a conspicuous barbel on each maxilla, and 4–5 incisors in the upper jaw. *Apletodon barbatus* is also characterized by the numerous brown spots on the head and body in males, and a double white spot near the anus. Head shapes of the 5 known species of *Apletodon* differ considerably in males. Males of *Apletodon barbatus* have a broadly rounded head (seen from above) similar to *Apletodon pellegrini*; the heads of males of the other species are more pointed. Unfortunately, the females of *A. barbatus* examined in the present study are too small to show sufficiently distinguishing characters from females of *A. incognitus* and *A. pellegrini*, except that they show a coloration with is very similar to that of male *A. barbatus*. Counts and proportions of the *Apletodon* species are compared in Table 2.

Discussion. The new species was classified in the genus *Apletodon* as it agrees with the generic characters given by Briggs (1955) within the subfamily Lepadogastrinae as 3 1/2 gills, the gill membranes attached to the isthmus, the disc double, the dorsal and anal fins with strong rays, normal, the subopercular region without a spine, 20–29 pectoral fin rays, the presence of small incisors in front of each jaw followed by 1–3 well-developed canines, and 6 rakers on the first gill arch.

After several years in preservative, the barbel of *A. barbatus* has shrunk and is barely visible (SMNS 24604, 24605); therefore, these specimens were not included in the type series. In life, the male barbel is conspicuously white and probably serves as a signal to females and other males.

The small species of the genus *Apletodon* are cryptic and easily overlooked. Because of their external similarity, they have probably often been confused in the past. Old distribution records must therefore be considered with caution. An example is the alleged presence of *A. pellegrini* at Annobon Island; does the species really occur there, or has it been confused with *A. wirtzi*? Previous records of

Table 2 Comparison of counts and proportions of the species of *Apletodon*

	A. barbatus sp. nov.	*A. dentatus*	*A. incognitus*	*A. pellegrini*	*A. wirtzi*
Maximum TL in males (mm)	18	51	41	43	17
Mandibular canal pores	3	0	3	3	3
Disc length in SL	3.6–4.4 (4.0)[a]	3.8–4.8 (4.4)	3.3–4.8 (3.8)	3.3–3.8 (3.5)	2.9–3.5 (3.3)
Head length in SL	2.5–2.9 (2.7)	2.4–3.0 (2.7)	2.2–2.8 (2.4)	2.4–3.0 (2.6)	2.2–2.5(2.4)
Head width in SL (males)	2.4–2.8 (2.6)	2.9–3.6 (3.2)	2.9–3.4 (3.3)	2.4–3.0 (2.7)	3.6–4.0 (3.8)
Head width in head length (males)	1.3–1.4 (1.3)	1.0–1.8 (1.3)	1.0–1.6 (1.4)	1.0–1.4 (1.1)	1.4–1.8 (1.5)
Incisors in upper jaw	4–5	2	1–2	2–3	2–3
Canines in upper jaw	3	1–3	1–2	2–3	1–2
Incisors in lower jaw	3	2–3	2–3	3–4	3–4
Canines in lower jaw	1–2	1–3	1–2	2–3	2–3
Anal papillae (male)[b]	+++	+++	+	+++	+++
Anal-fin length in distance between anus and anal-fin origin	1.4–1.7 (1.5)	1.3–2.3 (1.7)	1.0–1.7 (1.4)	1.5–2.3 (1.9)	1.5–2.7 (2.2)
Distribution	Cape Verde Islands	Mediterranean to Scotland	Mediterranean to Azores	Madeira to South Africa	São Tomé and Principe

[a] *Numerals* in parentheses show a mean value

[b] Condition of the anal papillae is shown as + (present) and +++ (pronounced)

Apletodon pellegrini from the Cape Verde Islands were probably based on *A. barbatus*.

The present paper also provides three new distribution records (see below, "Comparative materials"): *Apletodon dentatus* and *A. incognitus* are recorded from the Canary Islands, and *A. wirtzi* is recorded from Cameroon.

Checklist of the species of *Apletodon*

Apletodon barbatus Fricke, Wirtz, and Brito, sp. nov. (present paper). Distribution: Cape Verde Islands.

Apletodon dentatus (Facciola 1887). *Lepadogaster dentatus* Facciolà 1897: 165, pl. 3, fig. 2 (Sicilia/Sicily; no types known). *Lepadogaster stictopteryx* Holt and Byrne 1899: 589 (Plymouth and Loch Craignish in Argyllshire, UK; 3 syntypes, whereabouts unknown). *Lepadogaster microcephalus* Brook 1890: 166, pl. 7, figs. 1–4 (west coast of Scotland; no types known). *Lepadogaster microcephalus bacescui* Murgoci 1940: 384 (Cap Caliacra, Marii Region, Romania, 1–5 m depth; holotype: MGAB 54). Distribution: Mediterranean and Black Sea; northeastern Atlantic Ocean north to Scotland, south to Canary Islands.

Apletodon incognitus Hofrichter and Patzner 1997. *Apletodon incognitus*: Hofrichter and Patzner 1997: 16, figs. 1–7 (Banyuls-sur-Mer, France, 2 m depth; holotype: NMW 93029). Distribution: Mediterranean Sea; northeastern Atlantic Ocean from Azores and Canary Islands.

Apletodon pellegrini (Chabanaud 1925). *Lepadogaster* (*Mirbelia*) *pellegrini*: Chabanaud, 1925: 283 [northwestern Africa/Senegal; Cape Blanc; syntypes: MNHN 1907-0257 (1), MNHN 1925-0239-0240 (2), MNHN 1925-0241 (2)]. *Apletodon knysnaensis* Smith 1964: Smith 1964: 590, pls. 93, 96, 97 (Knysna, Cape Province, South Africa; holotype: SAIAB 315). Distribution: Madeira and Canary Islands along the west coast of Africa to Port Alfred, South Africa.

Apletodon wirtzi Fricke 2007. *Apletodon wirtzi*: Fricke 2007: 69, figs. 1, 3d (Bombom Island, São Tomé and Principe, 1°41′N 7°24′E; holotype: SMNS 24130). Distribution: São Tomé and Principe; Cameroon.

Comparative materials. *Apletodon dentatus*: CCML uncat., 2 specimens, 14.0–14.5 mm SL, Alegranza Island, Canary Islands (new record), 35 m depth, A. Brito; CCML uncat., 2 specimens, 11.5–17.5 mm SL, northern Lanzarote Island, Canary Islands, 30 m depth, A. Brito; SMNS 12664, 1 specimen, 19.1 mm SL, Italy, Genoa, 44°25′N, 8°57′E, Kossmann, 1891. *Apletodon incognitus*: NMW 93029, holotype, male, France, Banyuls-sur-Mer; CCML uncat., 2 specimens, 21.1–21.6 mm SL, Punta de La Sal, Gran Canaria, Canary Islands (new record), 12 m depth, A. Brito; CCML uncat., 1 specimen, 12.2 mm SL, La Graciosa, Canary Islands, 15 m depth, A. Brito; SMNS 21814, 1 specimen, 22.0 mm SL, Azores Islands, Faial Island, Porto Pim, 38°31′N, 28°37′20″W, P. Wirtz, April 1999. *Apletodon pellegrini*: SAIAB 10255, 1 specimen, South Africa, Knysna, under railroad bridge, D. Watts, 21 Nov 1978; SAIAB 10852, 11 specimens, South Africa, Knysna Lagoon, Western Cape area, 34°02′S, 23°02′E, 8 December 1979; SAIAB 14599, 7 specimens, South Africa. SAIAB 43756, 5 specimens, South Africa, False Bay, Cape Province, 34°10′S, 18°37′E, R. Winterbottom, 27 November 1975; USNM 198169, 1 paratype, South Africa, Knysna Estuary, J.L.B. Smith, January 1964; USNM 270272, 2 specimens, South Africa, Bird Island, Algoa Bay. *Apletodon wirtzi*: SMNS 24130, holotype, male, 14.2 mm SL, Bombom Island, Principe Group, São Tomé and Principe, 1 m depth, P. Wirtz, February 2004; MNHN 2005-0170, paratype, 1 male, 10.7 mm SL, same data as the holotype; SMNS 24446, paratypes, 5 specimens, 9.4–12.1 mm SL, same data as the holotype; SMNS 24132, paratypes, 2 specimens, 9.0–12.1 mm SL, same data as the holotype; SMNS 25472, 5 specimens, 13.0–14.0 mm SL, Cameroon (new record), Limbe, Province de Sud-Ouest, 3°59′49″N 9°12′18″E, P. Wirtz, January 2007; USNM 381374, paratype, 1 male, 11.5 mm SL, same data as the holotype. *Diplecogaster bimaculata bimaculata*: SMNS 12541, 1 specimen, France, Pyrenées Orientales, Racou, 22 km SSE Perpignan, 42°32′30″N, 3°1′E, 5 m depth, M. Grabert, September 1991; SMNS 13177, 1 specimen, Italy, Giglio Island, Bay of Campese, at Faraglione, 42°22′N, 10°52′E, 20 m depth, I. Koch, 28 April 1992; SMNS 14049, 2 specimens, Italy, Giglio Island, Bay of Campese, at Tralicci, 42°22′N, 10°52′E, 8 m depth, I. Koch, 18 April 1993; SMNS 19061, 2 specimens, Northern Cyprus, Karavas Alsavcak Bay, 9 km W Kyrenia/Girne, 35°21′13″N, 33°13′15″E, 0–1 m depth, R. Fricke, 19 May 1997; SMNS 19204, 2 specimens, Italy, Giglio Island, Bay of Campese, 42°22′35″N, 10°52′58″E, 10 m depth, I. Koch, 14 June 1985; SMNS 20163, 8 specimens, Madeira, off Hotel Roca Mar, Caniço de Baixo, 40–70 m depth, P. Wirtz, 22 September 1996; SMNS 20347, 1 specimen, Tunisia, 4 km E Tabarca, 6 km E Bone/Annaba, 36°57′22″N, 8°47′52″E, 0–6 m depth, R. Fricke, 23 May 1998; SMNS 21202, 2 specimens, Madeira, Porto Novo, 1–2 m depth, P. Wirtz, 16 October 1998. *Diplecogaster bimaculata pectoralis*: SMNS 11916, 4 specimens, Azores Islands, Faial Island, Horta, 38°32′N, 28°38′W, P. Wirtz, December 1990.

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