# *AMPHICORINA SCHLENZAE*, A SMALL SABELLID (POLYCHAETA, SABELLIDAE) ASSOCIATED WITH A STONY CORAL ON THE COAST OF SÃO PAULO STATE, BRAZIL

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ABSTRACT

Colonies of the stony coral *Mussismilia hispida* were collected from islands off shore of São Paulo State, de-calcified, and the polychaetes sorted and identified. Spionids, syllids, and sabellids were the most common families, and among the sabellids, a new species of *Amphicorina* was found. *Amphicorina schlenzae* is described and comparisons with the closest species are given.

Polychaetes are commonly found among the fauna associated with hard substrates, such as bryozoans (Morgado and Amaral, 1981a,b,c, 1984, 1985), gastropods (Ben-Eliahu, 1975a,b, 1976a,b,c, 1977a,b), and corals (Arvanitidis and Koukouras, 1994; Ebbs, 1966). Some species appear to be specialized for boring the calcareous skeleton of their hosts, by means of mechanical or chemical abrasion (Hutchings, 1986; Chughtai and Knight-Jones, 1988).

The polychaete endofauna associated with hard substrates, more especifically bryozoans, in Brazil, has been described by Morgado and Amaral (1981a,b,c, 1984, 1985). Recently, Nogueira initiated his Ph.D. studying the polychaetes associated with *Mussismilia hispida* (Verrill, 1868), a hemispheric stony coral endemic in Brazilian waters.

This study revealed that the most representative families associated with the coral colonies were Spionidae, Syllidae and Sabellidae. Among sabellids, some small animals belonging to a new species of the genus *Amphicorina* Quatrefages, 1850, were common.

In this paper, the third on the study of the polychaete fauna associated with that species of coral in São Paulo State, a new species is described and comparisons to the closest species are given.

## Material and Methods

Colonies of *M. hispida* were collected by SCUBA diving at Laje de Santos (24°19′S, 46°11′W) and Ilha dos Alcatrazes (24°06′S, 45°42′W). These two islands are located off the coast of São Paulo State, Brazil. Collections were made on 17 March 1996 and 4 December 1996 at a depth of 4–7 m. Corals were fixed in 4% formalin and later de-calcified with formaline-formic acid solution. Polychaetes were sorted from the resultant sediment with the aid of a stereomicroscope, transfered into 70% alcohol, and identified to species. Drawings were made with the aid of camera lucida equipment. SEM photographs were taken at Laboratório de Microscopia Eletrônica do Instituto de Biociências da Universidade de São Paulo.

## Description

Family Sabellidae
Subfamily Sabellinae
Genus *Amphicorina* Quatrefages, 1850

This genus has been re-diagnosed many times since the brief description of Quatrefages (1850). Caullery and Mesnil (1896 *in* Rouse, 1994) erected the genus *Oriopsis* and indicated as type species *O. metchnikovi*, a species that has not been found since (Rouse, 1994). *Oriopsis* was considered a valid genus, consisting of several species (Banse, 1957; Ben Eliahu, 1975b; Gambi et al., 1983; Knight-Jones, 1983; Rouse, 1990, 1994) and emended several times (Banse, 1957; Knight-Jones, 1983; Fitzhugh, 1989; Rouse, 1990, 1994). However, *O. metchnikovi* has presently been considered as a synonym of *Amphicorina armandi* (Claparède, 1864) and thus all the species referred to *Oriopsis* should now be considered as *Amphicorina* (Rouse, 1994).

***Amphicorina schlenzae*** new species
(Figs. 1,2)

*Material Examined.*—36 individuals, 16 from Laje de Santos and 20 from Ilha dos Alcatrazes. Holotype and paratypes deposited at Museu de História Natural, Instituto de Biologia, Universidade Estadual de Campinas (MHN-BPO 66-0 for holotype and MHN-BPO 66-1-29 for paratypes), holotype and 15 paratypes slide mounted, 14 paratypes in 70% ethanol, and six on SEM stubs not preserved.

*Description*.—Holotype complete, 0.8 mm long, from collar to pygidium, with eight thoracic setigers and three on the abdomen (Fig. 1A). Crown with three pairs of radioli lacking both, eyes and pigmentation, with at least eight long lateral pinullae ending at the same height; radiolar flanges present, tapering until the end of radioli, fused basally, forming a slight web, nearly impossible to see on the light microscope, but evident on SEM (Fig. 2G); one pair of ventral radiolar appendages present, shorter than radioli, grooved free from the palmate membrane, originating between the halves of tentacular crown (Fig. 2A,D). Collar distinct, smooth (Fig. 2A–F); anterior peristomial ring largely obscured by posterior peristomial ring, visible through dorsal gap on posterior peristomial ring (Fig. 2B,C,F); ventrally, collar distally bifid, due to one pair of anterior peristomial ring expansions, aparently fused to posterior peristomial ring collar, and with one big rectangular patch extending until the end of posterior peristomial ring; from the second setiger, two glandular patches in each setiger (Fig. 2A,D); ventrolaterally, collar has sort of an incision (Fig. 2B,E); dorsally, posterior peristomial ring with a dorsal gap and one pair of large red eyes; dorsal lips not seen (Fig. 2C,F). Thorax setigers each with elongate, narrowly bilimbate setae (Fig. 1B), much shorter bayonet setae (Fig. 1C,G), and, from the setiger 2, long handled uncini, not hooded, with one big main tooth and 6–7 rows of unequal sized secondary teeth, first row above main fang with one tooth much bigger than the following ones (Fig. 1D,H,I; Fig. 2A,B,E). Abdomen setigers each with 2–3 needlelike setae (Fig. 1E,J), and 12, decreasing in number posteriorly, short based, quadrangular uncini, with main fang slightly bigger and 6–7 rows of equal sized teeth (Fig.

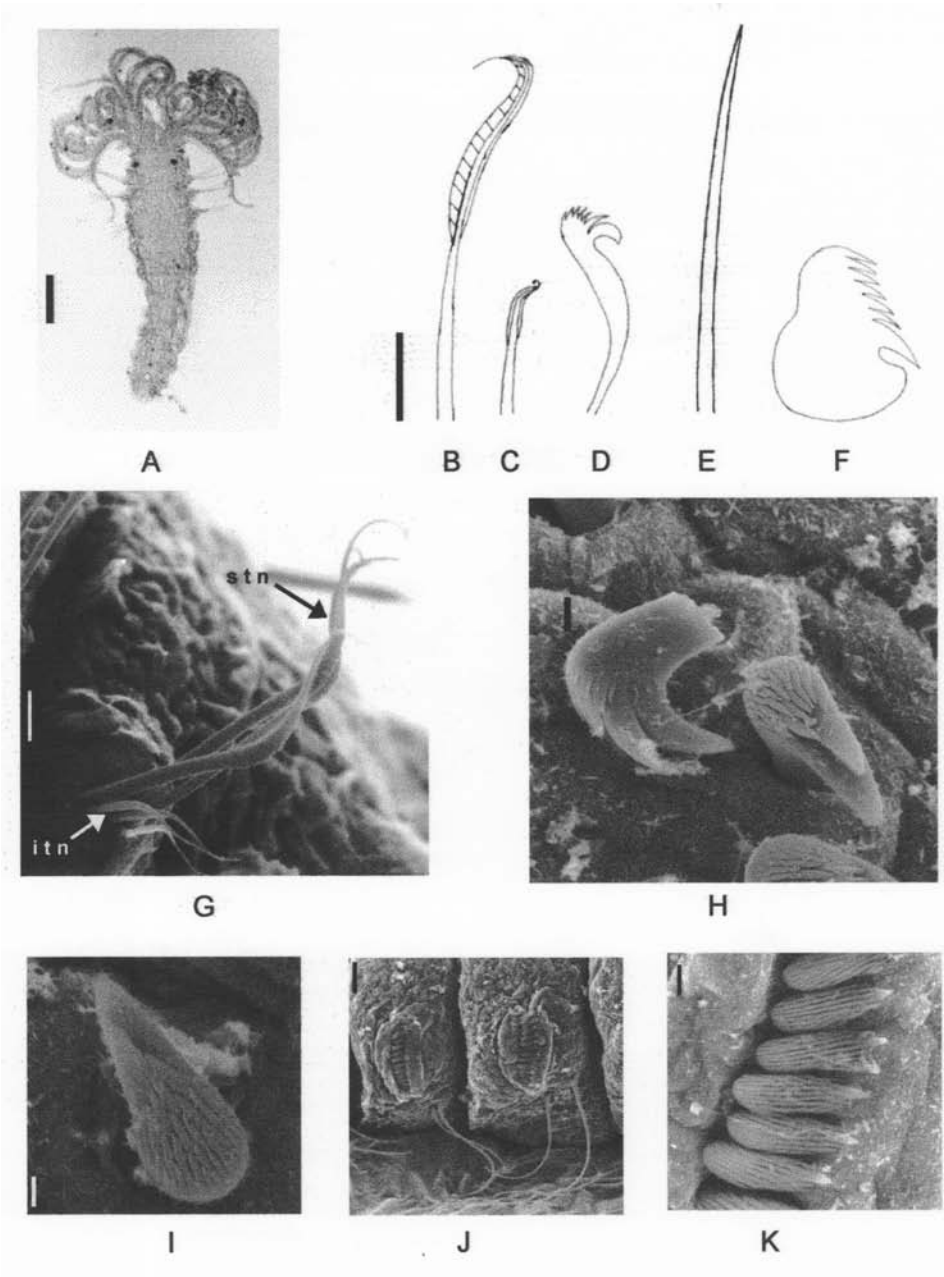


Figure 1. *Amphicorina schlenzae* A. holotype, light microscope; B. thoracic elongate, narrowly hooded bilimbate seta; C. thoracic bayonet seta; D. thoracic uncinus; E. abdominal needlelike seta; F. abdominal uncinus; G–K SEM photos: G. thoracic notosetae; H. thoracic uncini; I. thoracic uncinus, detail; J. abdominal setae; K. abdominal uncini, detail. i t n, inferior thoracic notosetae, s t n, superior thoracic notosetae. Bars in A: 150 mm, B–D: 10 mm, E–F: 5 mm, G: 7 mm, H: 6 mm, I: 4 mm, J: 6 mm, K: 8 mm.

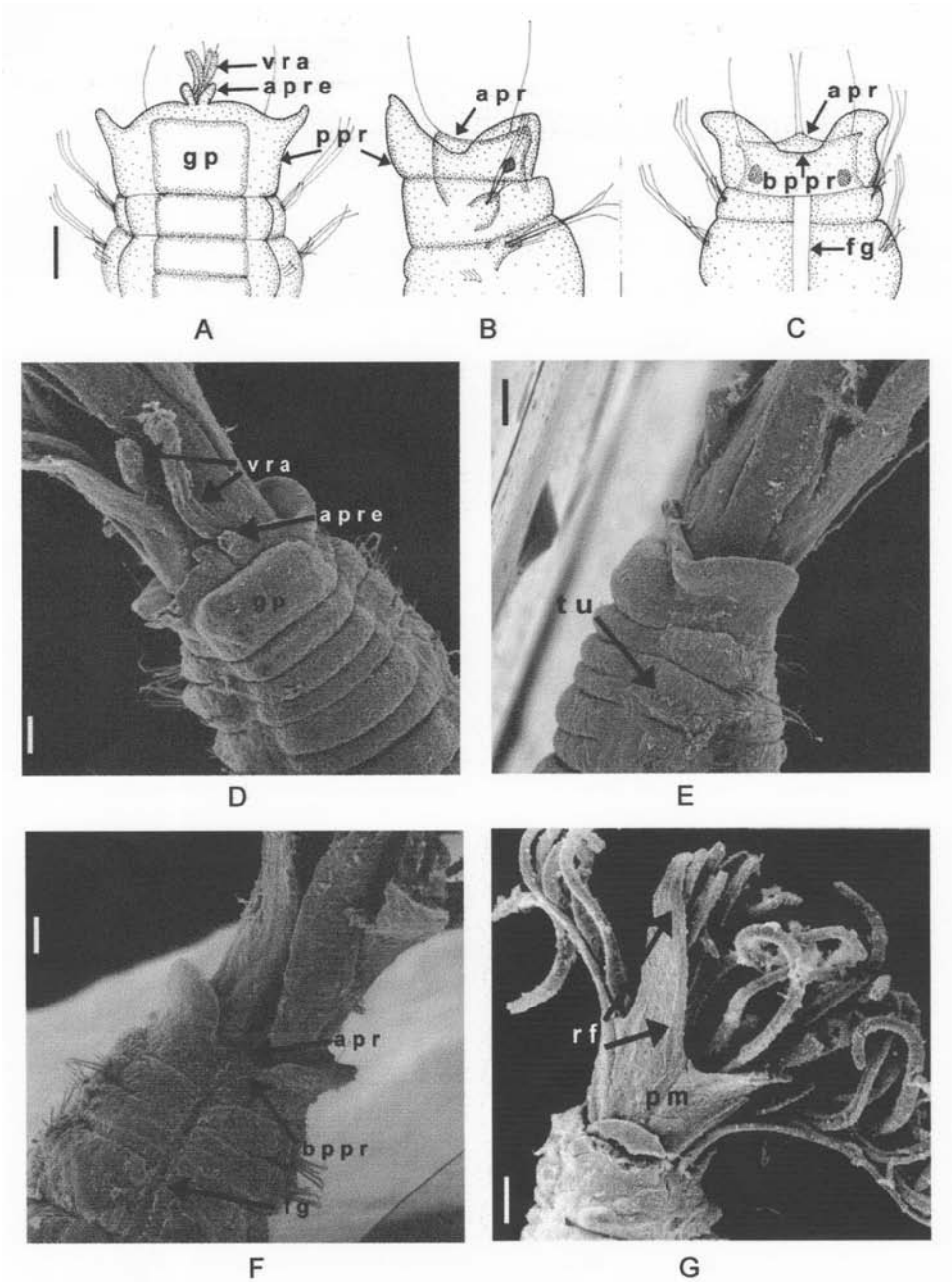


Figure 2. *Amphicorina schlenzae* A. collar, ventral view; B. collar, lateral view; C. collar, dorsal view; D–G SEM photos: D. collar, ventral view; E. collar, lateral view; F. collar, dorsal view; G. tentacular crown. a p r, anterior peristomial ring; a p r e, anterior peristomial ring expansions; b p p r, border of posterior peristomial ring; f g, fecal groove; g p, glandular patches; p m, palmate membrane; p p r, posterior peristomial ring; r f, radiolar flanges; t u, first thoracic torus; v r a, ventral radiolar appendages. Bars in A–C: 60 mm, D–G: 75 mm.

1F,J,K). Pygidium rounded and bilobed, without eyes. Neither glandular ridge on setiger 2, nor statocysts on setiger 1 were seen. Sex of specimens not studied.

*Variation*.—Some variations from the holotype were observed: (1) the length from collar to pygidium varies from 0.6–1.4 mm; (2) a few specimens lack peristomial eyes; (3) some specimens have enlarged midthoracic setigers, due to maturing gametes; (4) in the thoracic region, 1–5 uncini may occur on each setiger; elongate, narrowly hooded bilimbate setae vary from 3–6 (about 80–140 μm in length) per setiger, and bayonet setae, from 0–3 (about 20–45 μm in length); (5) 3–6 abdominal segments, most specimens with five segments, each with 12 plates of uncini and 2–3 long needlelike setae (80–140 μm in length), equal in size or with one of that length, the other being much smaller (about 20–60 μm in length). In spite of the differences between the specimens, all the examined animals have thoracic and abdominal capillaries about the same size.

The number of abdominal segments is considered a very important character (Rouse, 1990, 1994), but it depends largely on the length of the individuals (Gambi et al., 1983). In our specimens, most of the individuals have five abdominal setigers, but this number varies from 3–6 (3 on holotype); as the two largest individuals collected have six abdominal segments, we decided to consider this as the characteristic number for this species. Besides the number of abdominal setigers, we also attribute to size variation the differences in length and number of setae mentioned above.

*Etymology*.—The name *Amphicorina schlenzae* was given to honor the famous Brazilian researcher Dr. Erika Schlenz, specialist on sea anemones, who advised J. Nogueira during his Master of Science course, and who has helped the authors during the present study.

*Comparison*.—Rouse (1990) listed the main diagnostic characters of the known species of *Amphicorina* (as *Oriopsis*) and later (Rouse, 1994) described three new species. Among all these, three species have six abdominal setigers and smooth collar. *Amphicorina coalescens* (Banse, 1959) differs from *A. schlenzae* by having four pairs of radioli. *Amphicorina michaelseni* (Banse, 1957) is different because it has 4–5 pairs of radioli; and thoracic notosetae much longer (200–220 mm, versus 80–140 mm in *A. schlenzae*). *Amphicorina parvula* (Ehlers, 1913) differs because superior thoracic notosetae are slightly longer (160 mm), with narrower hood; inferior thoracic notosetae are much longer (120 mm, compared to 20–45 mm in *A. schlenzae*); and shape of thoracic and abdominal uncini very different (Banse, 1957).

As the individuals of *A. schlenzae* studied presented great variation in number of abdominal setigers, we also considered convenient to compare it to the species with five abdominal setigers, especially because the most similar species are *A. hynensis* (Knight-Jones, 1983) and *A. androgyne* (Rouse, 1994), both of them with five abdominal setigers. *A. androgyne* (Rouse, 1994) is the closest species to *A. schlenzae*, but they are separated because the former has smaller rectangular patch on ventral collar; thoracic inferior notosetae capillary, instead of bayonet setae, proportionally much longer than those of *A. schlenzae* (Rouse, 1994); according to Rouse's figure 23, thoracic uncini with teeth on first row above main fang much smaller than those of *A. schlenzae*; less abdominal uncini per fascicle (up to eight, compared to 12 in *A. schlenzae* ); and all animals examined had only five abdominal setigers. *Amphicorina hynensis* (Knight-Jones, 1983) is close, but they are distinguished because the former has few pinnules per radiolus, collar not bifid ventrally, only three rows of teeth above the main fang on thoracic uncini, and 6–9 uncini per abdominal setiger. *Amphicorina limbata* (Ehlers, 1897), besides the number of ab-

dominal setigers, differs from *A. schlenzae* because it has four pairs of radioli. *Amphicorina magna* (Banse, 1957) differs because it is much bigger, 6 mm in length (compared to 1.5 mm, from pygidium to the end of tentacular crown in *A. schlenzae*); it has five pairs of radioli; there are 18–22 single-limbate notosetae (3–6 in *A. schlenzae*), each measuring about 250–300 mm, and 8–10 thoracic uncini (1–5 in *A. schlenzae*); it has 22–24 abdominal uncini (12 in *A. schlenzae*), of which the basal fang is not bigger than the others; and abdominal capillary setae measuring 200–250 mm in length (20–140 mm in *A. schlenzae*). *Amphicorina mobilis* (Rouse, 1990) is distinguished from *A. schlenzae* because the former has anterior peristomial ring without appendages; one pair of eyes on pygidium; thoracic uncini with only two rows of teeth above main fang, and 3–9 abdominal uncini, with indistinct basal tooth. *Amphicorina paramobilis* (Rouse, 1994) differs from *A. schlenzae* because of the even collar all around the body, without ventral notch; radioli terminating by a pinnule-like filament; ventral glandular patches much smaller than those of *A. schlenzae*, if present; thoracic uncini with only three rows of teeth above main fang; thoracic inferior notosetae capillary, instead of bayonet setae, proportionally much longer than those of *A. schlenzae* (Rouse, 1994); and one pair of eyes on pygidium. *Amphicorina taltanensis* (Hartmann-Schröder, 1962) differs in size and number of thoracic notosetae.

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