

## Autolytinae (Polychaeta, Syllidae) from Cuba and north American Atlantic Ocean

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### ABSTRACT

This paper treats nine species of the subfamily Autolytinae (Polychaeta, Syllidae), principally from Cuba, and also from North Carolina and Massachusetts. One new species is described, *Autolytus juventudensis*. Four species: *Autolytus convolutus* Cognetti, 1953; *A. tamanus* Imajima, 1966; *A. quindecimdentatus* Langerhans, 1884; and *A. dentalius* Imajima, 1966, are newly reported for Cuba; all these species except the last are also new to the Caribbean and Gulf of Mexico. *Autolytus inermis* Saint-Joseph, 1887 is new to North Carolina.

### RÉSUMÉ

#### Autolytinae (Polychaeta, Syllidae) de Cuba et des côtes américaines de l'Atlantique Nord

Ce travail présente une étude de neuf espèces d'Autolytinae (Polychaeta, Syllidae) de Cuba, de Caroline du Nord et du Massachusetts (Etats-Unis). On décrit une nouvelle espèce, *Autolytus juventudensis*. Quatre espèces : *A. convolutus* Cognetti, 1953 ; *A. tamanus* Imajima, 1966 ; *A. quindecimdentatus* Langerhans, 1884 et *A. dentalius* Imajima, 1966, sont nouvelles pour Cuba. Ces espèces, à l'exception de la dernière, sont aussi nouvelles pour les Caraïbes et le golfe du Mexique. *Autolytus inermis* Saint-Joseph, 1887 est nouvelle pour la Caroline du Nord.

### INTRODUCTION

This is the seventh paper treating syllids collected in Cuba during the "Primera Expedición Cubano-Española a la Isla de la Juventud (Isle of Pines) y Archipiélago de los Canarreos", and elsewhere in neighbouring areas (SAN MARTIN, 1990, 1991 a, b, c, d, 1992). The material from North Carolina and Massachusetts was loaned by the Zoological Museum, University of Copenhagen (ZMUC), and were mostly collected by Dr. Mary E. Petersen during 1961-1963 and 1984.

## MATERIAL AND METHODS

Types and other specimens are deposited in the Museo Nacional de Ciencias Naturales de Madrid (MNCNM), Spain, the Zoological Museum, University of Copenhagen (ZMUC), and the author's collection.

Measurements refer to the holotype or the largest specimen studied; width was measured at the proventricular level, without cirri, parapodia or setae. Microscope mounts were made in glycerine jelly of some of the complete specimens and some parapodia. Drawings and measurements were made using a compound microscope with differential interference contrast optics (Nomarsky). Drawings were made using a camera-lucida drawing tube.

A more extensive introduction and additional information about methods and materials have been given in SAN MARTIN *et al.*, (1986).

PERKINS & SAVAGE (1975), UEBELACKER (1984), IBARZABAL (1986, 1988), DAY (1973), and GARDINER (1976) were used for determination of the new geographical records.

## SYSTEMATICS

Family Syllidae Grube, 1850

Subfamily Autolytinae Rioja, 1925

Genus *Myrianida* Milne-Edwards, 1845

*Myrianida* sp.

MATERIAL EXAMINED. — Cuba: Between Punta del Este, Isle of Pines, and Cayo Matías, Archipiélago de los Canarreos, from algae at 18 m depth, two incomplete specimens, from *Halimeda* sp. in *Thalassia testudinum* beds at 3 m depth, one incomplete specimen.

REMARKS. — The three anterior fragments have a trepan with 50-60 triangular, equal teeth and a small proventriculus, occupying two segments, with about 10 rows of large muscle cells. *Myrianida pinnigera* (Montagu, 1808) from the Mediterranean Sea has a similar trepan, but the proventriculus is longer and with more muscle cell rows. Other known species of *Myrianida* have fewer teeth in the trepan, longer proventriculus, and with more rows of muscle cells than these specimens from Cuba.

DISTRIBUTION. — Cuba.

Genus *Proceraea* Ehlers, 1864

*Proceraea* sp.

MATERIAL EXAMINED. — Cuba: Punta Pedernales, Isle of Pines in living coral from 1.5 m depth, two specimens. Canal de los Vapores, Cayo Bocas de Alonso, Archipiélago de los Canarreos in sponges on *Rhizophora mangle* roots at 0.5 m depth, four specimens. Cayo Matías, Archipiélago de los Canarreos from *Halimeda* sp., seven specimens. North Carolina, Bogue Sound in sand and shells, 2-4 m depth, two specimens (ZMUC).

REMARKS. — All species of this genus are very similar. The colour pattern is an important differential character; since all the examined specimens have lost their colouration, it was not possible to identify them.

DISTRIBUTION. — Cuba and North Carolina.

Genus *Autolytus* Grube, 1850

*Autolytus convolutus* Cognetti, 1953

*Autolytus convolutus* Cognetti, 1953: 323, pl. I, fig. 1-2 (type-locality: Gulf of Naples). — COGNETTI, 1957: 71, fig. 15. — BEN-ELIAHU, 1972: 217, fig. 14 a-d; 1977: 85, fig. 12. — SAN MARTIN, 1984: 413, pl. 111.

*Autolytus (Regulatus) convolutus* — IMAJIMA, 1966: 47, fig. 12 a-h.

MATERIAL EXAMINED. — Cuba: Canal de los Vapores, Cayo Bocas de Alonso, Archipiélago de los Canarreos from hydroids on *Rhizophora mangle* roots at 0.5 m depth, four specimens. Cayo Matías, Archipiélago de los Canarreos from *Turbinaria turbinata* at 3 m depth, one specimen and from *Halimeda* sp. at 3 m depth, seven specimens.

REMARKS. — Three specimens have 16 pharyngeal teeth on the trepan instead of nine as usually reported for this species; however, in the original description COGNETTI (1953) described several specimens having 15-16 teeth. The remaining characters agree with the diagnosis of this species.

DISTRIBUTION. — Mediterranean Sea, Suez Canal, Japan, Cuba.

*Autolytus alexandri* Malmgren, 1867

*Autolytus alexandri* Malmgren, 1867: 37, pl. VII, fig. 39 (type-locality: Davis Strait, Greenland). — PETTIBONE, 1963: 147, fig. 37 f, g.

*Autolytus longeferiens* Saint-Joseph, 1887. — FAUVEL, 1923: 319, figs 122 h-k. — GIDHOLM, 1967, figs. 2 C, 7 G, 13 C, 27.

Non *Autolytus alexandri* — HARTMAN, 1945: 17, pl. 2, fig. 11.

MATERIAL EXAMINED. — Massachusetts, off Nobska Light, Vineyard Sound in sand, shells, stones and masses of *Amaroucium pellucidum* at 6-7.5 m depth, two specimens (ZMUC).

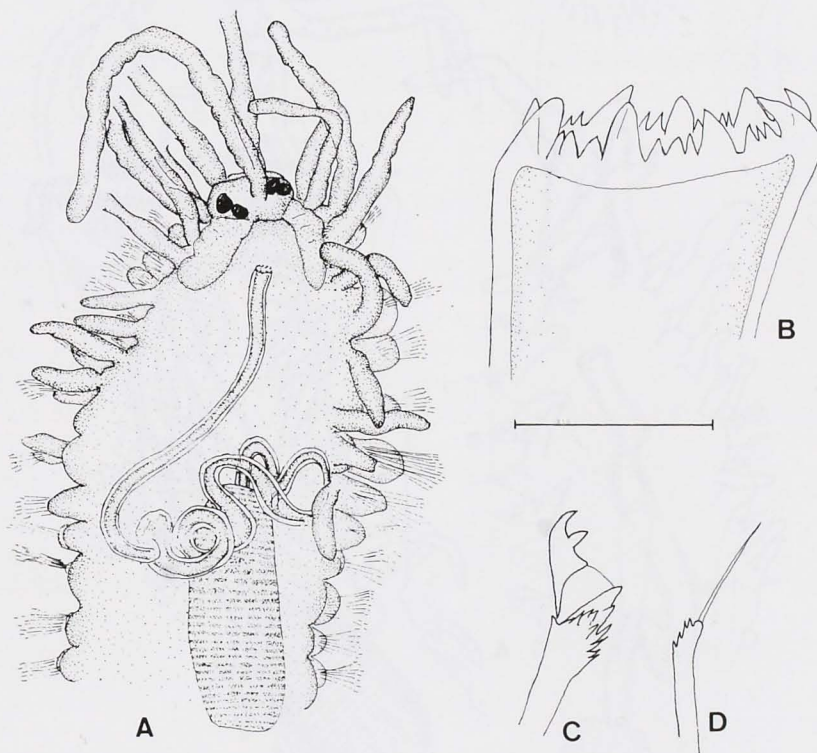


FIG. 1. — *Autolytus alexandri* Malmgren, 1867: A, anterior end, dorsal view. B, trepan. C, compound seta. D, dorsal simple seta. Scale. A: 0.2 mm. B, C, D: 20  $\mu$ m.

DESCRIPTION. — Body broad, especially anteriorly, dark orange, 0.28 mm wide, 2.5 mm long for 40 setigers (Fig. 1). Prostomium small, with four large eyes and close on each side. One specimen also had two additional small anterior eyespots. Palps small. Median antenna long, cylindrical, originating from the middle of prostomium; lateral antennae damaged on both specimens. Tentacular cirri broken on both specimens. Nuchal epaulettes reaching setiger 2. Dorsal cirri of first setiger relatively long, similar in length to body width; remaining dorsal cirri shorter than body width; cirrophores shorter than parapodial lobes. Parapodial lobes rounded. Parapodia each with about 5-9 compound setae; blades short, strongly bidentate, with both teeth similar, hooked. Solitary dorsal simple seta from proventricular setigers. Pharynx very long, with numerous sinuations. Trepan with nine large teeth separated by two-three smaller teeth. Proventriculus long through about four-six segments and with about 40 rows of muscle cells.

REMARKS. — GIDHOLM (1967) suggested that *A. alexandri* from North America and the Arctic Ocean are identical to *A. longeferiens* from northern Europe. Since the Massachusetts specimens examined agree with descriptions of both species, these two species appear to be synonymous.

DISTRIBUTION. — Arctic, Iceland, North American coasts from Labrador to Massachusetts, and from the Bering Sea to Washington, European Atlantic coasts from Skagerrak to France.

*Autolytus tamanus* Imajima, 1966

*Autolytus (Autolytus) tamanus* Imajima, 1966: 46, text-fig. 11 e-k (type-locality: Karasu-jima, near Tamano, Japan).

MATERIAL EXAMINED. — Cuba: Punta Pedernales, Isle of Pines in living coral at 1.5 m depth, three specimens.

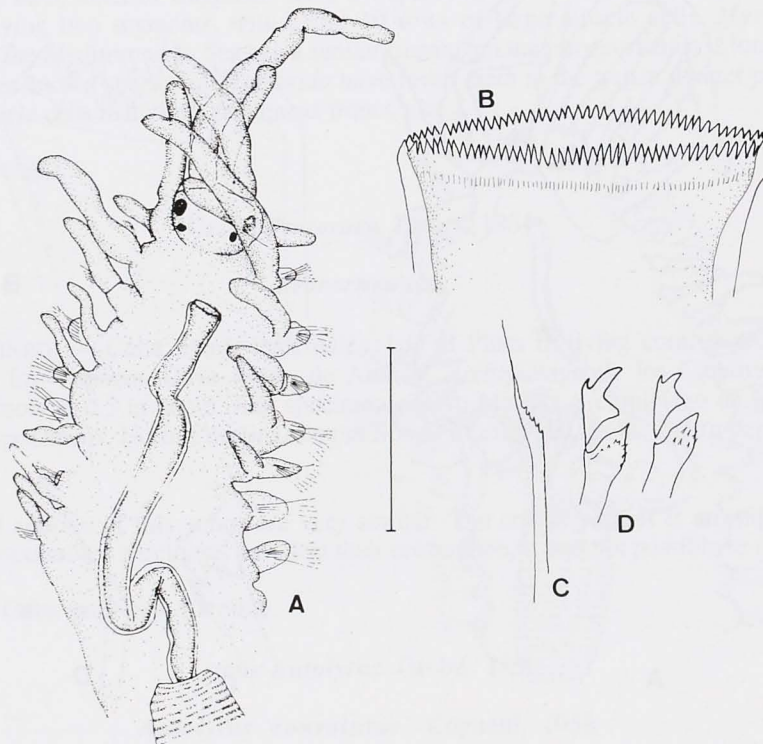


FIG. 2. — *Autolytus tamanus* Imajima, 1966: A, anterior end, dorsal view. B, trepan. C, dorsal simple seta. D, compound setae. Scale. A: 0.2 mm. B: 40  $\mu$ m. C, D: 20  $\mu$ m.

DESCRIPTION. — Body small, without colour markings, 0.48 mm wide, 4 mm long for 38 setigers (stolons not included). Prostomium rounded with four large eyes in open trapezoidal arrangement (Fig. 2). Antennae, tentacular cirri and dorsal cirri of first setiger longer than body width; remaining dorsal cirri more or less conical, alternating as long and short cirri. Nuchal epaulettes not seen. Parapodia rounded, shorter than dorsal cirri, each with about 15 setae which are provided with long proximal tooth and small distal tooth. Solitary dorsal simple setae bayonet-shaped on posterior segments. Pharynx long, with one sinuation extending from setiger 2 to setiger 9; trepan with about 90 small teeth. Proventriculus long through about 5 segments provided with about 30-40 rows of muscle cells. Anal cirri conical, much longer than dorsal cirri. One specimen with three attached terminal sexual stolons.

DISTRIBUTION. — Southern Japan, Cuba.

*Autolytus juventudensis* sp. nov.

MATERIAL EXAMINED. — Cuba: off Punta del Francés, Isle of Pines in dead coral at 1 m depth; holotype and two paratypes (MNCNM). Punta Pedernales, Isle of Pines in living coral at 1.5 m depth, two juvenile specimens.

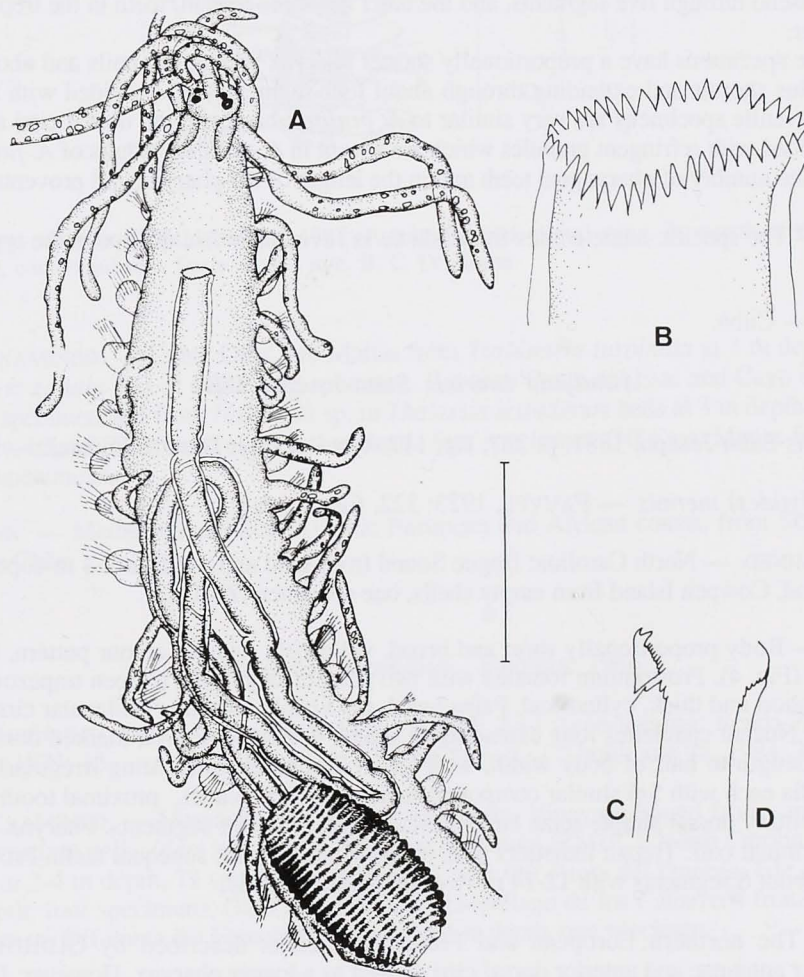


FIG. 3. — *Autolytus juventudensis* n. sp. Holotype: A, anterior end, dorsal view. B, trepan. C, compound seta. D, dorsal simple seta. Scale. A: 0.2 mm. B: 40  $\mu$ m. C, D: 20  $\mu$ m.

DESCRIPTION. — Body long, slender, holotype 0.28 mm wide, 4.6 mm long for 60 setigers (Fig. 3). Prostomium small, rounded, with two pairs of large eyes, palps small, fused, not visible dorsally; antennae long, extending to at least setiger 8. Nuchal epaulettes small, oval, reaching setiger 1. Dorsal tentacular cirri shorter than antennae; ventral tentacular cirri about half the length of the dorsal cirri. Dorsal cirri of setiger 1 long, shorter than dorsal tentacular cirri; dorsal cirri of setiger 2 shorter than dorsal cirri of setiger 1; remaining dorsal cirri proportionally long, alternating irregularly long, similar in length to body width, and shorter. Antennae, tentacular and dorsal cirri provided with small, rounded, hyaline inclusions. Pygidium small, with two long anal cirri. Parapodia rounded, each with about 7-8 compound setae with short blades and provided with a proximal a tooth somewhat larger than distal tooth. Solitary dorsal simple seta bayonet-shaped, slender, from about setiger 8. Pharynx very long with two long coils, trepan in setiger 3 with about 43 small, equal teeth. Proventriculus from setiger 14 to setiger 18 with about 25 rows of muscle cells.

REMARKS. — *Autolytus juventudensis* is characterized by having a slender body with relatively long dorsal cirri, a long and coiled pharynx and a trepan of more than 40 equal teeth. This species is similar to *A. magnus* Berkeley, 1923 from Alaska and Japan, but the blades of the compound setae are very different (see IMAJIMA & HARTMAN, 1964). The two teeth of the blades are similar and hooked in *A. magnus*, in contrast to the typical shape for the genus in *A. juventudensis*. Compound setae of *A. irregularis* Imajima & Hartman, 1964 from Japan are very similar to those of *A. juventudensis*; however, the former has a trepan with only 21-27 teeth and the nuchal epaulettes extend through five segments, and the latter has more than 40 teeth in the trepan and the nuchal epaulettes are shorter.

The two juvenile specimens have a proportionally shorter pharynx with fewer coils and about 33 teeth in the trepan; proventriculus shorter and extending through about four segments and provided with about 32 rows of muscle cells. The juvenile specimens are very similar to *A. prolifer*; however, the dorsal cirri are proportionally longer and are provided with refringent granules which are absent in *A. prolifer*. Adults of *A. juventudensis* differ from *A. prolifer* in the number of pharyngeal teeth and in the length of the pharynx and proventriculus.

ETYMOLOGY. — The specific name comes from Isla de la Juventud = Isle of Pines), the type locality of this species.

DISTRIBUTION. — Cuba.

*Autolytus inermis* Saint-Joseph, 1887

*Autolytus inermis* Saint-Joseph, 1887, p. 237, fig. 117 (type-locality: Dinard, France). — GIDHOLM, 1967: 193, figs 7 D-E, 22.

*Autolytus (Autolytides) inermis* — FAUVEL, 1923: 322, figs 123 h-k.

MATERIAL EXAMINED. — North Carolina: Bogue Sound from sand and shells at 2-4 m depth, two specimens (ZMUC). Core Sound, Cowpen Island from empty shells, one specimen (ZMUC).

DESCRIPTION. — Body proportionally short and broad, yellowish, without colour pattern, 0.32 wide, 4 mm long for 71 setigers (Fig. 4). Prostomium rounded with two pairs of large eyes in open trapezoidal arrangement; antennae relatively short and thick, cylindrical. Palps fused, not visible dorsally. Tentacular cirri relatively short, similar to antennae. Nuchal epaulettes long extending to setiger 4. Segments well marked dorsally. Dorsal cirri shorter or equal in length to half of body width, with long cirrophores, alternating irregularly long and short dorsal cirri. Parapodia each with 5-6 similar compound setae with short blades, proximal tooth somewhat larger than distal tooth. Solitary dorsal simple setae bayonet-shaped on posterior segments. Pharynx from setiger 2 to setiger 11 with a terminal coil. Trepan indistinct with about 26 very small, subequal teeth. Proventriculus small extending through about 6 segments with 12-14 rows of thick muscle cells.

REMARKS. — The northern European and French specimens described by GIDHOLM (1967) have proportionally longer antennae and anterior dorsal cirri as well as a longer pharynx. However, I do not think that these small differences justify erecting a new taxon for these specimens from North Carolina.

DISTRIBUTION. — Northern-European Atlantic coasts, North Carolina.

*Autolytus quindecimdentatus* Langerhans, 1884

*Autolytus quindecimdentatus* Langerhans, 1884: 249, fig. 3 a-b (type-locality: Madeira, Portugal). — GIDHOLM, 1967: 197, figs 7 f, 12, 23 a. — CAMPOY, 1982: 241. — SAN MARTIN, 1984: 417, pl. 113.

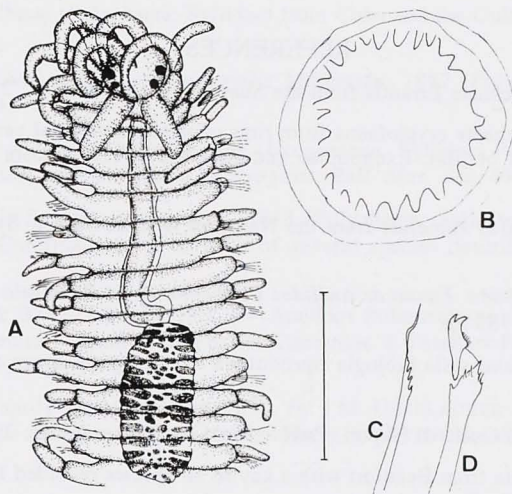


FIG. 4. — *Autolytus inermis* de Saint-Joseph, 1887: A, anterior end, dorsal view. B, mouth of the pharynx. C, dorsal simple seta. D, compound seta. Scale. A: 0.2 mm. B, C, D: 20  $\mu$ m.

MATERIAL EXAMINED. — Cuba: Off Cayo Matías from *Turbinaria turbinata* at 3 m depth, nine specimens, from *Stypopodium zonale* at 3 m depth, one specimen. Between Punta del Este and Cayo Matías from algae at 18 m depth, one specimen and from *Halimeda* sp. in *Thalassia testudinum* beds at 3 m depth, two specimens. Off Punta del Francés, Isle of Pines from algae at 4 m depth, four specimens. Off Cayo Matías from *Halimeda* sp. at 3 m depth, five specimens.

DISTRIBUTION. — Mediterranean Sea, Atlantic European and African coasts, from Scandinavia to Canary Islands, Red Sea, Cuba.

*Autolytus dentalius* Imajima, 1966

*Autolytus (Autolytus) dentalius* Imajima, 1966: 36, fig. 7 i-l (type-locality: Senda-Zaki, in Uruga Strait, Japan). — DAY, 1973: 35. — GARDINER, 1976: 127, fig. 10 a-d. — UEBELACKER, 1984: 30-12, fig. 30-4.

MATERIAL EXAMINED. — Massachusetts, off Nobska Light, Vineyard Sound from sand, shells, stones, and masses of *Amaroucium pellucidum* at 6-7.5 m depth, one specimen (ZMUC). North Carolina, Bogue Sound from shells and sand at 2-4 m depth, 73 specimens (ZMUC). Cuba: Off Punta del Francés, Isle of Pines from in dead coral at 1 m depth, four specimens. Off Cayo Matías, Archipiélago de los Canarreos from *Halimeda* sp. at 3 m depth, one specimen. Off Punta del Francés from algae at 4 m depth, one specimen.

DISTRIBUTION. — Japan, Massachusetts, North Carolina, Gulf of Mexico, Cuba.

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