

**A NEW *CONUS* (PROSOBRANCHIA: *CONIDAE*)  
SPECIES FOUND IN BAHAMAS**

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The characteristics of cones in the Caribbean region are generally quite distinctive from other worldwide areas. They are mostly of a small size, many species being polychromatic, with a variety of different patterns as well, and having a limited range of distribution, with a number of them being endemic to a single habitat. We deal here with just such a new discovery and propose *Conus sahlbergi* as a new taxon.

*Conus sahlbergi* sp. nov.

(Fig. 8 A, B)

**Description:**

Shell small, with a depressed conic spire and a double-whorl roseate protoconch, with eight spiral whorls, surface of which is flat and smooth, except for the last two being slightly concave and etched with arwate striae.

Sutures are shallowly channeled. Body whorl is smooth and glossy, with an angulate, sharply keeled, shoulder and sides which are flat and tapering, and having about six raised sulci at the basal end. The shell is polymorphic, the body whorl being solid-colored in orange or yellow — these two being most common — followed by white, purple and greenish tan; but the spire is only faintly tinted in a lighter shade of the same color (Fig 6). All colored specimens are decorated with a median band of a row of indistinctly connected blotches of a light tint. The spire of ashy-white specimens is sparsely sprinkled with light brown mottles. Aperture is very slightly dilated towards the anterior end; interior, colored the same as on the outer body whorl. Sizes of mature specimens average 16 mm, with the largest measuring 19 mm.

**Habitat:**

Coarse grained sand and rubble, approximately two inches deep, over a hard pan bottom near grass as well as gorgonians.

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**Type Locality:**

Bimini area of Bahamas in depths of 10 to 35 ft. off Cat Cay and Gun Cay. So far, not reported from other areas. *Conus flavescens* and *Conus jaspideus* are sympatric.

**Holotype:**

Measures 15.5 mm × 8.7 mm, yellow color, and lodged with the American Museum of Natural History, New York, No. 221046 (Fig. 8 A, B)

**Paratypes:**

No	Size	Color	Deposited In
1	14.7 × 8.6 mm (homeotype)	yellow	Museum Histoire Naturelle, Geneva, No. 986.1011
2	16.1 × 8.8 mm	purple	A. M. N. H. New York, No. 221047

The following are retained in the private collections of:

3	14.5 × 8.3 mm	orange	Wayne Harland
4	14.6 × 8.3 mm	pink	Carl Sahlberg
5	14.6 × 8 mm	yellow	da Motta
6	14.7 × 8.4 mm	yellow	Michael Cahill
7	14.6 × 8.2 mm	orange	Thomas Honker

**Radula Description:**

Typical vermivorous teeth, 35 in total. They are relatively narrow; one barb laterally sided; the waist near the middle. Serration is narrow with a few denticles protruding in two rows near the waist and the middle but none at the start. The cusp is not prominent. A spur is evident near the base (Fig. 11 A, B, C).

**Discussion:**

The new species is structurally closest to *Conus daucus* Hwass in Bruguière, 1792, which has a widespread distribution range from the Antilles to northern Brazil. Extreme color and pattern changes are seen in different communities. However, comparing the solid yellow and brown varieties, *C. daucus* has a transverse, intact midsection band of a lighter shade and the spire, although depressed, is more concave than conic and marked with a faint tessellated arrangement of alternating pale and darker yellow. The apex has no distinct color. Deep sea varieties attain lengths in excess of 50 mm.

*Conus mayaguensis* Usticke, 1968 is structurally also very close, with a color range of mostly pastel shades and a white center band, spotted with occasional brown markings. Shell profile is equally squat but the sides are imperceptibly con-

vex instead of flat. This species can also be confused with *C. ampliurgus* Dall, 1889 which, however, is a much larger shell with a higher spire and more rounded shoulders.

*Conus flamigo* Petuch, 1980 has a similar depressed, conic spire and carinate shoulder, but the sides are convex, narrowing by contracting rapidly at the lower section of the body whorl.

The apex is white, with a ground color of flamigo-red to a light coral-pink. Some specimens are marked with two or three tiny white spots at its mid-section.

*Conus flavescens* 'Gray' Sowerby, 1834 with an even larger range of color variations, is cylindrical in shape by comparison, with a pyramidal spire and attenuated body whorl, which differences easily separate the two. It is additionally sympatric in Bahamas with a distribution range from Florida through the Lesser Antilles, where the new species is not found.

*Conus magellanicus* Hwass in Brug., 1792 could also be compared for its depressed conic spire and similar overall profile, although the color range and variegated patterns would readily separate the two, in addition to the structure of its wavy spiral sutures and coronate shoulder which are quite distinct characteristics to preclude conspecificity.

Over some fifteen years of ceaseless observation, the first author discovered that species of the Conidae possess structural characteristics which are inherently basic in constant form, making it incompatible with conspecificity in the same species, if any divergence is seen occurring in the spire, shoulder and sides of the shell. Look to ascertain whether:

- a) the spire profile is convex, conic or concave?
- b) the shoulders are coronate, rounded or carinate?
- c) the sides are convex, concave or flat?

Each species will exhibit one each of the three main constant factors, but never two simultaneously. If the spire or sides are convex, specimens of the same species cannot also have a spire or sides which are concave or flat. If coronate, it cannot vary by having rounded or keeled shoulders. (Some obconic spires may occasionally be raised, but its profile remains unchanged.) Color and pattern are invariably inconsistent elements to be used as reliable evidence for identification.

With these precepts in mind, we can proceed to test out whether any relationship exists between the new species with other look-alikes. Bearing in mind that *C. sahlbergi* has a depressed and conic spire, carinate shoulders and flat sides, we can proceed to rule out any relationship, for instance, with:

*Conus speciosissimus* Reeve, 1848 because it has a coronate shoulder;  
*Conus cardinalis* Hwass in Brug., 1792 because its spiral sutures are scalloped,  
with broader shoulders and inflated sides.

Ad infinitum!

We conclude that no evidence has been found to link the new species as a possible subspecies or varietal form of any other known species.

### **Etymology:**

Named for Carl Sahlberg, who first suspected that the species could be a new and still undescribed one, and also furnished valuable data, which assisted the authors in reaching their conclusions.

### **Acknowledgement**

We are gratefully indebted to Dr. Emilio Rolan for contributing the description of the radula tooth of *Conus sahlbergi*.

## **RESUMO**

O autor descreve uma nova espécie do género *Conus*, endêmica das Bahamas. O novo taxon é estabelecido em homenagem a Carl Sahlberg e comparado com outras espécies próximas.

O autor tece ainda algumas considerações gerais acerca da morfologia dos exemplares de espécies do mesmo género.

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A



B



**FIGURA 8**

A — Holotype *Conus sahlbergi* sp. nov. Dorsal aspect.

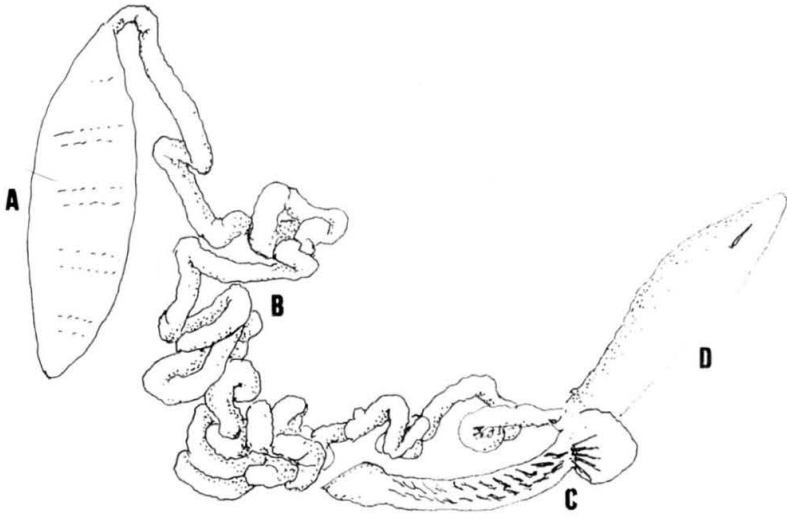
B — Holotype *Conus sahlbergi* sp. nov. Ventral aspect.

**FIGURA 9**

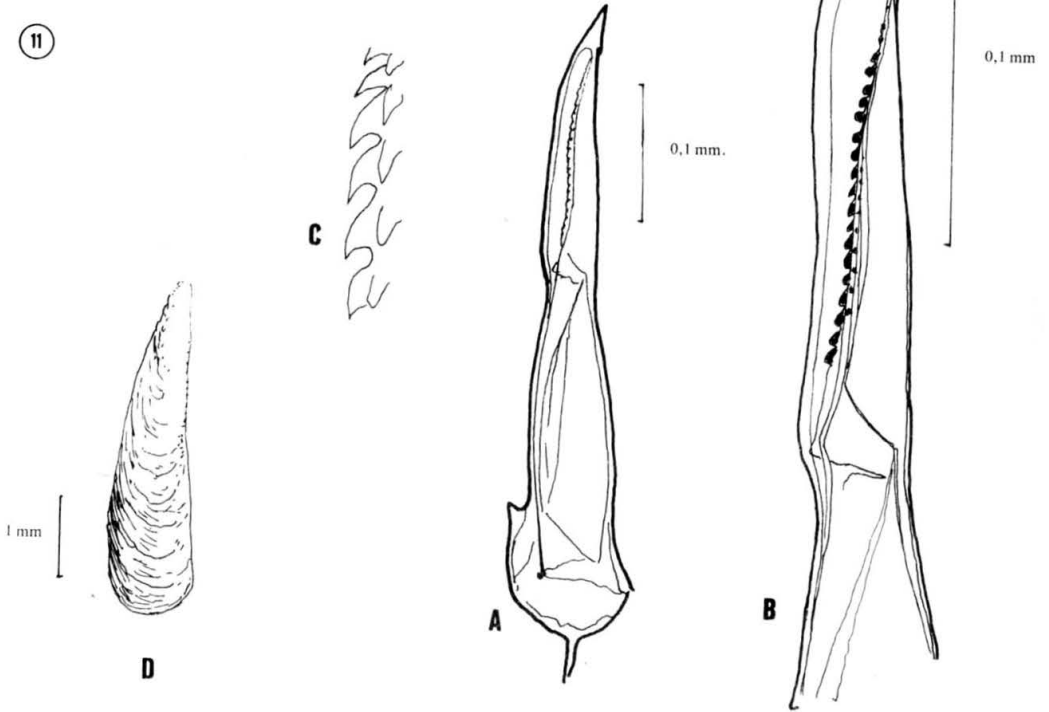
COLOUR SERIES

Orange, purple, pink, yellow, ashy-white, green tan.

10



11



**FIGURA 10**

VENOM APPARATUS

- A — Muscular venom bulb
- B — Coiled venom gland
- C — Radular sac
- D — Proboscis

**FIGURA 11**

- A — Radular tooth
- B — Radular tooth
- C — Detail of the denticles of serration