Two new species of *Iniforis* (Gastropoda: Triphoridae) from the Caribbean

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ABSTRACT. The taxon *Iniforis casta* is studied, and the lectotype of this species is compared with material from Cuba and the Grenadines. Two new species are described, the examination of the protoconch through SEM being the basis for the separation.

INTRODUCTION

In the revision of the Triphoridae of the Caribbean, (Rolán & Fernández-Garcés, 1993) the genus *Iniforis* Jousseaume, 1884 was revised. In that paper, two previously known species were mentioned: *Iniforis turristhomae* (Holten, 1802) and *I. casta* (Hinds, 1843); the former has a multispiral protoconch whereas the latter has a paucispiral protoconch. In addition, three new species were described.

Amongst samples collected in Cuba and also in the material of J. Pelorce, collected in the Grenadines, some lots of *Iniforis* species were found. A problem arose when lots of two different species seemed to correspond to the *taxon I. casta*. The study of the lectotype of *I. casta* and its comparison with the material from both species is the subject of the present paper.

Abbreviations

BMNH: The Natural History Museum, London
IES: Instituto de Ecología y Sistemática, La Habana
MHNS: Museo de Historia Natural, Santiago de Compostela (coll. E. Rolán)
MNCN: Museo Nacional de Ciencias Naturales, Madrid
MNHN: Muséum national d'Histoire naturelle, Paris
CFG: collection of R. Fernández-Garcés, Cienfuegos
CJP: collection of Jacques Pelorce, Paris

SYSTEMATICS

TRIPHORIDAE Gray, 1847

Genus ***Iniforis*** Jousseaume, 1884

Iniforis casta (Hinds, 1843)
Figs 1, 12, 32

Type material. Lectotype (Fig. 1) in BMNH (196536-37), Gray collection, of 4.9 x 1.6 mm (see Rolán & Fernández-Garcés, 1993).

Description. (See Hinds, 1843). The lectotype (Fig 1) is a shell in poor condition, relatively wide and with a slightly convex profile. It is beached and somewhat eroded. In spite of this, the protoconch (Figs. 12, 32), while eroded, is apparently complete, showing an apex that is pupoid, rounded, and continued by a low narrow whorl. The next whorl appears to have two spiral cords, probably constituting the beginning of the teleoconch.

Iniforis gudeliae sp. nov.
Figs 2-5, 13-21, 29

Type material. Holotype (Fig. 13) in MNCN (15.05/47.565). Paratypes in the following collections: MNHN 22191 (1); IES (1); MHNS (7, Figs. 14, 15, 16, 19, 20), CFG (2); all from the type locality. Other paratypes in CJP (4, Figs. 2-5, 18, 21), from Saint Lucia, north of Grenadines Is.

Other material examined. Cuba: 1 j, Jibacoa; 2 j, Cayo Cantiles; 2 j, Cayo Matías.

Type locality. Cienfuegos Bay, Cuba.

Figures 1-11

1. *Iniforis casta* (Hinds, 1843), lectotype 5.9 mm, (BMNH 196536-37).
2-5. *Iniforis gudeliae* spec. nov. 2, 3. paratype, 5.4 mm, Grenadine Is. (CJP); 4, 5. paratype, 6.5 mm, Saint Lucia (CJP).
6-11. *Iniforis pelorcei* spec. nov. 6. holotype, 4.6 mm, Saint Lucia (MNHN 22190); 7-11. paratypes, 4.6, 4.7, 3.5, 4.2, 3.1, 4.0 mm, all from Saint Lucia (MHNS).

Etymology. In memory of Gudelia Requeiro, a very close friend who died recently and to whom the second author once promised to dedicate a species to thank her for her help.

Description. Shell (Figs. 2-5, 13) not very different from those of other species in the same genus: elongate, solid, almost straight and solid profile.
Protoconch (Figs. 14-21)) with between 2 ¾ - 3 ¼ whorls and a diameter of about 390 µm; the nucleus has between 90 and 110 µm, and an embryonic part is hardly distinguished at the beginning, where 5-6 small cords are present being faded in a little more than one whorl; there are two prominent spiral cords, similar at the beginning but, in the second-third whorls, the lower one is more prominent; they are crossed irregularly by axial threads which begin on the upper suture and form small nodules on the upper cord, being rare on the lower one which near the end begins to be nodulous. The colour is white.
The teleoconch has 7-9 whorls which begin with two nodulous spiral cords per whorl; about the sixth whorl, a third spiral appears, being a very narrow undulating cord which is close to the upper one, continuing in this form up to the end of the spire. The nodules in the two previous cords are rounded but its upper part looks as if cut by the cord, being more evident on the lowest spiral (see Fig. 29). On the upper part of the nodules, an axial prolongation appears which however never becomes a rib. Near the base one nodulous cord appears below and near to the siphonal base two more being smooth. Aperture rounded and prominent. A little before the end of the spire, just on the suture, a hole appears and it is continued by a short tube. The siphonal canal is slightly elongated, close and slightly curved towards the dorsum.
The shell colour is white with a narrow spiral brown band placed on the lowest spiral cord. This band is variable: sometimes continuous, but in most of the shells it is interrupted by small white areas or is lesser marked.
Under high magnification, in fresh shells, it is possible to see a very fine spiral line on the surface between the nodules (Fig. 29).
Dimensions: The holotype is 4.4 mm.

Distribution. Known from Cuba and Saint Lucia.

Remarks. The present species was identified in Rolán & Fernandez-Garcés (1993) as *Iniforis casta* because that it perfectly matched the description in the original work. However, after studying the lectotype, we could find a few differences. The shell of the lectotype is a little wider, the profile slightly convex, and the apical angle a little larger. The comparison of the protoconchs show that the lectotype has a blunt extreme, being more globose, the second whorl is evidently shorter and lacks of two prominent cords as in *I. gudeliae* sp. nov. The next whorl seems to belong to the teleoconch.
The protoconch of *I. gudeliae* sp. nov. has a certain variability as can be seen in Figs. 14-16, in comparison with Fig. 17, a little shorter and less sculptured. But it is in no case similar to that of the lectotype. The protoconchs of shells from Grenadines (Figs. 18, 21) are similar to those collected in Cuba.

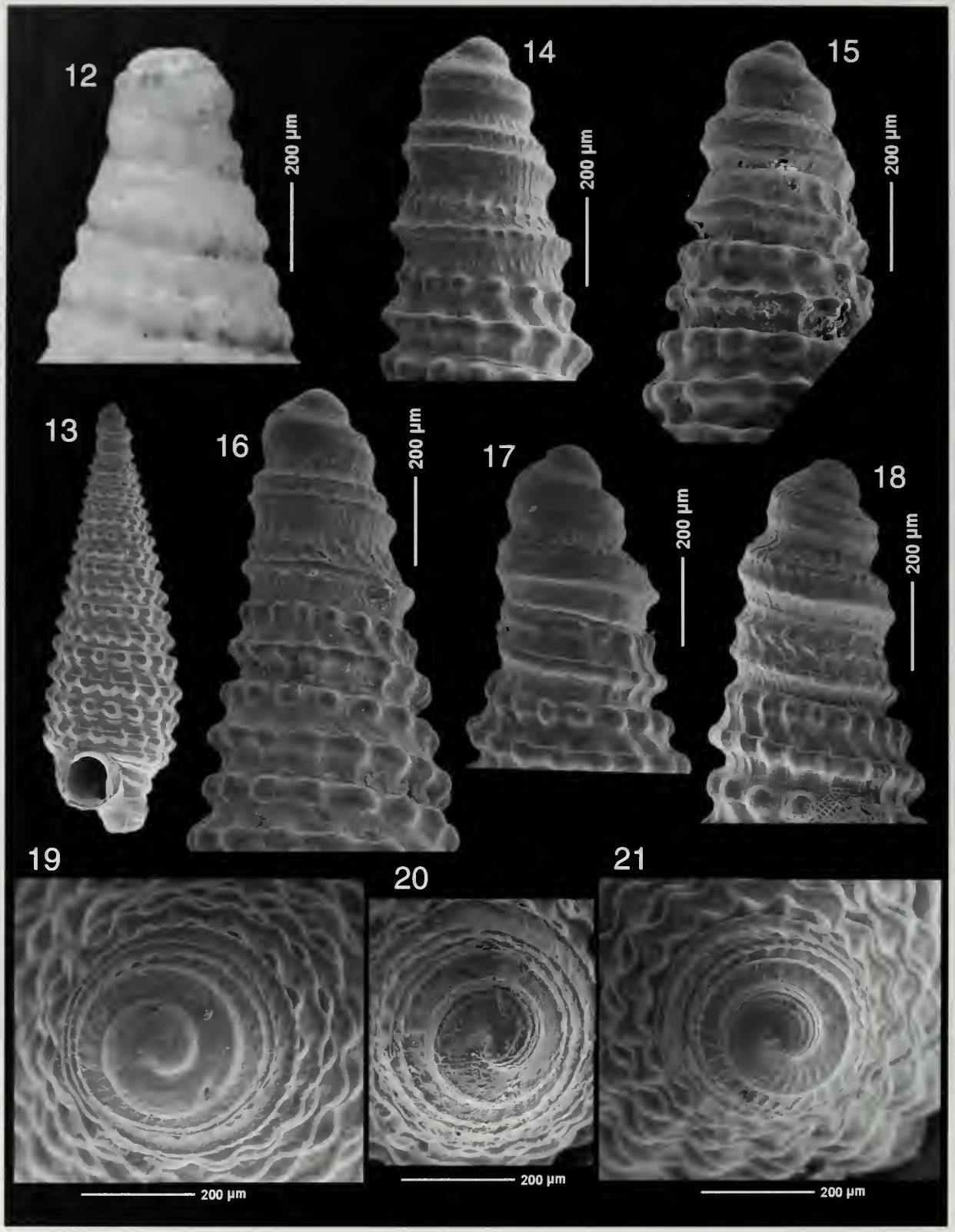
Iniforis pelorcei sp. nov.
Figs 6-11, 23-28

Type material. Holotype (Fig. 6) in MNHN 22190. Paratypes in the following collections: MNCN (1, 15.05/47.566); BMNH (1); IES (1); MHNS (7, Figs. 6-11); CFG (1); CJP (42), all ex-CJP.

Type locality. Caribbean, Saint Lucia, north of Grenadines Is., 0-20 m.

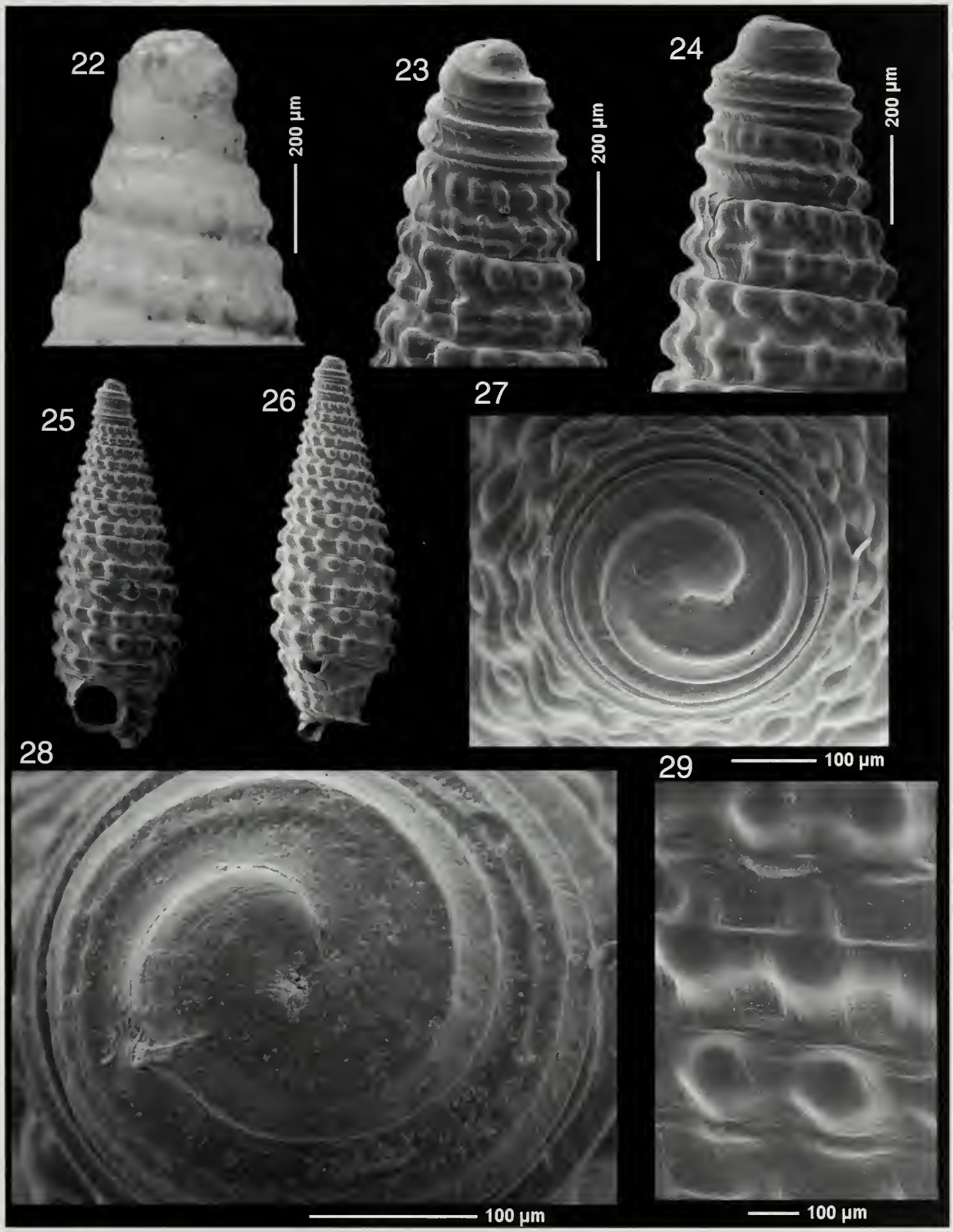
Etymology. The specific name is after Jacques Pelorce, a French malacologist, who found the material studied in this work while sailing and collecting in many Caribbean areas.

Description. The shell (Figs. 6-11, 25, 26) does not differ from that of other species within the genus: elongate, solid, with two nodulous spirals per whorl.
Protoconch (Figs. 23, 24, 27, 28) with between 2 ½ - 2 ¾ whorls and a diameter of about 360 µm; the nucleus has about 90 µm, and an embryonic part is distinguishable at the beginning; from the nucleus, the surface is irregular but has not evident spiral threads; there are two rather prominent spiral cords, one of them beginning after the embryonic part in the middle of the whorl, and the second half whorl later. They are not crossed by axial ribs but near the end of the protoconch, some threads can be seen on some areas.
Teleoconch with 7-8 whorls which begin with two nodulous spiral cords per whorl; about the sixth whorl, a third spiral appears being almost discontinuous, very narrow and undulating due to being very close to the upper spiral cord, continuing in this way up to the end of the spire. The nodules in the two previous cords are rounded but its upper part is as cut by the cord, being a little more evident on the lowest spiral. On the upper part of the nodules, an axial elevation appears which never becomes a rib. Near the end of the spire a new cord appears from the suture and at the base it increases in size and becomes more nodulous; three more smooth cords appear below. Aperture rounded and prominent. A little before the end of the spire, just on the suture, a hole appears and it is continued by a short tube. The siphonal canal is a little elongated, close and slightly curved towards the dorsum.
The shell is white with a narrow spiral brown band placed on the lowest spiral cord. This band is variable: continuous on the first whorls, but in some shells it is occasionally interrupted by small areas where it is less marked.



Figures 12-21

12. *Iniforis casta* (Hinds, 1843), protoconch of the lectotype.
13-21. *Iniforis gudeliae* spec. nov. 13. holotype, 4.3 mm, from Cienfuegos, Cuba (MNCN); 14-21. protoconchs of types: 17, from holotype (MNCN); 14-16, 19, 20. from Cuba (paratpes in MHNS); 18, 21. from Saint Lucia I. (paratypes in CJP).



Figures 22-29

22. *Iniforis casta* (Hinds, 1843), protoconch of the lectotype (for comparison).
23-28. *Iniforis pelorcei* spec. nov. 25, 26: paratypes, 3.3, 3.4 mm (MHNS); 23, 24, 27: protoconch, Grenadine Is.; 28: protoconch, detail. **29**. *Iniforis gudeliae* spec. nov., detail of the microsculpture.

Distribution. Known only from the Grenadine Islands.

Remarks. *Iniforis pelorcei* sp. nov. has a shell similar to that of other species in the genus. The lectotype of *I. casta* is a little larger, wider, with a more convex profile and with the apical angle a little wider. The protoconch, as was mentioned for the previous species, is different, pupoid, rounded, without the prominent cords present in *I. pelorcei*.
Iniforis gudeliae sp. nov. has a somewhat larger protoconch, wider, without visible embryonic part, with spiral threads on the nucleus, and more axial sculpture. The shell is slightly larger; the brown band is more frequently interrupted, which is very rare in *I. pelorcei*.
In the Grenadine Islands, both species were collected sympatrically without any intergradation.

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