Iphitus robertsi (Epitoniidae: Nystiellinae), A New Species of Deep-Sea Gastropod from the Gulf of Mexico

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ABSTRACT

Iphitus robertsi, new species, is described on the basis of nine specimens collected in the northern Gulf of Mexico. This new species, which differs from its six congeners in having a bicarinate shell with weakly cancellate sculpture, represents the first record of this genus in the Gulf of Mexico. The co-occurance of this species with deep-sea scleractinian corals suggests that *Iphitus robertsi* may, like its New Zealand congener, may be parasitic on corals.

Key words: Gastropoda, Epitoniidae, new species, Gulf of Mexico, deep-sea.

INTRODUCTION

A recent survey of deep-sea cold seeps of the continental slope of the Gulf of Mexico using the research submersible Johnson-Sea-Link I has led to the discovery of a new species of Epitoniidae from off Louisiana and Texas. The specimens were collected in a vent-free area at a site known as Green Canyon (Roberts *et al.*, 1990), Lease Block 189, during Johnson-Sea-Link I dive 3306. The sea bottom at a depth of 184 m was composed of mixed rocky and biogenic (silty-sandy shell debris) substrate. The description of this new species is based on nine empty shells in different stages of growth that were recovered while sorting three cubic decimeters of biogenic sand under a dissecting microscope. The species diversity of the molluscan fraction of this sample was very high (n=197).

SYSTEMATICS

Family Epitoniidae Berry, 1910
Subfamily Nystiellinae Clench and Turner, 1952
Genus *Iphitus* Jeffreys, 1883
Iphitus robertsi new species
Figures 1–4

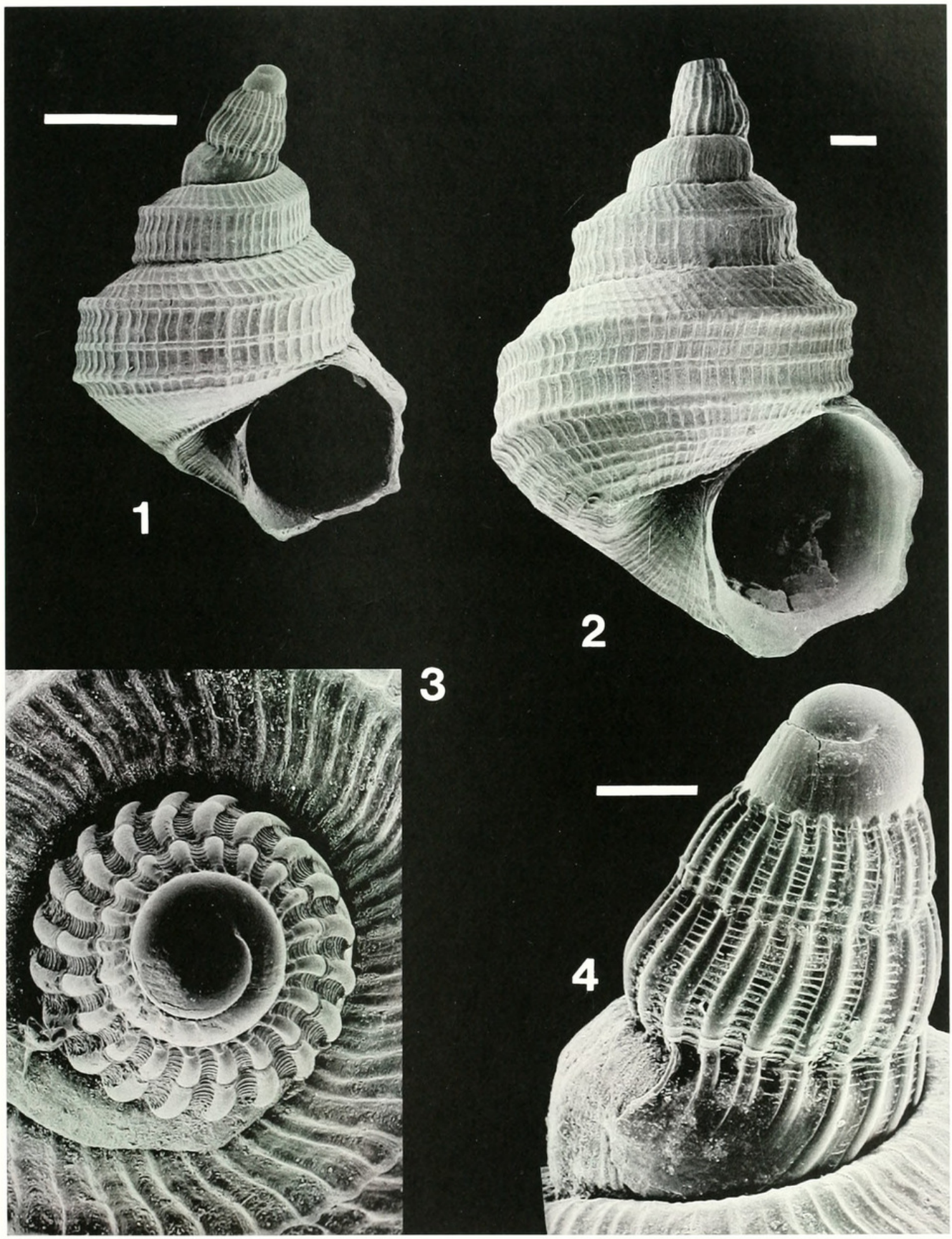
Description: Shell small, relatively fragile, trochiform, holostomatous, umbilicate, with carinate, angular whorls rapidly increasing in diameter. Suture subcanaliculate. Protoconch I of 1¼ smoothly rounded whorls. Protoconch II (larval shell) of 3½ whorls, strongly sculptured by axial ribs and weaker spiral cords. Protoconch brownish, axis inclined by about 10° to teleoconch axis. Teleoconch of 3½ whorls, with strong, spiral sculpture of widely spaced carinae and strong spiral cords. Color whitish, with few, irregular, pale brownish blotches. First half-whorl somewhat rounded, subsequent whorls with two carinae, one in upper third of whorl, the second suprasutural. Strong spiral cords, one between suture and shoulder, one or two between carinae, appear beginning with second whorl. Finer spiral threads visible on body whorl of larger specimens. Shell base with 5–6 spiral threads, innermost bordering deep, wide, infundibuliform umbilicus. Surface of umbilicus sculptured with thin, spiral threads. Axial sculpture of densely spaced threads, producing rectangular, cancellate pattern at intersections with spiral cords, threads, and carinae. Aperture attached to preceding whorl along one face of thin, roughly pentagonal peristome. Only one of nine specimens retained a complete protoconch, the remaining specimens lacked embryonic portion of the protoconch (protoconch I).

Type locality: Green Canyon, Block 189, Gulf of Mexico (27°46.48′N, 93°17.74′W) in 184 m.

Type Material: Holotype, National Museum of Natural History, Smithsonian Institution, Washington, DC, USNM 880185, Paratype USNM 888186; 3 paratypes, Museo di Zoologia, Bologna University, MZB 11621 a,b, MZB 11622; 1 paratype Museum National Histoire Naturelle, Paris; 1 paratype, Houston Museum of Natural Sciences, HMNH 42544, all from the type locality.

Additional Material Examined: 1 shell (Figure 2, accidentally broken), from the type locality.

Etymology: This species is named after Dr. Harry Roberts (Louisiana State University), the Chief Scientist of the research cruise and Scientist-in-Charge of scientific operations during dive JSL-I-3306.



Figures 1–4. *Iphitus robertsi*, new species. Green Canyon, Block 189, Gulf f Mexico (27°46.48'N, 93°17.74'W) in 184 m. **1.** Holotype, USNM 888185, Scale bar = 3 mm. **2.** Adult shell, scale bar = 3 mm. **3.** Apical and **4.** Lateral views of the protoconch of holotype. Scale bar = 3 mm.

Remarks: Bertolaso and Palazzi (1994) synonymized *Iphitus* Jeffreys, 1883 with *Stylotrochus* G. Seguenza, 1876, which is unavaliable because it is preoccupied by *Stylotrochus* Haeckel, 1862. To date, only six (four extant and two extinct) species of the genus *Iphitus* have been described. The Recent *Iphitus tuberatus* Jeffreys, 1883, *I. cancellatus* Dautzenberg and Fischer, 1896, and *I. marshalli* (Sykes, 1925) inhabit the eastern North Atlantic, while *I. neozelanicus* (Dell, 1956) occurs off New Zealand. The fossil species *Iphitus asperatus* (G.Seguenza, 1886) and *I. papillosocinctus* (G.Seguenza, 1886) are both from upper Pliocene-lower Pleistocene bathyal deposits of Sicily (Palazzi & Villari, 1996). All of these species have been well illustrated (Beu, 1978; Taviani & Sabelli, 1982; Bouchet & Warén, 1986, Bertolaso & Palazzi, 1994, Palazzi & Villari, 1996), and show little similarity to the new species described here. *Iphitus robertsi* superficially resembles *I. marshalli*, which also has strong carinae and spiral cords, but these differ in number and arrangement in the two species. *Iphitus marshalli* also differs in lacking cancellate sculpture. *Iphitus cancellatus*, the only species to be reported from the western Atlantic, differs from *I. robertsi* in having a much coarser reticulate sculpture and a rounded aperture lacking carinae. The fossil legacy of *Iphitus* is quite scant. The oldest record (as *Iphitus sp.*) is from an upper Miocene coral-assemblage in southeastern Spain (Barrier *et al.*, 1991). *Iphitus asperatus* (G. Seguenza, 1886) and *I. papillosocinctus* (G. Seguenza, 1886) are known from Plio-Pleistocene deposits in the Messina region of Sicily (Bertolaso & Palazzi, 1994, Palazzi & Villari, 1996), while *Iphitus tuberatus* occurs in glacial-Pleistocene deposits of southern Italy (Rindone & Vazzana, 1989) and submerged last glacial (Pontinian) tanathocoenoses of the Sicilan Channel (Taviani & Sabelli, 1982).

Habitat: Available ecological data indicates that species of *Iphitus* are parasitic on deep-sea scleractinian corals. Beu (1978) discovered *I. neozelanicus* living embedded in the calices of *Goniocorella dumosa* (Alcock, 1902). While there are no direct observations on any of the Atlantic species, a relationship with deep-sea scleractinian corals has been suggested by Taviani and Sabelli (1982). Bouchet and Warén (1986) noted that *I. tuberatus* occurs with *Lophelia* and that an association is probable. Bertolaso and Palazzi (1994) recorded one shell of *I. asperatus* still associated with a piece of *Lophelia* from the glacial Pleistocene of Calabria (southern Italy). A similar habitat is inferred for *I. robertsi*. As supported by visual observations (H. Roberts, personal communication, September 1992) and sample content, dead and living scleractinian corals (e.g. *Madracis* sp., *Caryophyllia* sp., *Coenosmilia arbuscula* Pourtalès, 1874, and *Balanophyllia* sp.: H. Zibrowius, in litt. 29 October 1993) were abundant at the sampling site. Among the possible hosts, the branching scleractinian *Madracis*, the commonest coral, is the most likely candidate, although no traces attributable to a secondary ectoparasite (Beu, 1978) were visible in our material.

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