

# A NEW SPECIES OF ANNULARIIDAE FROM EASTERN-MOST HISPANIOLA (GASTROPODA, LITTORINOIDEA)

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**Abstract** *Colonina gerhardfellneri* is a new species described from eastern Hispaniola in the Dominican Republic. *Colonina gerhardfellneri* is characterized by a colour pattern of spirally arranged small brown spots, appressed sutural tufts, and the near absence of spiral sculpture. It is compared with the similar *Colonina dominicensis* (Pfeiffer, 1850). *Haitipoma abbotti* Bartsch, 1946, and *Haitipoma catalinense* Bartsch, 1946, are synonymized with *Colonina dominicensis* (Pfeiffer, 1850).

**Key words** *Annulariidae* Hispaniola Dominican Republic systematics

## INTRODUCTION

Bartsch (1946) published a watershed study on the land snail family Annulariidae from Hispaniola and the Bahamas. However, closer examination of his material indicates that he lacked material from eastern-most Hispaniola. A recent study of the annulariid genus *Abbottella* (Watters, 2013) suggested that the high degree of diversity and endemism there is equal or greater to that found in the western parts of the island. The species described here adds further proof of the potential unrecognized diversity of annulariids in this understudied region.

The new species described here belongs to *Colonina* Bartsch (1946). Bartsch (1946) named and differentiated three genera (*Hispanipoma*, *Haitipoma*, and *Colonina*) based on the presence of either a single apertural lip (*Hispanipoma*) or a double lip (*Haitipoma* and *Colonina*) and ambiguous differences in sculptural strength. Watters (2006) synonymized these three nominal taxa, choosing *Colonina* as the valid name. *Colonina* is widespread, but species are localized, across most of western Hispaniola, occurring very rarely in eastern Hispaniola. It also occurs on adjacent Great and Little Inagua, Crooked, and Acklins islands in the Bahamas; these are probably derived from the Hispaniolan taxa.

## MATERIALS AND METHODS

Descriptions and measurements were based on adult shells oriented with the spire up and the aperture facing the viewer. Length was measured from the tip of the protoconch (or teleoconch of

decollate specimens) to the opposite anterior-most extension of the outer lip.

### *Institutional abbreviations used*

CFF – collection of C. Frank-Fellner

NHMUK – Natural History Museum, London, UK

NMNH – National Museum of Natural History, Washington, D.C., USA

UF – Florida Museum of Natural History, Gainesville, Florida, USA

## SYSTEMATICS

Superfamily Littorinoidea

Family Annulariidae

Subfamily Rhytidopomatinae

Genus *Colonina* Bartsch, 1946

Type species *Colonina fortunensis* Bartsch, 1946, by original designation

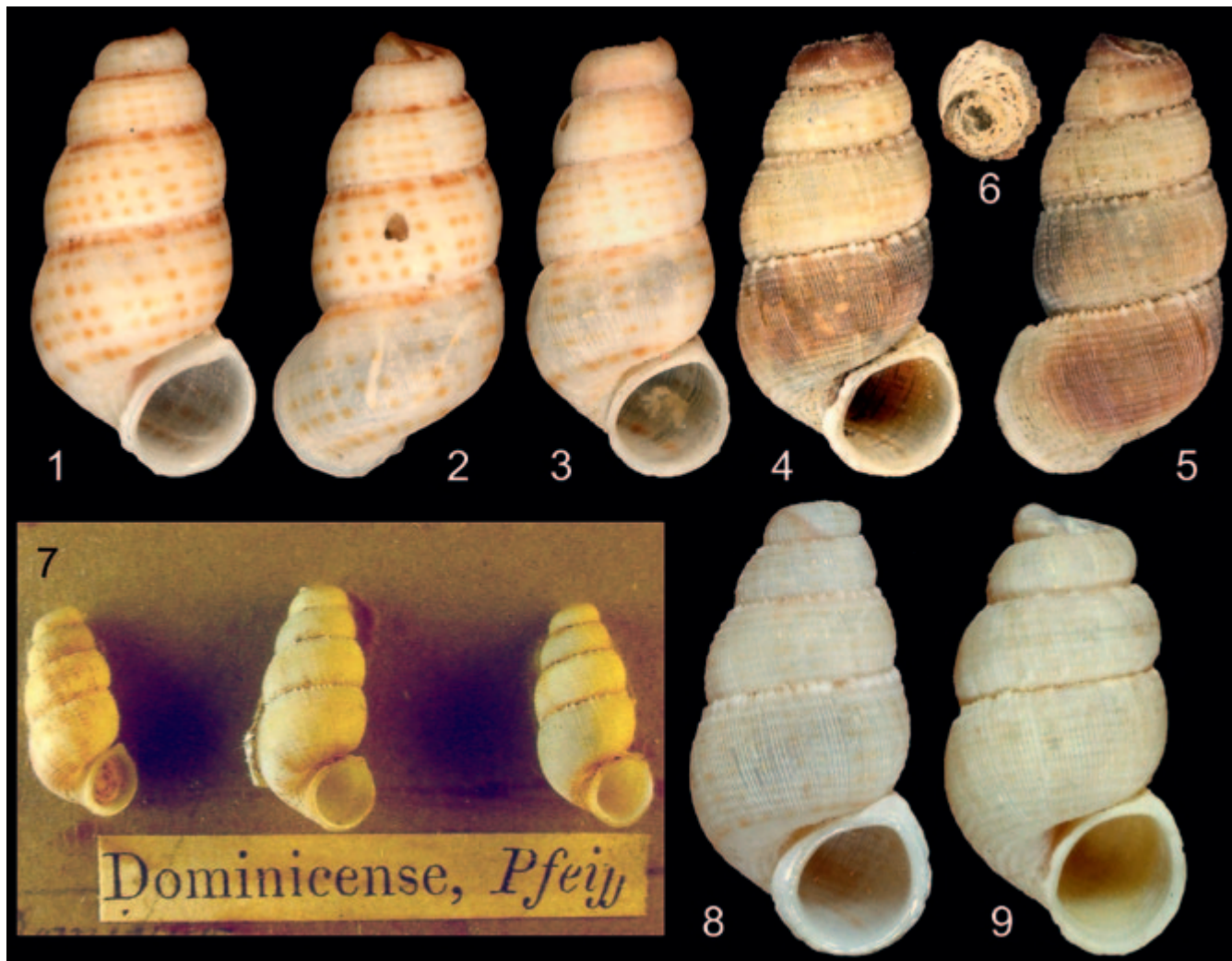
*Colonina gerhardfellneri* sp. n.  
(figs. 1–3)

**Holotype** 1 sh, Dominican Republic, La Altagracia Province, Playa Bávaro. UF 505822, 23 March–6 April, 2002, C. Frank-Fellner.

**Paratypes** 5 sh, from type locality. UF 505823, 23 March–6 April, 2002, C. Frank-Fellner.

**Type locality** Dominican Republic, La Altagracia Province, Playa Bávaro, ca. 18.65°N 68.36°W.

**Additional material examined** Frank-Fellner coll., 14 specimens, from type locality.



**Figures 1–3** *Colonina gerhardfellneri* sp. n. 1–2. Holotype UF 505822, 11.9mm length. 3. Paratype UF 505823, 12.9mm length.

**Figures 4–9** *Colonina dominicensis* (Pfeiffer, 1850). 4–6. CFF coll., near Bayahibe, 9.9mm length, and operculum. 7. *Cyclostoma dominicense* Pfeiffer, 1850, NMHUK 1996132, possible syntypes, middle specimen 13.0mm length. 8. *Haitipoma catalinense* Bartsch, 1946, NMNH 355344, holotype, 11.3mm length. 9. *Haitipoma abbotti* Bartsch, 1946, NMNH 355346, holotype, 7.3mm length.

**Measurements** Largest specimen, 13.1mm total length including peristome×5.9mm total width including peristome; smallest specimen, 7.5mm total length including peristome×4.1mm total width including peristome; holotype, 11.9mm total length including peristome×6.1mm total width including peristome; all decollate.

**Description** Shell small for family, elongate conic, whorls adnate except just before lip, decollate. Umbilicus open, narrow, communicating with hollow axis. Protoconch unknown. Teleoconch of 4–4.25 whorls with rounded apical plug. Axial sculpture of minute, fine, rounded, closely spaced threads, ca. 150 on final whorl.

Axial threads irregularly gathered in groups of 2–4 to form slightly enlarged sutural tufts; tufts closely appressed to previous whorl. Spiral sculpture present only as very weak scallops or nodules over axial threads, slightly stronger below suture, with 6–7 weak, rounded cords below base into umbilicus. Suture hidden by sutural tufts. Aperture double, oval, detached from final whorl. Inner lip smooth, thick, reflected over outer lip. Outer lip narrowly and regularly expanded, perpendicular to whorl except at columellar border where it is deflected abaperturally, with a small but well-defined posterior auricle. Base colour of shell ivory with a diffuse, narrow brown band at base of sutural tufts on holotype,

broken into spots on other specimens; five spiral bands of small, squarish brown spots occur between sutural band and base of whorl. These spots are widely spaced and axially aligned; they may be smudged into faint spiral bands, particularly on earlier whorls and bordering base. Apical plug brown. Operculum, radula, and anatomy unknown.

*Variation in specimens* 20 specimens examined. Shells vary little in sculpture; spiral sculpture somewhat coarser in smaller specimens than in larger ones. Most specimens we have seen are faded but all retain some vestige of the colour pattern.

*Derivation of name* Patronym of Gerhard Fellner, spouse of the second author, previous head of the Dean's Office, Vienna University, in recognition of his continual assistance and understanding of her malacological research.

*Habitat* On limestone rocks, under leaf litter and vegetation debris. It appears to be restricted to the narrow coastal strip between the hotels forming the Punta Cana resort complex. As such it may be endangered by increased tourism and the continued encroachment of hotels.

*Geographic range* Known only from the type locality.

*Comparisons* The spotted colouration occurs in many unrelated annulariid taxa from across the Caribbean region. In Hispaniola the colouration is superficially similar to *Sallepoma* Bartsch, 1946, particularly *S. vachense* Bartsch, 1946, but differs in details of the sutural sculpture, particularly the appressed tufts; *Sallepoma* is only known from Haiti. *Colonina* is similar to species of *Crossepoma* Bartsch, 1946, but also differs in the sutural sculpture; *Crossepoma* is only known from the Tiburon Peninsula of Haiti. *Klattea subreticulata* (Maltzan, 1888) from Cap-Haïtien, northwestern Haiti, is also similar but has a single lipped aperture and lacks sutural tufts.

Its closest relative, both conchologically as well as geographically, is *Colonina dominicensis* (Pfeiffer, 1850) (figs. 4–9). Although that species may have vague brown, spiral bands, it lacks the distinct maculations of *C. gerhardfellneri*. The sutural tufts of *C. dominicensis* are more widely spaced and do not appress the suture as in *C.*

*gerhardfellneri*. As a result the suture of *C. dominicensis* is distinctly channeled whereas the suture of *C. gerhardfellneri* is obscured by the tufts. The axial sculpture of *C. dominicensis* consists of erect, fine lamellae; in *C. gerhardfellneri* this sculpture consists of fine, rounded threads.

*Remarks* Watters (2006) included *Colonina* in the Chondropomatinae, in which he included Henderson and Bartsch's (1920) Rhytidopomatinae. A recent phylogenetic study indicates that the Rhytidopomatinae are distinct from the Chondropomatinae (Skomrock, 2014). Although that study did not use *Colonina*, it did include closely related genera such as *Ramsdenia* Preston, 1913, and *Opisthosiphon* Dall, 1905.

The majority of *Colonina* species occur only on the western third of the island in Haiti. Several nominal species occur close to the new species described here: *Cyclostoma dominicense* Pfeiffer, 1850, *Haitipoma catalinense* Bartsch, 1946, and *Haitipoma abbotti* Bartsch, 1946. Three specimens at NMHUK (1996132) may be syntypes of *Cyclostoma dominicense* Pfeiffer, 1850 (fig. 7). Described from "in insula Haiti," Watters (2006) restricted the type locality to Isla Catalina, Dominican Republic. Comparison of those specimens with *Haitipoma catalinense* Bartsch, 1946, also from Isla Catalina, shows that they are synonymous (fig. 8). *Haitipoma abbotti* Bartsch, 1946, another species described from Isla Catalina, does not appear to be distinct and is also here regarded as a synonym (fig. 9). *Colonina dominicensis* ranges beyond Isla Catalina to the adjacent mainland from Bayahibe to Punta Cana.

#### ACKNOWLEDGMENTS

The authors thank J. Slapcinsky (UF), R. Herschler (NMNH), and K. Way (NHMUK) for access to their invaluable collections. The second author is indebted to her husband for his long-standing companionship on her research trips and to the Department of Anthropology, Vienna University.

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