

## A New Species of *Scaphella* (Gastropoda: Volutidae) from the Yucatan Peninsula of Mexico

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**ABSTRACT** A new species of the volutid genus *Scaphella* Swainson, 1832 is described from the western Gulf of Mexico, in the Yucatanian Subprovince of the Carolinian Molluscan Province. This new scaphelline volute, here named *Scaphella audreyae* n. sp., was collected by shrimp boats working off the eastern coast of the Yucatan Peninsula. It is a member of the highly endemic molluscan assemblages found in the Contoyan Infraprovince ecozone. The new eastern Yucatan volute is the ninth *Scaphella* s.s. species known from the Gulf of Mexico.

**KEY WORDS** Volutidae, *Scaphella*, *Scaphella audreyae*, Yucatan, Mexico, Contoyan Infraprovince, Yucatanian Subprovince, Carolinian Molluscan Province

### INTRODUCTION

Recent biodiversity surveys of the mollusks from the Gulf of Mexico have shown that the resident volute fauna is much richer than was previously reported (*i.e.*, Abbott, 1974; Tunnel *et al.*, 2010; Petuch and Myers, 2014). Composed entirely of members of only one volutid subfamily, the Scaphellinae, the Gulf of Mexico volute fauna is comprised of six distinct genera, including *Scaphella*, *Clenchina*, *Aurinia*, *Rehderia*, *Caricellopsis*, and *Garciavoluta* and 24 species (see Petuch and Berschauer, 2025 for a complete overview of the scaphelline volutes of the Gulf of Mexico). Of these, members of the genus *Scaphella* Swainson, 1832 are the most prominent and conspicuous species found throughout the Gulf region, often occurring in large aggregations just offshore, at depths ranging from 10 m to 200 m (Petuch and Berschauer, 2026). Specimens are frequently collected in baited

lobster and crab traps or in shrimp trawler's nets and are subsequently sold to shell dealers and owners of local curio shops. One shop owner, Kevin Haley, proprietor of the Maya-Xel marine art studio in Playa del Carmen, Quintana Roo State, Mexico, has gathered up many rarely seen volutes from off the Yucatan Peninsula and has brought them to the attention of scientists around the world. One of the *Scaphella* species that he encountered was found to be a previously unrecognized taxon, which is described here.

### SYSTEMATICS

Class	Gastropoda Cuvier, 1795
Subclass	Sorbeoconcha Ponder and Lindberg, 1997
Order	Prosobranchia Milne-Edwards, 1848
Infraorder	Neogastropoda Wenz, 1938
Superfamily	Volutoidea Rafinesque, 1815

Family Volutidae Rafinesque, 1815  
 Subfamily Scaphellinae Rafinesque, 1815  
 Genus *Scaphella* Swainson, 1832

The holotype of the new species is deposited in the molluscan collections of the Santa Barbara Museum of Natural History, Santa Barbara, California and bears a SBMNH catalog number.

*Scaphella audreyae* Petuch, Berschauer, and Shelton, new species  
 (Plate 1, Figures A-F)

**Description.** Shell of normal size for genus, averaging 95 mm in length, smooth and polished, with 10-12 very low, almost obsolete cords around anterior end of body whorl; shell broadly fusiform, very inflated, with wide rounded shoulder and rounded sides; spire proportionally low, subpyramidal, with early whorls projecting and exerted; shell base color pale cream-white or pale yellow-orange, overlaid with 11-12 rows of evenly-spaced large oval or rounded spots which vary in color from reddish-brown to dark blackish-brown; suture of spire whorls bounded by row of larger oval spots, which are oriented obliquely; aperture proportionally wide, elongated and flaring; interior of aperture pale orange, becoming darker along inner edge of lip; columella and fasciole pale orange; anterior end of siphonal area darker orange; columella with 4 large, prominent riblike folds, with the anteriormost fold being smallest; protoconch dark orange-brown, domelike, with low raised pointed area in center; first postnuclear whorl smooth, white or pale cream-white, without spots; second postnuclear whorl with row of large brown spots and sculpted with numerous fine, closely-packed longitudinal ribs.

**Type Material.** HOLOTYPE - length 97.5 mm, 42.8 width mm, 65 m depth off Cabo Catoche, Yucatan Peninsula, SBMNH 235888: PARATYPES - Two specimens, length x width

91 x 34 mm, and 110 x 41 mm, same locality and depth as the holotype, in the Petuch research collection; Five specimens, length x width 101.7 x 44.2 mm, 100.7 x 39.9 mm, 95.2 x 42.1 mm, 70.8 x 29.0, and 69.2 x 28.2 mm, same locality and depth as the holotype, in the Berschauer research collection; Six specimens, lengths 119.0 x 48.0 mm, 93.9 x 37.7 mm, 85.4 x 31.7 mm, 65.6 x 27.0 mm, 56.0 x 22.9 mm, and 48.5 x 21.0 mm, same locality and depth as the holotype, in the Shelton research collection.

**Type Locality.** Trawled by commercial shrimpers from 65 m depth northeast off Isla Contoy, Quintana Roo State, Yucatan Peninsula, Mexico.

**Range.** At present, known only from the 65-100 m depth range off the northeastern area of the Yucatan Peninsula, from off Isla Holbox and Cabo Catoche to Isla Mujeres and Cancun, Quintana Roo State, Mexico.

**Etymology.** Named for Audrey Nicole Shelton, of Mobile, Alabama; an inspired amateur malacologist and granddaughter of volute expert Douglas Shelton.

## DISCUSSION

Of the known Gulf of Mexico *Scaphella* species, *S. audreyae* is most similar to the elongated and high-spined *S. stimpsonorum* (Plate 2, Figures E, F) known from the deep-water areas around the eastern edge of the Campeche Bank and along the eastern side of the Yucatan Peninsula, Mexico. This new species, which is restricted to the extreme eastern and southeastern edge of the Yucatan Peninsula, differs from its more northerly sibling species in having a much more inflated and rounded body whorl and in consistently having a lower, less elevated spire. The spots on *S. audreyae* are also proportionally larger than those seen on *S. stimpsonorum*, which are rounded and more numerous. Besides the obvious differences in the spotted color pattern,

the principal difference between the two eastern Yucatan sibling species is seen in the shape and sculpture of the early spire whorls; on *S. stimpsonorum*, the first three postnuclear whorls are very narrow and are heavily sculpted with numerous large, prominent longitudinal ribs, while on *S. audreyae*, only the second postnuclear whorl has any type of sculpture, being only slightly ornamented with very fine, almost obsolete, longitudinal ribs (Plate 3).

Since *Scaphella audreyae* has in recent years been collected in significant numbers off the Yucatan Peninsula in recent years, many commercial shell dealers and advanced volute specialists have referred the new species to *Scaphella butleri* Clench, 1953 (Plate 2, Figures A-D), a well-known Yucatan scaphelline. Based upon his extensive efforts working with local shrimp boat captains, Kevin Haley is the likely source of the majority of specimens of this taxon. A close examination of the two species shows that the two Mexican volutes differ substantially. Although having commercial collecting data denoting that they are from “Yucatan”, the two sibling species are not sympatric and actually occur a great distance from each other; with *S. butleri* being confined to depths of 100-150 m on the Campeche Bank off northern Yucatan, and *S. audreyae* being confined to depths of around 65 m in the area off Cabo Catoche and Isla Mujeres. The Campeche Bank *S. butleri* is a larger and more elongated shell than the stocky, inflated Contoyan *S. audreyae*, and has a much more elevated spire. The early whorls of *S. butleri* are also heavily sculptured with prominent coarse longitudinal ribs, while the early whorls of *S. audreyae* are only faintly sculptured with fine, nearly obsolete longitudinal ribs on the second postnuclear whorl (Plate 3). The base shell color also differs markedly between the two Yucatan

sibling species, with *S. butleri* characteristically having a pure white base color, while *S. audreyae* has a base color that is most often a pale yellow-white or orange-white, with some specimens having a base color with a rich peach-orange tone.

On a historical note, the “*Scaphella elizabethae*” illustrated in “Molluscan Faunas of the Gulf of Mexico: Endemism in North America’s Inland Sea” (Petuch and Berschauer, 2025: 75, figure 3.14 A, B) has proven to have incorrect locality data, and is in fact a specimen of *S. audreyae*, which was mistakenly added to the figure. The specimen was originally purchased from an online shell collector who provided data stating that it was collected off the “Dry Tortugas?”. With very few specimens of *S. elizabethae* being available for study at the time, and with *S. audreyae* being an unknown taxon, it was assumed that the purchased specimen was simply an unusual variant of *S. elizabethae*. Since many more *S. audreyae* have subsequently been collected and studied, we can now state, with surety, that the figured specimen in Petuch and Berschauer, 2025 is not from the Florida Keys and Dry Tortugas but is actually from the Contoyan Infraprovince of the Yucatan Peninsula and should not be associated with Floridian faunas. The figure in Petuch and Berschauer, 2025 will have to be emended in future editions of the book.

#### ACKNOWLEDGMENTS

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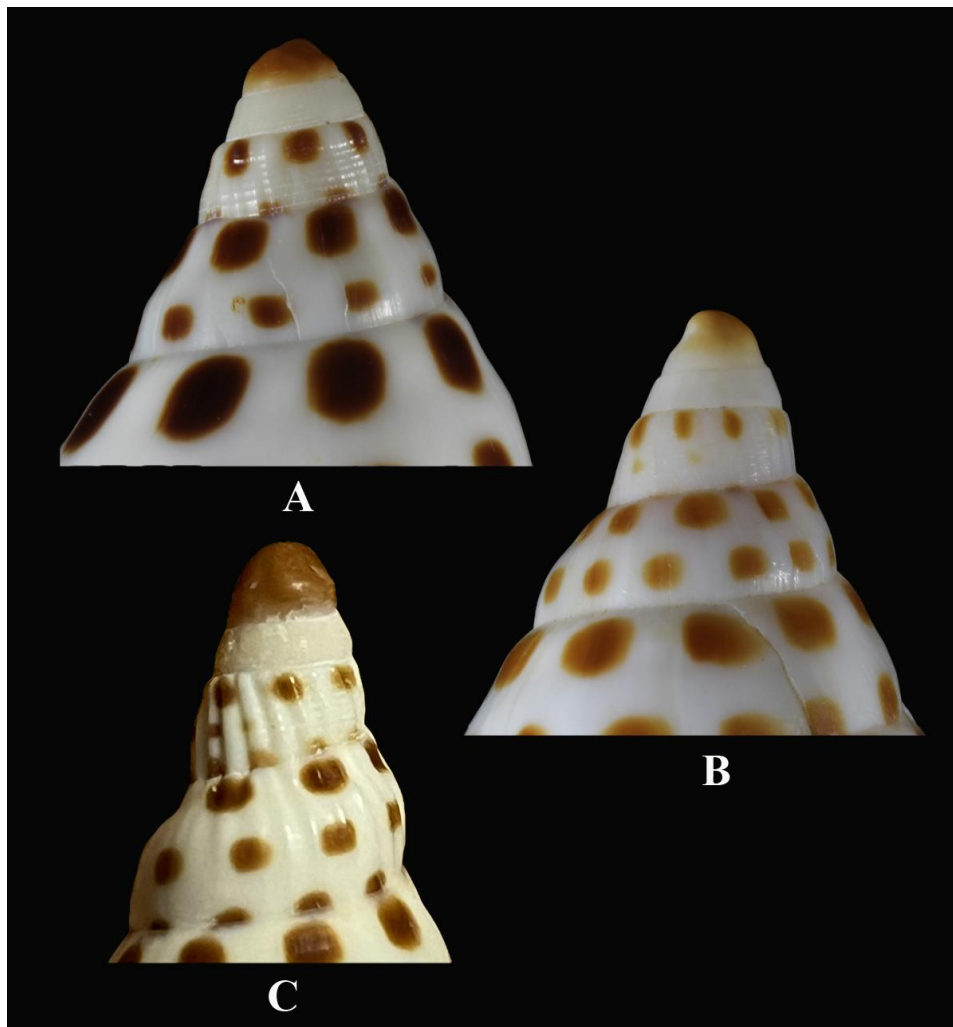
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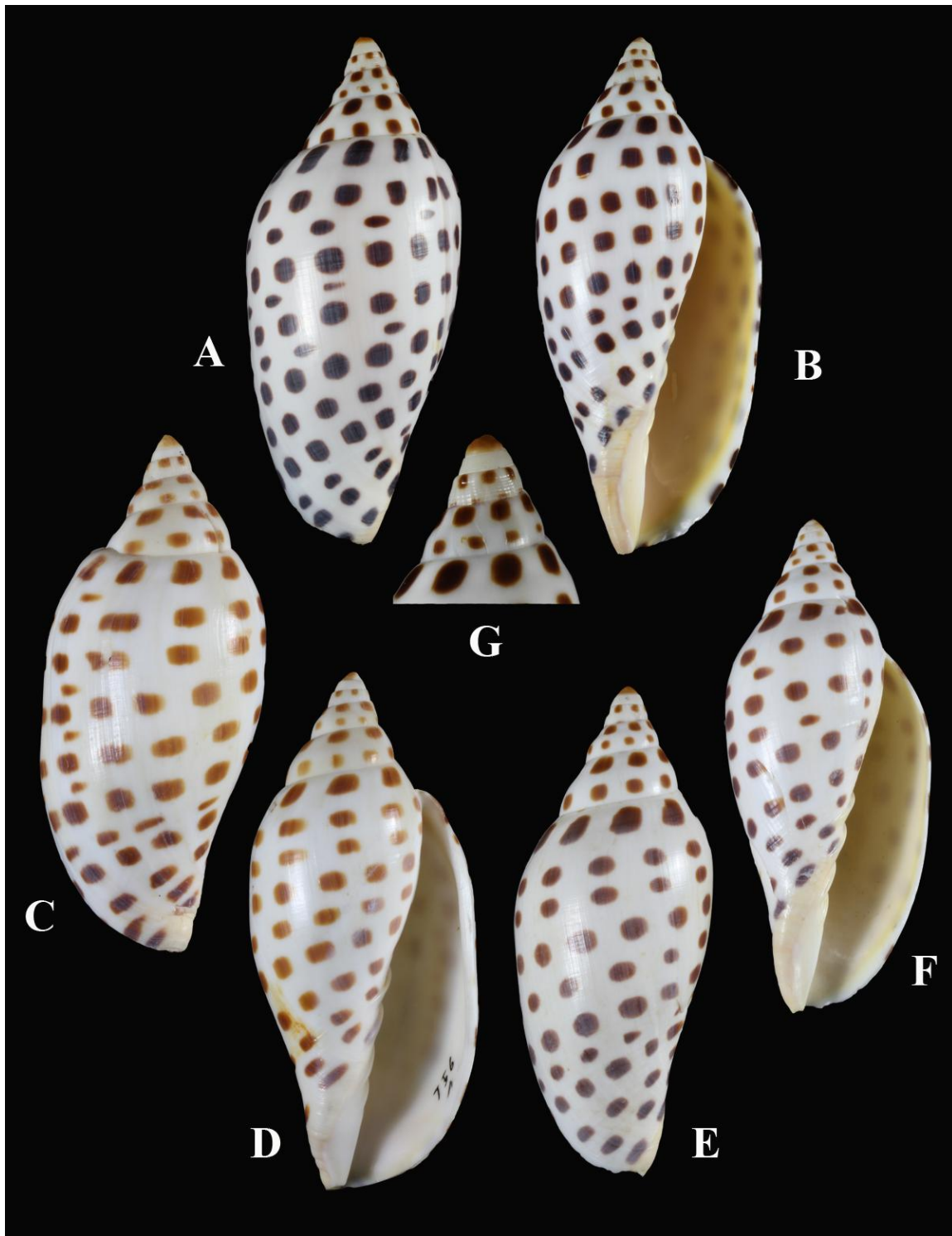
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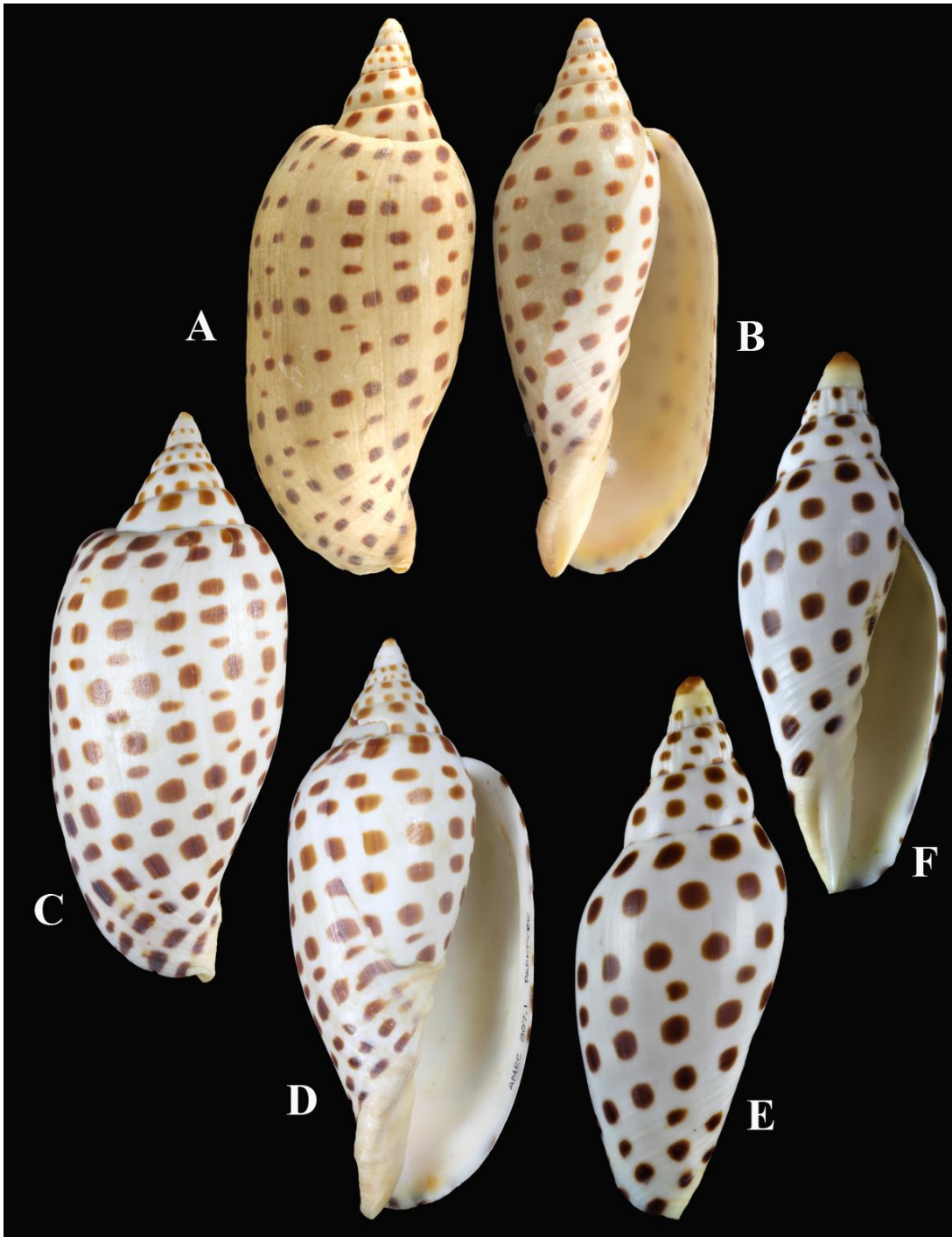
**Plate 3. Protoconch and Early Whorls of *Scaphella* species from the Yucantanean Subprovince.**

**A = *Scaphella audreyae* n.sp.,** holotype, length 97.5 mm, SBMNH 235888; **B = *Scaphella butleri* Clench, 1953,** paratype length 137 mm, in the Shelton research collection (ex W.H. Butler Coll.); **C = *Scaphella stimpsonorum* Cossignani & Allary, 2019** from off Isla Contoy, Quintana Roo, Mexico, in the Petuch research collection.



**Plate 1. *Scaphella audreyae* Petuch, Berschauer, and Shelton, new species.**

A, B= holotype, length 97.5 mm, SBMNH 235888; C, D= paratype, length 101.7 mm, in the Berschauer research collection; E, F= paratype, length 93.9 mm, in the Shelton research collection; G= detail of the protoconch of the holotype. All three specimens were collected by commercial shrimp fishermen, trawled from 65 m depth off Cabo Catoche, Quintana Roo State, Mexico.



**Plate 2. Other *Scaphella* species from the Yucatecan Subprovince.**

**A, B**= *Scaphella butleri* Clench, 1953, holotype, Harvard University Museum of Comparative Zoology No. 193591, length 126 mm, trawled by shrimpers from 100 m depth off the Campeche Bank off Progreso, Yucatan State, Mexico; **C, D**= *Scaphella butleri* Clench, 1953, paratype length 137 mm, in the Shelton research collection (ex W.H. Butler Coll.), trawled by shrimpers from 24-28 m depth on the Campeche Bank off Champoton, Yucatan State, Mexico; **E, F**= *Scaphella stimpsonorum* Cossignani and Allary, 2019, length 72 mm. In the Petuch research collection, originally stated as coming from off the Alacranes Reefs on the Campeche Bank, but that is now known to be an error, as the species actually inhabits depths of 150-200 m all along the deep terraces off Isla Holbox and the northern coast of the Yucatan Peninsula.