



Nota breve | Short note

Hitchhiking on drifting nets

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The marine litter has been the subject of much concern given its great impact on marine ecosystems (Lima *et al.* 2020). It has become quite clear that one of the main causes of marine litter is ghost fishing, a type of fishing that results in the loss or illegal disposal of fishing gear at sea (Baird 2006). According to World Animal Protection, 640,000 tonnes of fishing gear are left in our oceans every year, causing huge economic and environmental damage (Casarini *et al.* 2011).

Due to its geographical position, the Cabo Verde Archipelago may be prone to the introduction of species arriving on marine waste (Cardoso & Caldeira 2021). With this in mind, in 2016, at Janela, on Santo Antão Island (17°07'14.8"N 24°59'23.5"W), a bottom fishing net was collected to identify its contents. It was found to contain 20 kg of sea snails. Based on the rough-textured outer surfaces, shell length (maximum 200 mm), short spines spiraling off a long, straight

siphonal canal, low spires, and colour (ovate aperture mostly white, buff or tan shell interrupted on the body whorl by three darker brown spiral bands; Fig. 1), these shells were identified as horned murex *Bolinus cornutus* (L. 1758). The shells of six dry specimens were deposited in the BIOCATALOG collection, under the code UCV2024/00006.

Bolinus cornutus is often confused with *B. brandaris* (L. 1758) from Mediterranean, but *B. cornutus* has its larger size, reduced spire, and two rows of spines on the siphonal canal (as *B. brandaris* have one). Typically, the final whorl of *B. cornutus* bears two (occasionally three) rows of spines, while these spines often exhibit significant backward curvature (Houart 1996).

Bolinus cornutus is a predatory marine gastropod mollusk of the family Muricidae. It is common in the Canary Islands and along the west coast of Africa, where it inhabits moderately shallow waters (Muniz-Solís &

Guerra-Merchán 1994; Houart 1996). Although Muniz-Solís & Guerra-Merchán (1994) list Cabo Verde as part of the distribution of the species, it has never been seen before. Rolán (2005) argued that the

presence of *B. cornutus* in Cabo Verde was doubtful. The net that was lost or abandoned at sea off Cabo Verde drifted away, eventually collecting the horned murex.



Fig. 1. Specimens of *Bolinus cornutus* found in 2016 at Janela, Santo Antão Island, Cabo Verde (photo by E. Lopes).

Cabo Verde coastline is influenced by the canary current, which connects with the wind-driven north equatorial current approaching the African coast (Freitas *et al.* 2018; Medina *et al.* 2007). This could explain the arrival of *B. cornutus* individuals as these currents

transport debris from areas far away (Cardoso & Caldeira 2021). This case exemplifies how Cabo Verde is vulnerable to introduced species brought as marine litter, possibly affecting its fragile marine ecosystems and endemic species.

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REFERENCES

- Baird, R.J. (2006) *Aspects of illegal, unreported and unregulated fishing the Southern Ocean*. Springer, Berlin, 286 p.
- Cardoso, C. & Caldeira, R.M. (2021) Modeling the exposure of the Macaronesia Islands (NE Atlantic) to marine plastic pollution. *Frontiers in Marine Science*, 8, 653502.
- Casarini, L.M., Campolim, M.B., Castilho-Barros, L., Graça-Lopes, R., Fortuna, M.D., Mello-Junior, J.E.A. & Scola, D.C.A. (2011) Avaliação dos petrechos de pesca recolhidos em unidades de Conservação. *Proceedings of the V Simpósio Brasileiro de Oceanografia-Oceanografia e Políticas Públicas*, 17–20.
- Freitas, R., Falcón, J.M., Gonzáles, J.A. & Burnett, K.A. (2018) New and confirmed records of fishes from the Cabo Verde archipelago based on photographic and genetic data. *Arquipelago, Life and Marine Sciences*, 35, 67–83.
- Houart, R. (1996) Les Muricidae d’Afrique occidentale I. Muricinae & Muricopsinae. *Apex*, 11, 95–161.
- Lima, M.K.S, Fonteles de Vasconcelos Filho, J.I., de Freitas, R.M. & Feitosa, C.V. (2020). Pesca fantasma: Uma síntese das causas e consequências nos últimos 15 Anos. *Arquivos de Ciências do Mar*, 52, 98–114.
- Medina, A., Brêthes, J.C., Sévigny, J.M. & Zakardjian, B. (2007) How geographic distance and depth drive ecological variability and isolation of demersal fish communities in an archipelago system (Cape Verde, Eastern Atlantic Ocean). *Marine Ecology*, 28, 404–417.
- Muniz-Sólis, R. & Guerra-Merchán, A. (1994) Malacologic study from Pliocene of Estepona (Malaga). Family Muricidae, Rafinesque, 1815 (Gastropoda, Prosobranchia). *Iberus: Revista de la Sociedad Espanola de Malacologia*, 12, 07–41.
- Rolán, E. (2005). *Malacological fauna from the Cape Verde Archipelago: I. Polyplacophora and Gastropoda*. ConchBooks: Hackenheim, Germany. 455 pp.

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