



Check-List of the Sacoglossa and Nudibranchs (Mollusca, Gastropoda) From Comunitat Valenciana (Spain)

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Abstract

Nudibranchs and Sacoglossa are a group of marine mollusks that have been the subject of extensive research in many regions. While the Iberian Peninsula has a rich history of nudibranch studies, the Valencian Community remains relatively unexplored. This study aims to address this knowledge gap by providing the first comprehensive faunal catalogue of sacoglossa and nudibranchs in this region, contributing to our understanding of marine biodiversity and distribution and providing valuable information for conservation efforts.

Keywords Nudibranch · Sacoglossa · Biodiversity · Levantine coast

Introduction

Heterobranchia is a taxonomic group of marine mollusks mainly characterized by the loss of their shell as the first barrier of defense, which is replaced by various mechanisms, predominantly chemicals, which are of great interest to the pharmaceutical industry (Thompson and Brown 1984; Bielecki et al. 2011; Picton and Morrow 2023).

Heterobranchs are animals with a great variety of shapes and colors, which have attracted the attention of the scientific community, divers and the general public. In Spain, there are many works focused on this faunal group from different approaches, such as taxonomic identification (De Fez 1974; Sánchez-Tocino 2003; Caballer et al. 2010; Urgorri et al. 2011), diversity studies (Ros 1978; Luque 1984; Malaquias 2001), trophic characterization (Giménez-Casaldueiro et al. 2011; Camps-Castellà et al. 2020) or defense mechanisms studies (Ávila et al. 2018; Ávila 2020) among others. In 2004, Cervera et al. recollected all the species described

to date in the Iberian Peninsula, and this list has been continuously updated and expanded thanks to numerous studies (Ballesteros et al. 2016; Almón et al. 2019; Urgorri et al. 2021; Tibiriçá et al. 2023).

Thus, it is evident that the Iberian Peninsula has a wealth of information on nudibranchs but there is a significant exception: The Valencian Community. In the eastern area of Spain, several studies on nudibranchs can be found in the region of Murcia (Templado 1982, 1983, 1984; Marín and Ros 1987), but as far as the Valencian Community is concerned, only two studies on nudibranchs (De Fez 1974; Sáez et al. 2008) are found and both are focused exclusively on the port of Valencia.

This may be due, to a large extent, to the fact that the Valencian Community coast is mainly characterized by sandy bottoms with little hard substrate, except for some areas with a higher rocky predominance, such as the Alacant shore.

That is the motivation behind this work, which aims to fill the existing gap in the Valencian Community in terms of nudibranchs, offering the first faunal catalogue of nudibranchs and sacoglossans focused exclusively on the Valencian Community.

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Materials and Methods

Sampling Area

The Valencian Community belongs to the western Mediterranean coast and, together with Murcia, it forms the Spanish

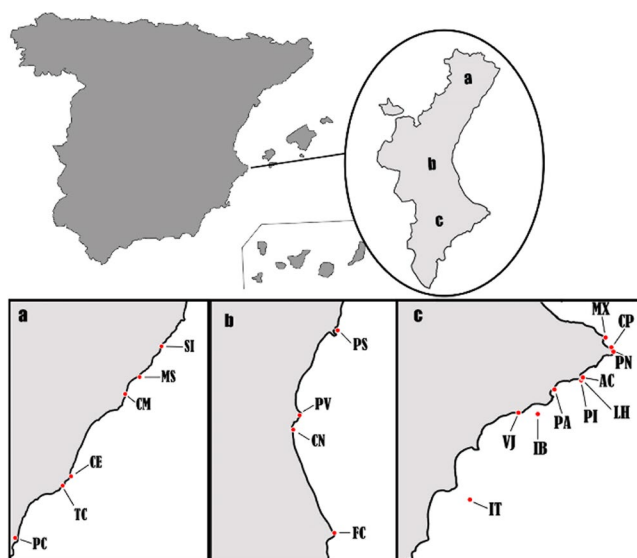


Fig. 1 Valencian Community sampling area. Image **a** corresponds to the province of Castelló, image **b** corresponds to the province of València and image **c** corresponds to the province of Alacant. The abbreviations used for each sampling point are shown in Table 1

Levantine Coast (Fig. 1). This area is characterised by the predominance of sandy habitats, with low hydrodynamic and rocky areas. Sample collection was carried out at 28 points, seven of which were located in the province of Castelló, four in the province of València and the remaining seventeen in the province of Alacant.

Material Collected

A total of 426 specimens were collected, corresponding to 4 species of Sacoglossans and 38 species of Nudibranchs. Totally 46 samplings were carried out between March and May 2016 and between January and September 2017. Sampling points are shown in Fig. 1 while their corresponding coordinates and the identification codes used throughout this work are listed in Table 1.

In the Castelló region, 74 specimens were collected, corresponding to 22 different species. In the València region, 234 specimens were collected, corresponding to 29 different species. In the Alacant province, 118 specimens were collected, corresponding to 17 different species. The species were observed and collected by free diving between 1 and 5 m depth and by scuba diving up to 26 m depth. Each group of specimens was studied, attending to their internal and external anatomy, focusing in their diagnosis characters such as the radula and the reproductive systems for their identification. Images from the animals were taken using a Leica M165C lens with an integrated camera. Specimens are stored in the faunal collection of the Station of Biology Marine of Graña (USC), in Ferrol (Galicia). Bibliography used for species identification was based principally on the works of Gofas et al. (2011), Schmekel and Portmann (1982), Thompson and Brown (1984), and a comprehensive review of original descriptions and the material collected in WORMS (2025, <http://www.marinespecies.org> at VLIZ).

Table 1 Sampling points. The first column corresponds to the abbreviations of each sample point, the second column contains the name of each sample point, and the third column details its coordinates

CASTELLÓ		
SI	Serra d'Irta	40° 18' 53.4" - N 0° 21' 26.1" E
CM	Cala del Moro, Peñíscola	40° 13' 46.2" N-0° 16' 21.5" E
CE	El enchufado	40° 05' 05.1" N-0° 08' 50.1" E
PC	Port de Castelló	39° 58' 26.5" N-0° 01' 01.0" E
TC	Torre de la Cordà	40° 03' 59.1" N 0° 07' 33.2" E
MS	Cala Mundina, Serra d'Irta	40° 15' 36.1" N-0° 18' 15.2" E
VALÈNCIA		
FC	Far de Cullera	39° 11' 14.5" N-0° 13' 05.6" W
PV	Marina Reial, Port de València	39° 27' 42.6" N-0° 19' 00.4" W
CN	Club Nàutic de València	39° 25' 51.8" N-0° 19' 58.3" W
PS	Port de Sagunt	39° 39' 07.2" N-0° 12' 18.7" W
ALACANT		
MX	Ca la Mona, Xàbia	38° 47' 58.4" N-0° 11' 51.0" E
IT	Illa de Tabarca	38° 09' 40.0" N-0° 27' 31.7" W
IB	Illa de Benidorm	38° 30' 07.2" N-0° 07' 59.4" W
PI	Tres Pedres, Calp	38° 37' 53.3" N-0° 04' 32.0" E
AC	Los Arcos, Calp	38° 37' 51.9" N-0° 04' 40.9" E
PA	Port Altea	38° 35' 27.5" N-0° 03' 18.9" W
LH	La Higuera	38° 37' 59.0" N-0° 04' 58.3" E
PN	Pared negra	38° 44' 43.4" N-0° 13' 58.8" E
CP	Cala Portixol	38° 45' 27.0" N-0° 13' 22.2" E
VJ	Port Vila Joiosa	38° 30' 30.6" N-0° 13' 09.0" W

Results

Faunistic Results

For the first time a heterobranch catalogue from a Comunitat Valenciana biodiversity is provided. A total of 426 specimens were collected, corresponding to 4 species of sacoglossans and 38 species of nudibranchs. These species are distributed in 27 genera (3 sacoglossans and 24 nudibranchs). Habitat and distribution details have been collected and cross-checked according to scientific publications, books and online resources from Thompson (1976), Barletta (1980), Schmekel and Portmann (1982), Thompson and Brown (1984), Cattaneo-Vietti et al. (1990), Picton and Morrow (1994, 2023), McDonald and Nyebakken (1997), Cervera et al. (2004), Debelius and Kuitert (2007), Gofas et al. (2011), Calado and Silva (2012), Trainito and Doneddu (2015), Ballesteros et al. (2016), Furfaro and Mariottini (2016), Zenetos et al. (2016), OPK-Opisthobranchis (Ballesteros et al. 2012–2025, <http://opisthobranchis.info/en/>), World Register of Marine Species (WoRMS, <http://www.marinespecies.org> at VLIZ), and personal underwater observations. If any of the information presented below on the habitat and distribution of species was obtained from a source different from those cited above, it has been included in the corresponding section.

Phylum Mollusca

Class Gastropoda Cuvier, 1795

Subclass Heterobranchia Burmeister, 1837

Infraclass Opisthobranchia Milne-Edwards, 1848

Order Sacoglossa Ihering, 1876

Suborder Plakobranchea Gray, 1840

Superfamily Plakobranchoidea Gray, 1840

Family Plakobrancheidae Gray, 1840

Genus *Elysia* Risso, 1818

1. *Elysia viridis* (Montagu, 1804) (Fig. 2.1)

Material CM: two specimens collected on 07.02.2017. CE: one specimen collected on 01.06.2017. PV: two specimens collected on 14.03.2016 and one specimen collected on 21.03.2016.

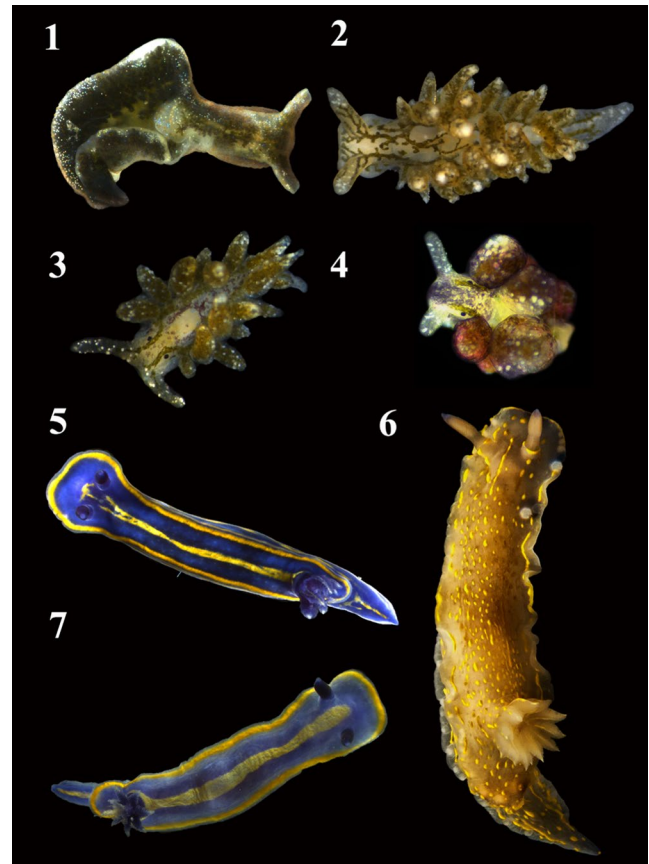


Fig. 2 Images of the species described. 1. *Elysia viridis* (5,3mm), 2. *Placida dendritica* (4,2mm), 3. *Placida* sp. (3,6mm), 4. *Calliopaea bellula* (1,2mm), 5. *Felimare bilineata* (12mm), 6. *Felimare picta* (35mm), 7. *Felimare tricolor* (10mm)

Ecology In this work the species were found on a conglomerate of organisms including *Crisia denticulata* (Lamarck, 1816); *Bugula neritina* (Linnaeus, 1758); *Clathrina* sp. Gray, 1867; *Tricellaria inopinata* d'Hondt & Occhipinti Ambrogi, 1985; *Savignyella lafontii* (Audouin, 1826) and numerous undetermined attached algae.

Species lives on a wide variety of intertidal green algae and shallow bottoms. It is usually found on *Cladophora rupestris* (Linnaeus) Kützinger, 1843; *Chaetomorpha linum* (O.F.Müller) Kützinger, 1845; *Codium* sp. Stackhouse, 1797; *Enteromorpha clathrata* (Roth) Greville, 1830; *Ulva lactuca* Linnaeus, 1753; *Ceramium* sp. Roth, 1797 and *Bryopsis* spp. J.V. Lamouroux, 1809; in some rhodophyceae such as *Chondrus* sp. Stackhouse, 1797 or phaeophyceae such as *Cystoseira* sp. C.Agardh, 1820. Some authors report it on phanerogam *Zostera* sp. Linnaeus, 1753. In the Iberian Mediterranean it is frequently observed on *Codium fragile* (Suringar) Hariot, 1889.

Distribution This species is widely distributed. It has been cited in Norway, the Baltic Sea, England, Holland, France, Spain, Portugal, Azores and Madeira. It is very frequent in the Mediterranean.

In the Iberian Peninsula, it has been cited in Galicia, in the Bay of Biscay, in Portugal, along the Andalusian coast, in the Strait of Gibraltar, on the Levantine coast, Catalonia, Balearic Islands, Canary Islands, Madeira, and Azores.

Superfamily Limapontioidea Gray, 1847

Family Limapontiidae Gray, 1847

Genus *Placida* Trinchese, 1876

2. *Placida dendritica* (Alder & Hancock, 1843) (Fig. 2.2)

Material PV: one specimen collected on March 2016. **PA:** one specimen collected on 28.02.2017.

Ecology Specimen were found between 0 - 2 meters depth, on *Crisia denticulata* and *Bugula neritina* with numerous unidentified attached algae.

Infralitoral, especially on *Codium tomentosum* Stackhouse, 1797; *Bryopsis pulvinata* Oltmanns, 1904 and *Codium*. Juvenile specimens have been observed on *Posidonia oceanica* (Linnaeus) Delile, 1813.

Distribution Cosmopolitan species. Its distribution in the eastern Atlantic ranges from Norway to Morocco. Citations include South Africa, Australia, New Zealand, Japan and the western Mediterranean.

In the Iberian Peninsula it has been collected in Galicia, in the Bay of Biscay, in Portugal, in eastern Andalusia, on the Levantine coast, in Catalonia, in the Balearic Islands and Madeira.

3. *Placida* sp. (Fig. 2.3)

Material PV: one specimen collected in June 2016.

Genus *Calliopaea* d'Orbigny, 1837

4. *Calliopaea bellula* d'Orbigny, 1837 (Fig. 2.4)

Material PC: one specimen collected in January 2017.

Ecology It has been observed on different species of algae, in zoostera meadows and feeding on eggs of other species

of heterobranchs such as *Haminoea orbignyana* (A. Férussac, 1822).

Distribution In Europe, it is widely distributed in the United Kingdom, Norway, Italy, France and Greece.

In the Iberian Peninsula the species has been reported from Galicia, Portugal, Spanish Levant and Canary Islands.

Order Nudibranchia Cuvier, 1817

Suborder Euctenidiacea Tardy, 1970

Infraorder Doridacea Thiele, 1931

Superfamily Doridoidea Rafinesque, 1815

Family Chromodorididae Bergh, 1891

Genus *Felimare* Ev. Marcus & Er. Marcus, 1967

5. *Felimare bilineata* (Pruvot-Fol, 1953) (Fig. 2.5)

Material PN: one specimen collected on 24.06.2017.

Ecology It is usually found on rocky bottoms, from the first meters to about 25 m depth, usually on top of sponges or in infralipidic environments (under rocks) with encrusting sponges.

Distribution The species has been reported in the Atlantic and the Mediterranean. In the Iberian Peninsula it has been observed in Portugal, in Andalusia, and throughout the Mediterranean region.

6. *Felimare picta* (Schultz in Philippi, 1836) (Fig. 2.6)

Material PV: two specimens collected on 20.06.2017. **FC:** one specimen collected on 04.04.2017. **IT:** one specimen visually registered on 15.04.2017.

Ecology On algae and sponges on rocky bottoms, from the intertidal to depths of 50 meters. On *Posidonia oceanica* meadows. Feeds on *Dysidea fragilis* (Montagu, 1814), *Sarcotragus fasciculatus* (Pallas, 1766) and *Pleraplysilla spinifera* (Schulze, 1879).

Distribution Western Atlantic coast (Florida, Gulf of Mexico) and eastern (from Angola to Cape Verde). Throughout the Mediterranean and in the Canary Islands, Madeira and Azores. Throughout the Iberian Peninsula.

7. *Felimare tricolor* (Cantraine, 1835) (Fig. 2.7)

Material LH: four specimens collected in June 2017.

Ecology It is usually found on different species of sponges of the genus *Dysidea*.

Distribution In Europe this species can be found in Italy, along the Atlantic coast of France, in Portugal, in the Strait of Bonifacio and in the Adriatic Sea.

In the Iberian Peninsula it has been noticed throughout the entire Mediterranean region.

8. *Felimida krohni* (Vérany, 1846) (Fig. 3.8)

Material PN: one specimen collected on 24.06.2017.

Ecology Found on low-lighted rocky walls with presence of algae, hydrozoans, bryozoans and scyaphilid sponges. It is typically located on sponges but their feed preference is not clear. Occasionally observed on rhizomes of *Posidonia oceanica* at depths of up to 50 m. According to McDonald and Nybakken (1997) compilation of feeding habitats, it has been found on *Hymeniacidon sanguinea* (Grant, 1826) and on species of the genus *Ircinia* Nardo, 1833. Furfaro and Mariottini (2016) also report it on *Hymeniacido perlevis* (Montagu, 1814). The specimen in this research was found on *Petrosia (Petrosia) ficiformis* (Poirlet, 1789) at a depth of nine metres.

Distribution This species is found in the Mediterranean, in the European southern Atlantic and in North Africa. In the Mediterranean it is found in Italy, in the Adriatic Sea, in Turkish waters and on the French coasts. It is also present in the whole Iberian Peninsula.

Family Dorididae Rafinesque, 1815

Genus *Doris* Linnaeus, 1758

9. *Doris ocelligera* (Bergh, 1881) (Fig. 3.9)

Material PC: specimen collected in March 2017. **PV:** one specimen collected in May 2017. **CN:** One specimen collected in March 2016.

Ecology It can be found in rocky environments, beneath stones or among algae, particularly in juvenile specimens. Also observed on *Posidonia oceanica*. Their diet includes species of the genus *Halicionia* Grant, 1836; *Halichondria* Fleming, 1828 and *Hymeniacidon* Bowerbank, 1858. In this

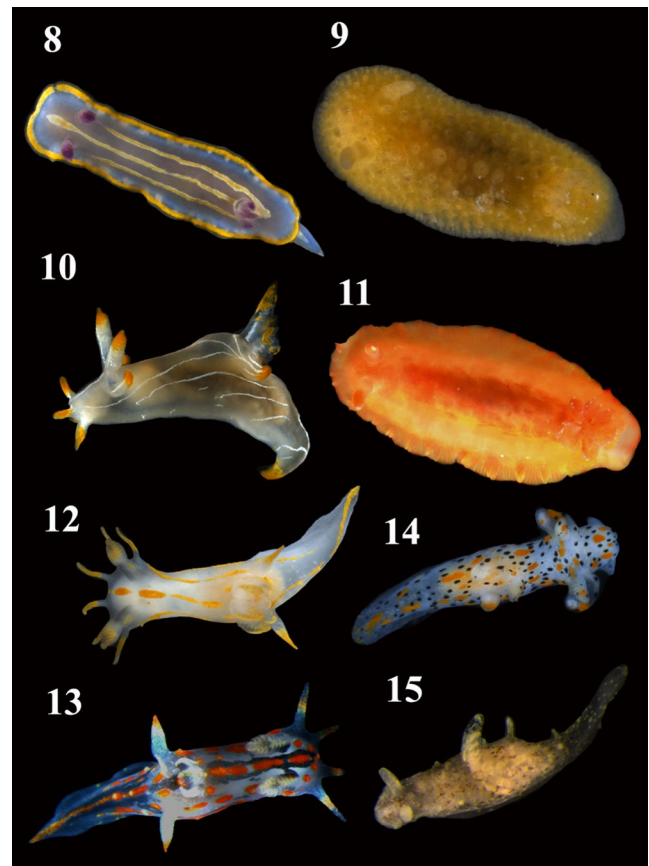


Fig. 3 Images of the species described. 8. *Felimida krohni* (9mm), 9. *Doris ocelligera* (4mm), 10. *Trapania lineata* (6mm), 11. *Dendrodoris temarana* (4mm), 12. *Polycera aurantiomarginata* (9mm), 13. *Polycera quadrilineata* (5mm), 14. *Thecacera pennigera* (10mm), 15. *Polycerella emertoni* (4mm)

work the specimen was collected on *Eudendrium album* Nutting, 1898 to a maximum depth of 2 metres.

Distribution From the French coasts of the Bay of Biscay to the Mediterranean. Cited in the Wild Islands, Madeira and Cabo Verde.

In the Iberian Peninsula, it has been recorded in Galicia, on the Cantabrian coast, in Portugal, in the Strait of Gibraltar, in eastern Andalusia and in eastern Spain. It has also been reported on the Balearic Islands and on the Azores.

Superfamily Onchidoridoidea Gray, 1827

Family Goniadorididae H. Adams & A. Adams, 1854

Genus *Trapania* Pruvot-Fol, 1931

10. *Trapania lineata* Haefelfinger, 1960 (Fig. 3.10)

Material PN: one specimen was collected on 24.06.2017.

Ecology Lives on poorly illuminated rock walls with abundant algae, sponges and hydrozoans, as well as inside caves. Feeds on entoprocta (Kamptozoa) of the genus *Loxosomella* (Cattaneo-Vietti et al. 1990). The specimen was found on *Sarcotragus spinolosus* Schmidt, 1862 at 3m depth.

Distribution It is a mediterranean species. It was cited in Italy, Turkey and along the Mediterranean coast of the Iberian Peninsula.

Superfamily Phyllidioidea Rafinesque, 1814

Family Dendrodorididae O'Donoghue, 1924 (1864)

Genus *Dendrodoris* Ehrenberg, 1831

11. *Dendrodoris temarana* Pruvot-Fol, 1953 (Fig. 3.11)

Material PV: one specimen was collected in March 2016.

Ecology The specimen was found on rocky substrate a few meters deep, normally under stones from the intertidal zone.

Distribution Typical from the western Mediterranean Sea, South Portugal, Morocco, Canary Islands and Cape Verde.

In the Iberian Peninsula it has been abundantly described in Catalanian coast and Cádiz (Andalusia). Recorded from Andalusia and Catalonia as *D. limbata*, and from Portugal, Azores and Canary Islands as *D. herytra* or *D. grandiflora* (Galià-Camps et al. 2022).

Superfamily Polyceroidea Alder & Hancock, 1845

Family Polyceridae Alder & Hancock, 1845

Subfamilia Polycerinae Alder & Hancock, 1845

Genus *Polycera* Cuvier, 1816

12. *Polycera aurantiomarginata* García-Gómez & Bobo, 1984 (Fig. 3.12)

Material PC: one specimen was collected in February 2017. **PV:** two specimens were collected in March 2016.

Ecology Usually found on shallow rocky bottoms, in poorly illuminated areas. It usually rests on the bryozoan

Bugula neritina, its typical food. The specimens collected were observed on rocky substrate a few meters deep with *Eudendrium capillare* Alder, 1856, and *Crisia denticulata*.

Distribution It was found in Tunisia, Senegal, and Angola. In the Iberian Peninsula it has been cited in Galicia, Portugal, and the Andalusian coasts, both the Atlantic and the Mediterranean.

13. *Polycera quadrilineata* (O. F. Müller, 1776) (Fig. 3.13)

Material PC: two specimens collected between January and February 2017. **PV:** six specimens collected between March 2016 and March 2017. **CN:** four specimens collected on 04.03.2016. **PA:** One specimen collected in February 2017. **VJ:** one specimen collected in February 2017.

Ecology The specimens were collected on shallow rocky substrate with *Eudendrium capillare* and *Crisia denticulata*.

It is usually found on infralittoral rocky bottoms, on brown algae, phanerogams, or on bryozoans *Bugula neritina*; *Celleporella* Gray, 1848; *Electra* Lamouroux, 1816; *Callopora* Gray, 1848; *Cellaria* Ellis & Solander, 1786; *Furcellaria* J.V.Lamouroux, 1813; *Membranipora* de Blainville, 1830; *Microporella* Hincks, 1877; *Stegella* Stechow, 1919; *Schizomavella* Canu & Bassler, 1917 and *Sessibugula barrosoi* Lopez de la Cuadra & Garcia-Gomez, 1994.

Distribution It was reported in the North Atlantic, mainly in Greenland, Norway, Iceland, Denmark, British Isles and North Sea. In the Mediterranean, it was seen from the Iberian Peninsula to Italy. It has also been observed on the South African coasts.

In the Iberian Peninsula it has been located in Galicia, in the Cantabrian coast, in Portugal, in the Andalusian coasts, in the Strait of Gibraltar, in the Iberian Levant, in Catalonia, in the Balearic Islands, in the Azores, Madeira and in the Canary Islands.

Genus *Thecacera* Fleming, 1828

14. *Thecacera pennigera* (Montagu, 1813) (Fig. 3.14)

Material PC: three specimens were collected in March 2017. **PV:** one specimen was collected in March 2017.

Ecology This species is present from the intertidal to 36 m depth. Feeds mainly on bryozoans of the genus *Bugula* Oken, 1815.

Distribution It is a cosmopolitan species found on the west coast of Europe, in the Mediterranean, Africa, the Eastern

United States, Brazil, Pakistan, Japan, Korea, Australia and New Zealand.

In the Iberian Peninsula it has been found in the Cantabrian Sea, in Portugal, and along the Atlantic coast of Andalusia.

Genus *Polycerella* A. E. Verrill, 1880

15. *Polycerella emertoni* A. E. Verrill, 1880 (Fig. 3.15)

Material PC: six specimens were collected between January and March 2017. **PV:** six specimens were collected in July 2016 and March 2017.

Ecology It is observed in both Mediterranean and Atlantic waters, typically on soft bryozoans such as *Amathia verticillata* or *A. gracilis*. It is also found on *Bugula neritina*.

Distribution This species was reported in the Atlantic, Ghana, and the Mediterranean Sea. In the Iberian Peninsula, it can be found in Portugal, Andalusia and Catalonia.

Suborder Cladobranchia

Superfamily Aeolidioidea Gray, 1827

Family Aeolidiidae Gray, 1827

Genus *Berghia* Trinchese, 1877

16. *Berghia verrucicornis* (A. Costa, 1867) (Fig. 4.16)

Material PV: one specimen was collected in March 2017.

Ecology The specimen was found at the base of a *Eudendrium* sp. in shallow water on a harbor dock. In the scientific literature *Berghia verrucicornis* is observed at shallow depths, under stones with hydrozoans and anthozoans. It feeds on intralipid anemones such as *Aiptasiogeton hyalinus* (Delle Chiaje, 1825) and *Sagartia* sp. Gosse, 1855. It has also been cited on *Anemonia sulcata* (Pennant, 1777), *Exaiptasia diaphana* (Rapp, 1829) and *Actinothoe* sp. Fischer, 1889.

Distribution In Europe this species is cited in France, Italy, the Adriatic Sea and other localities in the Mediterranean. Cataneo-Vietti et al. (1990) considers it an amphiatlantic species.

In the Iberian Peninsula it is observed in the Bay of Biscaia, in Portugal, in Andalusia, in the Strait of Gibraltar, in

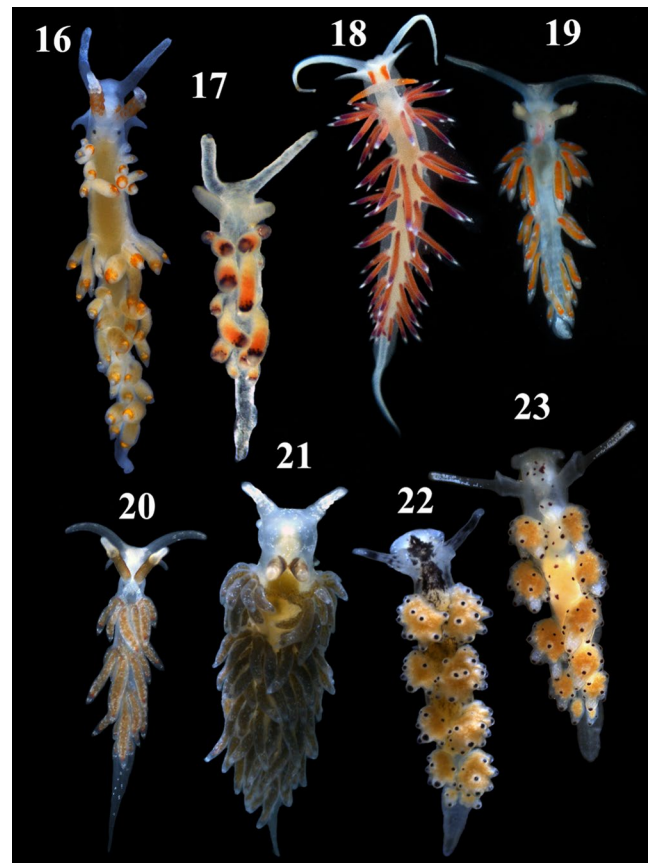


Fig. 4 Images of the species described. 16. *Berghia verrucicornis* (9mm), 17. *Caloria elegans* (2mm), 18. *Cratena peregrina* (10mm), 19. *Facellina auriculata* (8mm), 20. *Favorinus branchialis* (5mm), 21. *Favorinus ghanensis* (13mm), 22. *Doto cervicenigra* (6,5mm), 23. *Doto coronata* (3mm)

the Spanish Levant, in Catalonia and in the Canary Islands and Azores.

Family Facelinidae Bergh, 1889

Genus *Caloria* Trinchese, 1888

17. *Caloria elegans* (Alder & Hancock, 1845) (Fig. 4.17)

Material PC: a specimen was collected in February 2017.

Ecology The specimen was found on *Obelia geniculata* (Linnaeus, 1758).

In the scientific literature, this species is usually found on rocky walls with abundant algae and hydrozoans of the genus *Eudendrium* Ehrenberg, 1834; *Obelia* Péron & Lesueur, 1810; *Aglaophenia* Lamouroux, 1812; *Tubularia* Linnaeus, 1758; *Campanularia* Lamarck, 1816; *Halecium*

Oken, 1815; *Plumularia* Lamarck, 1816; on the species *Nemertesia ramosa* (Lamarck, 1816) and on specimens of the genus *Bougainvillia* Lesson, 1830.

Distribution This species is found in Europe, both on the Atlantic slope (UK and Portugal) and the Mediterranean part (Spain, Italy). It is also found in Turkey (Öztürk et al. 2014).

In the Iberian Peninsula this species has been cited in Portugal, in the Strait of Gibraltar, in the Mediterranean part of Andalusia, in Catalonia, in the Balearic Islands, Azores, Madeira, Canary Islands and in the Levant.

Genus *Cratena* Bergh, 1864

18. *Cratena peregrina* (Gmelin, 1791) (Fig. 4.18)

Material **PC:** 15 specimens were collected and 7 were visually registered between January and March 2017. **PV:** 14 specimens were collected and 20 were visually censused between February 2016 and June 2017. **CN:** 23 specimens were collected between February and March 2016. **PS:** 2 specimens were collected in May 2017. **FC:** 7 specimens were collected in May 2017. **MX:** 1 specimen was collected in October 2016. **IT:** 12 specimens were visually registered in April 2017. **IB:** 8 specimens were visually registered in May 2017. **PI:** 20 specimens were visually registered in June 2017. **AC:** 9 specimens were visually registered in June 2017.

Ecology The specimens in the present study were found on natural rocky substrates, concrete structures, and submerged headlands, in a depth range from 0 to 15 meters. They were found throughout the year, more abundantly in the summer. Specimens were found on the hydrozoan species *Eudendrium rameum* (Pallas, 1766); *E. capillare*; *E. racemosum* (Cavolini, 1785) and *E. ramosum* (Linnaeus, 1758).

The scientific literature cites this species in shallow areas, in environments with abundant athecate hydrozoans of the genus *Eudendrium* with low illumination, especially in the first 5 meters of depth. It is usually cited on *Eudendrium rameum*, *E. racemosum*, *E. ramosum* and on species of the genus *Aiptasia* Gosse, 1858; *Pennaria* Goldfuss, 1820; *Tubularia*; *Corydendrium* Van Beneden, 1844. It is very common to find it together with specimens of *Flabellina affinis* (Gmelin, 1791).

Distribution Mainly Mediterranean species both in the eastern part: in Greece and Turkey; as well as in the western: Italy, Adriatic Sea, France, and Iberian Peninsula. In the Atlantic, the species has been recorded from Portugal to Senegal, including the Savage Islands (Bharate et al. 2020).

In the Iberian Peninsula, it has been cited in Portugal, along the entire Andalusian coast and the Strait of Gibraltar, in Catalonia, on the Levantine coast, in the Balearic Islands, and the Canary Islands.

Genus *Facelina* Alder & Hancock, 1855

19. *Facellina auriculata* (Müller, 1776) (Fig. 4.19)

Material **SI:** one specimen was collected in May 2017. **CE:** one specimen was collected in June 2017. **PS:** five specimens were collected between March and May 2017.

Ecology This species has been found on undetermined hydrozoa between 0-7 meters deep, harbor docks, and natural rocky bottoms.

In the scientific literature it has been cited on poorly lit rocky walls with plenty of hydrozoans and stones. It usually feeds on species of *Podocoryna* sp. M. Sars, 1846; *Clava* sp. Gmelin, 1788, *Obelia geniculata*, *Tubularia* sp., *Dynamena pumila* (Linnaeus, 1758), *Cordylophora caspia* (Pallas, 1771) and *Laomedea flexuosa* Alder, 1857, although it may predate on other nudibranchs, polychaetes and some jellyfishes of the genus *Lucernaria* O. F. Müller, 1776. It has also been seen on species of the genus *Eudendrium* and *Clytia* Lamouroux, 1812.

Distribution The distribution of the species is imprecise because, until recently, it was confused with *Facelina coronata* (Forbes & Goodsir, 1839) which has been found to correspond to several distinct species. In Europe it has been cited in Norway, United Kingdom, Netherlands, Belgium, The Netherlands, France, Italy, the Black Sea and the Iberian Peninsula.

In the Iberian Peninsula the species has been cited in the Bay of Biscay, Galicia, Portugal, Andalusia, the Levant, Catalonia and the Canary Islands.

Genus *Favorinus* Gray, 1850

20. *Favorinus branchialis* (Rathke, 1806) (Fig. 4.20)

Material **TC:** one specimen was collected in March 2017. **PV:** two specimens collected in March 2016 and February 2017. **PA:** one specimen was collected in February 2017. **CP:** one specimen was collected in April 2017.

Ecology The specimens were found in poorly lighted areas, between 2 and 3 meters deep, on *Crisia denticulata*, *Bugula neritina*, and species of the genus *Eudendrium*. Eggs of other nudibranchs were present in some samples.

In the scientific literature, this species is recorded on shallow rocky bottoms, with clutches of other heterobranchs on which it feeds, such as *Placida dendritica*, *Elysia viridis*, *Aplysia fasciata* Poiret, 1789, *Aplysia punctata* (Cuvier, 1803), *Tylodina perversa* (Gmelin, 1791), *Platydoris argo* (Linnaeus, 1767), *Acanthodoris pilosa* (Abildgaard in Müller, 1789), *Felimare tricolor* (Cantraine, 1835) and *Aeolidia papillosa* (Linnaeus, 1761). It also feeds on species of the genus *Obelia*; *Nemertesia* Lamouroux, 1812; *Bugula* or *Sertularia* Linnaeus, 1758. Occasionally found in *Actinia equina* (Linnaeus, 1758); *Anemonia sulcata*, *Doris pseudoargus* Rapp, 1827, *Bugula neritina* and predated on specimens of their own species.

Distribution In Europe it is present along most of the European Atlantic coasts, from Norway to the Gulf of Guinea, Canary Islands, Madeira, and Azores. It is very frequent in the Mediterranean.

In the Iberian Peninsula, it has been cited from Cantabria, Asturias, Galicia, Portugal, the entire coast of Andalusia, the Spanish Levant, Catalonia, the Canary Islands, Azores and Madeira.

21. *Favorinus ghanensis* Edmunds, 1968 (Fig. 4.21)

Material PC: three specimens collected in March 2017.

Ecology The specimens in this study were found swimming in water from substrate samples scraped from organisms attached to a pontoon at a depth of 1 meter in a port area.

In the scientific literature, this species is found between 0-20 meters depth. It has been cited on epibionts, on fishing mesh remains, on colonies of the bryozoan *Amathia verticillata* (delle Chiaje, 1822) and eggs of *Hypselodoris capensis* (Barnard, 1927).

Distribution This species was first described in Ghana. It has also been observed on the Atlantic coast of Morocco, in Tunisia and the Canary Islands.

Superfamily Dendronotoidea Allman, 1845

Family Dotidae Gray, 1853

Genus *Doto* Oken, 1815

22. *Doto cervicenigra* Ortea & Bouchet, 1989 (Fig. 4.22)

Material PC: four specimens collected in March 2017. **PV:** sixty-two specimens collected between March 2016 and May 2017. **CN:** one specimen collected in February 2016. **VJ:** four specimens collected in February 2017.

Ecology This species has been found on the bryozoans *Crisia denticulata*, *Bugula neritina*, and *Scrupocellaria scruposa* (Linnaeus, 1758). It has also been found in the hydrozoans *Obelia dichotoma* (Linnaeus, 1758), *Opercularella lacerata* (Johnston, 1847), and on species of the genus *Eudendrium*.

In the scientific literature this species has been cited on *Lytocarpia myriophyllum* (Linnaeus, 1758) and *Aglophenia* Lamouroux, 1812; *A. kirkenpaueri* (Heller, 1868); *A. tubiformis* Marktanner-Turneretscher, 1890.

Distribution In Europe this species has been found exclusively in the Mediterranean, in Cagliari, Sardinia, in Calvi, Corsica, and in Porto Cesareo (Lecce). In the Iberian Peninsula it has been found in Catalonia and Mallorca.

23. *Doto coronata* (Gmelin, 1791) (Fig. 4.23)

Material PV: three specimens collected in May 2016 and March-April 2017.

Ecology The specimens have been found on pontoons located between 0-2 meters, in poorly lit areas, on the bryozoan *Crisia denticulata*, with numerous epibiont species, including indeterminate hydrozoans and on *Eudendrium* sp.

In the scientific literature, this species has been cited on a multitude of substrates, since it is a generalist species. It has been observed on tectate hydrozoans such as *Aglophenia plumosa*; *Rhizocaulus verticillatus* (Linnaeus, 1758); *Dynamena pumila*; *Diphasia rosacea* (Linnaeus, 1758); *Hydrallmania falcata* (Linnaeus, 1758); *Sertularia polyzonias* (Linnaeus, 1758); *Sertularia cupressina* Linnaeus, 1758 species of *Nemertesia* Lamouroux, 1812; *Dyphasia* Agassiz, 1862; *Halecium*; *Kirchenpaueria* Jickeli, 1883; *Lafoea* Lamouroux, 1812; *Laomedea* Lamouroux, 1812; *Obelia* as *O. geniculata* and *O. dichotoma* among others. It has also been cited on athecate hydrozoans such as *Bougainvillia muscus* (Allman, 1863), *Clava muricornis* (Forsskal, 1775); *Coryne muscoides* (Linnaeus, 1761), species of *Eudendrium* as *E. rameum* and *E. ramosum*; *Hydractinia echinata* (Fleming, 1828); *Garveia nutans* Wright, 1859 and even on bryozoans such as *Alcyonidium* Lamouroux, 1813 or *Euclarea loricata* (Linnaeus, 1758) although after the separation of this species into several species carried out by Lemche (1976) the actual substrate spectrum remains unclear.

Distribution This species is widely distributed. It has been reported on Maine, United States. On the Atlantic coasts, it has been reported on New England, New Jersey and Long Island in the western part and from Iceland and Scandinavia to the Iberian Peninsula via the English, Dutch and Welsh coasts. In the Mediterranean it was observed in the eastern part, in Turkey, in the Black Sea, in the Aegean and Adriatic Sea, on the coast of the former Yugoslavia, in Naples and in France.

In the Iberian Peninsula it can be found in the Bay of Biscay, in Galicia, in Portugal, in the Strait of Gibraltar, in Catalonia and on the Levantine coast.

24. *Doto floridicola* Simroth, 1888 (Fig. 5.24)

Material **PV**: one specimen collected in March 2016.

Ecology The collected specimen was on concrete blocks with epiphytic algae and numerous sessile organisms, including *Aglaophenia* sp.

In the scientific literature it has been cited in shallow waters on hydroids of the genus *Syntheicum* Allman, 1872 and on infralittoral rocky bottoms on hydrozoans of the genus *Aglaophenia*, especially in *Aglaophenia kirchenpaueri* (Heller, 1868) and *A. pluma*.

Distribution Found in the Atlantic, on the continental coasts, in Ireland, the United Kingdom, the Canary Islands, Madeira and the Azores. It was also reported in the Mediterranean, both in the eastern part (Greece and Turkey) and in the western part (Italy).

In the Iberian Peninsula it has been cited in Portugal, in Cabo Verde, in the Strait of Gibraltar, in eastern Andalusia, in the Iberian Levant, in Catalonia, in the Balearic Islands, in Azores, in Madeira, in the Canary Islands and in Ceuta.

25. *Doto koenneckeri* Lemche, 1976 (Fig. 5.25)

Material **TC**: six specimens collected in April 2017. **FC**: twelve specimens collected in March. **PS**: one specimen collected in May 2017.

Ecology Specimens have been found on *Aglaophenia picardi* Svoboda, 1979 and *Aglaophenia* sp. in scyaphilic, shallow and not very dynamic areas.

In the scientific literature it is cited on *Lytocarpia myriophyllum* and species of the genus *Aglaophenia* such as *Aglaophenia kirchenpaueri*, *Aglaophenia pluma* (Linnaeus, 1758) and *Aglaophenia tubiformis*.

Distribution This species is widely distributed in the Atlantic, from Scotland to Spain. In the Mediterranean it has been recorded in France, on the Ligurian coast and in Italy.

In the Iberian Peninsula, specimens have been cited in the Bay of Biscay, Galicia, Portugal, eastern Andalusia, Catalonia, Azores and in the Canary Islands. It was also found in Ceuta (Ortea et al. 2010).

26. *Doto rosea* Trinchese, 1881 (Fig. 5.26)

Material **PC**: a specimen collected in January 2017. **PV**: a specimen collected in February 2017. **PS**: two specimens collected between March and May 2017. **FC**: a specimen collected in May 2017.

Ecology Specimens have been found on *Aglaophenia pluma* with numerous epibiont species, on *Scrupocellaria scruposa* with epibionts of hydrozoans and on *Campanularia* sp.. It is usually found in shallow waters on thecate hydroids or on rocks in clear, sublittoral and shallow waters.



Fig. 5 Images of the species described. 24. *Doto floridicola* (7,2mm), 25. *Doto koenneckeri* (4,7mm), 26. *Doto rosea* (7mm), 27. *Cuthona corraei* (4mm), 28. *Cuthona thompsoni* (6mm), 29. *Amphorina far-rani* (2,6mm), 30. *Capellinia doriae* (5,5mm), 31. *Eubranchius vittatus* (3mm)

In the literature it has been cited on species of the genus *Eudendrium* and in the species *Halimeda tuna* (J.Ellis & Solander) J.V. Lamouroux, 1816.

Distribution This species is present throughout the Mediterranean.

In the Iberian Peninsula it has been cited in Portugal, in Andalusia, in the Strait of Gibraltar, on the Levantine coast and in Catalonia.

Superfamily Fionoidea Gray, 1857

Family Cuthonidae Odhner, 1934

Genus *Cuthona* Alder & Hancock, 1855

27. *Cuthona corraei* Ortea, Caballer & Moro, 2002 (Fig. 5.27)

Material PC: two specimens collected in September 2017.

Ecology Mainly found on hydrozoans of the genus *Eudendrium* with a multitude of epibiont athecate hydrozoans. It has also been cited on hydroids at low tide.

Distribution The species has only been reported in Tenerife (Spain).

28. *Cuthona thompsoni* Garcia, Lopez-Gonzalez & Garcia-Gomez, 1991 (Fig. 5.28)

Material PV: a specimen collected in March 2017.

Ecology The animal was found on a specimen of the genus *Eudendrium* at a few meters depth, in a port area.

In the literature this species has been reported on rocks, in the intertidal, in shallow waters and on the bottom of *Lobophora* J.Agardh, 1894.

Distribution This species is mainly present in Corsica (Moro et al. 2016).

In the Iberian Peninsula it has been found on the southern coast of Portugal, in Andalusia and in the Levant. It is also common in the Canary Islands.

Family Eubranchidae Odhner, 1934

Genus *Amphorina* Quatrefages, 1844

1. *Amphorina farrani* (Alder & Hancock, 1844) (Fig. 5.29)

Material VJ: a specimen collected in February 2017.

Ecology The species has been found on hydrozoans attached to ropes at a depth of 5 meters.

In the scientific literature it has been cited on *Obelia dichotoma*; *Tubularia indivisa* Linnaeus, 1758; *Ectopleura larynx* (Ellis & Solander, 1786) and species of the genus *Plumularia*. It has also been cited on *Aglaophenia pluma* and on *Obelia geniculata*.

Distribution In Europe this species is found both in the Mediterranean Sea and in European Atlantic waters. It has been cited in Norway, the Netherlands, Italy, the Adriatic Sea, the British Isles, the Atlantic side of France and Turkey. In Sweden this species lives below 15–25 m depth (Korshunova et al. 2020).

In the Iberian Peninsula it has been found in Cantabria, the Galician coasts, Portugal, the whole of Andalusia, the Strait of Gibraltar, the Levant coast, Catalanian waters, the Canary Islands and Azores.

Genus *Capellinia* Trinchese, 1873

30. *Capellinia doriae* Trinchese, 1874 (Fig. 5.30)

Material PA: two specimens collected in February 2017.

Ecology The species has been found on indeterminate hydroids on a cape at 5 meters depth. In the scientific literature it is found on hydroids below the tidal zone on the species *Kirchenpaueria pinnata* (Linnaeus, 1758) and *Plumularia setacea* (Linnaeus, 1758).

Distribution In Europe it has been reported from the United Kingdom, the Atlantic coast of France and Italy, among others.

In the Iberian Peninsula it has been cited in Portugal and in Catalonia.

Genus *Eubranchus* Forbes, 1838

31. *Eubranchus vittatus* (Alder & Hancock, 1842) (Fig. 5.31)

Material PV: one specimen collected on 14.03.2016.

Ecology The specimen was found on *Crisia denticulata*, accompanied by *Bugula neritina*, *Clathrina* sp., *Tricellaria*

inopinata and *Savignyella lafontii*. It is usually found on hydrozoans of the genus *Obelia*.

Distribution In Europe it is found from Norway to France. It is common in the British Isles and can also be found in Italy.

In the Iberian Peninsula it has been cited in Asturias, in Galicia, in Cantabria, in Portugal, in the Strait of Gibraltar and in the Levant coast.

32. *Eubranchus exiguus* (Alder & Hancock, 1848) (Fig. 6.32)

Material **PC**: one specimen collected in February 2017. **PV**: seven specimens collected in February and March 2016 and in January 2017. **CN**: seven specimens collected in February and March 2016 and April 2017. **PS**: one specimen collected in March 2017. **VJ**: fifteen specimens collected in February 2017.

Ecology The specimens of this work were collected on *Obelia dichotoma*; *O. geniculata*; *Clytia hemisphaerica* (Linnaeus, 1767); *Clytia gracilis* (Sars, 1850); *Bugula neritina*; *Eudendrium glomeratum* Picard, 1952; *E. album*; *Bougainvillia muscus* and *Crisia denticulata*. In the scientific literature it has been recorded from shallow waters to depths of 40 meters. It has been observed on *Abietinaria abietina* (Linnaeus, 1758), *Bougainvillia muscus*, *Clytia hemisphaerica*, *Cordylophora caspia*, *Halecium halecinum* (Linnaeus, 1758), *Hartlaubella gelatinosa* (Pallas, 1766), *Gonothyraea loveni* (Allman, 1859), on species of the genus *Nemertesia*, *Eudendrium*, *Coryne* Gaertner, 1774 and *Plumularia*.

It has also been cited on *Hydrallmania falcata* (Linnaeus, 1758), *Kirchenpaueria pinnata*, *Laomedea flexuosa*, *Obelia dichotoma*, *Obelia geniculata*, *Obelia longissima* (Pallas, 1776) and on other species of the genus *Obelia*.

Distribution It is widely distributed in the United States, in the eastern Atlantic to the Iberian Peninsula and into the western Mediterranean.

In the Iberian Peninsula it can be found on the Cantabrian coast, on Galicia, on Portugal, on the Strait of Gibraltar and on the Catalan coasts.

Family Flabellinidae Bergh, 1889

Genus *Calmella* Eliot, 1910

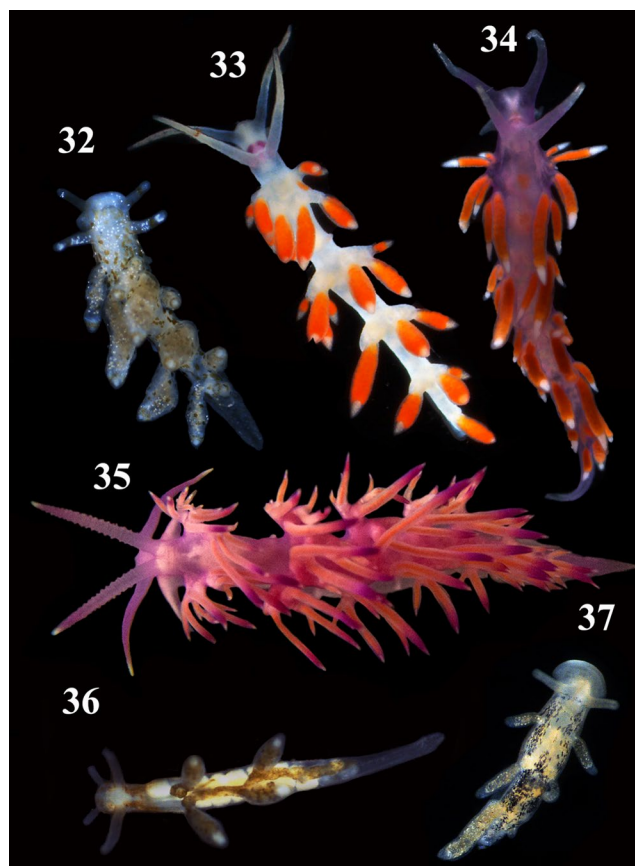


Fig. 6 Images of the species described. 32. *Eubranchus exiguus* (4,3mm), 33. *Calmella cavolini* (6,8mm), 34. *Edmundsella pedata* (10mm), 35. *Flabellina affinis* (13mm), 36. *Tergipes tergipes* (4mm), 37. *Tenellia adspersa* (1,9mm)

33. *Calmella cavolini* (Vérany, 1846) (Fig. 6.33)

Material **PI**: three specimens collected in June 2017.

Ecology It has been found on *Eudendrium* sp. at 8 meters depth.

In the bibliography is commonly reported in shallow water, all year round, usually on poorly illuminated rocks, with a multitude of hydrozoans and sponges. It has been cited on *Halecium pusillum* Sars, 1856, *Eudendrium racemosum*, *Clytia hemisphaerica*, *Halecium tenellum* Hincks, 1861 and on the gorgonian *Paramuricea clavata* (Risso, 1826). In addition, it has been observed on *Eudendrium* sp. and *Paramuricea* sp..

Distribution So far, it has been cited exclusively in the Mediterranean, especially on the west coast. It is found in Italy, the Adriatic Sea and in Turkish waters. Furfaro and Mariottini (2016) state that the species has also been found in the Atlantic part of the Iberian Peninsula.

In the Iberian Peninsula it has been cited in Catalonia, in the Balearic Islands, in the east coast of Andalusia and in the Levantine coast.

Genus *Edmundsella* Korshunova, Martynov, Bakken, Evertsen, Fletcher, Mudianta, Saito,

Lundin, Schrödl & Picton, 2017

34. *Edmundsella pedata* (Montagu, 1815) (Fig. 6.34)

Material PS: three specimens collected in May 2017.

Ecology The species has been found on *Eudendrium* sp. between 0–6 meters depth.

In the literature it has been cited on *Nemertesia*, *Halecium halecinum* and *Sagartia elegans* (Dalyell, 1848). It has also been cited on *Abietinaria abietina*; species of *Aglaophenia*; *Obelia geniculata*; *Sertularella gayi* (Lamouroux, 1821); *Eudendrium racemosum*, *Flustra foliacea* (Linnaeus, 1758); *Garveia nutans*; *Hydrallmania falcata*, and *Tubularia indivisa*. On *Hydrallmania* Hincks, 1868 and *Bougainvillea* Lesson, 1830. Finally, it has been cited on *Eudendrium ramosum*, *Eudendrium rameum*, and on several species of the genus *Eudendrium*.

Distribution It is frequent in Europe: Norway, the Netherlands, British Isles, France, and throughout the Mediterranean.

In the Iberian Peninsula it has been cited in the Bay of Biscay, in Galicia, in Portugal, in Andalusia, in the Levante coasts, in Catalonia, in Balearic Islands, in Canary Islands and Azores.

Genus *Flabellina* McMurtrie, 1831

35. *Flabellina affinis* (Gmelin, 1791) (Fig. 6.35)

Material PC: one specimen collected in March 2017. **PV:** five specimens collected in January, February and April 2017. **PS:** one specimen collected in May 2017. **IT:** seven specimens collected in April 2017. **PI:** fifteen specimens collected in June 2017.

Ecology It is usually found on *Eudendrium ramosum* and *E. racemosum*, from 0 to 6 meters depth.

In the literature it has been cited on *Eudendrium glomeratum*, *E. racemosum*, *E. ramosum* and on indeterminate species of *Eudendrium*.

Distribution This species presents a wide distribution in southern Europe. In the Mediterranean it has been cited, among others, in Italy, in Turkish waters and in the Adriatic Sea.

In the Iberian Peninsula it has been cited in Portugal, in Andalusia, in the Levant coasts, in Catalonia, in the Balearic Islands and in the Canary Islands.

Family Tergipedidae Bergh, 1889

Genus *Tergipes* Cuvier, 1805

36. *Tergipes tergipes* (Forsskal in Niebuhr, 1775) (Fig. 6.36)

Material PC: four specimens collected between February and March 2017. **MS:** a specimen collected in April 2017. **PV:** a specimen collected in March 2016. **CN:** four specimens collected in March 2016 and May 2017. **PS:** three specimens collected in March and May 2017. **VJ:** seven specimens collected in February 2017.

Ecology Specimens were found on *Bougainvillea muscus*, *Obelia geniculata*, *Campanularia* sp. and *Rhodymenia ardissoni* (Kuntze) Feldmann, 1937 with *Clytia gracilis*.

In the bibliography it has been cited on rocky areas in shallow waters up to 20 meters and on vegetation on artificial substrates. It feeds on several species of the genera *Obelia*, *Campanularia*, *Sertularia*, or the species *Gonothyraea loveni*, *Aglaophenia pluma*, *Bougainvillea muscus*, *Obelia geniculata*, *O. longissima*, *Clava multicornis* (Forsskal, 1775) and *Coryne eximia* Allman, 1859.

Distribution This species is widely distributed from Iceland to the Mediterranean, and along the entire North American coast as far as Brazil.

In the Iberian Peninsula it has been cited in Galicia, in the Portuguese coast, in Andalusia, in the Levant coast and in Catalonia.

Family Trinchesiidae F. Nordsieck, 1972

Genus *Tenellia* A. Costa, 1866

37. *Tenellia adpersa* (Nordmann, 1845) (Fig. 6.37)

Material VJ: a specimen collected in February 2017.

Ecology It has been found on a cape at 3 m depth in a harbor area, on *Eudendrium ramosum*.

In the scientific literature it has been cited on species of *Eudendrium*, *Bougainvillia* and *Obelia*. On *Amathia dichotoma* (Verrill, 1873); *Anguinella palmata* Van Beneden, 1845; *Calypso spadix cerulea* Clarke, 1882; *Campanularia geniculata* (Linnaeus, 1758); *Ectopleura dumortieri* (van Beneden, 1844); *Corydendrium dispar* Kramp, 1935; *Laomedea flexuosa*; *Hartlaubella gelatinosa* and *Obelia dichotoma*. It has also been cited on *Cordylophora caspia*, on *Obelia longissima*, on *Gonothyraea loveni*, and on *Protohydra leuckarti* Greeff, 1870. It has also been cited on *Obelia geniculata*, *Ectopleura larynx*, and *Podocoryna carnea* M. Sars, 1846.

Distribution Widespread species. It was reported in European Atlantic waters, the Mediterranean, Japan and even in North America and India.

In the Iberian Peninsula it has been cited in Galicia, in Portugal, in Andalusia and in the Levant coast.

Genus *Trinchesia* Ihering, 1879

38. *Trinchesia caerulea* (Montagu, 1804) (Fig. 7.38)

Material PS: a specimen collected on May 2017.

Ecology The specimen was found on a rock face on *Hebella scandens* (Bale, 1888), *Sertularella mediterranea* Hartlaub, 1901 and *Obelia geniculata*.

It is frequent in poorly lighted rocky areas with abundant hydrozoa and algae. It has been observed on *Aglaophenia pluma*, *Eudendrium racemosum*, *Halecium halecinum*, and *Hydrallmania falcata*. McDonald and Nybakker (1997) also report records of the species on *Diphasia rosacea*, *Eudendrium ramosum*, *Halopteris catharina* (Johnston, 1833), *Halopteris diaphana* (Heller, 1868) and *Tubularia indivisa*.

Distribution This species lives in European Atlantic waters from Ireland and the British Isles to the Azores and the Canary Islands. In the Mediterranean waters from Turkey and Greece to the western basin.

In the Iberian Peninsula it has been cited in Galicia, Portugal, the Strait of Gibraltar, the Levant coast, in the Catalan coasts, in the Balearic Islands, and in the Azores.

39. *Trinchesia foliata* (Forbes & Goodsir, 1839) (Fig. 7.39)

Material PC: one specimen collected in March 2017. SI: one specimen collected in May 2017. PV: one specimen collected in July 2016. CN: one specimen collected in April 2017.

Ecology This species has been found on algae with indeterminate hydrozoan epibionts and on capes at a few meters depth.

In the scientific literature, it has been cited in *Aurelia aurita* (Linnaeus, 1758) and *Dynamena pumila*. On *Sertularella polyzonias*, *Nemertesia ramosa*, *Hydrallmania falcata*, *Nemertesia antennina* (Linnaeus, 1758), *Tubularia indivisa*, *Ectopleura larynx*, *Sertularella polyzonias*, and *Bimeria vestita* Wright, 1859. It has also been cited in *Abietinaria abietina*, *Sertularella gayi*, *Bougainvillia muscus*, and *Dynamena pumila*. It was also found on species of the genus *Halecium* and *Obelia*.

Distribution This species has been cited in the United Kingdom and in Norway, in Tunisia, in the Netherlands, in Turkey and in the Adriatic.

In the Iberian Peninsula it has been cited in Biscay, in Asturias, in Galicia, in Portugal, in the Strait of Gibraltar, in Andalusia and in Catalonia.

1. *Trinchesia genovae* (O'Donoghue, 1929) (Fig. 7.40)

Material PV: a specimen collected in February 2017.

Ecology It has been reported on *Eudendrium* sp. on capes submerged to two meters. In the scientific literature the species has been cited on *Halecium delicatulum* Coughtrey, 1876; *Halecium labrosum* Alder, 1859; *Salacia dismoides* (Torrey, 1902); *Scandia gigias* (Pieper, 1884). On species of the genus *Obelia*, *Dynamena* Lamouroux, 1812, and



Fig. 7 Images of the species described. 38. *Trinchesia caerulea* (2mm), 39. *Trinchesia foliata* (2,6mm), 40. *Trinchesia genovae* (6,5mm), 41. *Trinchesia* sp.1 (3mm), 42. *Antiopella cristata* (5mm)

Sertularella Gray, 1848. It has also been cited on *Ectopleura larynx*.

This species is commonly associated with rocky substrates, in polychaete tubes of *Serpula vermicularis* Linnaeus, 1767, in environments with algae and in *Posidonia oceanica* meadows. It also rests on artificial substrates. Furthermore, it has recently been found on maerl beds (Droual, 2018).

Distribution This species is very common in the Mediterranean and has also been cited in the British Isles and in the Atlantic part of France. It has also been cited in the Caribbean Sea.

In the Iberian Peninsula it has been cited in Portugal, in Andalusia, in the Levant coast, in Catalonia, in the Balearic Islands and in the Canary Islands.

1. *Trinchesia* sp.1 (Fig. 7.41)

Material **PC:** five specimens collected between February and September 2017. **PV:** eight specimens collected between January 2016 and March 2017.

Ecology It can be found on indeterminate hydroids and specimens of *Eudendrium* sp. with a multitude of associated epibionts.

Superfamily Proctonotoidea Gray, 1853

Family Janolidae Pruvot-Fol, 1933

Genus *Antiopella* Hoyle, 1902

42. *Antiopella cristata* (Delle Chiaje, 1841) (Fig. 7.42)

Material **PC:** a specimen collected in March 2017.

Ecology The specimen was collected on *Bugula neritina*, covered with a multitude of Entoprocta. This species can be observed on rocky walls up to 25 meters, although it can be observed up to 40 meters. It is usually found in poorly lit areas and feeds mainly on bryozoans. Common prey includes *Alcyonidium gelatinosum* (Linnaeus, 1761), *Bicelariella ciliata* (Linnaeus, 1758), *Bugulina avicularia* (Linnaeus, 1758), *B. flabellata* (Thompson in Gray, 1848), *B. turbinata* (Alder, 1857), *Bugula neritina* and species of the genus *Cellaria*.

Distribution In Europe the species has been documented throughout the United Kingdom, Netherlands, North Sea in the Atlantic part, Italy, in the Slovenian part of the Adriatic Sea, in Turkey and in Greece.

In the Iberian Peninsula is reported from Cantabria, Galicia, Portugal, Andalusia, the Strait of Gibraltar, the Levant coast, Catalonia, Canary Islands and Madeira.

Up-to-Date Register

This section shows the list of the species obtained in this work combined with species reported in the bibliography to date, expanding and updating the current data (Table 2). This study presents new information on the presence of sacoglossan and nudibranch species in the Valencian Community. A total of 42 species, comprising 27 genera, have been obtained. A total of 22 species were observed in Castelló, 29 in València, and 17 in Alacant.

Table 2 Comparison of the occurrence of the species observed and the scientific literature existing until the time of publication. Abbreviations used are detailed in Table 1, corresponding to the sampling points

Species	This study	Other studies
Order Sacoglossa Ihering, 1876		
Genus <i>Elysia</i> Risso, 1818		
<i>Elysia viridis</i> (Montagu, 1804)	CM, CE, PV	PV De Fez (1974)
<i>Elysia margaritae</i> Fez, 1974		PV De Fez (1974)
Genus <i>Thuridilla</i> Bergh, 1872		
<i>Thuridilla hopei</i> (Vérany, 1853)		PV De Fez (1974) as a <i>Thuridilla splendida</i>
Genus <i>Ercolania</i> Trinchese, 1872		
<i>Ercolania viridis</i> (A. Costa, 1866)		PV De Fez (1974) as <i>Ercolania funerea</i>
Genus <i>Hermaea</i> Lovén, 1844		
<i>Hermaea bifida</i> (Montagu, 1816)		
Genus <i>Placida</i> Trinchese, 1876		
<i>Placida dendritica</i> (Alder & Hancock, 1843)	PV, PA	PV De Fez (1974)
<i>Placida cremoniana</i> Trinchese, 1892		PV De Fez (1974) as <i>Hermoea carmeni</i>
<i>Placida</i> sp.	PV	
Genus <i>Calliopaea</i> A. d'Orbigny, 1837		
<i>Calliopaea bellula</i> A. d'Orbigny, 1837	PV	
Order Nudibranchia Cuvier, 1817		
Genus <i>Tritonia</i> Cuvier, 1798		
<i>Tritonia hombergi</i> Cuvier, 1803		PV De Fez (1974)
Genus <i>Marionia</i> Vayssière, 1877		
<i>Marionia blainvillea</i> (Risso, 1818)		PV De Fez (1974)
Genus <i>Aeolidiella</i> Bergh, 1867		
<i>Aeolidiella glauca</i> (Alder & Hancock, 1845)		PV De Fez (1974)
Genus <i>Spurilla</i> Bergh, 1864		
<i>Spurilla neapolitana</i> (Delle Chiaje, 1823)		PV De Fez (1974)
Genus <i>Felimare</i> Ev. Marcus & Er. Marcus, 1967		
<i>Felimare bilineata</i> (Pruvot-Fol, 1953)	PN	
<i>Felimare picta</i> (Schultz in Philippi, 1836)	PV, FC, IT	
<i>Felimare tricolor</i> (Cantraine, 1835)	LH	
<i>Felimare villafranca</i> (Risso, 1818)		PV De Fez (1974) as <i>Chromodoris villafranca</i>
Genus <i>Felimida</i> Ev. Marcus, 1971		
<i>Felimida krohni</i> (Vérany, 1846)	PN	
Genus <i>Doris</i> Linnaeus, 1758		
<i>Doris ocelligera</i> (Bergh, 1881)	PC, FC, CN	
<i>Doris verrucosa</i> Linnaeus, 1758		PV De Fez (1974)
Genus <i>Trapania</i> Pruvot-Fol, 1931		
<i>Trapania lineata</i> Haefelfinger, 1960	PN	
Genus <i>Dendrodoris</i> Ehrenberg, 1831		
<i>Dendrodoris temara</i> (Pruvot-Fol, 1953)	PV	PV De Fez (1974) as <i>Doriopsis limbata</i>
Genus <i>Polycera</i> Cuvier, 1816		
<i>Polycera aurantiomarginata</i> García-Gómez & Bobo, 1984	PC, PV	
<i>Polycera quadrilineata</i> (O. F. Müller, 1776)	PC, PV, CN, PA, VJ	PV De Fez (1974)
Genus <i>Thecacera</i> Fleming, 1828		
<i>Thecacera pennigera</i> (Montagu, 1813)	PC, PV	
Genus <i>Polycerella</i> A. E. Verrill, 1880		
<i>Polycerella emertoni</i> A. E. Verrill, 1880	PC, PV	
Genus <i>Berghia</i> Trinchese, 1877		
<i>Berghia verrucicornis</i> (A. Costa, 1867)	PV	PV De Fez (1974) as <i>Berghia coerulescens</i>
Genus <i>Caloria</i> Trinchese, 1888		
<i>Caloria elegans</i> (Alder & Hancock, 1845)	PC	PV De Fez (1974) as <i>Caloria maculata</i>
Genus <i>Cratena</i> Bergh, 1864		
<i>Cratena peregrina</i> (Gmelin, 1791)	PC, PV, CN, PS, FC, MX, IT, IB, PI, AC	PV De Fez (1974) as <i>Rizzolia peregrina</i>
Genus <i>Facelina</i> Alder & Hancock, 1855		

Table 2 (continued)

Species	This study	Other studies
<i>Facelina annulicornis</i> (Chamisso & Eisenhart, 1821)		
<i>Facellina auriculata</i> (Müller, 1776)	SI, CE, PS	PV De Fez (1974) as <i>Acanthopsole coronata</i>
<i>Facelina bostoniensis</i> (Couthouy, 1838)		
Genus <i>Favorinus</i> Gray, 1850		
<i>Favorinus branchialis</i> (Rathke, 1806)	TC, PV, PA, CP	PV De Fez (1974)
<i>Favorinus ghanensis</i> Edmunds, 1968	PC	
Genus <i>Doto</i> Oken, 1815		
<i>Doto cervicenigra</i> Ortea & Bouchet, 1989	PC, PV, CN, VJ	
<i>Doto coronata</i> (Gmelin, 1791)	PV	
<i>Doto floridicola</i> Simroth, 1888	PV	PV De Fez (1974) as <i>Doto susanae</i>
<i>Doto koenneckeri</i> Lemche, 1976	TC, FC, PS	
<i>Doto rosea</i> Trinchese, 1881	PC, PV, PS, FC	
Genus <i>Cuthona</i> Alder & Hancock, 1855		
<i>Cuthona corraei</i> Ortea, Caballer & Moro, 2002	PC	
Genus <i>Amphorina</i> Quatrefages, 1844		
<i>Amphorina farrani</i> (Alder & Hancock, 1844)	VJ	
Genus <i>Capellinia</i> Trinchese, 1873		
<i>Capellinia doriae</i> Trinchese, 1874	PA	
Genus <i>Eubbranchus</i> Forbes, 1838		
<i>Eubbranchus vittatus</i> (Alder & Hancock, 1842)	PV	
<i>Eubbranchus exiguus</i> (Alder & Hancock, 1848)	PC, PV, CN, PS, VJ	
Genus <i>Calmella</i> Eliot, 1910		
<i>Calmella cavolini</i> (Vérany, 1846)	PI	PV De Fez (1974)
<i>Edmundsella pedata</i> (Montagu, 1815)	PS	PV De Fez (1974) as <i>Coryphella pedata</i>
Genus <i>Coryphella</i> J. E. Gray, 1850		
<i>Coryphella lineata</i> (Lovén, 1846)		PV De Fez (1974)
Genus <i>Flabellina</i> McMurtrie, 1831		
<i>Flabellina affinis</i> (Gmelin, 1791)	PC, PV, PS, IT, PI	PV De Fez (1974)
Genus <i>Tergipes</i> Cuvier, 1805		
<i>Tergipes tergipes</i> (Forsskål in Niebuhr, 1775)	PC, MS, CN, PV, PS, VJ	
Genus <i>Tenellia</i> A. Costa, 1866		
<i>Tenellia adspersa</i> (Nordmann, 1845)	VJ	
Genus <i>Trinchesia</i> Ihering, 1879		
<i>Trinchesia caerulea</i> (Montagu, 1804)	PS	PV De Fez (1974) as <i>Amphorina coerulea</i>
<i>Trinchesia foliata</i> (Forbes & Goodsir, 1839)	PC, SI, PV, CN	
<i>Trinchesia genovae</i> (O'Donoghue, 1929)	PV	
<i>Trinchesia</i> sp.1	PC, PV	
Genus <i>Antiopella</i> Hoyle, 1902		
<i>Antiopella cristata</i> (Delle Chiaje, 1841)	PC	PV De Fez (1974) as <i>Janus cristata</i>
Genus <i>Jorunna</i> Bergh, 1876		
<i>Jorunna tomentosa</i> (Cuvier, 1804)		PV De Fez (1974)
Genus <i>Pelagella</i> J. E. Gray, 1850		
<i>Pelagella castanea</i> (Alder & Hancock, 1845)		PV De Fez (1974) as <i>Goniodoris castanea</i>
<i>Nemesignis banyulensis</i> (Portmann & Sandmeier, 1960)		PV De Fez (1974) as <i>Coryphella</i> sp.

Discussion

The present contribution significantly expands the existing knowledge of sacoglossans and nudibranchs in the Spanish Levante (De Fez 1974; Cervera et al. 2004; Sáez et al. 2008). This is the first time such an extensive sampling effort has been carried out in this area. Furthermore, to date, studies

have only been conducted in port areas and this is the first study to alternate between port areas and natural areas.

The latest registers of heterobranchs found in the area of the Valencian Community since previous studies correspond to photographs and images obtained by photographers and recreational divers available on pages such as OPK (2025, <https://opistobranquis.info/es>) and GROC (2025, <https://opistobranquis.info/es>) and GROC (2025, <https://opistobranquis.info/es>)

ranquis.org/es/home). Such records, although useful, are size-biased and identifications cannot always be made accurately from this material. Many of the species collected in this work were small in size, or cryptically colored and therefore difficult to detect unless specific sampling is carried out.

Marine mollusks are a group with an abundance of cryptic species and unresolved synonymies. Due to the impossibility of genetic analysis with the specimens studied, as they were collected between 2016 and 2018 and preserved in a suboptimal condition for this purpose, special attention has been paid to those species belonging to groups where these synonymies or cryptic species are known, and an exhaustive study of them has been carried out, taking into account the morphological and ecological variations associated with the genetic variations described in studies that consider these conditions, which can lead to confusion or errors in studies of marine mollusks.

To conclude, these results show a high number of species and specimens in the port areas. For an area such as the Valencian Community, where sandy substrates predominate, the appearance of new anthropogenic fixation structures may facilitate the establishment of benthic organisms that have a preference for rocky substrates.

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Declarations

Competing Interests The authors declare no competing interests.

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