



A new species of the genus *Hincksina* (Bryozoa: Cheilostomatida: Flustridae) from the Faroe Islands slope

Новый вид рода *Hincksina* (Bryozoa: Cheilostomatida: Flustridae) из батииали Фарерских островов

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Abstract. A new species of the genus *Hincksina* Norman, 1903, *H. magnicellata* **sp. nov.**, is described and illustrated. Its specimens were found on stones collected on the slope around the Faroe Islands archipelago. Description of the new species in the genus *Hincksina* is based on an extensive opesia, on endozooidal ovicells and on the presence of interzooidal avicularia, as well as oral and mural spines.

Резюме. Описан и проиллюстрирован новый вид рода *Hincksina* Norman, 1903 – *H. magnicellata* **sp. nov.** Образцы этого вида были обнаружены на камнях, собранных в верхней батииали вокруг архипелага Фарерских островов. Описание нового вида в роде *Hincksina* основано на размере опезии, занимающей почти всю фронтальную поверхность зооида, наличии эндозооидальных овицелл, интерзооидальных авикуляриев и оральных и фронтальных шипов.

Key words: North Atlantic, Faroe Archipelago, taxonomy, Flustridae, *Hincksina*, new species

Ключевые слова: Северная Атлантика, архипелаг Фарерских островов, таксономия, Flustridae, *Hincksina*, новый вид

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Introduction

Despite two recently published papers on Bryozoa in the Faroe Islands area (Denisenko et al., 2016; Denisenko, 2018), the renewed checking of the Faroes samples and archive photos resulted in the discovery of a new species belonging to the genus *Hincksina* Norman, 1903, described below. The genus was established within the family Flustridae due to the presence of diagnostic characteristics such as encrusting form of colonies in combination with a slightly developed gymnocyst, the presence of an extensive opesia surrounded by mural and oral spines, endozooidal

ovicells with cap-shaped ooecia, and by the occurrence of interzooidal avicularia. At the present time the genus includes 35 species while 15 species of them belong to recent taxa. Five species of the genus are reported from the North Atlantic, and four of them inhabit the eastern part of the Atlantic in subtropical to temperate latitudes (Bock, 2012). No representatives of the genus have been found in the Faroes area before. The new species was sampled in the upper bathyal zone, at the border between the boreal (temperate) and Arctic waters. The aim of this publication is to introduce the new species based on a comparison with allied taxa.

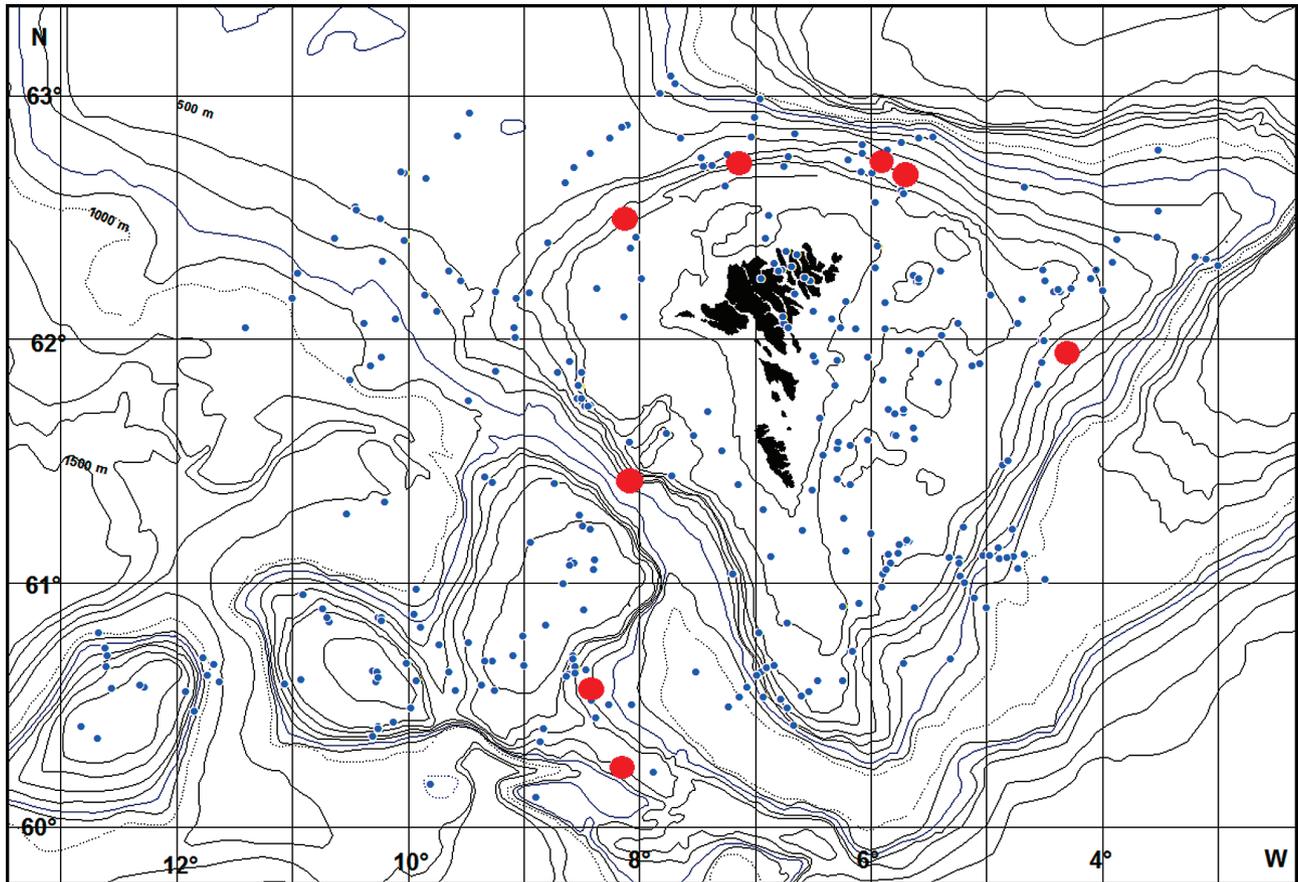


Fig. 1. Map of the stations where bryozoans were sampled around the Faroe Islands (blue dots) and records of *Hincksina magnicellata* sp. nov. (red dots).

Material and methods

Colonies of the new taxon were found in samples collected during BIOFAR-program cruises in 1988–1990 (Fig. 1). The specimens of the new taxon were recorded from eight stations located in the north and north-east off the Faroe Archipelago as well as on the eastern slopes of the Faroes shallow banks south of the Faroes.

At first, colonies attached to stones were checked under a stereomicroscope and some of them were photographed with a digital camera. One colony on a small-sized substrate was used for imaging by scanning electronic microscope (SEM). Owing to its delicate skeleton, the analysed colony was not bleached and sputter-coated before scanning. Measurements were made using the SEM-photos. The holotype of the new species is kept in the collections of the National History Museum of Denmark, Copenhagen (Denmark).

Description of the new species

Class **Gymnolaemata**

Order **Cheilostomatida**

Family **Flustridae**

Genus *Hincksina* Norman, 1903

Hincksina magnicellata sp. nov.
(Fig. 2, 3)

Holotype. NHMD 231446, **Atlantic Ocean, Faroe Archipelago area**, 60°35.45'N 8°28.64'W, R/V “Magnus”, BIOFAR program, station 499, dredge, depth 613 m, 24.VII.1987, collector unknown.

Additional material examined. BIOFAR program; R/V “Magnus”, Station 298, 60°15.3'N 8°11.9'W, dredge, depth 593 m, 17.07.1988; Station 328, 61°27.6'N 8°04.6'W, dredge, depth 400 m, 2.09.1997; Station 346. 62°31.2'N 8°09.9'W, dredge, depth 338 m, 27.07.1997; Sta-

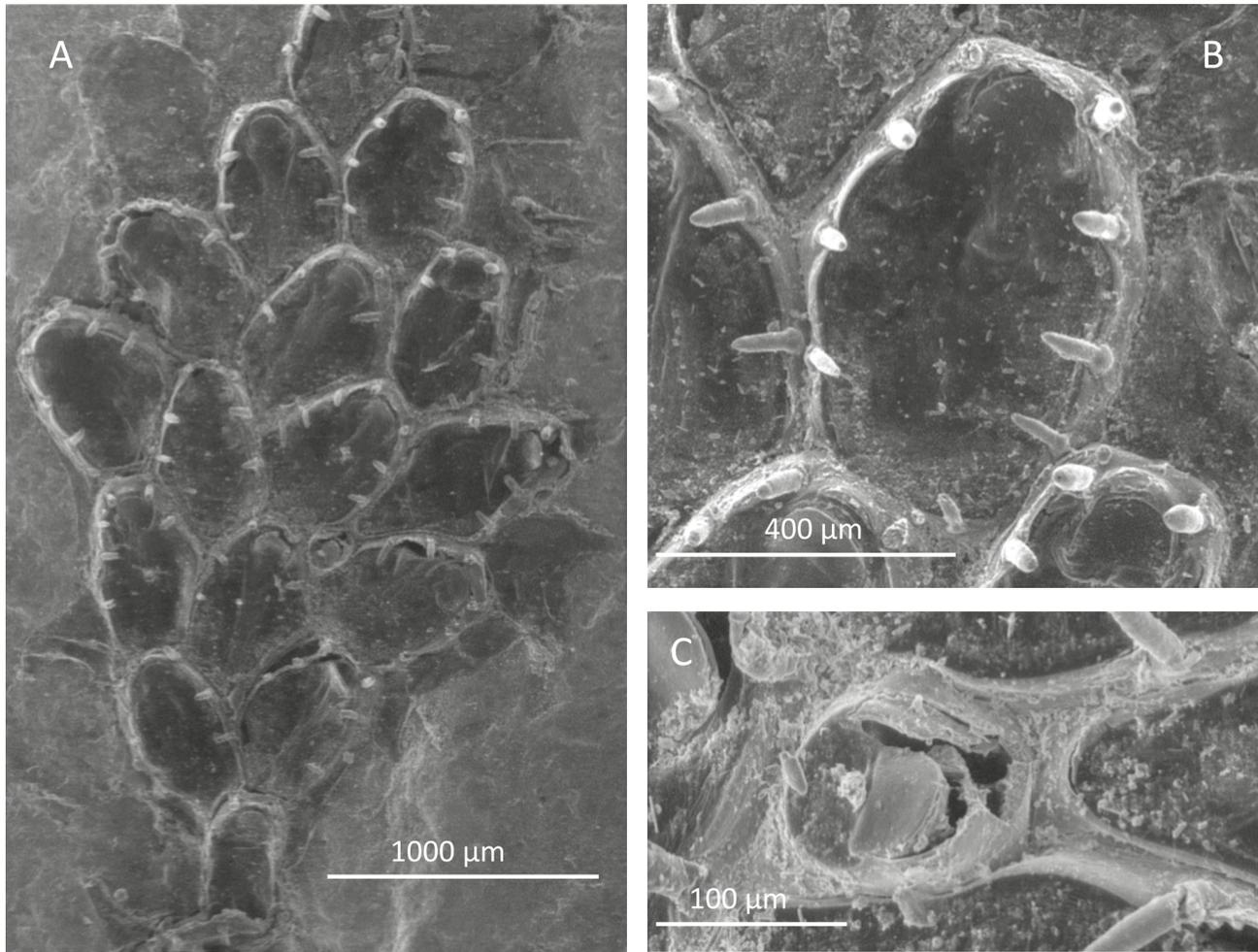


Fig. 2. *Hincksina magnicellata* sp. nov., holotype, NHMD 231446. **A**, colony view; **B**, group of autozooids; **C**, interzooidal avicularium with semicircular mandible.

tion 359, 61°57.3'N 4°22.0'W, dredge, depth 407 m, 23.07.1988; Station 453 (digital photo, Fig. 3), 62°45.02'N 7°10.12'W, dredge, depth 400 m, 03.VI.1989; Station 469, 62°40.3'N 5°42.25'W, dredge, depth 381 m, 5.06.89; Station 747, 62°43.4'N 5°55.8'W, dredge, depth 394 m, 03.10.1990; collector unknown.

Description. Colonies 5–30 mm in diameter, encrusting, irregular roundish or lobe-shaped, light brownish in color when dry, and poorly calcified. Autozooids large (Table 1), mostly irregularly oval or rectangular in shape (Fig. 2A, B; Fig. 3). Zooid boundaries clearly visible and separated by shallow grooves (Fig. 2A, B). Frontal membrane or opesia occupying almost entire frontal surface of zooid; cryptocyst extremely narrow or absent (Fig. 2B). Gymnocyst also very narrow and thin all around each zooid. Zooidal margin with six

Table 1. Measurements (in µm) of *Hincksina magnicellata* sp. nov. N, number of measurements; SD, standard deviation.

Characteristic	N	Mean ± SD	Range (min–max)
Autozooid length	10	711 ± 93	567–833
Autozooid width	10	435 ± 46	367–500
Avicularium cystid length	1	–	135
Avicularium cystid width	1	–	127
Avicularium mandible length	1	–	110
Avicularium mandible width	1	–	105

or seven mural and two oral spines. Mural spines short, slender or slightly overarching the frontal membrane, lying at regular distance from each other; oral spines straight and upright, lying near

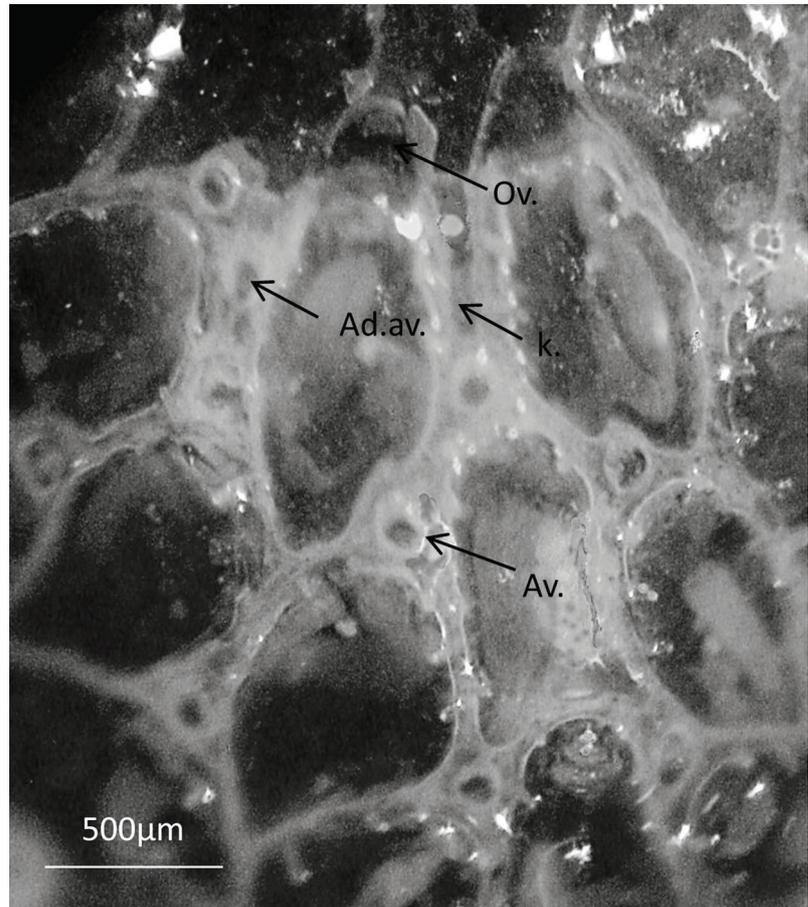


Fig. 3. Optical image of another specimen of *Hincksina magnicellata* **sp. nov.** demonstrating frequent interzooidal avicularia, the presence of kenozooids and additional interzooidal avicularia in an old colony. Av. – interzooidal avicularium; Ad.av. – additional interzooidal avicularium; k. – kenozooid; Ov. – ovicell.

distolateral corners of operculum. Interzooidal avicularian cystids rectangular, frequent in older colonies having also additional avicularia between zooids (Fig. 3). Distal part of avicularium slightly elevated; mandible semicircular or semi-oval (Fig. 2C). Ovicells absent in type specimen but present in older colonies (that were not scanned here), relatively small and immersed into distal zooid.

Distribution. Lower sublittoral and upper continental slope of the North Atlantic. At present time the new species is registered only in the Faroe Islands area.

Etymology. The species is named for the large size of its zooids, a combination of the Latin *magnus* (large) and *cellatus* (chambered).

Discussion. The newly described species shows a different suite of characteristics from the allied species also found in the eastern Atlantic such as *Hincksina flustroides* Hincks, 1877 and *H. flustroides* forma *crassispinata* Calvet in Gautier, 1962. Although Hincks (1877, 1880) characterised *H. flustroides* as having large zooids, the zooid

size of that species (cf. Hayward & Ryland, 1998) is actually relatively small when compared to the new species. The mean zooid length in *H. magnicellata* **sp. nov.** is about 0.71 mm whereas it is 0.45 mm in *H. flustroides*.

According to Hincks (1877, 1889), as well as Hayward & Ryland (1998), the oval opesia of *H. flustroides* is surrounded by 12–14 massive, often flattened and sometimes bifid spines. The long mural spines bend inwards while the two oral spines stand upright. The medium-sized and well calcified autozooids of *H. flustroides* forma *crassispinata* are also surrounded by 12–14 spines but they are slender. In contrast to the earlier described species, the new species, besides having a distinctly larger zooid size, has very poorly calcified autozooids. Zooid shape is oval only in young colonies while the autozooids more often have an irregularly rectangular shape in older colonies (Fig. 3). The number of spines in the new species is about half of that in *H. flustroides* and in *H. flustroides* forma *crassispinata*. Not only is the number of spines different, an-

other distinguishing character of the new species is also their shape; they are short, slender and only slightly bent over the frontal membrane, whereas in the two above-mentioned species they are distinctly longer, thicker (sometimes even flattened in *H. flustroides*), and almost meet in the center of the zooid. The rectangular shape of the interzooidal avicularium of the new species is similar to *H. flustroides*, but differs from the avicularium of the *H. flustroides* forma *crassispinata*, which is transversely positioned. Despite the similar shapes of interzooidal avicularia of *H. magnicellata* sp. nov. and *H. flustroides*, their size in the new species is only half of that in the latter species. Besides the interzooidal avicularium, which is located in the terminal part of the zooids, an additional interzooidal avicularium is sometimes developed between zooids, and also kenozooids are inserted between autozooids (Fig. 2). The suite of listed characteristics thus justifies the distinction at species level of the new taxon from *H. flustroides* and *H. flustroides* forma *crassispinata*.

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References

- Bock P.** 2012. The genus *Hincksina*. *Recent and Fossil Bryozoa* [online]. Available from: <http://www.bryozoa.net/cheilostomata/flustridae/hincksina.html> [updated 2 April 2012; viewed 15 May 2018].
- Denisenko N.V.** 2018. New Cheilostomata (Bryozoa) species from sublittoral and bathyal zones off the Faroe Islands, with some comments on allied taxa. *Zootaxa*, **4375**(1): 116–126. <https://doi.org/10.11646/zootaxa.4375.1.6>
- Denisenko N.V., Hayward P.J., Tendal O.S. & Soerensen J.** 2016. Diversity and biogeographical patterns of the bryozoan fauna of the Faroe Islands. *Marine Biology Research*, **12**: 360–378. <https://doi.org/10.1080/17451000.2016.1148817>
- Gautier Y.V.** 1962. Recherches écologiques sur les Bryozoaires Chilostomes en Méditerranée occidentale. *Receuil des Travaux de la Station Marine d'Endoume*, **38**: 1–434.
- Hayward P.J. & Ryland J.S.** 1998. Cheilostomatous Bryozoa. Part 1: Aeteoidea – Cribrilinoidea. *Synopses of the British Fauna (New Series)*, **10** [2nd Edition]. Shrewsbury: Field Studies Council. 366 p.
- Hincks Th.** 1877. On British Polyzoa. Part 1. *The Annals and Magazine of Natural History*, **20**(4): 212–218.
- Hincks Th.** 1880. *A history of the British marine Polyzoa*, **1,2**. London: J. van Voorst. 601 p. + 83 pl.
- Norman A.** 1903. Notes on the natural history of East Finmark, Polyzoa. *Annals and Magazine of Natural History*, **11**(7): 567–598. <https://doi.org/10.1080/00222930308678818>

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