

## University of Groningen

### Flexible filter feeders

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## Appendix B

# Identification key for ctenophora in Dutch coastal waters

This key can be used for the identification of ctenophores in Dutch coastal waters (excluding overseas territories).

The identification of ctenophores can be very difficult, especially when dealing with damaged specimens. This key for the identification of ctenophores found in Dutch coastal waters is based upon the experience obtained identifying ctenophores in North Sea, Wadden Sea and coastal waters of Zeeland in the period 2009–2014 and the ICES ID leaflet “ctenophora” (Greve, 1975).

Identification is best performed on submerged specimens, e.g. in a petri dish, with oblique lighting from a cold light source or transverse lighting using a light table. A binocular microscope is necessary.

### Key

1. (a) Comb rows along the longitudinal axis of the body.  
Bilaterally symmetric. 2
- (b) No comb rows, radially symmetric. **Scypho- or hydromedusa**
2. (a) Larger than 5 mm 3
- (b) Smaller than 5 mm 7
3. (a) Spherical or spheroid. Two long finely branched tentacles.

**NL: Zeedruif EN: Sea gooseberry *Pleurobrachia pileus***

- (b) Flattened, fragile 4
- 4. (a) Oval, large mouth occupying the entire width of the animal. 5
- (b) Not oval, with two oral lobes. 6

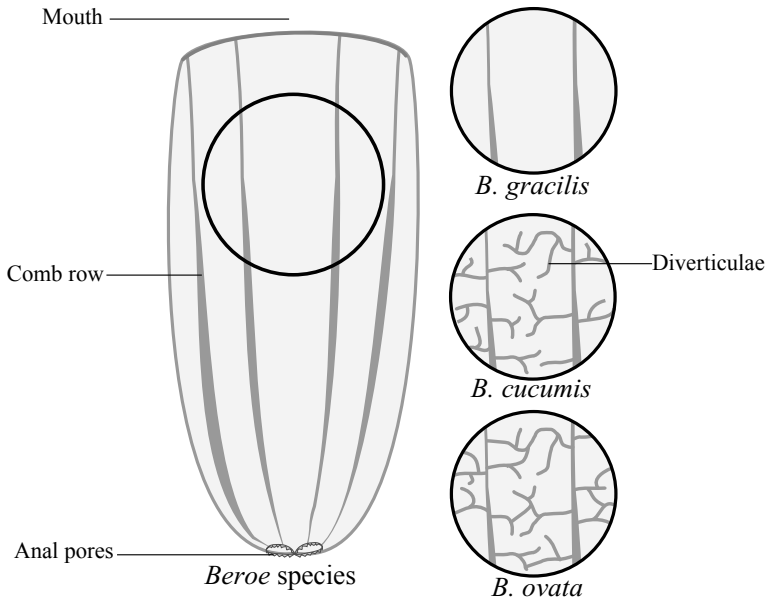


Figure B.1: Features distinguishing the three species of *Beroe* mentioned in this key.

5. *Beroe* species can be distinguished by the presence and characteristics of diverticulae, canals diverging from the meridional canals under the comb rows (Fig. B.1). These do not develop until the animal reaches a length of approximately 20 mm and thus *Beroe* specimens smaller than this can not be identified to species level.

(a) No diverticulae. Maximum length 35 mm.

**NL: slanke meloenkwal *Beroe gracilis***

(b) Diverticulae diverging from the canals under the comb rows. The diverticulae of parallel comb rows are never connected. Can be bigger than 35 mm.

**NL: grote meloenkwal *Beroe cucumis***

- (c) Diverticulae diverging from the canals under the comb rows. Some diverticulae of parallel comb rows are connected (anastomose). Can be bigger than 35mm.

***Beroe ovata* (not yet recorded in Dutch coastal waters)**

6. (a) Oral lobes terminate near or past the statocyst (Fig. B.2).

**NL: Amerikaanse ribkwal EN: Sea walnut *Mnemiopsis leidyi***

- (b) Oral lobes terminate nearer to the mouth than to the statocyst (Fig. B.2).  
One comb row on each lobe has a black stripe (often not visible).

***Bolinopsis infundibulum***

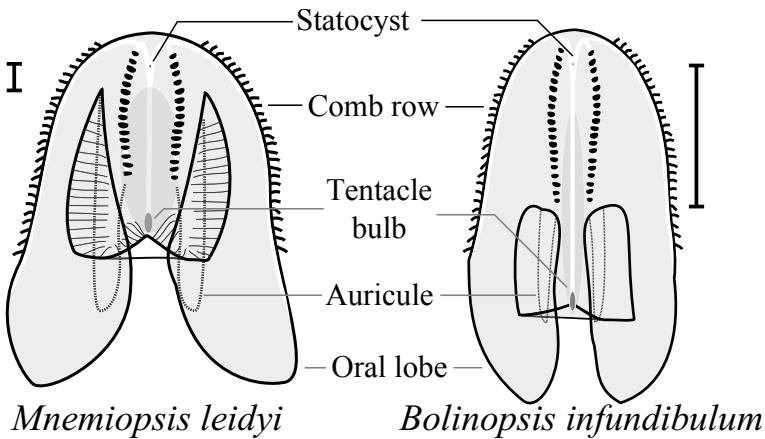


Figure B.2: *Bolinopsis infundibulum* and *Mnemiopsis leidyi* compared, with the distance from the statocyst to the termination of the oral lobe indicated.

7. (a) Tentacle bulbs present.

8

- (b) No tentacle bulbs.

***Beroe*, not identifiable to species level at this size.**

8. **Cydippid larvae.** Note: Cydippid stage ctenophores are very difficult to distinguish. The below characteristics are visible using a binocular microscope or similar magnification. Small individuals of the Arctic species *Mertensia ovum* found in the Baltic Sea together with *M. leidyi* are very similar to *M. leidyi* and require genetic identification (Gorokhova *et al.*, 2009; Gorokhova and Lehtiniemi, 2010). Especially samples of small ctenophores only, without larger specimens in the same sample should be treated with caution. Visibility of the comb rows is much better in TCA-fixed specimens (Fig. B.3) than in fresh specimens.