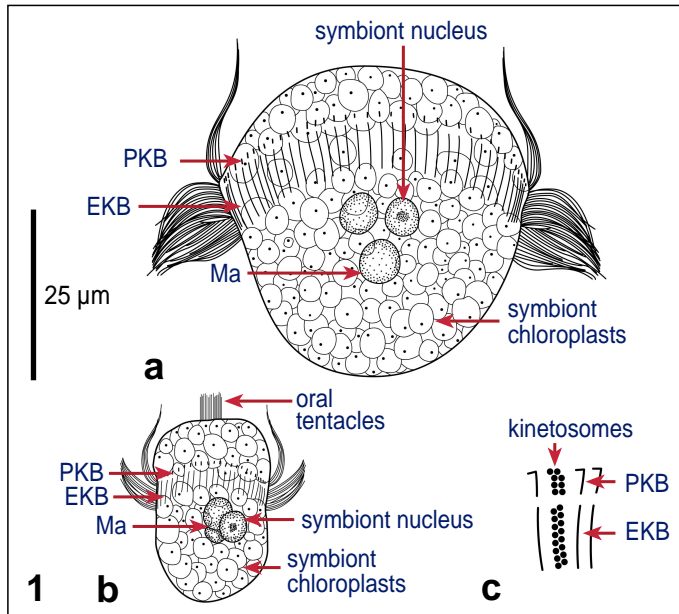


Myrionecta rubra (Lohmann, 1908) Jankowski, 1976



Key features

Cell body generally ovoid or as 2 hemispheres with a subequatorial constriction; large range in size (10-100 µm long), generally 20-60 µm long; cytoplasm in live cells is red (stains dark with Lugol's); cytostome rudimentary, oral tentacles sometimes observed; 2 ovoid macronuclei, centrally located, one cryptophyte (symbiont) nucleus with nucleolus; pre-equatorial girdle (PKB) and somatic kineties equatorial (EKB)

Measurements

Length: 25-100 µm
Width: 20-75 µm
No of EKB: 20-80
No of PKB: 20-80
Ma diameter: 4 (2-8) µm
Biovolume: 5,000 to 300,000 µm³

Movement

Swims rapidly by a jumping movement (10-20 x body length), then stays in one position for 1-10 s; cilia of the PKB are widely spread when the cell is stationary

Food

Autotroph, but may eat cryptophytes (Gustafson et al. 2000)

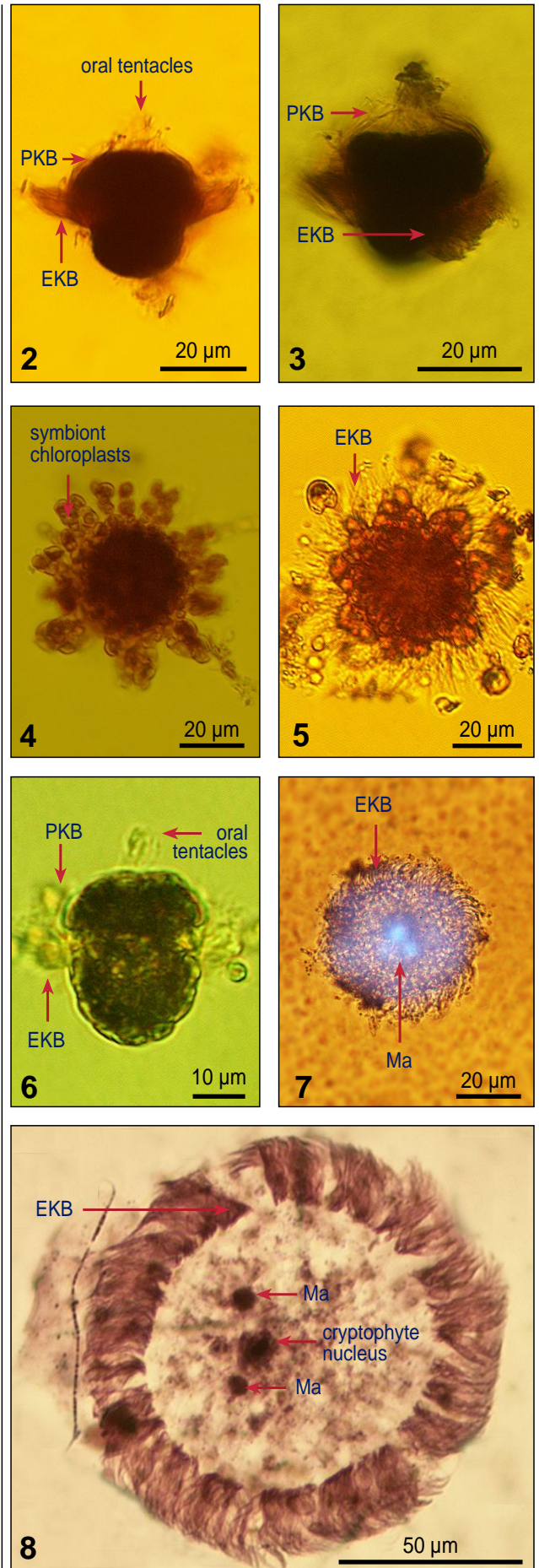
Ecological data

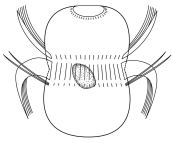
Temperature: 0-24 °C; eurythermal
Salinity: 3-37 ‰; euryhaline
ability to form large blooms (red tide), can be the dominant autotroph at times

References

Agatha S (unpubl.); Krainer K-H & Foissner W 1990; Kuylenstierna M & Karlson B 1996-2000 (www.marbot.gu.se/SSS/others/Mesodinium_rubrum.htm); Leegaard C 1920; Lindholm T 1985; Lohmann H 1908

Fig 1 Line drawings: a,b. Protargol stained cells representing the average size range within the species; c. Infraciliature of the kinetial belts. **Fig 2-5** Lugol's fixed cells, showing effects of fixation (Fig 4,5. Burst cells). **Fig 6** Lugol's fixed cell, oral tentacles clearly visible. **Fig 7** Lugol's fixed and DAPI stained cell, illustrating nuclei. **Fig 8** Protargol stain, viewed from apical end.





Myrionecta rubra (Lohmann, 1908) Jankowski, 1976

Species description

Body ovoid, anterior and posterior **semispherical** - anterior part larger than posterior part (Fig 1,2,3); wide range of size (10-100 μ m), generally 20-60 μ m long; larger forms are more asymmetrical (Fig 1a); live cells red due to chloroplasts of endosymbiotic cryptophyte.

Oral end unciliated; **distally forked tentacles on the apex**, fork not visible in Lugol's fixed cells (Fig 1b,2,6); **cytostome is rudimentary**.

Two equatorial kinety belts (Fig 1-3,6): equatorial kinety belt (**EKB**) with 20-80 equatorial somatic kineties, dikinetids with 10 kinetosomes arranged in a zigzag pattern (Fig 1c); pre-equatorial kinety belt (**PKB**) with 20-80 groups of square-packed basal bodies (Fig 1c); larger cells have additional basal bodies between PKB and EKB.

Two ovoid Ma, centrally located, 4 (2-8) μ m large, (Fig 1,7,8,13); **one symbiont nucleus located centrally**.

Similar species

Mesodinium pulex (colourless); *Askenasia* sp. (3 equatorial kinety belts, more pear-shaped, often has extrusomes ejected at the anterior end)

List of synonyms

- 1908 *Halteria rubra* Lohmann, Wiss Meeresuntersuch, Kiel 10: 303, Pl 17, Fig 39.
- 1929 *Mesodinium rubrum* Hamburger & Buddenbrock, Nord Plankton Zool 7: 152 - non Fig 20a, b.
- 1932 *Cyclotrichium meunieri* Powers, Biol Bull 63
- 1966 *Mesodinium pulex* Bakker, De levende Natuur 69: - partim, Fig 2e, f
- 1967 *Mesodinium pulex* Bakker, De levende Natuur 70

Taxonomical remarks

Based on the revision of Krainer & Foissner (1990), this ciliate - in the literature mostly referred to as *Mesodinium rubrum* - is assigned to the monotypic genus *Myrionecta* Jankowski, 1976. In many studies, *M. rubra* is divided into two size classes but there is likely a continuum of sizes.

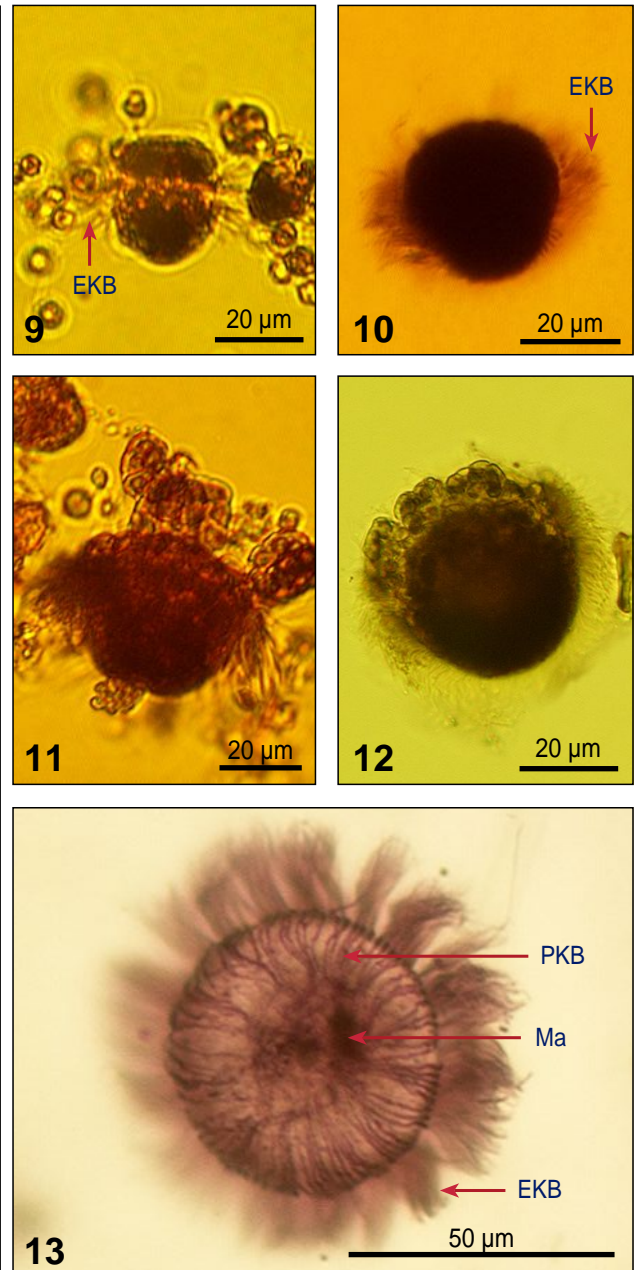


Fig 9-12 Lugol's fixed cells, lateral view, showing different fixation artefacts: 9,10. Small cells, intact; 11,12. 'Exploded' large cells. **Fig 13** Protargol stained cell, anterior view.

Notes