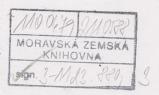
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KEY TO SPECIES

bbre	viations: $\mathbf{r} = \text{recent}$, $\mathbf{s} = \text{subfossil}$, $\mathbf{f} = \text{fossil}$, $\mathbf{F} = \text{freshwater}$, $\mathbf{B} = \text{brackish}$, $\mathbf{M} = \text{marine}$
1a	Valves with the marginal fultoportulae located on costae (ribs)
b	Valves with the marginal fultoportulae located between costae (ribs)
2a	Rimoportula(e) in the ring of marginal fultoportulae
d B	Rimoportula(e) on the valve face nearer to the valve center, marginal fultoportulae with two satellite pori oriented circumferentially (laterally)
3a	Valve margin fultoportulae with two satellite pori oriented radially4
b	Valve margin fultoportulae with three satellite pori
4a	Marginal part with a complex alveolar structure having the marginal fultoportulae located on thin depressed costae; cells diameter larger than 10 µm
b	Marginal part without a complex alveolar structure
5a	Central fultoportulae arranged in a semicircular position, valve face undulation laps over the striated marginal part
b	Central fultoportulae scattered on the convex part, shape of the central part circular
6a	Valve central part elliptical
b	Valve central part circular
7a	Complex alveolar system distinctly observable in LM, cells usually larger, >25 µm in diameter; freshwater to brackish-water taxa
b	Complex alveolar system indistinct in LM, cells usually smaller than 25 µm in diameter; brackish-water to marine taxa
8a	Each 3.–5. stria cuneate strengthened towards the valve margin
b	Marginal striae are not cuneate strengthened towards the valve margin
	Cyclotella atomus var. gracilis (r, F to B)
9a	Marginal fultoportulae and rimoportula internally located on the costae/valve rim junction ${f 10}$
b	Marginal fultoportulae and rimoportula internally located below the costae/valve rim junction
10a	Valve face is transversally undulate
b	Valve face is flat

11a	Marginal fultoportulae and rimoportula located on depressed costae
b	Marginal fultoportulae located on each or nearly each rib, excepting this with the rimoportula, the marginal striation coarse
c	Marginal fultoportulae are not on each rib
12a	Alveoli internally with a very short centripetal occlusion, striae of equal lengthss, the valve central part transversally undulate, with 1–9 central fultoportulae, sometimes with ghost, radially-dichotomic lineation
b	Alveoli internally completely opened without occlusions, striae mostly of unequal lengthss, the valve central part transversally undulate to nearly flat, with one to several central fultoportulae
13a	Valve face without fultoportuae
b	Valve face with fultoportula(e)
14a	Alveoli internally with a short centripetal occlusion, a coarse marginal striation with striae of equal lengthss, the valve central part transversally undulate, pori on striae diminish towards the margin; the valve central part smooth or slightly colliculate, with 1–5 central fultoportulae <i>Cyclotella gamma</i> (r, F)
b	Internal centripetal occlusion of alveoli longer
15a	Marginal fultoportulae and the single rimoportula located on depressed costae, valves and the valve central area mostly elliptical in the valve view
b	Depressed costae are not present, valves and the valve central area circular in the valve view
16a	Internally the marginal fultoportulae with high cowlings which overlap the satellite pore covers, the valve central area distinctly colliculate to nearly smooth
b	Internally the marginal fultoportulae with flat semicircular cowlings not overlapping the satellite pore covers, the valve central area distinctly structured with colliculae or wrinkles
17a	Valve central part without areolae
b	Valve central part with areolae
18a	Rimoportula located in the valve central part
b	Rimoportula located within the valve face margin
19a	Number of the central part fultoportulae <6, valves always oval in the valve view, valves relatively small, 7–40 μm in diameter (longer axis)
b	Number of the valve central part fultoportulae >6

20a	Valves ±circular in front view, 40–150 µm in diameter, valve mantle fultoportulae situated on every costa (interstria), longer thickened costae (ribs) without fultoportulae are irregularly inserted among other costae
b	Valves circular to slightly elliptical in front view, 25–80 µm in diameter, between ribs (1)2–3(5) valve mantle fultoportulae are located on depressed costae
21a	Striated marginal area with visible in LM additional structure elements ("Perlenreihe", "Höcker") near the valve margin
b	Striated marginal area without in LM visible "Perlenreihe" or "Höcker" near the valve margin
22a	Mostly large valves rounded with a small, transversally undulate valve central part, with a sparse irregular ring of long, thin spines near the valve face/valve mantle junction
b	Valves of another type
23a	Valve face strongly transversally undulate, the outline of the valve central part distinctly elliptical
b	Valve face of another type
24a	Valve central area nearly smooth, with one to several central fultoportulae and often with additional rather small puncta
b	Valve central area of another type
25a	Valve central area with 3–6 larger, ±concentrically arranged granules, with distinct circular depressions between them
b	Valve central area of another type
26a	Valve central area in LM with ±irregular radiating rows of puncta
b	Valve central area in LM with mostly 1 distinct punctum
27a	Valve central area flat, with mostly more than 3 radiating rows of puncta often of unequal size
b	Valve central area with depressions radiating symmetrically in mostly 3 directions between rows of often of similar sizes puncta, rimoportula located on valve face near to valve central area
c	Valve central area with depressions radiating symmetrically in 3 directions, rimoportula located on a rib with marginal fultoportula
28a	Valve central area nearly flat, with one, exceptionally two (or none), distinct central fultoportulae
b	Valve central area of another type29

29a	Valve central area with mostly three, rarely 1–5, central part fultoportulae, concentrically positioned very close to the striated marginal part
b	Valve central area of another type
30a	Valve central area of the lobate shape, with mostly radially positioned larger bulges or bumps
b	Valve central area distinctly transversally undulate
31a	Valve central part with areolae and fultoportulae
b	Valve central part with areolae only
32a	Between the thickened ribs bearing the marginal fultoportulae there are >85 % costae forked near the margin
b	Less than 86% costae forked near the margin
33a	Puncta in the valve central part very coarse
b	Puncta in the valve central part finer
34a	Valve central part nearly flat
b	Valve central part distinctly concentrically undulate
35a	Valves with strong undulation of the central part
b	Undulation of the valve central part is distinct, but not strong
36a	Central part undulation is distinctly flat, puncta in the central part very fine with a large rosette in the center; taxon nowadays disappeared
b	Central part undulation is symmetrically convex or concave, puncta in the central part coarser; the taxon is only fossil
37a	Valve margin with complex alveolar system with thickened ribs, in LM with so called 'Schattenlinien'
b	Valve margin without complex alveolar system
38a	Valve face is transversally undulate
b	Valve face is concentrically undulate or nearly flat
39a	Valves oval in the valve view
b	Valves circular in the valve view

40a	Rimoportulae situated on ribs at, or very near to the internal alveolar opening, so that as if missing striae (notae) are visible in LM in the marginal part
b	
41a	Valves in the valve view distinctly elliptical
b	Valves in the valve view distinctly circular
42a	Frustules large, flat, >24 µm in diameter, 2–3 costae between ribs bearing the marginal fultoportulae, alpine species
b	Minimal size of the frustules is smaller 43
43a	Central part fultoportulae are concentrated in a wide inner annular ring, sometimes several coarse areolae can be scattered among them, the cells are mostly connected with a typical narrow ligament of setae covered with mucilage, running from the valve central parts of the adjacent valves; recent taxon
b	Central part fultoportulae are not in a wide inner annular ring, cells solitary or the type of chains is of another type
44a	Thickened ribs bearing the marginal fultoportulae thin and elongated, >3 thin long costae between them, the rimoportulae near to the central part
b	Thickened ribs short
45a	Thickened ribs thin and short, mostly 1 thin costa between ribs, the valve diameter >17 μm; alpine species
b	Thickened ribs thick with 1 thin costa between them
c	The thickened ribs thick, more than 1 costa between the thickened ribs, valve often <18 µm in diameter
46a	Valve central part distinctly concentrically undulate, puncta in the valve central part always arranged in radial rows; recent lake species
b	The valve central part slightly concentrically undulate or nearly flat, puncta in the valve central part can be arranged randomly; fossil species
47a	Rimoportula(e) situated between costae at the valve margin, the marginal fultoportulae on every rib, fossil species
b	Rimoportula(e) situated on ribs near the valve central part, >1 costa between the thickened ribs
48a	Striated marginal area very narrow, about 4/5 of the valve diameter
b	Width of the striated marginal area greater

494	Warginar Introporturae Situated between each two costae
b	Location of marginal fultoportulae different 50
50a	All the valves without outer tubular projections of the marginal fultoportulae
b	All or some valves with outer tubular projections of the marginal fultoportulae
51a	Marginal striae of the same lengths, not forked towards the margin
b	Some of the marginal striae are forked near the margin
52a	Marginal striation very coarse, 5.5–8.5 striae in 10 μmDiscostella mascarenica (r, F)
b	Marginal striation finer
53a	One type of the marginal striation with striae of the same lengths, valve diameter >10 μm 54
b	Two types of the marginal striation, with striae of the same and of different lengths
54a	Stellate pattern in the valve central part \pm distinct
b	The valve central part punctate without stellate pattern
55a	Valve types with striae of the same lengths have stellate pattern of alveoli in both convex and concave valve central parts, without outer tubular projections of the marginal fultoportulae
b	Valve types with striae of the same lengths with outer tubular projections of the marginal fultoportulae, the stellate pattern of alveoli only in the types with convex valve central part
56a	Marginal striation with >9 striae in 10 μm
b	Marginal striation with <9 striae in 10 μm
57a	Radial rows of puncta in the valve central part59
b	Valve central part without radial rows of puncta58
58a	Puncta in the valve central part scattered
b	Nearly regular ring of distinct puncta encloses other scattered distinct puncta inside valve central part
59a	Striated marginal part narrow, with 6–8 striae in 10 µm
b	Striation of the marginal part fine, with 13–15 striae in 10 μm