



**The bryozoan collection of Prof. Dr Ehrhard Voigt (1905–2004)
at the Senckenberg Institute in Frankfurt.**

Part 2 - Ctenostomata and non-ascophoran Cheilostomata

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Abstract: The bryozoan collection of Prof. Dr Ehrhard VOIGT (1905–2004) at the Senckenberg Research Institute in Frankfurt am Main, Germany is a world-renowned collection of great scientific value. It is the world's largest collection of fossil bryozoans from the Upper Cretaceous and Paleocene and a unique archive documenting the evolution of this phylum of marine invertebrates during this time interval in the Boreal Chalk Sea that extended from the British Isles to the Aral Sea in Central Asia. The VOIGT Collection contains over 300,000 specimens and was relocated to the Senckenberg Institute in 2005 according to the bequest of Ehrhard VOIGT. As a result of a DFG-funded project, we present here a three-part type catalogue of the holotypes and neotypes of 256 bryozoan species in the VOIGT Collection, of which this is Part 2. In total over the three parts, 247 species are re-illustrated but the name-bearing type specimens of 20 species are missing and no material could be found for 9 species. Two species, described as ctenostome bryozoans by Ehrhard VOIGT, are questionable, while a further three 'ctenostome' species and one 'ctenostome' genus are considered as ichnotaxa.

Key-words:

- Bryozoa;
- Cheilostomata;
- Cyclostomata;
- Ctenostomata;
- ichnofossils;
- type catalogue;
- palaeontological collections;
- Cretaceous

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Résumé : La collection de bryozoaires du Prof. Dr Ehrhard Voigt (1905–2004) conservée à l'Institut Senckenberg de Francfort - 2e partie - Cténostomates et Chéilostomates hormis les Ascophores.- La collection de bryozoaires du Prof. Dr Ehrhard VOIGT (1905–2004) conservée à l'Institut de recherche Senckenberg de Francfort-sur-le-Main (Allemagne) est une collection de renommée mondiale et de grande valeur scientifique. C'est la plus grande collection au monde de bryozoaires fossiles du Crétacé supérieur et du Paléocène. Elle constitue un patrimoine unique documentant l'évolution de ce phylum d'invertébrés marins au cours de cette période dans la mer de la Craie Boréale qui

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s'étendait des îles britanniques à la mer d'Aral en Asie centrale.

La collection VOIGT qui compte plus de 300.000 spécimens a été transférée en 2005 à l'Institut Senckenberg grâce à un legs testamentaire d'Ehrhard VOIGT. À l'issue d'un programme financé par la DFG, nous présentons ici en trois parties un catalogue des holotypes ou néotypes de quelques 256 espèces de bryozoaires de la collection VOIGT, catalogue dont la présente contribution est la deuxième des trois. 247 espèces sont illustrées ici à nouveau, tandis qu'aucun matériel n'a pu être retrouvé pour neuf d'entre elles. Les spécimens-types porte-noms de vingt espèces n'ont pas été retrouvés. Deux espèces, décrites comme des bryozoaires cténostomes par Ehrhard VOIGT, sont douteuses, tandis que trois autres espèces "cténostomes" et un genre "cténostome" sont considérés comme des ichnotaxa.

Mots-clefs :

- Bryozoa ;
- Cheilostomata ;
- Cyclostomata ;
- Ctenostomata ;
- ichnofossiles ;
- catalogue des types ;
- collections de paléontologie ;
- Crétacé

3. Systematic palaeontology (continuation)

Phylum Bryozoa EHRENBURG, 1831

Class Gymnolaemata ALLMAN, 1856

Order Ctenostomata BUSK, 1852

**Superfamily Arachnidoidea
HINCKS, 1880**

Family Arachnidoidea HINCKS, 1880

Genus Arachnidium HINCKS, 1862

Arachnidium longicauda VOIGT, 1980
(Fig. 33a–b)

*# 1980 *Arachnidium longicauda* n.sp. – VOIGT, p. 742, Figs. 1–3, 4d.

1981b *Arachnidium longicauda* VOIGT – VOIGT, Pl. 67, fig. 4.

Holotype: SMF 24798 (VOIGT, 1980, Figs. 1, 3).

Original label: VOIGT collection number 9077.

Locus typicus: Blom Quarry near Terblijt, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum typicum: Pockets in the fourth hard-ground above the Caster horizon IV d in the *Belemnitella junior* belemnite Zone.

Stratigraphical range: Late Maastrichtian.

Remarks: *Arachnidium longicauda* is preserved by bioimmuration. The holotype is the only reported specimen of this species.

**Superfamily Vesicularioidea
HINCKS, 1880**

Family Buskiidae HINCKS, 1880

Genus Buskia ALDER, 1857

Buskia hachti VOIGT, 1979
(Fig. 33c–d)

*# 1979a *Buskia hachti* n.sp. – VOIGT, p. 545, Pl. 1, figs. 4–5.

Holotype: SMF 24782 (VOIGT, 1979a, Pl. 1, figs. 4–5).

Original label: VOIGT collection number 7860.

Locus typicus: Clay pit near Puget-sur-Argens, Provence-Alpes-Côte d'Azur, France.

Stratum typicum: Piacencian.

Stratigraphical range: Piacencian, Pliocene.

Remarks: *Buskia hachti* is preserved by bioimmuration. The holotype is the only reported specimen of this species and was collected by H.J. von Hacht who passed it to VOIGT.

Buskia inexpectata VOIGT, 1979
(Fig. 33e–f)

*# 1979a *Buskia inexpectata* n.sp. – VOIGT, p. 543, Pl. 1, fig. 1.

Holotype: SMF 24783 (VOIGT, 1979a, Pl. 1, fig. 1).

Original label: VOIGT collection number 8151.

Locus typicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

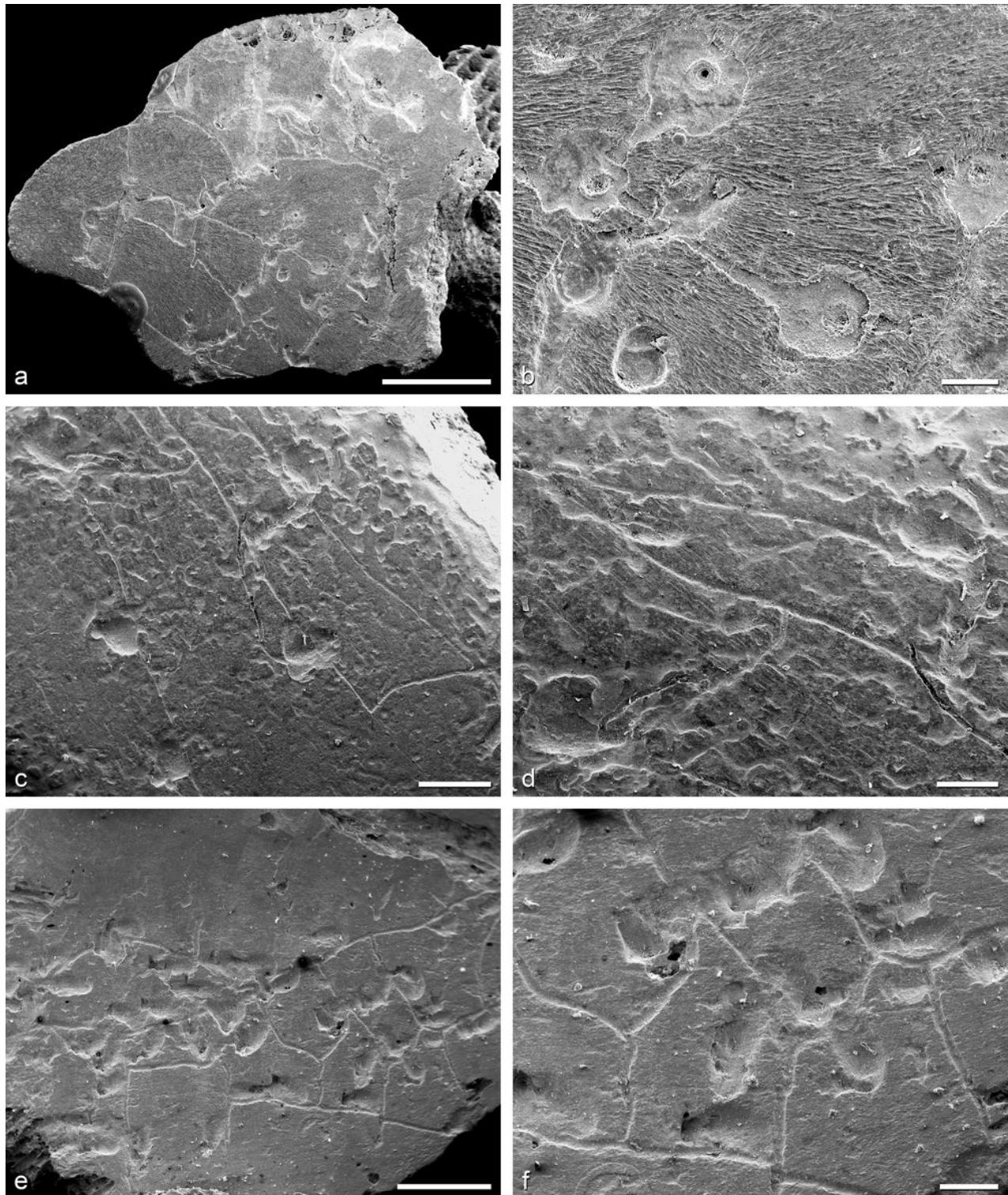


Figure 33: a-b *Arachnidium longicauda* VOIGT, 1980, holotype, SMF 24798, late Maastrichtian (*Belemnitella junior* belemnite Zone), Blom Quarry near Terblijt in the municipality Valkenburg aan de Geul, Limburg, Netherlands. c-d *Buskia hachti* VOIGT, 1979, holotype, SMF 24782, Piacencian, clay pit near Puget-sur-Argens, Provence-Alpes-Côte d'Azur, France. e-f *Buskia inexpectata* VOIGT, 1979, holotype, SMF 24783, late Maastrichtian (*Belemnitella junior* belemnite Zone), Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands. Scale bars: a, e 1 mm; c 500 µm; d, f 250 µm; b 100 µm.

Stratum typicum: *Belemnitella junior* belemnite Zone, Tuffeau de Maastricht.

Stratigraphical range: Late Maastrichtian.

Remarks: *Buskia inexpectata* is preserved by bioimmuration. The holotype is the only reported specimen of this species.

**Ctenostomata incertae sedis****Genus *Stolonicella* VOIGT, 1966*****Stolonicella filosa* VOIGT, 1966**

(Fig. 34a–b)

- *# 1966 *Stolonicella filosa* n.g. n.sp. – VOIGT, p. 417, Pl. 35, fig. 1.
1979a *Stolonicella filosa* VOIGT, 1966 – VOIGT, p. 553, Pl. 2, figs. 1–2, Pl. 3, figs. 1–2, Pl. 4, fig. 1.

Holotype: SMF 24163 (VOIGT, 1966, Pl. 35, fig. 1).

Original label: VOIGT collection number 3903.

Locus typicus: Abandoned Nekami Quarry on the hill Sint-Pietersberg near Maastricht, Limburg, Netherlands.

Stratum typicum: Chalk tuff of the latest Maastrichtian (Md₄).

Further distribution: According to VOIGT (1979a) in the late Maastrichtian, Kunrade beds near Benzenrade in the Heerlen municipality, Limburg, Netherlands.

Stratigraphical range: Late Maastrichtian.

Remarks: *Stolonicella filosa* is preserved by bioimmuration on the underside of a colony of *Lichenopora* sp. The holotype is the only reported specimen of this species. Dr M. MEIJER ceded the holotype to Prof. Dr E. VOIGT. The holotype has several cracks that were already visible in the image of VOIGT (1966).

***Stolonicella hillmeri* VOIGT, 1979**

- *# 1979a *Stolonicella hillmeri* n.sp. – VOIGT, p. 554, Pl. 3, fig. 3, Pl. 4, figs. 2–3.

Holotype: Not found (VOIGT, 1979a, Pl. 3, fig. 3, Pl. 4, fig. 2).

Original label: VOIGT collection number 7711 or 7712.

Locus typicus: Blom Quarry near Terblijt in the municipality Valkenburg aan de Geul, Limburg, Netherlands.

Stratum typicum: *Belemnitella junior* belemnite Zone in the Late Maastrichtian.

Stratigraphical range: Late Maastrichtian.

Remarks: *Stolonicella hillmeri* is preserved by bioimmuration. Prof. Dr G. HILLMER collected the holotype and ceded it to Prof Dr E. VOIGT. In the species description, 7712 is indicated as the VOIGT collection number of the holotype, but in the figure captions 7711 is indicated instead. However, both samples, i.e., all material of *S. hillmeri*, could not be found. Both samples were listed in EISERHARDT (1998).

***Stolonicella schindewolfi* VOIGT, 1966**

(Fig. 34c–d)

- *# 1966 *Stolonicella schindewolfi* n.g. n.sp. – VOIGT, p. 416, Pl. 36, Pl. 37, fig. 5.
1973a *Stolonicella schindewolfi* VOIGT – VOIGT, Pl. I, fig. 5.
1979a *Stolonicella schindewolfi* VOIGT, 1966 – VOIGT, p. 552, Pl. 5, figs. 2–3, Pl. 6, figs. 1–7.
1981b *Stolonicella schindewolfi* VOIGT – VOIGT, Pl. 67, fig. 1.

Holotype: SMF 24784 (VOIGT, 1966, Pl. 36, Pl. 37, fig. 5).

Original label: VOIGT collection number 3557.

Locus typicus: Albert Canal near the Château Neercanne, Riemst-Kanne, Flanders, Belgium.

Stratum typicum: Chalk tuff of the latest Maastrichtian (Md₄).

Further distribution: According to VOIGT (1979a) in the late Maastrichtian, Curfs Quarry near Berg and Blom Quarry near Terblijt (both Valkenburg aan de Geul municipality) as well as Kunrade beds near Benzenrade in the Heerlen municipality (all Limburg, Netherlands).

Remarks: *Stolonicella schindewolfi* is the type species of *Stolonicella* VOIGT, 1966. It is preserved by bioimmuration. The holotype bioimmures the same sample as the holotype of *Taeniocellaria setifera* VOIGT, 1966. *S. schindewolfi* has been redescribed in VOIGT (1979a, p. 552) after the finding of new material.

***Stolonicella westfalica* VOIGT, 1966**

(Fig. 34e–f)

- *# 1966 *Stolonicella westfalica* n.g. n.sp. – VOIGT, p. 418, Fig. 6, Pl. 33, fig. 4, Pl. 35, figs. 2–6.

Holotype: SMF 24165 (VOIGT, 1966, Fig. 6, Pl. 33, fig. 4, Pl. 35, fig. 5).

Original label: VOIGT collection number 3902.

Locus typicus: The former brick factory Becker in Mülheim an der Ruhr-Broich, North Rhine-Westphalia, Germany.

Stratum typicum: Bochum (or Soest?) Greensand on the top of the *Mytiloides labiatus* beds.

Stratigraphical range: Middle Turonian

Remarks: *S. westfalica* is preserved by bioimmuration. The age of the greensand on top of the *labiatus* beds is either middle Turonian, if the Bochum Greensand Member is exposed in the outcrop, or late Turonian, if the greensands belong to the Soest Greensand Member instead.

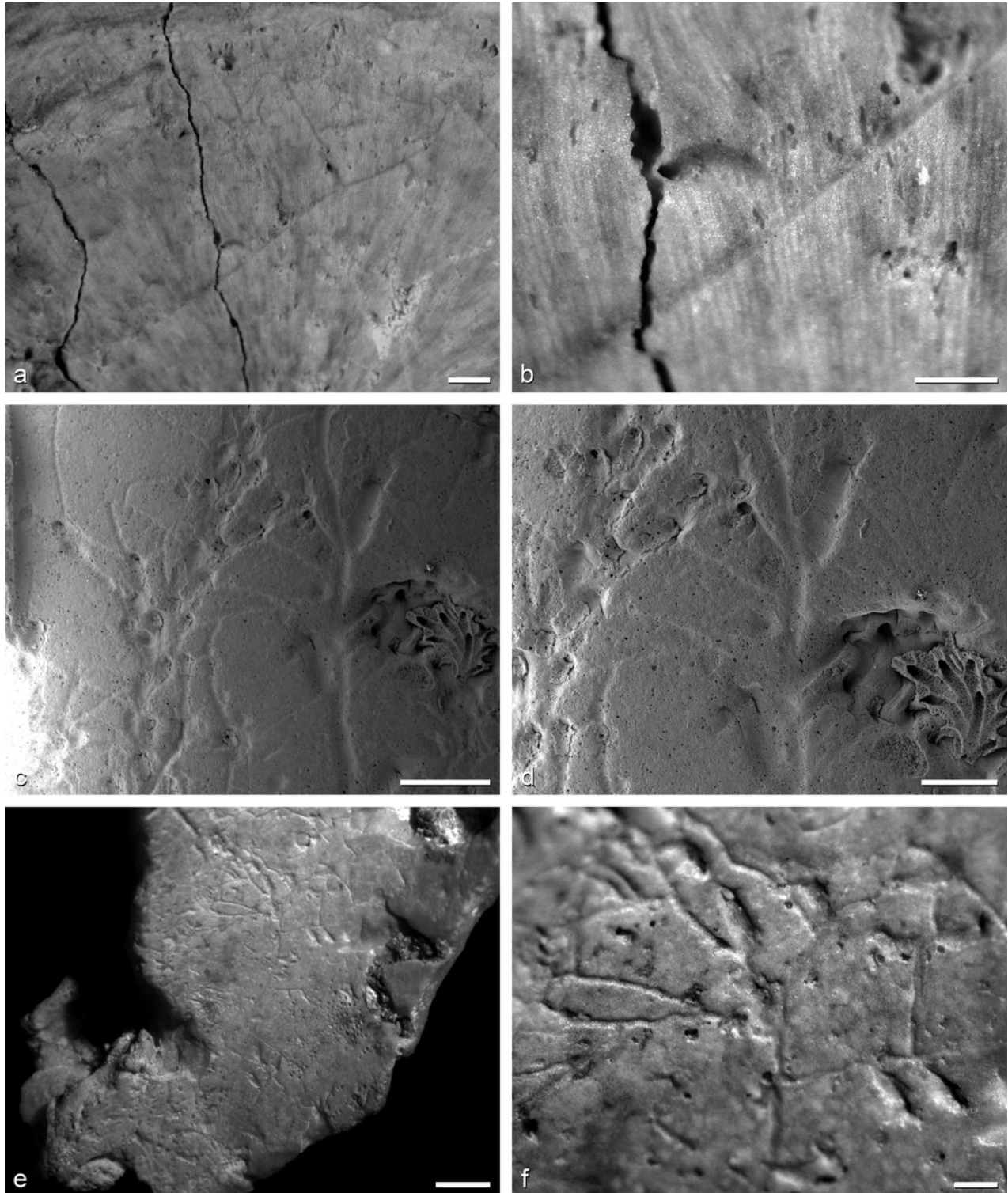


Figure 34: a-b *Stoloniceella filosa* VOIGT, 1966, holotype, SMF 24163, late Maastrichtian, Nekami Quarry on the hill Sint-Pietersberg near Maastricht, Limburg, Netherlands. c-d *Stoloniceella schindewolfi* VOIGT, 1966, holotype, SMF 24784, late Maastrichtian, Albert Canal near the Château Neercanne, Riemst-Kanne, Flanders, Belgium. e-f *Stoloniceella westfalica* VOIGT, 1966, holotype, SMF 24165, middle Turonian, former brick factory Becker in Mülheim an der Ruhr-Bro263ich, North Rhine-Westphalia, Germany. Scale bars: c, e 1 mm; a, d 500 µm; b, f 250 µm.



Order Cheilostomata BUSK, 1852

**Suborder Membraniporina
ORTMANN, 1890**

**Superfamily Membraniporoidea
BUSK, 1854**

**Family Chiplonkarinidae
TAYLOR & GORDON, 2007**

**Genus *Chiplonkarina*
TAYLOR & BADVE, 1995**

***Chiplonkarina bretoni*
TAYLOR & BADVE, 1995**

(Fig. 35a–b)

*# 1995 *Chiplonkarina bretoni* sp. nov. – TAYLOR & BADVE, p. 644, Fig. 4, Pl. 2, figs. 2, 4, Pl. 4, figs. 1–3.

Holotype: SMF 26543 (TAYLOR & BADVE, 1995, Pl. 4, figs. 1–2).

Original label: VOIGT collection number 10373.

Locus typicus: Carrière du Billot, Notre-Dame-de-Fresnaye near L'Oudon, Normandy, France.

Stratum typicum: Early Cenomanian (*Neostlin-goceras carcitense* ammonite Zone).

Paratypes: SMF 26544–26561.

Further distribution: Early Cenomanian, Villers-sur-Mer, Normandy, France; Essen and Mülheim an der Ruhr (both North-Rhine Westphalia, Germany).

Stratigraphical range: Early Cenomanian.

Remarks: This species is the earliest representative of *Chiplonkarina* TAYLOR & BADVE, 1995.

Family Electridae ORBIGNY, 1851

Genus *Danocella* VOIGT, 1999

***Danocella hakanssoni* VOIGT, 1999**

(Fig. 35c–d)

*# 1999 *Danocella hakanssoni* n.g. n.sp. – VOIGT, p. 303, Pl. 1, figs. 1–10.

Holotype: SMF 26220 (VOIGT, 1999, Pl. 1, figs. 1–2, 10)

Original label: VOIGT collection number 14454.

Locus typicus: Glacial drift deposit near Neu Wulmstorf-Daerstorf, Lower Saxony, Germany.

Further distribution: Earliest Danian, Nye Kløv, Thisted Kommune, Nordjylland Region, Denmark.

Stratum typicum: Glacial drift deposit of Danian age.

Stratigraphical range: Danian.

Remarks: *Danocella hakanssoni* is the type species of *Danocella* VOIGT, 1999. The holotype is mounted on a SEM stub with over 150 other specimens (VOIGT, 1999, Pl. 1, fig. 10) and is the ninth specimen in the second row. Specimens assigned to *D. hakanssoni* show high variability in the shape of the autozooids and opesia.

Genus *Herpetopora* LANG, 1914

***Herpetopora titania* VOIGT, 1949**

(Fig. 36a–b)

*# 1949 *Herpetopora danica titania* n.subsp. – VOIGT, p. 9, Pl. 1, figs. 1–3.

Holotype: SMF 26257 (VOIGT, 1949, Pl. 1, figs. 1–3).

Original label: VOIGT collection number 135.

Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk of the *Gonioteuthis quadrata* belemnite Zone (level ksq 2); the colony encrusts a fragment of the echinoid *Echinocorys* sp.

Stratigraphical range: Early Campanian.

Remarks: *Herpetopora titania* was first established as a subspecies of *H. danica* LANG, 1914, differing from the latter in being considerably larger and with the margin of the opesia being more subtly denticulated. THOMAS and LARWOOD (1956) regarded the genus *Herpetopora* LANG, 1914, as a junior synonym of *Pyripora* ORBIGNY, 1852, and the same authors (THOMAS & LARWOOD, 1960, p. 381) excluded both *H. danica* and *H. danica titania* from *Pyripora* as they have hyperstomial ovicells and provisionally assigned them to *Membranipora* BLAINVILLE, 1830. VOIGT (1982c) questioned the synonymy of *Pyripora* and *Herpetopora*. TAYLOR and MCKINNEY (2006, p. 56) again excluded *H. danica* from the genus *Herpetopora* because of the hyperstomial ovicells and suggested assigning the species to the family Calloporidae NORMAN, 1903. As no ovicells occur in the subspecies *titania*, it can be retained provisionally in the genus *Herpetopora*, as *Herpetopora titania*.

Genus *Pyripora* ORBIGNY, 1852

***Pyripora huckei* BUGE, 1973**

(Fig. 36c–d)

*# 1973 *Pyripora huckei* n.sp. – BUGE, p. 35, Pl. 5, fig. 6.

1982c *Pyripora huckei* BUGE – VOIGT, p. 49, Pl. 1, figs. 1–2, Pl. 2, figs. 1–2.

2003 *Pyripora huckei* BUGE, 1973 – ZÁGORŠEK, p. 129, Pl. 10, figs. 1–2.

2005 *Pyripora huckei* BUGE, 1973 – HINZ-SCHALLREUTER & SCHALLREUTER, p. 550.

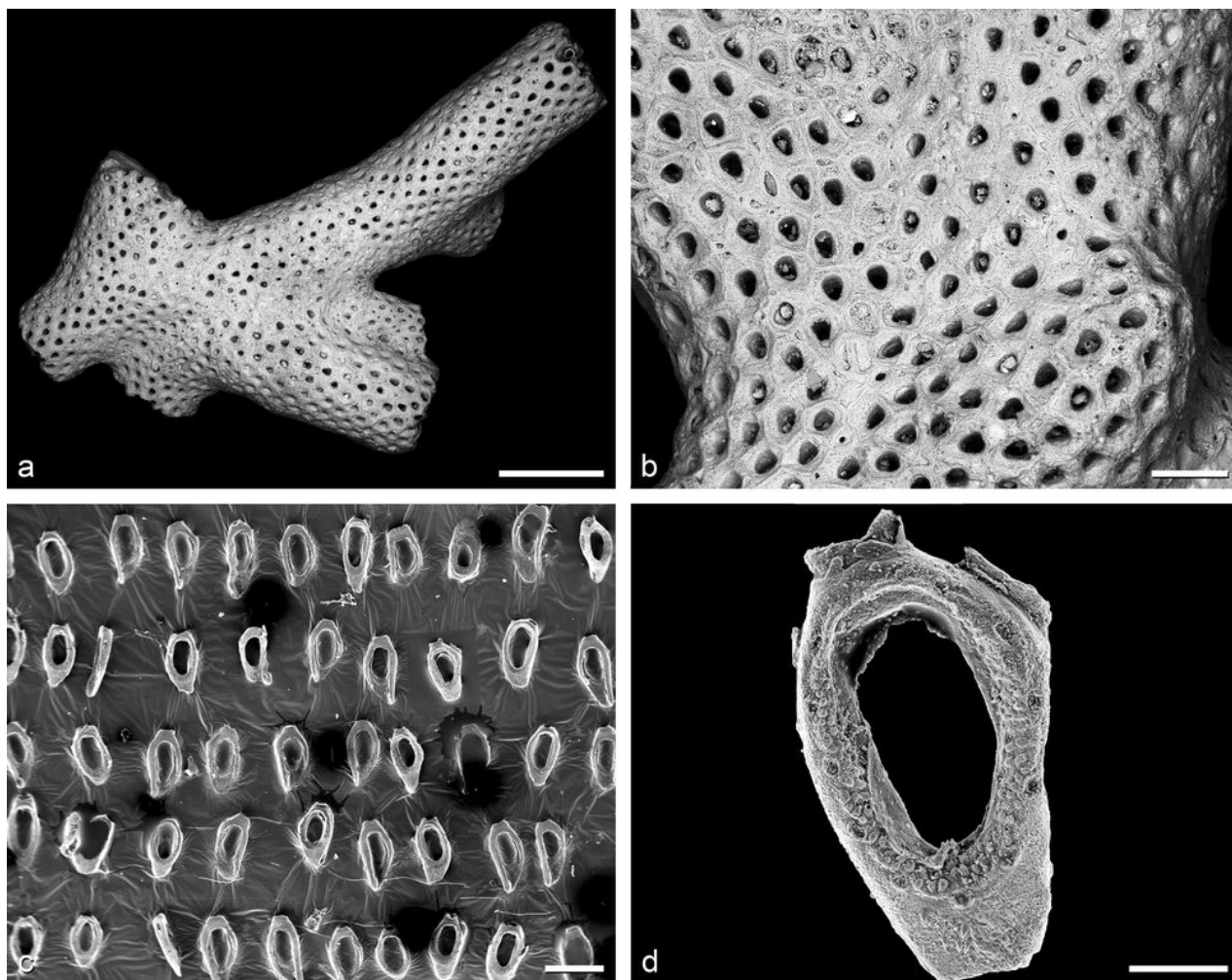


Figure 35: a-b *Chiplonkarina bretoni* TAYLOR & BADVE, 1995, holotype, SMF 26543, early Cenomanian (*Neostlingoceras carcitanense* ammonite Zone), Carrière du Billot, Notre-Dame-de-Fresnaye near L'Oudon, Normandy, France. c-d *Danocella hakanssoni* VOIGT, 1999, holotype, SMF 26220, Danian, glacial drift deposit near Neu Wulmstorf-Daerstorf, Lower Saxony, Germany.

Scale bars: a 2.5 mm; b-c 500 µm; d 100 µm.

Holotype: SMF 26440 (BUGE, 1973, Pl. 5, fig. 6).

Original label: VOIGT collection number 7935.

Locus typicus: Plön, Schleswig-Holstein, Germany.

Stratum typicum: Glacial drift of Aquitanian age.

Further distribution: Priabonian, Reingrubenhöhe near Niederhollabrunn-Bruderndorf, Upper Austria, Austria.

Stratigraphical range: Priabonian to Aquitanian.

Remarks: Dr Kurt HUCKE found the holotype of *Pyrripora huckei* and gave it to VOIGT. The species was later re-described (VOIGT, 1982c) based on a better-preserved specimen (SMF 24899) encrusting the shell of a bivalve, the holotype lacking many of the typical features of this species.

Suborder Flustrina SMITT, 1867

Superfamily Buguloidea GRAY, 1848

Family Candidae ORBIGNY, 1851

Genus *Bactrellaria* MARSSON, 1887

Bactrellaria hamulifera VOIGT, 1994

(Fig. 37a-b)

*# 1994c *Bactrellaria hamulifera* HAG. – VOIGT, p. 580, Pl. 5, figs. 1–6; Pl. 6, figs. 1–3.

Holotype: SMF 26060 (VOIGT, 1994c, Pl. 6, fig. 1).

Original label: VOIGT collection number 10372.

Locus typicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

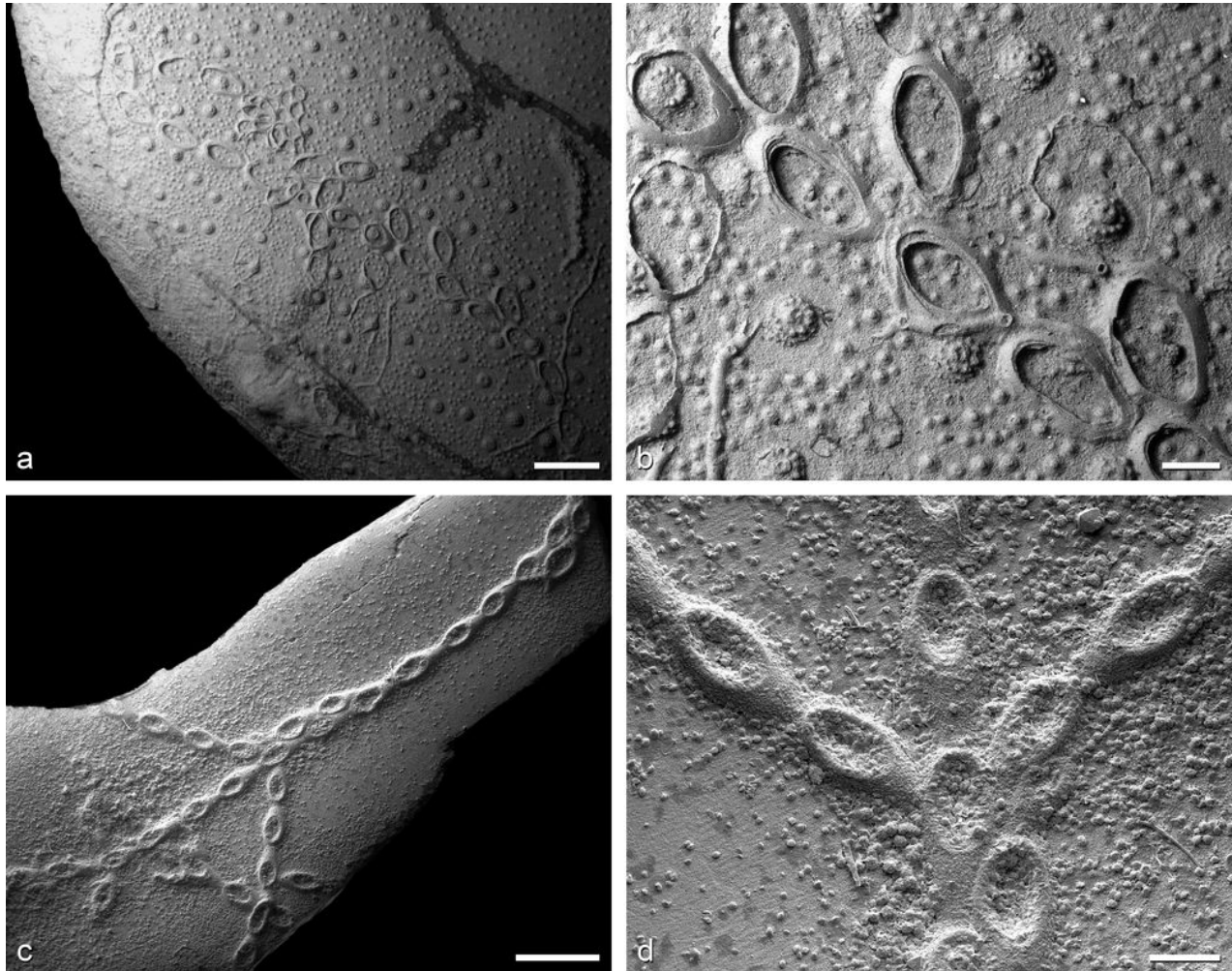


Figure 36: a-b *Herpetopora titania* VOIGT, 1949, holotype, SMF 26257, early Campanian (*Gonioteuthis quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. c-d *Pypipora huckei* BUGÉ, 1973, holotype, SMF 26440, Aquitanian, Plön, Schleswig-Holstein, Germany. Scale bars: a 2.5 mm; c 1 mm; b 500 µm; d 250 µm.

Stratum typicum: Tuffeau de Maastricht (Meerssen Limestone).

Further distribution: Late Maastrichtian, abandoned van der Zwaan Quarry and ENCI (*Eerste Nederlandse Cement Industrie*) pit on the hill Sint-Pietersberg; Blom Quarry near Terblijt, Valkenburg aan de Geul municipality (all Limburg, Netherlands).

Stratigraphical range: Late Maastrichtian.

Genus *Eoscrupocellaria* VOIGT, 1991

***Eoscrupocellaria longiopesiata* VOIGT, 1999**

(Fig. 37c–d)

*# 1999 *Eoscrupocellaria longiopesiata* n.sp. – VOIGT, p. 306, Pl. 3, figs. 21–27.

Holotype: SMF 26224 (VOIGT, 1999, Pl. 3, figs. 21–22).

Original label: VOIGT collection number 10471.

Locus typicus: Lime works of Sigerslev north of Stevns Klint, in the Stevns Kommune, Zealand Region, Denmark.

Stratum typicum: Bryozoan limestone of early Danian age.

Further distribution: Danian, glacial drift near Neu Wulmstorf, Lower Saxony, Germany.

Stratigraphical range: Early Danian.

Superfamily Calloporoidea NORMAN, 1903

Family Bryopastoridae D'HONDT & GORDON, 1999

Genus *Monticellaria* VOIGT, 1987

***Monticellaria obscura* VOIGT, 1987**

(Fig. 38a–b)

*# 1987a *Monticellaria obscura* n.g. n.sp. – VOIGT, p. 78, Pl. 16, figs. 1–11.

Holotype: SMF 25522 (VOIGT, 1987a, Pl. 16, fig. 1).

Original label: VOIGT collection number 7374.

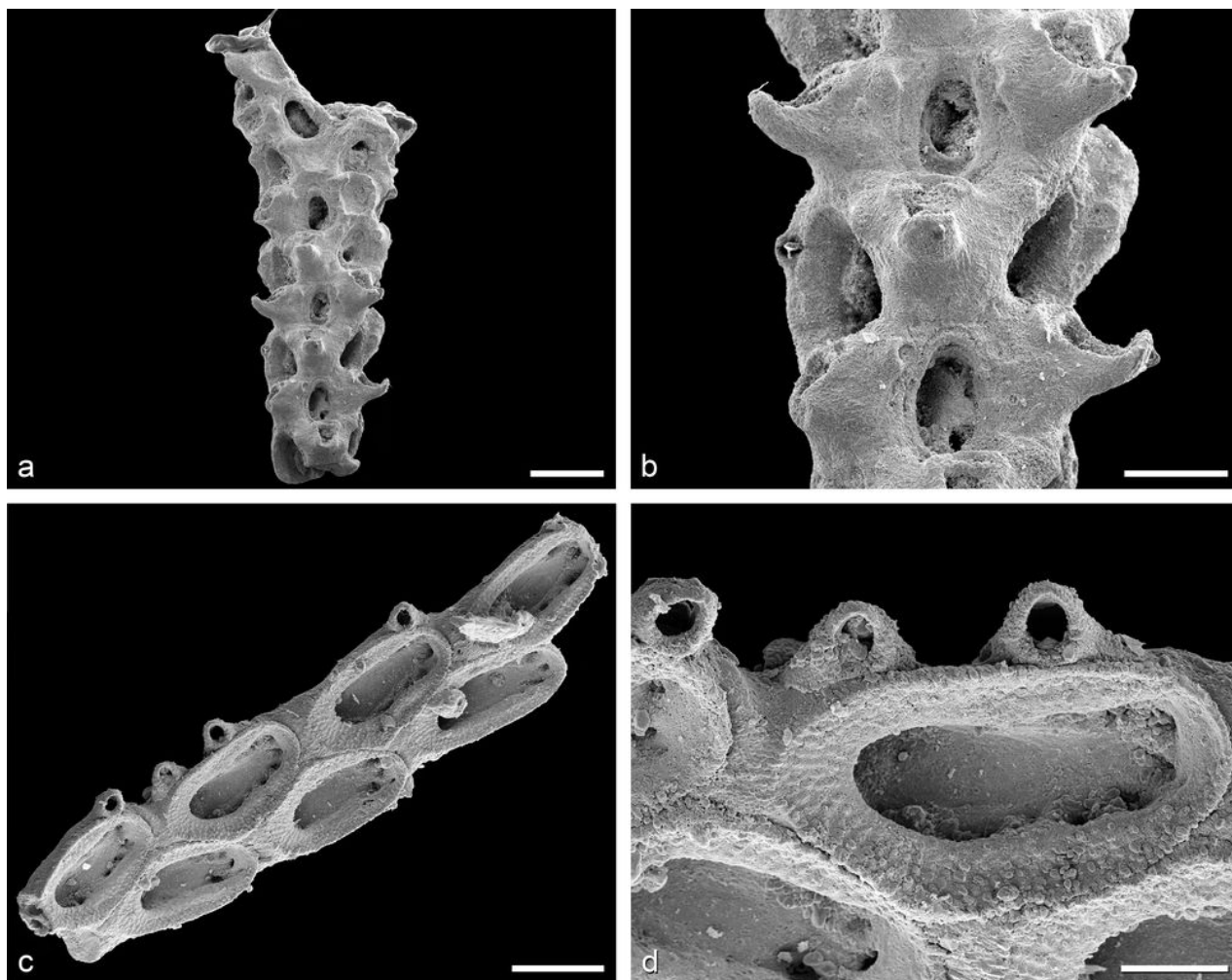


Figure 37: a-b *Bactrellaria hamulifera* VOIGT, 1994, holotype, SMF 26060, late Maastrichtian, Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Netherlands. c-d *Eoscrupocellaria longiopesiata* VOIGT, 1999, holotype, SMF 26224, early Danian, lime works of Sigerslev north of Stevns Klint in the Stevns Kommune, Zealand Region, Denmark.

Scale bars: a 500 µm; b-c 250 µm; d 100 µm.

Locus typicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum typicum: Danian calcarenite.

Further distribution: Danian, Mons borehole and Ciply, Mons municipality, Wallonia, Belgium; Ratheim borehole near Erkelenz, North Rhine-Westphalia, Germany.

Stratigraphical range: Danian.

Remarks: *Monticellaria obscura* is the type species of *Monticellaria* VOIGT, 1987.

Genus *Pseudothyracella*
LABRACHERIE, 1975

***Pseudothyracella ciplyensis* VOIGT, 1987**
(Fig. 38c-d)

*# 1987a *Pseudothyracella ciplyensis* n.sp. – VOIGT, p. 57, Pl. 18, figs. 15–24.

Holotype: SMF 25523 (VOIGT, 1987a, Pl. 18, fig. 15).

Original label: VOIGT collection number 2526.

Locus typicus: Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Basal beds of the Tuffeau de Ciply.

Further distribution: Danian, Mons borehole, Wallonia, Belgium.

Stratigraphical range: Danian.

Pseudothyracella lanceolata
(VOIGT, 1962)

(Fig. 38e-f)

*# 1962a "*Vincularia*" *lanceolata* n.sp. – VOIGT, p. 248, Pl. 27, figs. 9–13.

2005 "*Vincularia*" *lanceolata* VOIGT, 1962 – HINZ-SCHALLREUTER & SCHALLREUTER, p. 553.

Holotype: SMF 24132 (VOIGT, 1962a, Pl. 27, fig. 9).

Original label: VOIGT collection number 3533.

Locus typicus: Quarry near Tornesch, Schleswig-Holstein, Germany.

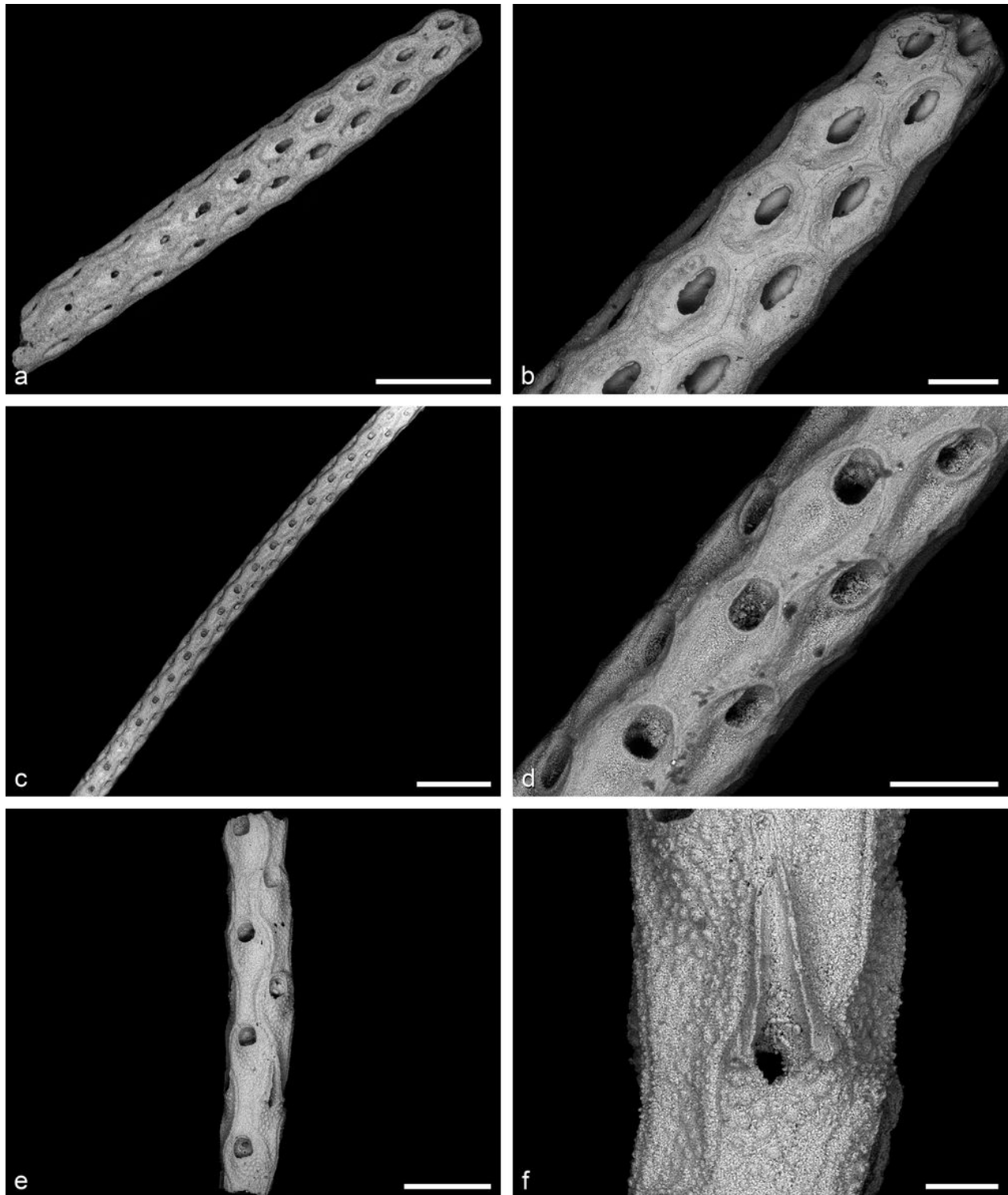


Figure 38: a-b *Monticellaria obscura* VOIGT, 1987, holotype, SMF 25522, Danian, Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands. c-d *Pseudothyraella ciptyensis* VOIGT, 1987, holotype, SMF 25523, Danian, Ciplu in the municipality Mons, Wallonia, Belgium. e-f *Pseudothyraella lanceolata* (VOIGT, 1962), holotype, SMF 24132, late Maastrichtian, quarry near Tornesch, Schleswig-Holstein, Germany. Scale bars: a, c 1 mm; e 500 μ m; b, d 250 μ m; f 100 μ m.

Stratum typicum: Glacial drift deposits containing white chalk of late Maastrichtian age.

Further distribution: Late Maastrichtian, glacial drift C containing flint near Neu Wulmstorf, Lower

Saxony, Germany; glacial drift A containing flint near Wohltorf, Schleswig-Holstein, Germany.

Stratigraphical range: Late Maastrichtian.

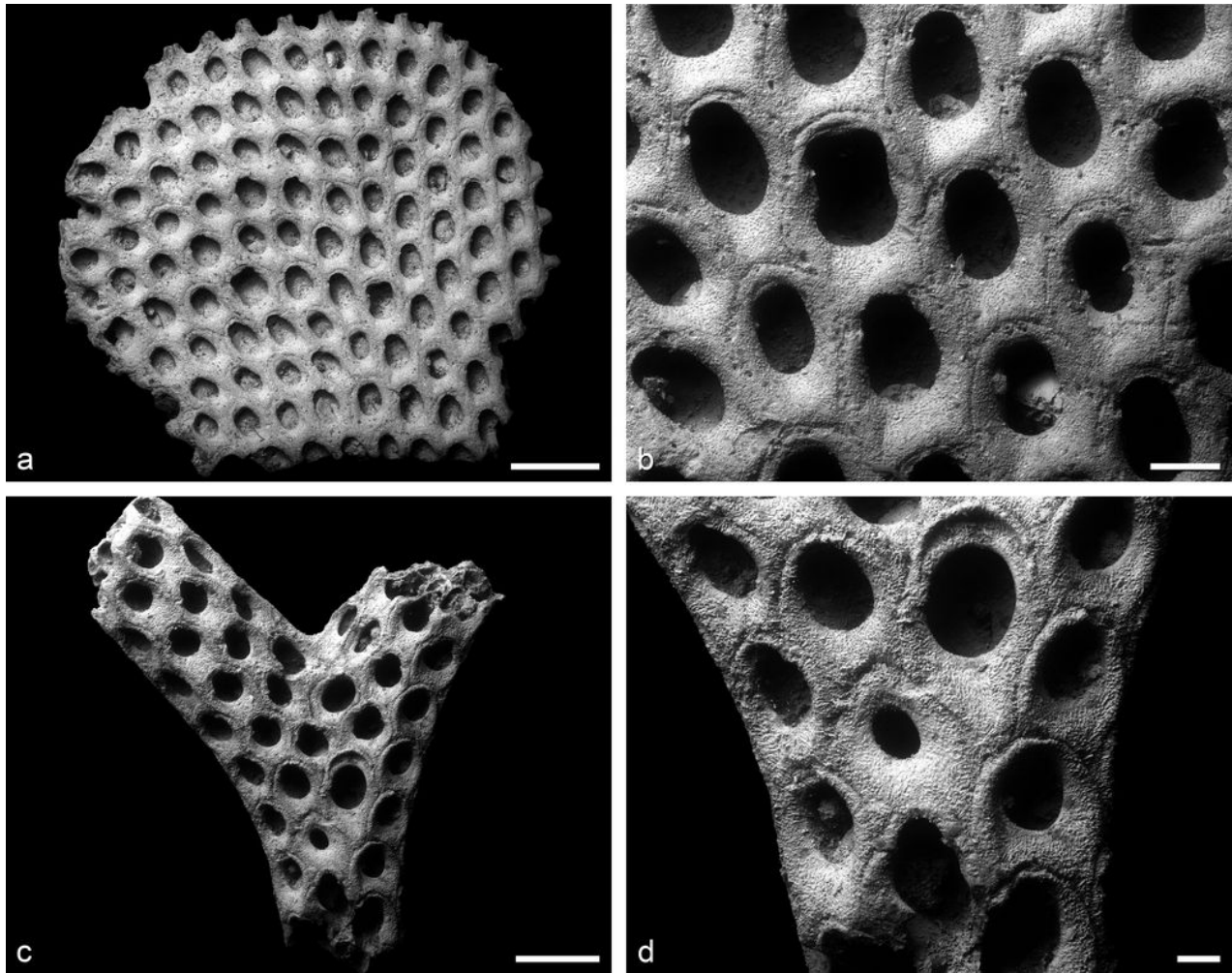


Figure 39: a-b '*Thyracella* *rectangulata* (VOIGT, 1987), holotype, SMF 25520, Danian, Ciply in the municipality Mons, Wallonia, Belgium. c-d *Thyracella* *subclavatoides* (VOIGT, 1987), holotype, SMF 25521, Danian, Ciply in the municipality Mons, Wallonia, Belgium.

Scale bars: a 1 mm; c 500 µm; b 250 µm; d 100 µm.

Genus *Thyracella* VOIGT, 1930

'*Thyracella* *rectangulata* (VOIGT, 1987) (Fig. 39a–b)

*# 1987a "*Membranipora*" *rectangulata* n.sp. – VOIGT, p. 47, Pl. 10, figs. 1–5.

Holotype: SMF 25520 (VOIGT, 1987a, Pl. 10, fig. 4).

Original label: VOIGT collection number 8106.

Locus typicus: Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Tuffeau de Ciply.

Further distribution: Danian, F.P. Mons bore-hole, Mons, Wallonia, Belgium; Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratigraphical range: Danian.

Thyracella *subclavatoides* (VOIGT, 1987) (Fig. 39c–d)

*# 1987a "*Membranipora*" *subclavatoides* n.sp. – VOIGT, p. 48, Pl. 9, figs. 18–23.

Holotype: SMF 25521 (VOIGT, 1987a, Pl. 9, fig. 18).

Original label: VOIGT collection number 7631.

Locus typicus: Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Basal beds of the Tuffeau de Ciply.

Further distribution: Danian, F.P. Mons bore-hole, Mons, Wallonia, Belgium; Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratigraphical range: Danian.

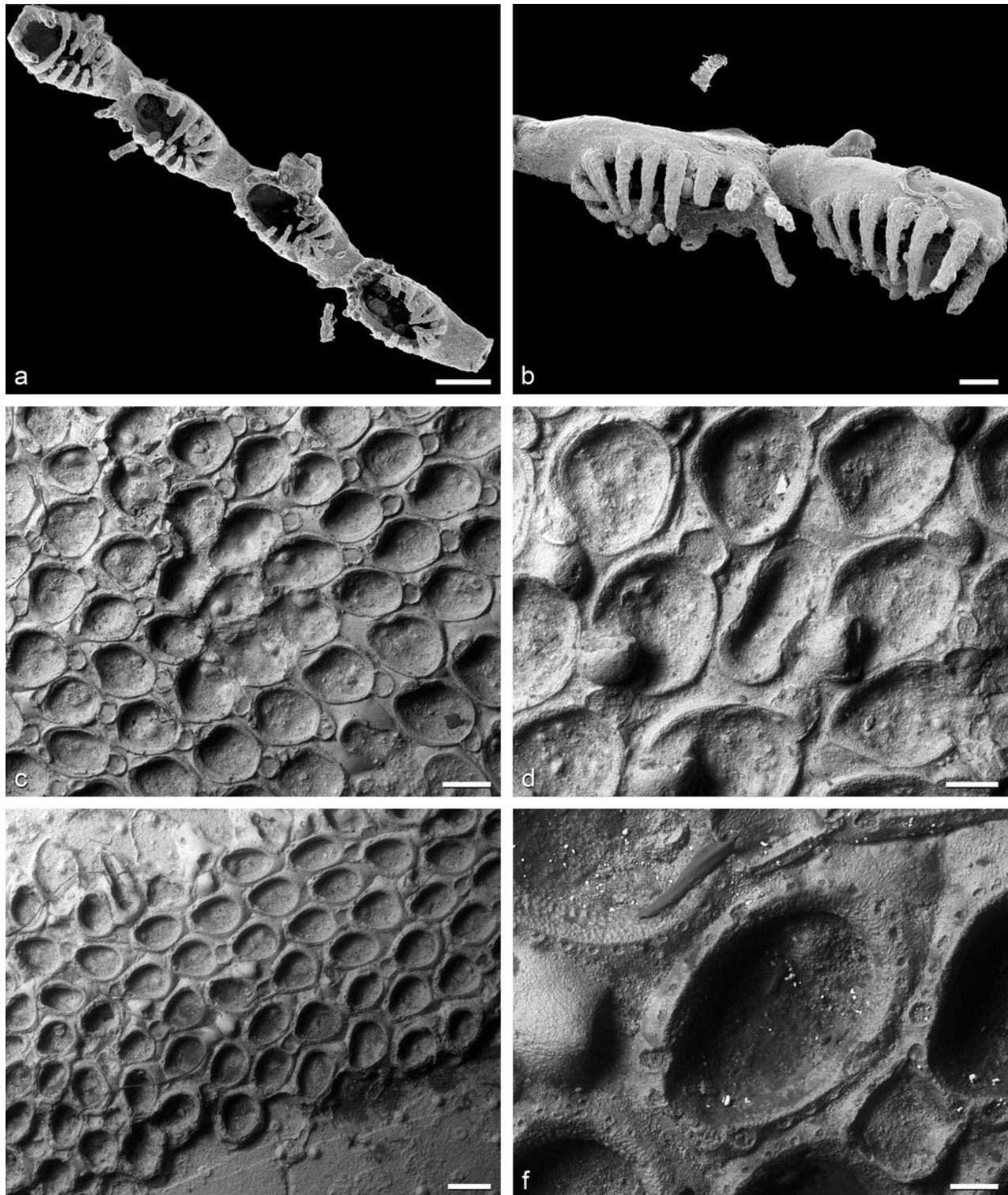


Figure 40: a-b *Acanthobaktron spinosum* VOIGT, 1999, holotype, SMF 26221, early Danian, lime works of Sigerslev north of Stevns Klint in the Stevns Kommune, Zealand Region, Denmark. c-d *Biaviculigera exhauriens poculifera* (VOIGT, 1949), holotype, SMF 26275, early Campanian (*Goniatites quadrata* belemnite Zone), marl pit near Lahstedt-Oberg, Lower Saxony, Germany. e-f *Biaviculigera falaria* (VOIGT, 1949), holotype, SMF 26269, early Campanian (*Goniatites quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. Scale bars: c, e 500 µm; a, d 250 µm; b, f 100 µm.

Remarks: On the original box containing the holotype, VOIGT classified this species as belonging to *Thyracella* VOIGT, 1930. However, in VOIGT (1987a) he provisionally assigned it to "*Membranipora*" BLAINVILLE, 1830, without mentioning *Thy-*

racella. As the species fits perfectly into *Thyracella* as defined by VOIGT (1930) and compares well with other species assigned to this genus, we have no hesitation in transferring "*M. subclavatoidea*" to *Thyracella*. The specimens referred to *T.*



subclavatooides in VOIGT (1987a) show a broad range of variability and, as assumed by VOIGT himself, may represent more than one species, although intermediate stages occur.

Family Calloporidae NORMAN, 1903

Genus *Acanthobaktron* VOIGT, 1999

***Acanthobaktron spinosum* VOIGT, 1999**

(Fig. 40a–b)

- *# 1999 *Acanthobaktron spinosum* n.g. n.sp. – VOIGT, p. 304, Pl. 2, figs. 11–16.

Holotype: SMF 26221 (VOIGT, 1999, Pl. 2, figs. 11–14).

Original label: VOIGT collection number 15017 A.

Locus typicus: Lime works of Sigerslev north of Stevns Klint in the Stevns Kommune, Zealand Region, Denmark.

Stratum typicum: Bryozoan limestone of early Danian age.

Stratigraphical range: Early Danian.

Remarks: *Acanthobaktron spinosum* is the type species of *Acanthobaktron* VOIGT, 1999. However, the spelling of the genus varies several times in VOIGT (1999) between *Acanthobaktron* and *Akanthobaktron*. The holotype is mounted on an SEM stub together with VOIGT collection number 15017 B of the same species.

Genus *Biaviculigera* VOIGT, 1989

***Biaviculigera exhaustiens poculifera* (VOIGT, 1949)**

(Fig. 40c–d)

- *# 1949 *Membranipora exhaustiens poculifera* n. subsp. – VOIGT, p. 20, Pl. 5, figs. 1–3.

Holotype: SMF 26275 (VOIGT, 1949, Pl. 5, figs. 1–3).

Original label: VOIGT collection number 111.

Locus typicus: Marl pit near Lahstedt-Oberg, Lower Saxony, Germany.

Stratum typicum: White chalk marl, *Goniot euthis quadrata* belemnite Zone.

Further distribution: Early Campanian (*Goniot euthis quadrata* belemnite Zone), Hannover-Misburg, Lower Saxony, Germany.

Stratigraphical range: Early Campanian.

Remarks: This taxon was classified as a subspecies of *Membranipora exhaustiens* (BRYDNE, 1929) by VOIGT (1949), differing from it only in the shape of the avicularia and the larger opesia. It is here provisionally assigned to *Biaviculigera* VOIGT, 1989.

***Biaviculigera falaria* (VOIGT, 1949)**

(Fig. 40e–f)

- *# 1949 *Membranipora falaria* n.sp. – VOIGT, p. 17, Pl. 3, figs. 4–5, Pl. 9, fig. 5.

Holotype: SMF 26269 (VOIGT, 1949, Pl. 3, figs. 4–5).

Original label: VOIGT collection number 122.

Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk, *Goniot euthis quadrata* belemnite Zone (level ksq 3).

Further distribution: Early Campanian (*Goniot euthis quadrata* belemnite Zone), Marl pit near Lahstedt-Oberg, Lower Saxony, Germany.

Stratigraphical range: Early Campanian.

'*Biaviculigera*' *tripunctata* (HAGENOW, 1839)

(Fig. 41a–b)

- *# 1839 *Cellepora tripunctata* nob. – HAGENOW, p. 269, Pl. IV, fig. 7a–b.
1839 *Cellepora ?nova* nob. – HAGENOW, p. 269.
1841 *Marginaria (Cellepora) tripunctata* v. HAG. – ROEMER, p. 13.
?# 1929 *Membranipora repetita* [sp. nov.] – BRYDNE, p. 16, Pl. I, fig. 5.
1959a *Membranipora tripunctata* (v. HAGENOW), 1839 – VOIGT, p. 15, Pl. V, figs. 2–4.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 24152 (VOIGT, 1959a, Pl. V, fig. 2).

Original label: VOIGT collection number 2435.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

Stratigraphical range: Early Maastrichtian.

***Biaviculigera voighti* TAYLOR & MCKINNEY, 2006**

(Fig. 41c–d)

- *# 2006 *Biaviculigera voighti* sp. nov. – TAYLOR & MCKINNEY, p. 87, Pl. 57.

Holotype: SMF 26571 (TAYLOR & MCKINNEY, 2006, Pl. 57).

Original label: VOIGT collection number 13958.

Locus typicus: Macon, Mississippi, USA.

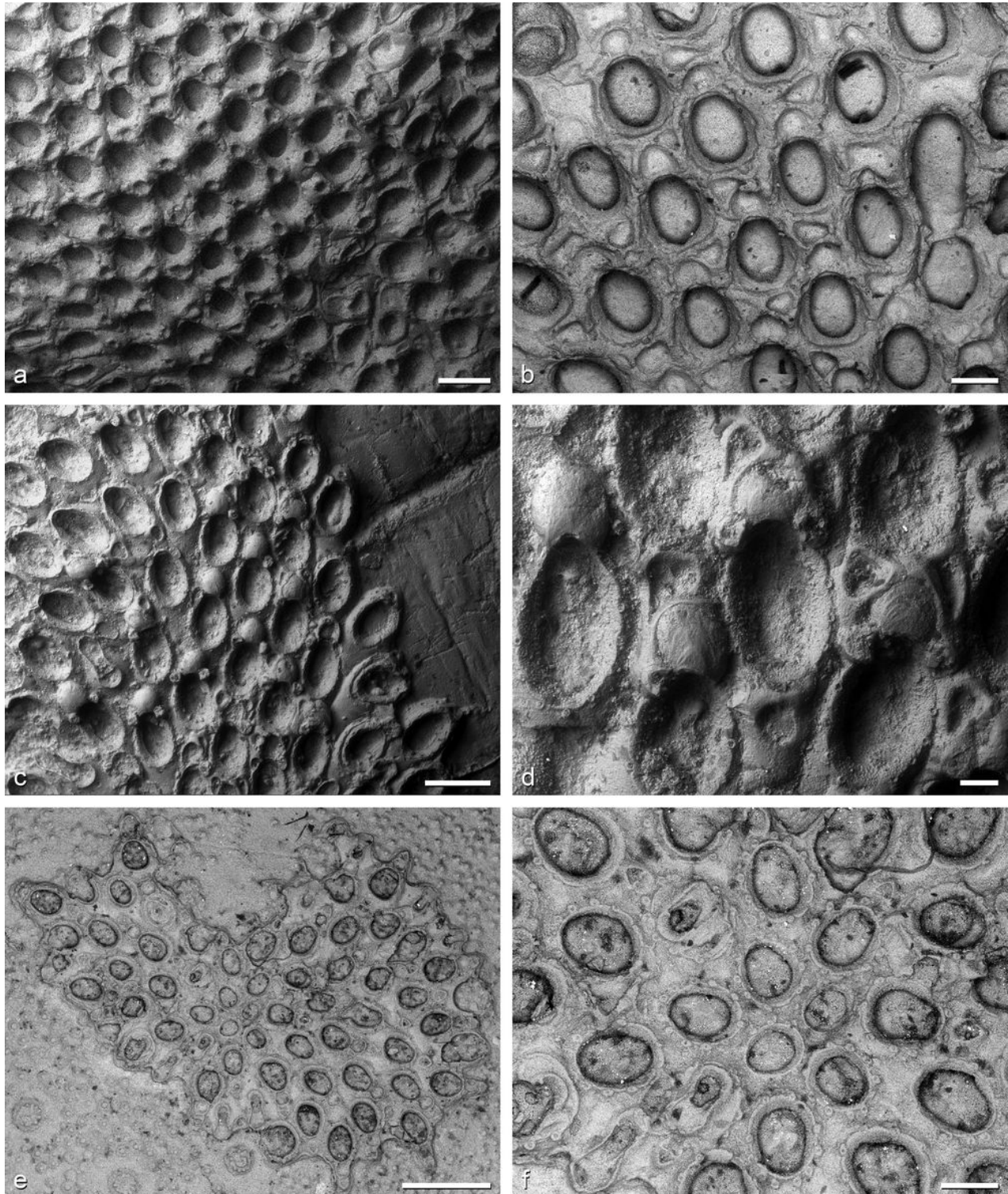


Figure 41: a-b '*Biaviculigera* *tripunctata*' (HAGENOW, 1839), neotype, SMF 24152, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. c-d *Biaviculigera* *voighti* TAYLOR & MCKINNEY, 2006, holotype, SMF 26571, Campanian, Macon, Mississippi, United States of America. e-f *Dionella* *subboletiformis* (VOIGT, 1949), holotype, SMF 26263, early Campanian (*Gonioteuthis quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. Scale bars: e 1 mm; a, c 500 µm; b, f 250 µm; d 100 µm.

Stratum typicum: Demopolis Chalk.

Paratype: SMF 26571 (encrusting same shell

as holotype).

Stratigraphical range: Campanian.

**Genus *Dionella* MEDD, 1965*****Dionella subboletiformis* (VOIGT, 1949)**

(Fig. 41e–f)

- *# 1949 *Membranipora boletiformis subboletiformis* n.sp. [sic] – VOIGT, p. 18, Pl. 2, figs. 2–3.

Holotype: SMF 26263 (VOIGT, 1949, Pl. 2, fig. 2).

Original label: VOIGT collection number 127.

Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk of the *Gonioteuthis quadrata* belemnite Zone (levels ksq 2–4).

Further distribution: Early Campanian (*Gonioteuthis quadrata* belemnite Zone), Hannover-Misburg, Lower Saxony, Germany.

Stratigraphical range: Early Campanian.

Remarks: *Membranipora boletiformis subboletiformis* was classified as a subspecies of *M. boletiformis* BRYDONE, 1914, by VOIGT (1949). BRYDONE's species was subsequently considered a junior synonym of *Dionella trifaria* (HAGENOW, 1846) by MEDD (1965). MEDD (1965; p. 496) also regarded the subspecies *subboletiformis* as a possible junior synonym of *D. trifaria*. However, compared to the neotype of *D. trifaria*, *D. subboletiformis* clearly differs in the large number of spine bases surrounding the mural rim, although in the broad definition of *D. trifaria* provided by MEDD (1965) *D. subboletiformis* would have to be considered a junior synonym of *D. trifaria*.

***Dionella trifaria* (HAGENOW, 1846)**

(Fig. 42a–b)

- *# 1846 *Cellepora trifaria* v. HAG. – HAGENOW, p. 617, Pl. XXIII. b, fig. 40.
- # 1906 *Membranipora griffithi*, sp. nov. – BRYDONE, p. 293, Fig. 1.
- # 1914a *Membranipora boletiformis*, sp. nov. – BRYDONE, p. 346, Pl. XXVI, figs. 5–6.
- # 1914a *Membranipora griffithi*, mihi – BRYDONE, p. 347, Pl. XXVI, figs. 7–8.
- # 1925 *Membranipora trifaria* [sic] (v. HAG.) – LEVINSSEN, p. 333, Pl. III, fig. 27a–b.
- # 1929 *Membranipora bradingensis* [sp. nov.] – BRYDONE, p. 29, Pl. IX, fig. 4.
- # 1929 *Membranipora retrorsa* [sp. nov.] – BRYDONE, p. 29, Pl. IX, fig. 5.
- # 1930 *Membranipora griffithi* BRYDONE – VOIGT, p. 421, Pl. 10, fig. 13.
- # 1959a *Membranipora trifaria* (v. HAGENOW), 1846 – VOIGT, p. 55, Pl. VI, fig. 2.
- # 1962b *Membranipora trifaria* (HAGENOW), 1846 – VOIGT, p. 30, Pl. 12, fig. 3.
- # 1965 *Dionella trifaria* (Von HAGENOW) – MEDD, p. 496, Pl. 67, figs. 1–6, Pl. 68, figs. 1–6.
- # 1991a *Dionella trifaria* (v. HAGENOW, 1846) – VOIGT, p. 189, Pl. 10, fig. 5.

Syntypes: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 26402 (VOIGT, 1959a, Pl. VI, fig. 2).

Original label: VOIGT collection number 401.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

Further distribution: Early Campanian, Seaford, East Sussex and Brading, Isle of Wight (both England, United Kingdom). Middle Campanian, Island of Heligoland, Schleswig-Holstein, Germany. Early Maastrichtian, Island of Møn, Zealand Region, Denmark; Aalborg and Gudumlund near Aalborg, Nordjylland Region, Denmark; Khvalynsk, Saratov Oblast, Russia. Late Maastrichtian, Trimingham, Norfolk, England, United Kingdom.

Stratigraphical range: Early Campanian to late Maastrichtian.

Remarks: *Dionella trifaria* is the type species of *Dionella* MEDD, 1965.

Genus *Flustrellaria* ORBIGNY, 1853***Flustrellaria capuloides* (VOIGT, 1949)**

(Fig. 42c–d)

- *# 1949 *Membranipora capuloides* n.sp. – VOIGT, p. 15, Pl. 2, figs. 4–5.

Holotype: SMF 26265 (VOIGT, 1949, Pl. 2, figs. 4–5).

Original label: VOIGT collection number 119.

Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk, *Gonioteuthis quadrata* belemnite Zone.

Stratigraphical range: Early Campanian.

Remarks: The holotype is the only reported specimen of this species and, unfortunately, is not well preserved. *Flustrellaria capuloides* resembles *Marginaria capulus* (LEVINSSEN, 1925) but differs from it in the structure of the avicularia and in having two different types of spines. *Marginaria capulus* was assigned to the genus *Marginaria* ROEMER, 1841, by VOIGT (1989b), while the similar *F. capuloides* was not mentioned. Both *Marginaria* and *Flustrellaria* ORBIGNY, 1853, can have circumopesial spines, although they are not mandatory in *Marginaria*. Dimorphism of the circumopesial spines is also known in the type species of *Marginaria*, *M. elliptica* (HAGENOW, 1839).

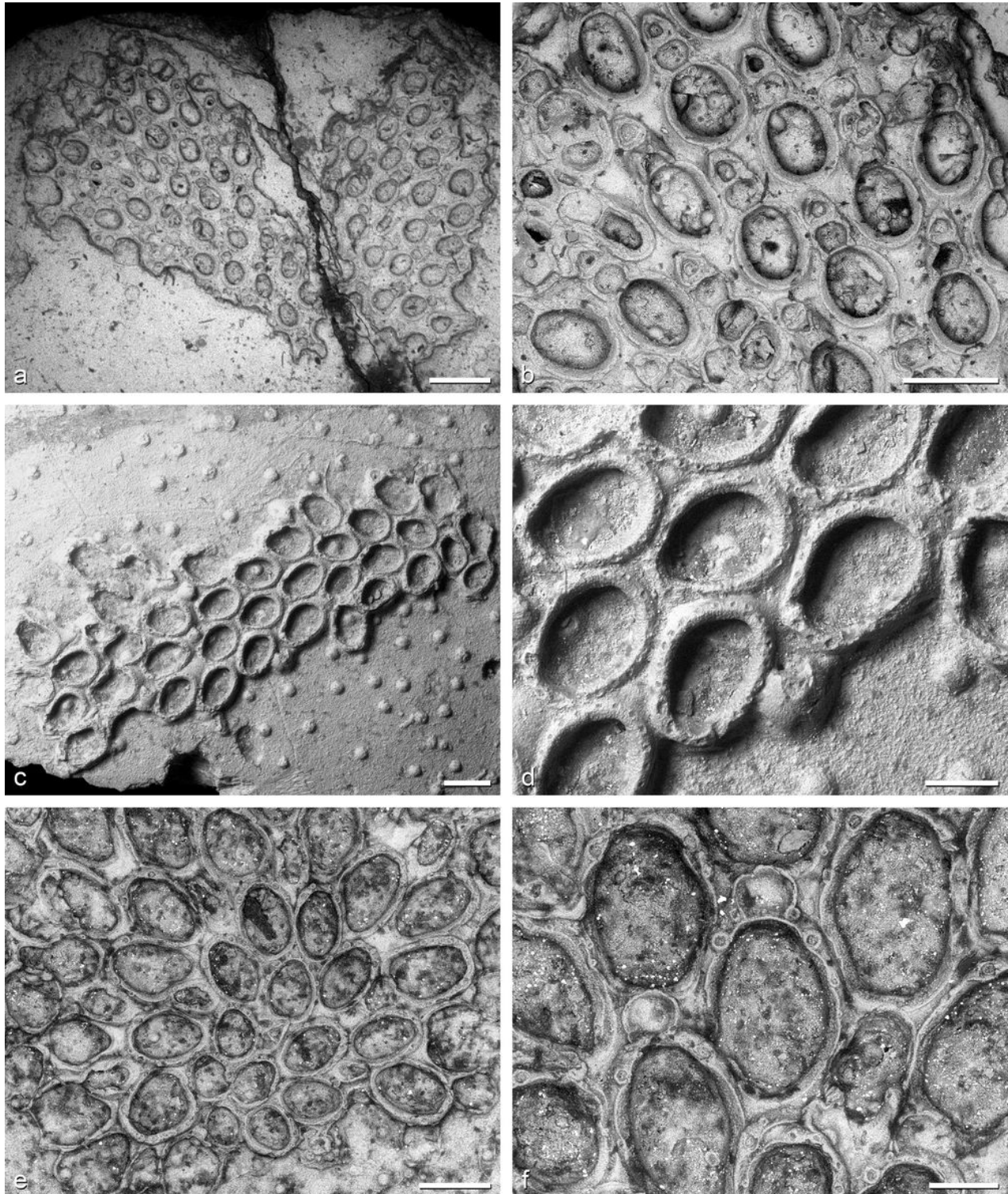


Figure 42: a-b *Dionella trifaria* (HAGENOW, 1846), neotype, SMF 26402, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. c-d *Flustrellaria capuloides* (VOIGT, 1949), holotype, SMF 26265, early Campanian (*Goniatites quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. e-f *Flustrellaria flammula* (VOIGT, 1949), holotype, SMF 26268, early Campanian (*Goniatites quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany.
Scale bars: a 1 mm; b-c, e 500 µm; d, f 250 µm.

from the Maastrichtian (VOIGT, 1989b). However, spine bases are much more numerous in *F. capuloides*. As avicularia in species of the genus *Marginalia* are more frequent and often clustered

between autozooids, we assign *capuloides* to the genus *Flustrellaria* pending a comprehensive revision of the calloporid genera.

***Flustrellaria flammula* (VOIGT, 1949)**

(Fig. 42e–f)

*# 1949 *Membranipora flammula* n.sp. – VOIGT, p. 16, Pl. 3, figs. 2–3.

Holotype: SMF 26268 (VOIGT, 1949; Pl. 3, figs. 2–3).

Original label: VOIGT collection number 117.

Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk, *Gonioteuthis quadrata* belemnite Zone (levels ksq 3 and ksq 4).

Stratigraphical range: Early Campanian.

Remarks: *Flustrellaria flammula* was regarded as a probable junior synonym of *Dionella trigonopora* (MARSSON, 1887) by MEDD (1965, p. 503). However, the absence of distal interzoecial avicularia and other characters clearly distinguishes *F. flammula* from *D. trigonopora* (VOIGT, 1967). Despite the oral spine bases mentioned in VOIGT (1949), additional spine bases are observable in some autozooids, which justify assignment of the species to the genus *Flustrellaria* ORBIGNY, 1853, pending revision of calloporid cheilostomes.

***Flustrellaria tegulata* (VOIGT, 1987)**

(Fig. 43a–b)

*# 1987a *Callopora tegulata* n.sp. – VOIGT, p. 38, Pl. 10, figs. 6–10.

Holotype: SMF 25524 (VOIGT, 1987a, Pl. 10, fig. 9).

Original label: VOIGT collection number 2802.

Locus typicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum typicum: Filling of a burrow in the earliest Danian.

Further distribution: Late Maastrichtian, Sint-Pietersberg near Maastricht, Limburg; Netherlands. Danian, Mons borehole and Ciply, Mons municipality, Wallonia, Belgium; Waterschei borehole in Genk and Eisden shaft near Maasmechelen, Flanders, Belgium; pisolith limestone near Vigny, Île-de-France, France; Beatrix borehole near Neer, Leudal municipality, Limburg, Netherlands.

Stratigraphical range: Late Maastrichtian to Danian.

Remarks: In the figure captions, 2202 is mistakenly indicated as the VOIGT collection number of the holotype.

Genus *Kunradocella***VOIGT & HILLMER, 1996*****Kunradocella kunradensis* (VOIGT, 1930)**

(Fig. 43c–d)

?# 1852 *Semiflustrilla ornata* d'ORB. – ORBIGNY, Pl. 731, figs. 1–4.

?# 1853 *Semiflustrilla ornata* d'ORB., 1851 [sic] – ORBIGNY, p. 566.

?# 1900 *Onychocella* (*Ogiva*) ? *inornata* [(d'ORBIGNY, 1851)] [sic] – CANU, p. 405, Pl. 4, fig. 7.

*# 1930 *Membranipora kunradensis* n.sp. – VOIGT, p. 425, Pl. 11, fig. 2.

1951 *Membranipora kunradensis* VOIGT, 1930 – VOIGT, p. 58, Pl. 9, figs. 7–8.

1979b '*Membranipora*' *kunradensis* VOIGT, 1930 – VOIGT, p. 36, Pl. 1, fig. 6.

1987 *Membranipora kunradensis* VOIGT, 1930 – FAVORSKAYA, p. 82, Pl. 1, fig. 1.

1996 *Kunradocella kunradensis* (VOIGT, 1930) – VOIGT & HILLMER, p. 361, Figs. 1B–E, 2A–E.

Syntypes: This material belonged to the first VOIGT Collection that was destroyed in a fire at the *Geologisches Staatsinstitut Hamburg* in 1943.

Locus typicus: Voerendaal-Kunrade, Limburg, Netherlands.

Stratum typicum: Bryozoan-rich layers of the Kunrade Limestone.

Neotype: SMF 26354 (VOIGT, 1951, Pl. 9, fig. 7).

Original label: VOIGT collection number 304.

Locus neotypicus: Sehnde-Ilten, Lower Saxony, Germany.

Stratum neotypicum: Bryozoan-rich rubbly limestone, Belemnitelletta junior belemnite Zone.

Further distribution: Late Maastrichtian, Sainte-Colombe, Manche, Normandy, France; Pitnak Ridge near the Tuyamuyun Hydro Complex, Lebap Region, Turkmenistan.

Stratigraphical range: Late Maastrichtian.

Remarks: *Kunradocella kunradensis* is the type species of *Kunradocella* VOIGT & HILLMER, 1996. These authors regarded *Semiflustrilla ornata* ORBIGNY, 1852, as probable senior synonym of *K. kunradensis*, but declared *S. ornata* as a *nomen dubium* as the drawing in the atlas of *Paléontologie française* (ORBIGNY, 1852c) shows striking differences from the specimen described in the text livraison (ORBIGNY, 1853).

Genus *Marginaria* ROEMER, 1841***Marginaria elliptica* (HAGENOW, 1839)**

(Fig. 43e–f)

*# 1839 *Cellepora elliptica* nob. – HAGENOW, p. 268, Pl. IV, fig. 6a–b.

1841 *Marginaria* (*Cellepora*) *elliptica* v. HAG. – ROEMER, p. 13.

non# 1842 *Marginaria* (*Cellepora*) *elliptica* v. HAG. – GEINITZ, p. 93, Pl. XXII, fig. 16a, B.



- # 1846 *Cellepora elliptica* v. HAG. – HAGENOW, p. 616.
- non# 1846 *Marginaria elliptica* ROEMER [sic] – REUSS, p. 68, Pl. XV, figs. 17–18.
- non# 1872 *Membranipora elliptica* HAG. sp. – REUSS, p. 101, Pl. 24, figs. 4–5.
- non# 1874a *Membranipora elliptica* HAG. sp. – REUSS, p. 128.
- non# 1874b *Membranipora elliptica* v. HAG. sp. – REUSS, Pl. 9, figs. 1–2.
- non# 1877 *Membranipora elliptica* v. HAG. sp. – NOVÁK, p. 89, Pl. II, figs. 11–16.
- non# 1887 *Membranipora elliptica* v. HAG. sp. – FRECH, p. 150.
- p# 1887 *Membranipora elliptica* v. HAGENOW sp. – MARSSON, p. 57.
- non# 1889 *Membranipora elliptica* v. HAG. – FRIČ, p. 90, Fig. 95.
- non# 1890a *Membranipora elliptica* ? HAGENOW – VINE, p. 385.
- non# 1890b *Membranipora elliptica* (?) (HAGENOW) – VINE, p. 485.
- non# 1892 *Membranipora elliptica* v. HAG. sp. – HENNIG, p. 13, Pl. 1, figs. 1–2.
- non# 1892 *Membranipora elliptica* v. HAG. sp. – POČTA, p. 30.
- non# 1895 *Membranipora elliptica* n.sp. – MACGILLIVRAY, p. 35, Pl. IV, fig. 12.
- non# 1900 *Membranipora elliptica* REUSS [sic] – CANU, p. 354.
- non# 1903 *Membranipora elliptica* RSS. [sic] – CANU, p. 661, Pl. XXI, fig. 6.
- non# 1904 *Membranipora elliptica* HAG. [1839] – CANU, p. 13, Pl. XXXIII, fig. 1.
- non# 1907 *Membranipora elliptica* HAG., 1839 – CANU, p. 61, Pl. I, fig. 17 (imaged as *Membranipora elliptica* REUSS).
- # 1907 *Membranipora elliptica* HAG. – LEVINSSEN, Fig. 8.
- non# 1909 *Membranipora elliptica* HAGENOW, 1839 – CANU, p. 444, Pl. XV, fig. 4.
- non# 1911 *Membranipora elliptica*, HAG. sp. – FRIČ, p. 61, Fig. 225A–D.
- non# 1912 *Membranipora elliptica* REUSS, 1847 [sic] – CANU, p. 194, Pl. X, figs. 4–8.
- non# 1921 *Electra elliptica* REUSS, 1874 [sic] – CIPOLLA, p. 23, Pl. I, fig. 5.
- non# 1924a *Membranipora elliptica* v. HAGENOW – VOIGT, p. 191.
- # 1925 *Membranipora elliptica* (v. HAG.) – LEVINSSEN, p. 317, Pl. I, fig. 12a–b.
- non# 1927 *Electra elliptica* HAG. – ZUFFARDI COMERCI, p. 22, Pl. II, fig. 1.
- # 1930 *Membranipora elliptica* v. HAGENOW – VOIGT, p. 419, Pl. 3, figs. 11–12.
- # 1935 *Marginaria elliptica* ROEMER, 1841 [sic] – BASSLER, p. 143.
- non# 1936 *Membranipora elliptica* REUSS, 1872 – ALLÈGRE, p. 97.
- non# 1939 *Membranipora elliptica* – REUSS 1872 [sic] – ALLÈGRE, p. 164.
- p# 1939 *Membranipora ambigua* nom. nov. – ALLÈGRE, p. 164.
- non# 1958 *Membranipora elliptica* von HAGENOW, 1839 – DUCASSE, p. 19, Pl. I, fig. 2.
- # 1959a *Membranipora elliptica* (v. HAGENOW), 1839 – VOIGT, p. 14, Fig. 2.

non# 1976 *Marginaria elliptica* (HAGENOW), 1838 [sic] – CHIPLONKAR & GHARE, p. 64, Pl. V, fig. 13.

1989b *Marginaria elliptica* (v. HAGENOW, 1839) – VOIGT, p. 29, Pl. 3, figs. 1–4.

non# 2006 *Marginaria elliptica* ROEMER, 1841 [sic] – ŽÁGORŠEK & VODRÁŽKA, p. 168, Pl. 3, fig. 4.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 26417 (VOIGT, 1959a, Fig. 2).

Original label: VOIGT collection number 669.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

Further distribution: Maastrichtian, Hemmoor, Lower Saxony, Germany; glacial drift containing white chalk or flint in northern Germany. Early Maastrichtian, Island of Møn, Zealand Region, Denmark; Aalborg, Nordjylland Region, Denmark; Saturn pit near Krons Moor, Schleswig-Holstein, Germany. Late Maastrichtian, Stevns Klint in the Stevns Kommune, Zealand Region, Denmark; Kvarnby, Husie district, Malmö, Skåne län, Sweden.

Stratigraphical range: Maastrichtian.

Remarks: *Marginaria elliptica* is the type species of *Marginaria* ROEMER, 1841. When ROEMER first erected it, he assigned *C. elliptica* and seven other species to it without selecting a type species. *Marginaria elliptica* was chosen as the type species by BASSLER (1935). VOIGT (1959a), when selecting a neotype for the species, rejected BASSLER's assignment because BASSLER (1935) had provided no description of *Marginaria* and therefore VOIGT assigned *M. elliptica* to *Membranipora* BLAINVILLE, 1830. Subsequently, however, VOIGT (1989b) accepted *M. elliptica* as the type species of *Marginaria* and provided a comprehensive revision of the genus. The SEM images of a specimen purported to be the neotype of *M. elliptica* were figured by VOIGT (1989b) in Pl. 3, figs. 2–3. However, the specimen shown on these images is not the neotype but VOIGT collection number 10657 (=SMF 25838). This specimen shows spine bases on the gymnocyst of the avicularium, which are not evident in the neotype. The specimen figured by ŽÁGORŠEK and VODRÁŽKA (2006) from the Turonian of the Czech Republic is not conspecific with *M. elliptica* as avicularia are rare and have a pivotal bar, which is not present in the true *M. elliptica*.

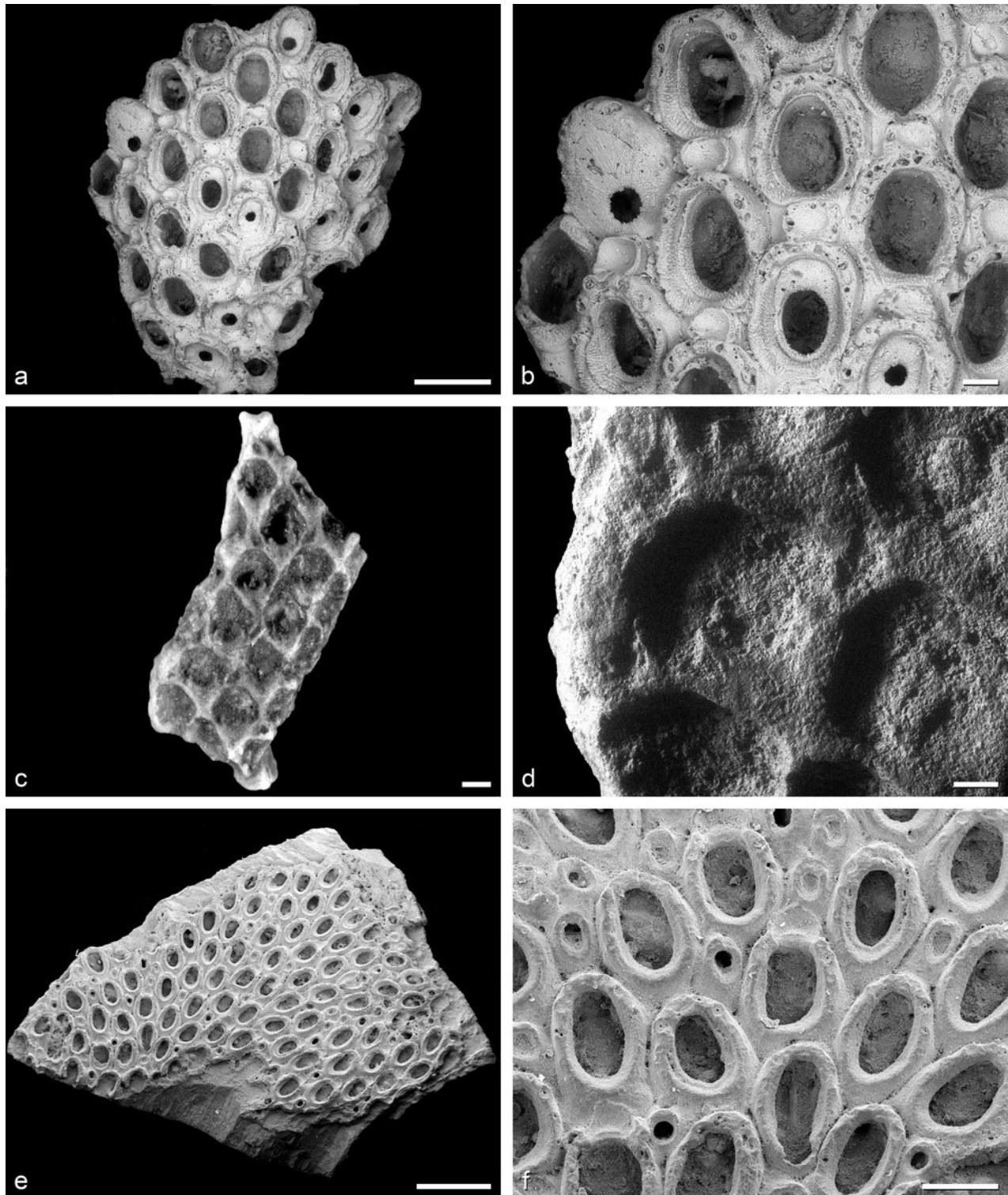


Figure 43: a-b *Flustrellaria tegulata* (VOIGT, 1987), holotype, SMF 25524, earliest Danian, Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands. c-d *Kunradocella kunradensis* (VOIGT, 1930), neotype, SMF 26354, late Maastrichtian (*Belemnitella junior* belemnite Zone), Sehnde-Ilten, Lower Saxony, Germany. e-f *Marginaria elliptica* (HAGENOW, 1839), neotype, SMF 26417, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany.

Scale bars: e 1 mm; a 500 µm; c, f 250 µm; b, d 100 µm.

***Marginaria sarthacensis* VOIGT, 1989**

(Fig. 44a–b)

*# 1989b *Marginaria sarthacensis* n.sp. – VOIGT, p. 36, Pl. 6, figs. 1–4.

Holotype: SMF 26104 (VOIGT, 1989b, Pl. 6,

figs. 1–4).

Original label: VOIGT collection number 10998.

Locus typicus: Saint-Calais, Sarthe, Pays de la Loire, France.



Stratum typicum: Chalk marl containing *Terebratula carantonensis*.

Stratigraphical range: Late Cenomanian.

Genus *Pachybaktropora* VOIGT, 1999

***Pachybaktropora uniserialis* VOIGT, 1999**

(Fig. 44c–d)

*# 1999 *Pachybaktropora uniserialis* n.sp. – VOIGT, p. 310, Pl. 7, figs. 62–73.

Holotype: SMF 26243 (VOIGT, 1999, Pl. 7, figs. 62–63).

Original label: VOIGT collection number 14213.

Locus typicus: Glacial drift deposit near Neu Wulmstorf-Daerstorf, Lower Saxony, Germany.

Stratum typicum: Glacial drift of Danian age.

Stratigraphical range: Danian.

Remarks: *Pachybaktropora uniserialis* is the type species of *Pachybaktropora* VOIGT, 1999.

Genus *Pithodella* MARSSON, 1887

***Pithodella impar* VOIGT, 1987**

(Fig. 44e–f)

*# 1987a *Pithodella impar* n.sp. – VOIGT, p. 40, Pl. 11, figs. 1–4.

Holotype: SMF 25525 (VOIGT, 1987a, Pl. 11, fig. 4).

Original label: VOIGT collection number 7506.

Locus typicus: Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Basal beds of the Tuffeau de Ciply.

Further distribution: Danian, Mons borehole and F.P. Mons borehole in Mons and Ciply, Mons municipality, Wallonia, Belgium; Waterschei borehole in Genk; Albert Canal near Riemst-Vroenhoven (both Flanders, Belgium); Curfs Quarry near Berg, Valkenburg aan de Geul municipality; Beatrix borehole near Neer, Leudal municipality (both Limburg, Netherlands).

Stratigraphical range: Danian.

Genus *Stamenocella*

CANU & BASSLER, 1917

***Stamenocella marlierei* VOIGT, 1987**

(Fig. 45a–b)

*# 1987a *Stamenocella marlierei* n.sp. – VOIGT, p. 41, Pl. 11, figs. 5–13.

Holotype: SMF 25526 (VOIGT, 1987a, Pl. 11, fig. 8).

Original label: VOIGT collection number 2543.

Locus typicus: Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Basal beds (Tuffeau de la Malogne) of the Tuffeau de Ciply.

Further distribution: Danian, Mons borehole and F.P. Mons borehole, Mons and Ciply, Mons municipality, Wallonia, Belgium; Waterschei borehole in Genk; Albert Canal near Riemst-Vroenhoven; Eisdien shaft near Maasmechelen (all Flanders, Belgium); Curfs Quarry near Berg, Valkenburg aan de Geul municipality; Beatrix borehole near Neer, Leudal municipality (both Limburg, Netherlands).

Stratigraphical range: Danian.

Genus *Unidistelopora*

OSTROVSKY & TAYLOR, 2004

Unidistelopora krauseae

(VOIGT & SCHNEEMILCH, 1986)

(Fig. 45c–d)

*# 1986 *Allantopora krauseae* n.sp. – VOIGT & SCHNEEMILCH, p. 114, Pl. 1, figs. 1–7.

2004 *Unidistelopora krauseae* (VOIGT and SCHNEEMILCH, 1986) – OSTROVSKY & TAYLOR, p. 784, Pl. 4, figs. 1–6.

2005 *Unidistelopora krauseae* (VOIGT & SCHNEEMILCH, 1986) – OSTROVSKY & TAYLOR, p. 325, Figs. 5A, B, 21D, 24P.

2013 *Unidistelopora krauseae* (VOIGT & SCHNEEMILCH, 1986) – OSTROVSKY, Figs. 2.10A, B.

Holotype: SMF 25912 (VOIGT & SCHNEEMILCH, 1986, Pl. 1, figs. 1–3).

Original label: VOIGT collection number 11025.

Locus typicus: Alemannia quarry near Sehnde-Höver, Lower Saxony, Germany.

Stratum typicum: White chalk marl.

Further distribution: Early Campanian, chalk pit of the cement factory Alsen-Breitenburg near Lägerdorf, Schleswig-Holstein, Germany.

Stratigraphical range: Early Campanian.

Remarks: *Unidistelopora krauseae* is the type species of *Unidistelopora* OSTROVSKY & TAYLOR, 2004. I. KRAUSE collected the holotype, which encrusts a fragment of octocoral, and gave it to VOIGT.

Genus *Wilbertopora* CHEETHAM, 1954

***Wilbertopora brandesi* (VOIGT, 1930)**

(Fig. 45e–f)

*# 1930 *Membranipora brandesi* n.sp. – VOIGT, p. 424, Pl. 4, fig. 12.

2014 *Membranipora brandesi* VOIGT, 1930 – MARTHA, Fig. 8A–B.

2015 *Wilbertopora brandesi* (VOIGT, 1930) – MARTHA et al., p. 701, Figs. 8a–g, 9.

Holotype: SMF 29999 (VOIGT, 1930, Pl. 4, fig. 12).

Original label: 3/7.

Locus typicus: Abandoned quarry of the former iron-ore mine of Bülten-Adenstedt near Ilse-de-Groß Bülten, Lower Saxony, Germany.

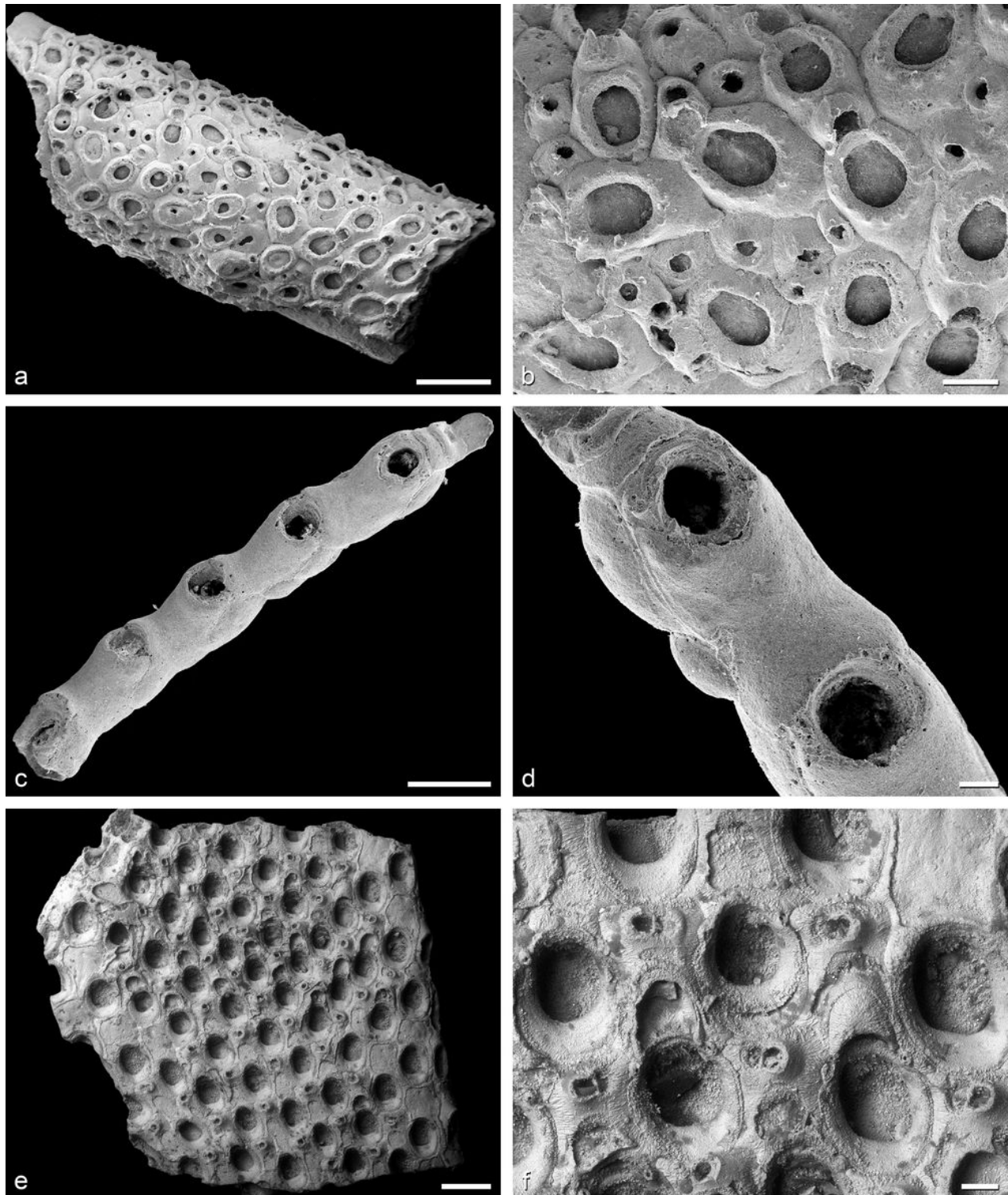


Figure 44: a-b *Marginaria sarthacensis* VOIGT, 1989, holotype, SMF 26104, late Cenomanian, Saint-Calais, Sarthe, Pays de la Loire, France. c-d *Pachybaktropora uniserialis* VOIGT, 1999, holotype, SMF 26243, Danian, Neu Wulmstorf-Daerstorf, Lower Saxony, Germany. e-f *Pithodella impar* VOIGT, 1987, holotype, SMF 25525, Danian, Ciply in the municipality Mons, Wallonia, Belgium.

Scale bars: a 1 mm; c, e 500 µm; b 250 µm; d, f 100 µm.

Stratum typicum: Glauconitic arenaceous limestone of the Gehrden Formation, *Gonioteuthis westfalica* belemnite Zone, middle Santonian.

Stratigraphical range: Middle Santonian.

Remarks: The holotype belongs to the BRANDES Collection and is the only specimen from VOIGT (1930) that could be recovered (MARTHA, 2014).

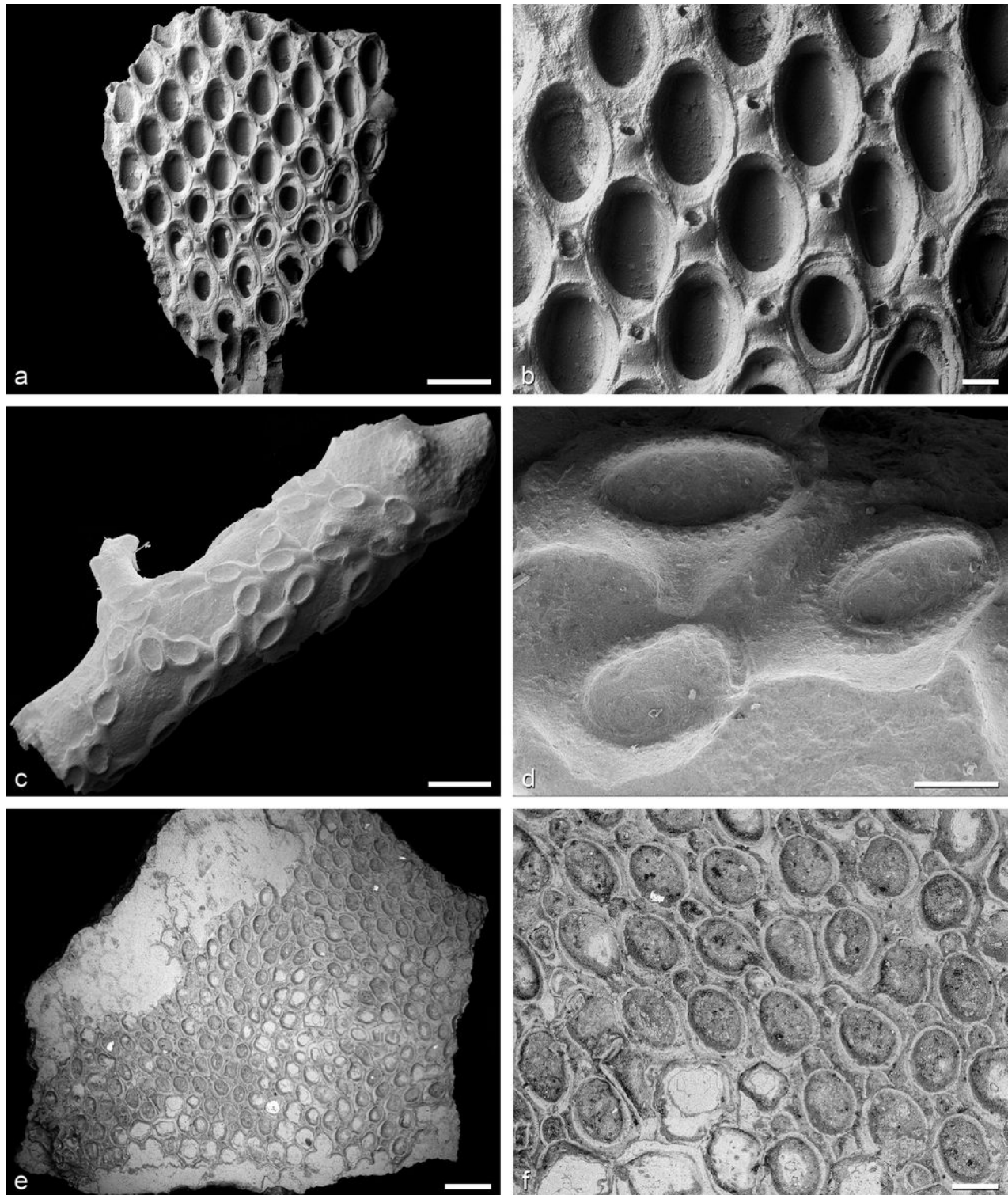


Figure 45: a-b *Stamenocella marlierei* VOIGT, 1987, holotype, SMF 25526, Danian, Ciply in the municipality Mons, Wallonia, Belgium. c-d *Unidistelopora krauseae* (VOIGT & SCHNEEMILCH, 1986), holotype, SMF 25912, early Campanian, Alemannia quarry near Sehnde-Höver, Lower Saxony, Germany. e-f *Wilbertopora brandesi* (VOIGT, 1930), holotype, SMF 29999, middle Santonian (*Gonioteuthis westfalica* belemnite Zone), abandoned quarry of the former iron-ore mine of Bülten-Adenstedt near Ilsede-Groß Bülten, Lower Saxony, Germany. Scale bars: c, e 1 mm; a 500 µm; d, f 250 µm; b 100 µm.

***Wilbertopora capsula* (VOIGT, 1949)**
(Fig. 46a–b)

*# 1949 *Membranipora capsula* n.sp. – VOIGT, p. 14, Pl. 3, fig. 1, Pl. 4, fig. 6.

Holotype: SMF 26267 (VOIGT, 1949, Pl. 3, fig. 1, Pl. 4, fig. 6).

Original label: VOIGT collection number 114.



Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk of the *Gonioteuthis quadrata* belemnite Zone.

Further distribution: Early Campanian, Lüneburg-Zeltberg, Lower Saxony, Germany.

Stratigraphical range: Early Campanian.

Remarks: *Wilbertopora capsula* resembles *Membranipora cuculligera* BRYDONE, 1914, which has similar avicularia, but has smaller autozooids and no spine bases.

***Wilbertopora oxyteichos* (VOIGT, 1930)**

(Fig. 46c–d)

- *# 1930 *Membranipora* (*Membraniporida*) *oxyteichos* n.sp. – VOIGT, p. 427, Pl. 5, figs. 7–8.
- # 1949 *Membranipora oxyteichos* VOIGT – VOIGT, p. 12, Pl. 2, fig. 1.
- ?# 1958 *Membranipora oxyteichos* VOIGT, 1930 – DUCASSE, p. 36, Pl. II, fig. 8.

Syntypes: This material belonged to the first VOIGT Collection that was destroyed in a fire at the *Geologisches Staatsinstitut Hamburg* in 1943.

Locus typicus: Hannover-Misburg, Lower Saxony, Germany.

Stratum typicum: Early Campanian (*Gonioteuthis quadrata* belemnite Zone).

Neotype: SMF 26262 (VOIGT, 1949, Pl. 2, fig. 1).

Original label: VOIGT collection number 153.

Locus neotypicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum neotypicum: White chalk of the *Gonioteuthis quadrata* belemnite Zone.

Further distribution: Early Campanian (*Belemnitella mucronata senior* belemnite Zone), Hannover-Misburg, Lower Saxony, Germany.

Stratigraphical range: Early Campanian.

Family Chaperiidae JULLIEN, 1888

Genus *Amphiblestrella*

PRUD'HOMME, 1961

Amphiblestrella elegans

(HAGENOW, 1851)

(Fig. 46e–f)

- *# 1851 *Siphonella elegans*, HAG. – HAGENOW, p. 84.
- # 1851 *Siphonella gracilis*, HAG. – HAGENOW, Pl. VI, fig. 7.
- # 1851 *Flustrella baculina* d'ORB., 1851 [sic] – HAGENOW, p. 291, Pl. 699, figs. 4–6.
- # 1886 *Membranipora elegans*, HAGENOW – PERGENS & MEUNIER, p. 239.
- # 1887 *Membranipora elegans* v. HAGENOW sp. – MARSSON, p. 59.
- # 1925 *Membranipora elegans* (v. HAG.) – LEVINSEN, p. 338, Pl. III, fig. 32a–b.
- # 1925 *Membranipora elegans* (v. HAG.). var. *faxensis* – LEVINSEN, p. 339.

- # 1930 *Amphiblestrella elegans* v. HAG. – VOIGT, p. 448, Pl. 13, figs. 13–16.
- # 1961 *Amphiblestrella elegans* (von HAGENOW), 1851 – PRUD'HOMME, p. 949.
- # 1962 *Amphiblestrella elegans* (v. HAGENOW) and *Amphiblestrella elegans faxensis* (LEVINSEN) – BERTHELSEN, p. 100, Pl. 9, figs. 1–5.
- # 1963 *Amphiblestrella elegans* (von HAGENOW, 1851) – VEENSTRA, p. 104, Pl. 3, fig. 14.
- # 1968c *Amphiblestrella elegans* (von HAGENOW) – VOIGT, p. 20, Pl. 4, figs. 1–3.
- # 1979 *Ellisina elegans* (von HAGENOW) – MEDD, p. 20, Pl. 3, figs. 2–7.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Maastricht, Limburg, Netherlands.

Stratum typicum: Tuffeau de Maastricht.

Neotype: SMF 26473 (MEDD, 1979, Pl. 3, figs. 2–6).

Original label: VOIGT collection number 3606.

Locus neotypicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum neotypicum: Tuffeau de Maastricht, late Maastrichtian

Further distribution: Late Campanian, Meudon, Île-de-France, France. Early Maastrichtian, Island of Møn, Zealand Region, Denmark; Island of Rügen, Mecklenburg-Vorpommern, Germany. Late Maastrichtian, Chef-du-Pont, Néhou and Sainte-Colombe, Manche, Normandy, France; Tornesch, Schleswig-Holstein, Germany. Danian, Faxø quarries; Herfølge, Køge Kommune; Kagstrup, Solrød Kommune; Stevns Klint in the Stevns Kommune (all Zealand Region, Denmark); Island of Salt-holm and Torslunde near Taastrup, Capital Region, Denmark; Voldum, Favrskov Kommune, Midtjylland Region, Denmark; Klintholm, island of Funen, South Denmark Region, Denmark; Köthen (Anhalt), Saxony-Anhalt, Germany.

Stratigraphical range: Late Campanian to Danian.

Amphiblestrella ringens

(HAGENOW, 1839)

(Fig. 47a–b)

- ?*# 1839 *Cellepora ringens* nob. – HAGENOW, p. 278.
- non# 1841 *Discopora* (*Cellepora*) *ringens* v. HAGENOW – ROEMER, p. 12.
- # 1851 *Cellepora* (*Discop.*) *ringens*, HAG. – HAGENOW, p. 92, Pl. XI, fig. 8.
- # 1887 *Semieschara ringens* v. HAGENOW sp. – MARSSON, p. 74.
- # 1892 *Periteichisma ringens* v. HAG. sp. – HENNING, p. 23, Pl. 1, fig. 9.
- p# 1910 *Membranipora Britannica*, mihi – BRYDONE, p. 76, Pl. VIII, fig. 4 (non Pl. VIII, fig. 3).

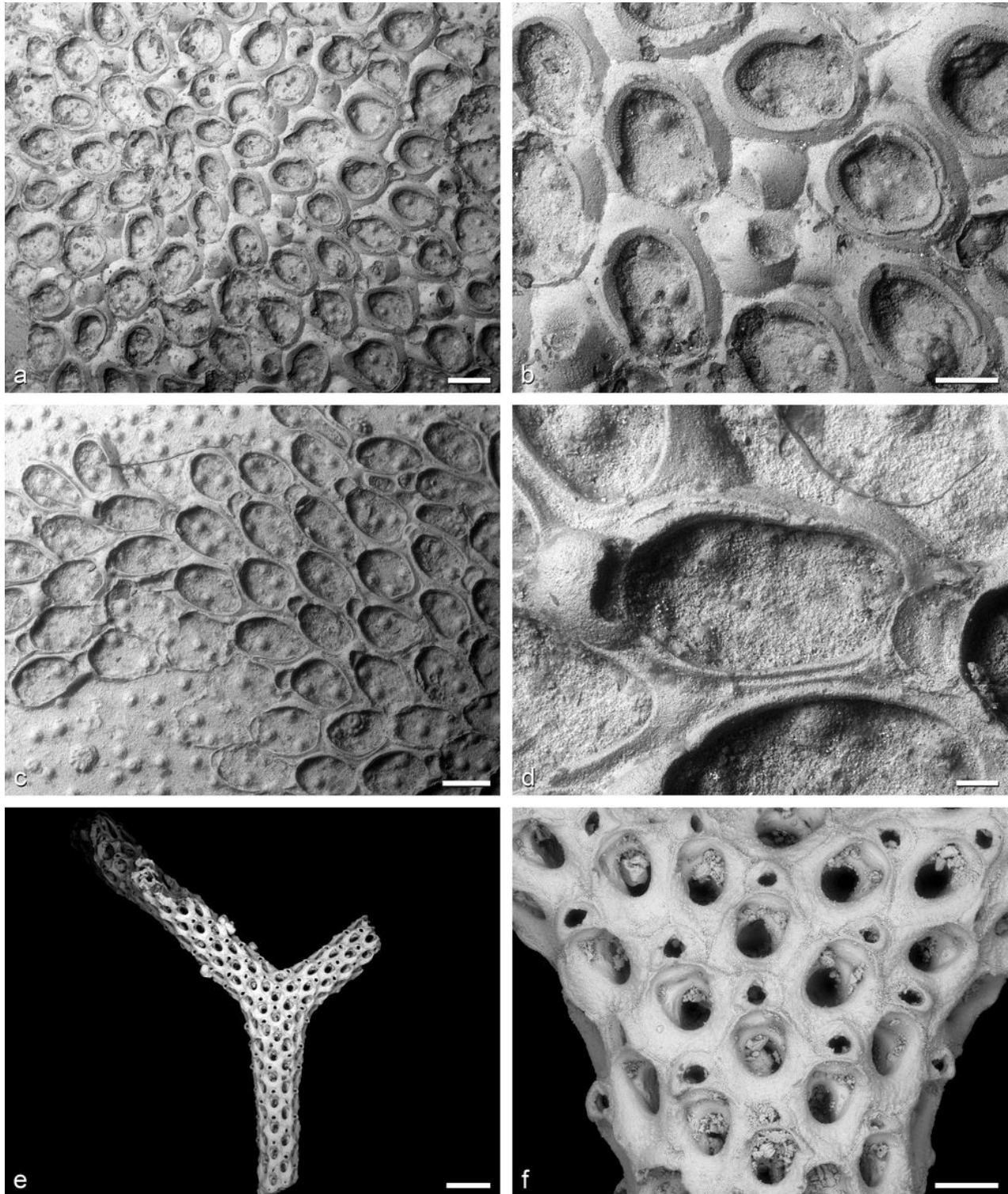


Figure 46: a-b *Wilbertopora capsula* (VOIGT, 1949), holotype, SMF 26267, early Campanian (*Gonioteuthis quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. c-d *Wilbertopora oxyteichos* (VOIGT, 1930), holotype, SMF 26267, early Campanian (*Gonioteuthis quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. e-f *Amphiblestrella elegans* (HAGENOW, 1851), neotype, SMF 26473, late Maastrichtian, Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Scale bars: e 1 mm; a, c 500 µm; b, f 250 µm; d 100 µm.

1910 *Membranipora Britannica*, var. *demissa*, nov. – BRYDONE, p. 77, Pl. VIII, fig. 6.

p# 1916 *Membranipora demissa*, nov. – BRYDONE, p. 98, Pl. VI, fig. 5.

1930 *Amphiblestrum ringens* v. HAGENOW – VOIGT, p. 447, Pl. 13, figs. 8–9.

?# 1930 *Amphiblestrum ringens* v. HAG. nov. var. *major* – VOIGT, p. 447, Pl. 13, fig. 10.

1936 *Semieschara tumefacta*, nov. – BRYDONE, p. 81, Pl. XXXIX, fig. 12.

1959a *Amphiblestrum ringens* (v. HAGENOW), 1839 – VOIGT, p. 31.



- # 1961 *Amphiblestrella ringens* (von HAGENOW), 1839 – PRUD'HOMME, p. 947.
1963 *Amphiblestrella ringens* (von HAGENOW, 1839) – VEENSTRA, p. 103, Pl. 3, fig. 13.
?# 1963 *Amphiblestrella ringens* (von HAGENOW), var. *major* VOIGT, 1930 – VEENSTRA, p. 104.
1967 *Amphiblestrella ringens* (v. HAGENOW, 1839) – VOIGT, p. 14, Pl. 3, figs. 1–2.
1979 *Ellisina ringens* (von HAGENOW) – MEDD, p. 17, Fig. 5, Pl. 2, figs. 7–11, Pl. 3, fig. 1, Pl. 4, figs. 1–2.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maas-trichtian age.

Neotype: SMF 26471 (MEDD, 1979, Pl. 2, figs. 7–8).

Original label: VOIGT collection number 3605.

Locus neotypicus: Hemmoor, Lower Saxony, Germany.

Stratum neotypicum: White chalk of late Maastrichtian age.

Further distribution: Early Campanian, Balsberg north of Kristianstad; Maltesholms slott near Kristianstad; Annetorp, Malmö (all Skåne län, Sweden). Late Campanian, Staversvad near Kristianstad-Arkelstorp, Sweden. Early Maastrichtian, unspecified locality along the Emba River (Kazakh: Ембі or Жем; Russian: Эмба), Aktobe or Mangystau Province, Kazakhstan; "Teschewa" Gorge, Kopet Dag Mountains, northwest of Ashgabat, Turkmenistan; Studland, Dorset; Weybourne, Norfolk (both England, United Kingdom) and several other localities in southern and eastern England. Late Maastrichtian, "Teschewa" Gorge, Kopet Dag Mountain range, northwest of Ashgabat, Turkmenistan; Trimingham, Norfolk, England, United Kingdom and several other localities in southern and eastern England.

Stratigraphical range: Campanian to Maas-trichtian.

Remarks: *Amphiblestrella ringens* is the type species of *Amphiblestrella* PRUD'HOMME, 1961, the validity of which has been disputed by MEDD (1979).

Family Quadricellariidae GORDON, 1984

Genus *Cellarinidra* ORBIGNY, 1854

Cellarinidra fertilis VOIGT, 1989

(Fig. 47c–d)

- *# 1989b *Cellarinidra fertilis* n.sp. – VOIGT, p. 75, Pl. 16, figs. 15–17.

Holotype: SMF 26105 (VOIGT, 1989b, Pl. 16, fig. 16).

Original label: VOIGT collection number 11160.

Locus typicus: Quarry north of Přeboj, Central Bohemian Region, Czech Republic.

Stratum typicum: Transgressive sediments above crystalline basement (*Actinocamax plenus* ammonite Zone, early Turonian).

Stratigraphical range: Early Turonian.

Remarks: In the figure caption for Pl. 16, fig. 16, 10993B is indicated as the VOIGT collection number of the holotype. However, this specimen is imaged in Pl. 16, fig. 13 as *Cellarinidra turo-nensis* (ORBIGNY, 1851). The correct VOIGT collection number for the holotype of *C. fertilis* is 11160.

Genus *Nellia* BUSK, 1852

'*Nellia*' *schmidtii* (VOIGT, 1962)

(Fig. 47e–f)

- *# 1962a *Callopora schmidtii* n.sp. – VOIGT, p. 245, Pl. 27, figs. 14–18.
2005 *Callopora schmidtii* VOIGT, 1962 – HINZ-SCHALLREUTER & SCHALLREUTER, p. 534.

Holotype: SMF 24140 (VOIGT, 1962a, Pl. 27, fig. 18).

Original label: VOIGT collection number 3541.

Locus typicus: Either a former brick factory in Oststeinbek-Havighorst, Schleswig-Holstein, or glacial drift H, Neu Wulmstorf, Lower Saxony, Germany.

Stratum typicum: Glacial drift deposit containing white chalk of late Maastrichtian age.

Further distribution: Late Maastrichtian, glacial drift A containing flint, gravel pit near Neu Wulmstorf, Lower Saxony, Germany.

Stratigraphical range: Late Maastrichtian.

Remarks: VOIGT (1962a) indicated a former brick factory in Havighorst as the type locality, whereas the original label of the holotype indicates that the specimen came from the glacial drift H near Neu Wulmstorf, which is situated about 25 km southwest of Havighorst.

Superfamily Cellarioidea

LAMOUROUX, 1821

Family Cellariidae LAMOUROUX, 1821

Genus *Hemistylus* VOIGT, 1928

Hemistylus dissimilis VOIGT, 1987

(Fig. 48a–b)

- *# 1987a *Hemistylus dissimilis* n.sp. – VOIGT, p. 75, Pl. 16, figs. 14–26.

Holotype: Not found (VOIGT, 1987a, Pl. 16, figs. 14–15).

Original label: VOIGT collection number 8051.

Locus typicus: Sophia Jacoba shaft near Hückelhoven, North Rhine-Westphalia, Germany.

Stratum typicum: Danian calcarenite.

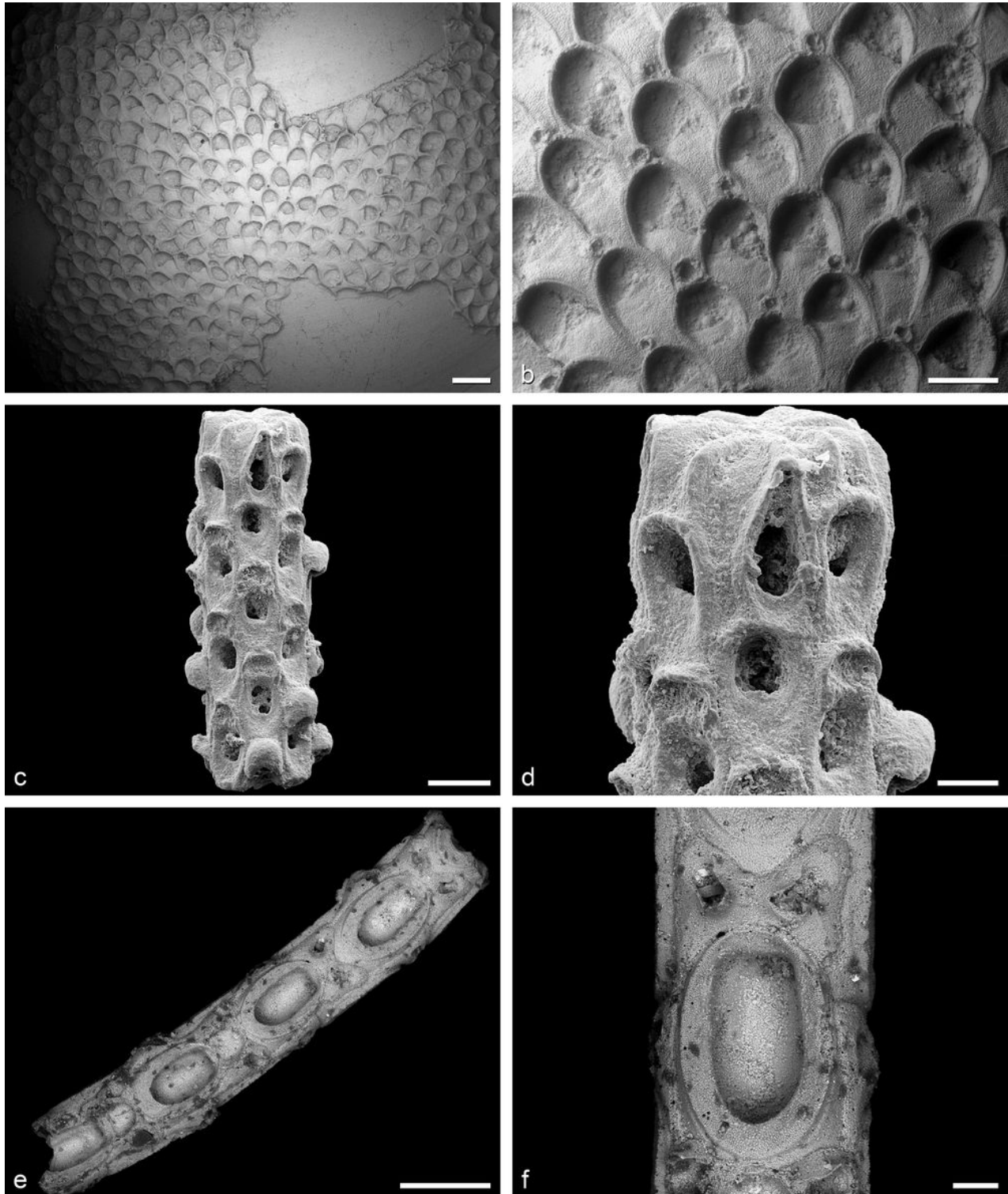


Figure 47: a-b *Amphiblestrella ringens* (HAGENOW, 1839), neotype, SMF 26471, late Maastrichtian, Hemmoor, Lower Saxony, Germany. c-d *Cellarinidra fertilis* VOIGT, 1989, holotype, SMF 26105, early Turonian (*Actinocamax plenus* ammonite Zone), quarry north of Přeboj, Central Bohemian Region, Czech Republic. e-f '*Nellia*' *schmidtii* (VOIGT, 1962), holotype, SMF 24140, late Maastrichtian, either from a former brick factory in Oststeinbek-Havighorst, Schleswig-Holstein or from Neu Wulmstorf, Lower Saxony, Germany. Scale bars: a 1 mm; b, e 500 µm; c 250 µm; d, f 100 µm.

Further distribution: Danian, Mons borehole, Mons, Wallonia, Belgium; Stevns Klint in the Stevns Kommune, Zealand Region, Denmark; Beatrix borehole and Neer borehole near Neer, Leudal municipality, Limburg, Netherlands.

Stratigraphical range: Danian.

Remarks: The holotype was listed by EISERHARDT (1998). Here, we image specimen SMF 25537 (VOIGT collection number 8211), which was figured by VOIGT (1987a, Pl. 16, figs. 24–26).

**Superfamily Microporoidea GRAY, 1848****Family Coscinopleuridae CANU, 1913****Genus Acoscinopleura VOIGT, 1956*****Acoscinopleura crassa*
KOROMYSLOVA et al., 2018**

(Fig. 48c–d)

- *# 2018 *Acoscinopleura crassa* sp. nov. – KOROMYSLOVA et al., p. 256, Figs. 3i–j, 7a–m.

Holotype: SMF 29950 (KOROMYSLOVA et al., 2018, Figs. 3i–j, 7a–f).

Original label: None.

Locus typicus: Hemmoor, Lower Saxony, Germany.

Stratum typicum: White chalk of the late Maastrichtian.

Paratypes: SMF 29951–29952.

Further distribution: Early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratigraphical range: Early to late Maastrichtian.

***Acoscinopleura dualis*
KOROMYSLOVA et al., 2018**

(Fig. 48e–f)

- p# 1956 *Acoscinopleura fallax* n.g. n.sp. – VOIGT, p. 54, Pl. 10, figs. 3, 6–7 (non Pl. 10, figs. 1–2, 4–5).
- *# 2018 *Acoscinopleura dualis* sp. nov. – KOROMYSLOVA et al., p. 253, Figs. 3g–h, 6a–j.

Holotype: SMF 24098 (KOROMYSLOVA et al., 2018, Figs. 3g–h, 6a–h).

Original label: VOIGT collection number 2384.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of the *Belemnella lanceolata* belemnite Zone (early Maastrichtian).

Paratypes: SMF 24092–24093.

Further distribution: Late Maastrichtian, Hemmoor-Basbeck, Lower Saxony, Germany.

Stratigraphical range: Early to late Maastrichtian.

***Acoscinopleura fallax* VOIGT, 1956**
(Fig. 49a–b)

- ?# 1840 *Eschara gladiiformis* nob. – HAGENOW, p. 645.
- ?# 1930 *Coscinopleura lamourouxii* v. HAGENOW – VOIGT, p. 491, Pl. 25, fig. 18.
- *p# 1956 *Acoscinopleura fallax* n.sp. – VOIGT, p. 54, Pl. 10, fig. 1 (non Pl. 10, figs. 2–7).
- ?# 1959a *Eschara gladiiformis* v. HAG. = *Acoscinopleura fallax* VOIGT, 1956 – VOIGT, p. 47.
- ?# 1969 *Acoscinopleura fallax* VOIGT, 1956 – MA-

RYAŃSKA, p. 115, Pl. XI, fig. 1.

- ?# 1992 *Acoscinopleura fallax* VOIGT, 1956 – FAVORSKAYA, p. 130, Pl. 69, figs. 6–8.

non# 2015 *Acoscinopleura fallax* VOIGT, 1956 – KOROMYSLOVA et al., p. 55, Fig. 1Д–Ж.

- # 2018 *Acoscinopleura fallax* VOIGT, 1956 – KOROMYSLOVA et al., p. 258, Figs. 3k, 8a–h.

Holotype: SMF 24097 (VOIGT, 1956, Pl. 10, fig. 1).

Original label: VOIGT collection number 2389.

Locus typicus: Hemmoor, Lower Saxony, Germany.

Stratum typicum: *Belemnitella junior* belemnite Zone in the late Maastrichtian.

Stratigraphical range: Late Maastrichtian.

Remarks: VOIGT (1959a) regarded *Acoscinopleura fallax* as a junior synonym of *Eschara gladiiformis* HAGENOW, 1840, after examining material recovered from the HAGENOW collection. However, as HAGENOW (1840) had provided no images of *E. gladiiformis* and the description was inaccurate, he considered *E. gladiiformis* as a *nomen nudum*. In the species description (VOIGT, 1956), Stubbenkammer on the island of Rügen is named as the type locality, whereas the original label of the specimen and the figure captions indicate that the specimen is from the *Belemnitella junior* belemnite Zone of the Hemmoor white chalk. KOROMYSLOVA et al. (2018) re-examined the type material and restricted *A. fallax* to the holotype only.

***Acoscinopleura foliacea* (VOIGT, 1930)**
(Fig. 49c–d)

- # 1925 *Rhagasostoma elegans* (v. HAG.). Variet b – LEVINSSEN, p. 369.
- *# 1930 *Coscinopleura foliacea* n.sp. – VOIGT, p. 491, Pl. 25, fig. 19, Pl. 39, fig. 8.
- ?# 1933 *Coscinopleura foliacea* VOIGT – SCHÖNFELDER, p. 93, Pl. XIV, figs. 23a–b.
- # 1956 *Acoscinopleura foliacea* (VOIGT), 1930 – VOIGT, p. 52, Pl. 8, figs. 6–7, Pl. 9, figs. 3–5.
- # 2015 *Acoscinopleura foliacea* (VOIGT, 1930) – KOROMYSLOVA et al., p. 55, Fig. 1A–Г.
- # 2018 *Acoscinopleura foliacea* (VOIGT, 1930) – KOROMYSLOVA et al., p. 245, Figs. 2a–m, 3a–b.

Holotype: The samples belonging to the first VOIGT Collection were destroyed in 1943 in a fire of the *Geologisches Staatsinstitut Hamburg*.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 26417 (VOIGT, 1956, Pl. 8, fig. 6).

Original label: VOIGT collection number 933.

Locus neotypicus: Stubbenkammer, Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

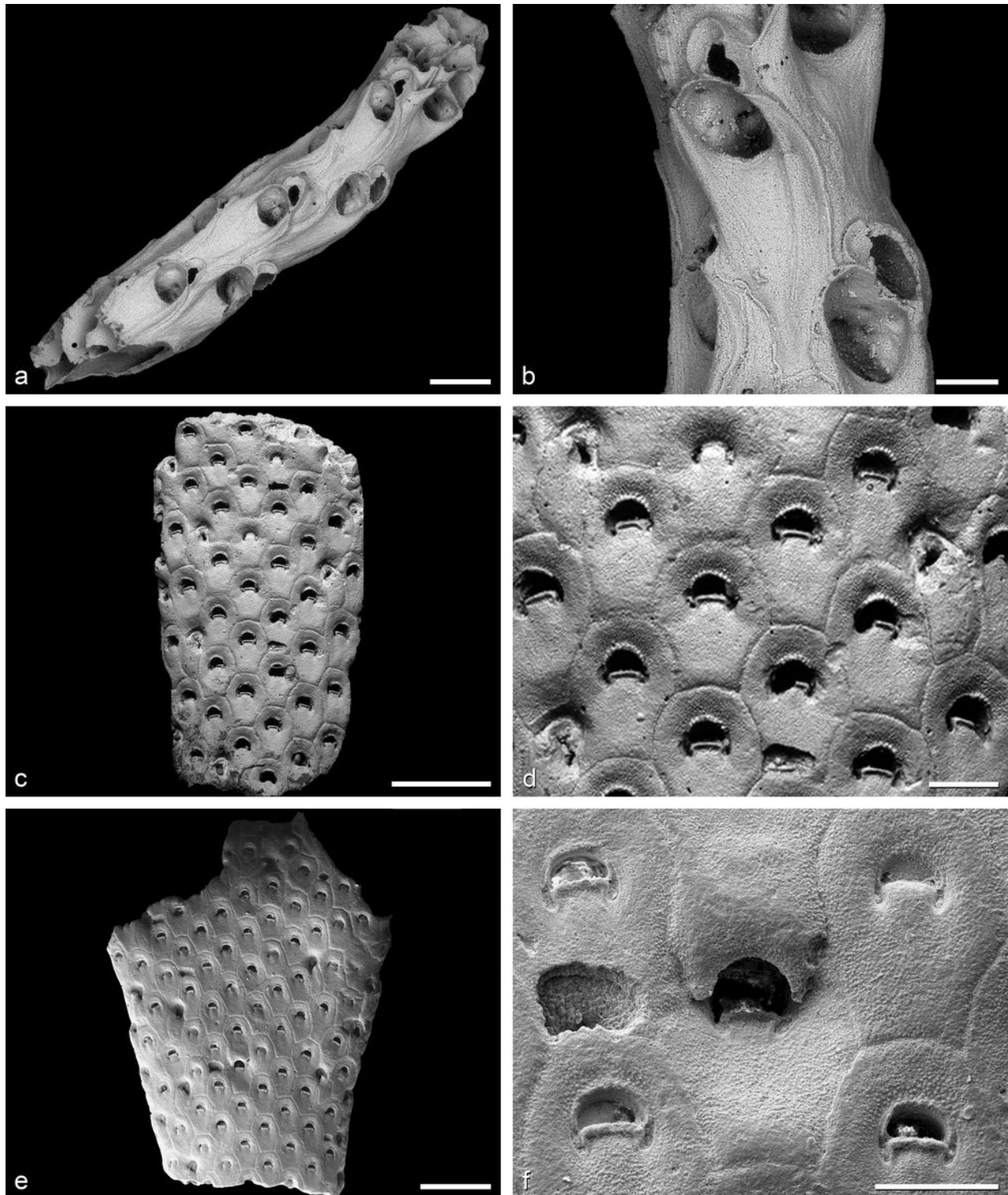


Figure 48: a-b *Hemistylus dissimilis* VOIGT, 1987, SMF 25537, early Danian, Stevns Klint in the Stevns Kommune, Zealand Region. c-d *Acoscinopleura crassa* KOROMYSLOVA *et al.*, 2018, holotype, SMF 29950, late Maastrichtian, Hemmoor, Lower Saxony, Germany. e-f *Acoscinopleura dualis* KOROMYSLOVA *et al.*, 2018, holotype, SMF 24098, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. Scale bars: c, e 1 mm; a, d, f 250 μ m; b 100 μ m.

Further distribution: Early Maastrichtian, Phosphatic Chalk near Ciply, Mons municipality, Wallonia, Belgium; Island of Møn, Zealand Region, Denmark; Aalborg, Nordjylland Region, Denmark.

Stratigraphical range: Early Maastrichtian.

Remarks: *Acoscinopleura foliacea* is the type species of *Acoscinopleura* VOIGT, 1956.

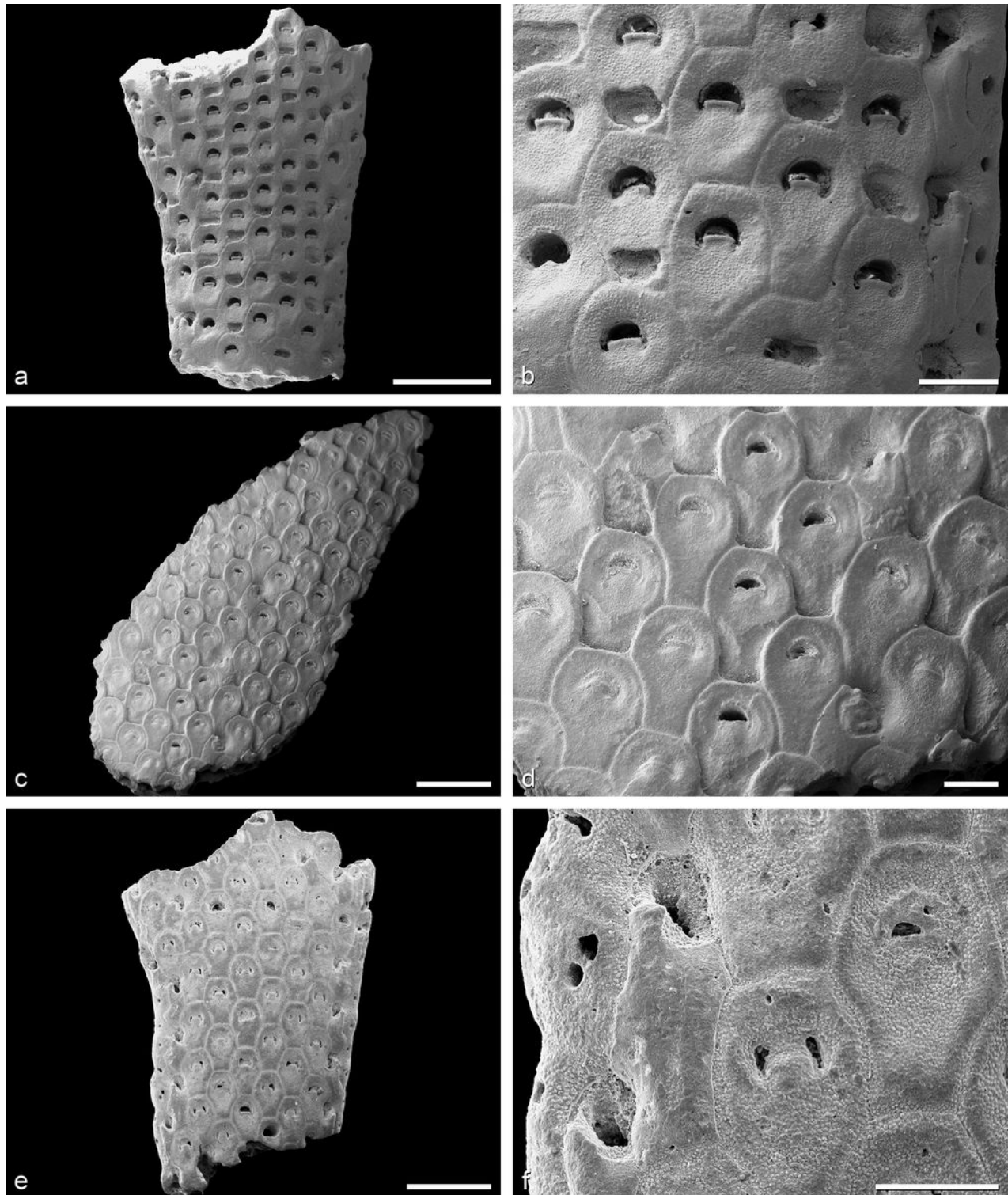


Figure 49: a-b *Acoscinopleura fallax* VOIGT, 1956, holotype, SMF 24097, late Maastrichtian (*Belemnitella junior* belemnite Zone), Hemmoor, Lower Saxony, Germany. c-d *Acoscinopleura foliacea* (VOIGT, 1930), neotype, SMF 26417, early Maastrichtian, Stubbenkammer on the island of Rügen, Mecklenburg-Vorpommern, Germany. e-f *Acoscinopleura occulta* KOROMYSLOVA *et al.*, 2018, holotype, SMF 24086, late Maastrichtian (*Belemnitella junior* belemnite Zone), Hemmoor, Lower Saxony, Germany.
Scale bars: a, c, e 1 mm; b, d, f 250 µm.

Acoscinopleura occulta
KOROMYSLOVA *et al.*, 2018
(Fig. 49e-f)

p# 1956 *Acoscinopleura fallax* n.g. n.sp. – VOIGT, p. 54, Pl. 10, figs. 2, 4–5 (non Pl. 10, figs. 1, 3, 6–7).
*# 2018 *Acoscinopleura dualis* sp. nov. – KOROMYSLOVA *et al.*, p. 259, Figs. 3l, 9a–o.



Holotype: SMF 24086 (KOROMYSLOVA *et al.*, 2018, Figs. 3l, 9a–i).

Original label: VOIGT collection number 2385.

Locus typicus: Hemmoor, Lower Saxony, Germany.

Stratum typicum: White chalk of the late Maastrichtian.

Paratypes: SMF 24099, 24104.

Stratigraphical range: Late Maastrichtian.

***Acoscinopleura rimosa* VOIGT, 1956**

(Fig. 50a–b)

- *# 1956 *Acoscinopleura rimosa* n.g. n.sp. – VOIGT, p. 55, Pl. 11, figs. 1–7.
- # 1979b *Acoscinopleura rimosa* VOIGT, 1956 – VOIGT, p. 50, Pl. 10, figs. 1–2.

Holotype: SMF 24096 (VOIGT, 1956, Pl. 11, figs. 5–7).

Original label: VOIGT collection number 2416.

Locus typicus: Ciply, Mons municipality, Walloonia, Belgium.

Stratum typicum: Phosphatic Chalk.

Further distribution: Late Maastrichtian, Sehn-de-Ilten, Lower Saxony, Germany; Kunrade beds near Benzenrade, Heerlen municipality; Voerendaal-Kunrade (both Limburg, Netherlands).

Stratigraphical range: Late Maastrichtian.

Remarks: The holotype is broken into two large and two small fragments, but all features of the species are still recognizable.

***Acoscinopleura rugica* VOIGT, 1956**

(Fig. 50c–d)

- *# 1956 *Acoscinopleura rugica* n.g. n.sp. – VOIGT, p. 53, Pl. 9, figs. 1–2, Pl. 12, figs. 1–3.
- ?# 1969 *Acoscinopleura rugica* VOIGT, 1956 – MARYAŃSKA, p. 116, Pl. X, fig. 2, Pl. XI, fig. 4.
- # 2015 *Acoscinopleura rugica* VOIGT, 1956 – KOROMYSLOVA *et al.*, p. 55, Fig. 13–M.
- # 2018 *Acoscinopleura rugica* VOIGT, 1956 – KOROMYSLOVA *et al.*, p. 250, Figs. 3e, 5a–k.

Holotype: SMF 24091 (VOIGT, 1956, Pl. 12, figs. 1–2).

Original label: VOIGT collection number 2381.

Locus typicus: Stubbenkammer, Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of the *Belemnella lanceolata* belemnite Zone (early Maastrichtian).

Further distribution: Late Maastrichtian, Nasiłów, Gmina Janowiec, Lublin Voivodeship, Poland.

Stratigraphical range: Early (?to late) Maastrichtian.

Remarks: The reverse side of the holotype

was figured by VOIGT (1956, Pl. 12, fig. 2) as VOIGT collection number 2409. The holotype was broken into two pieces after examination, but all features are still recognizable.

Genus *Coscinopleura* MARSSON, 1887

***Coscinopleura elegans* (HAGENOW, 1839)**

(Fig. 50e–f)

- *# 1839 *Eschara elegans* nob. – HAGENOW, p. 265, Pl. IV, figs. 3a–e.
- # 1841 *Eschara elegans* v. HAG. – ROEMER, p. 16.
- # 1846 *Eschara elegans* v. HAG. – HAGENOW, p. 608.
- # 1881 *Eschara elegans* HAGENOW – QUENSTEDT, p. 327, Pl. 154, fig. 85.
- # 1887 *Coscinopleura elegans* v. HAGENOW – MARSSON, p. 72.
- # 1892 *Rhagasostoma elegans* v. HAG. sp. – HENNIG, p. 33, Pl. 2, figs. 22–24.
- ?# 1924b *Coscinopleura elegans* v. HAGENOW – VOIGT, p. 217.
- # 1925 *Rhagasostoma elegans* (v. HAG.) Varietet a – LEVINSSEN, p. 368.
- # 1925 *Coscinopleura elegans* v. HAG. – VOIGT, Pl. 1, fig. 18.
- p# 1930 *Coscinopleura elegans* v. HAGENOW – VOIGT, p. 490, Pl. 25, fig. 16 (non Pl. 25, fig. 17).
- # 1948 *Coscinopleura elegans* (von HAGENOW) – BERTHELSEN, p. 11, Figs. 1–3.
- # 1953 *Coscinopleura elegans* HAG., 1840 – BASSLER, p. G178, Fig. 136.6.
- # 1956 *Coscinopleura elegans elegans* (v. HAG.) – VOIGT, p. 41, Pl. 2, figs. 7–8, Pl. 3, figs. 1–4, Pl. 4, figs. 6–7.
- # 1959a *Coscinopleura elegans elegans* (v. HAGENOW), 1839 – VOIGT, p. 11.
- # 1963 *Coscinopleura elegans elegans* (von HAGENOW, 1839) – VEENSTRA, p. 125, Pl. 7, figs. 6–7.
- ?# 1969 *Coscinopleura elegans elegans* (HAGENOW, 1839) – MARYAŃSKA, p. 113.
- # 1979b *Coscinopleura elegans* (v. HAGENOW, 1839) – VOIGT, p. 49, Pl. 10, fig. 3.
- # 1991b *Coscinopleura elegans* (von HAGENOW) – VOIGT, Pl. 3, fig. 9.
- # 2001 *Coscinopleura elegans* – HÅKANSSON & THOMSEN, Fig. 11.5.E.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 24055 (VOIGT, 1956, Pl. 2, fig. 7).

Original label: VOIGT collection number 2417.

Locus neotypicus: Stubbenkammer, island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

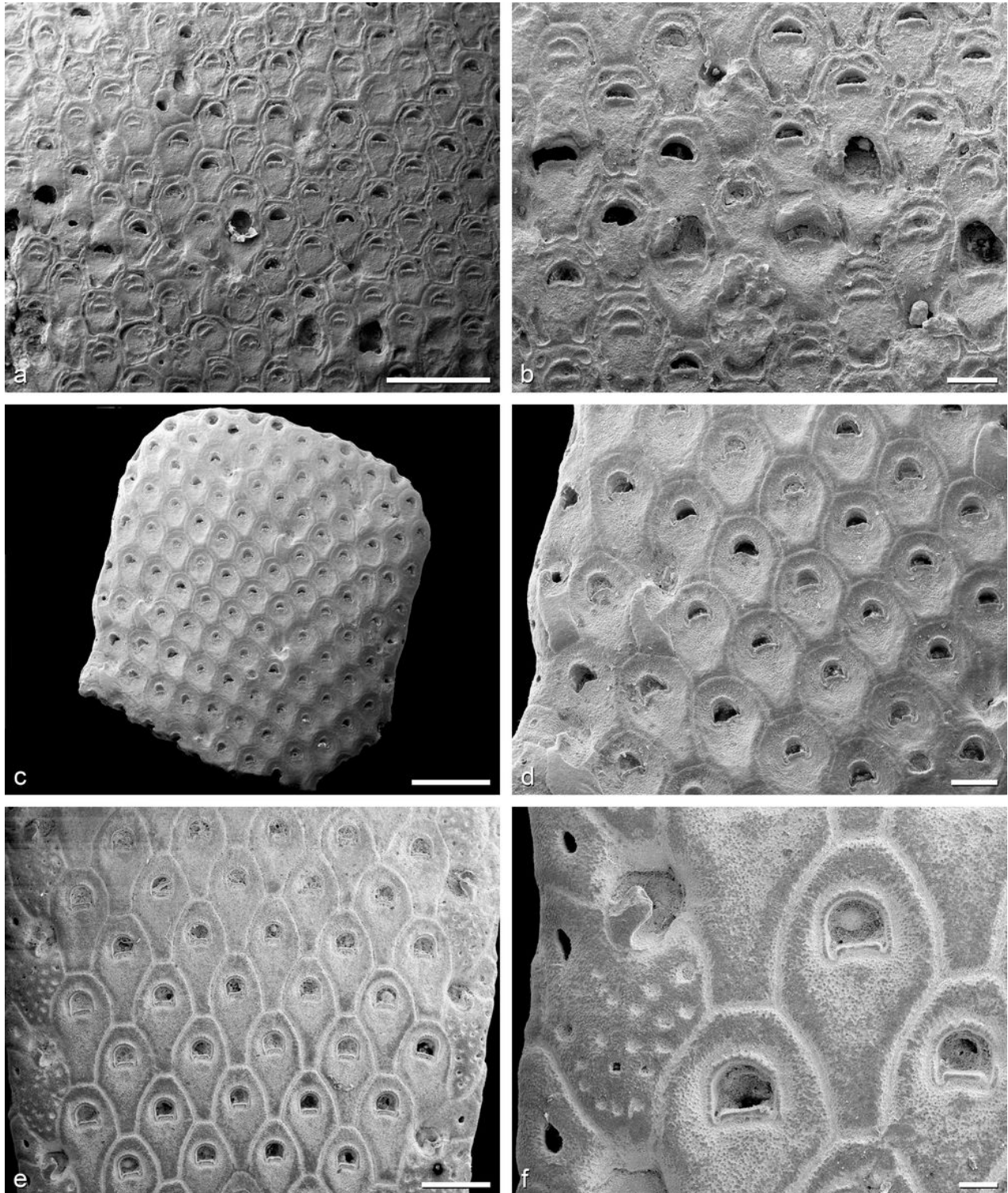


Figure 50: a-b *Acoscinopleura rimosa* VOIGT, 1956, holotype, SMF 24096, late Maastrichtian, Ciply in the municipality Mons, Wallonia, Belgium. c-d *Acoscinopleura rugica* VOIGT, 1956, holotype, SMF 24091, early Maastrichtian (*Belemnella lanceolata* belemnite Zone), Stubbenkammer on the Island of Rügen, Mecklenburg-Vorpommern, Germany. e-f *Coscinopleura elegans* (HAGENOW, 1839), neotype, SMF 24055, early Maastrichtian, Stubbenkammer on the island of Rügen, Mecklenburg-Vorpommern, Germany. Scale bars: a, c 1 mm; e 500 µm; b, d 250 µm; f 100 µm.

Further distribution: Early Maastrichtian, Phosphatic Chalk near Ciply, Mons municipality, Wallonia, Belgium; Island of Møn, Zealand Region, Denmark; Hemmoor; Zeltberg near Lüneburg (both Lower Saxony, Germany); Heide

(Holstein), Schleswig-Holstein, Germany; several deep boreholes in northwestern Germany; Trimmingham, Norfolk, England, United Kingdom. Late Maastrichtian, Stevns Klint, Zealand Region, Denmark and several other localities in Denmark;



Hamburg-Hummelsbüttel, Hamburg, Germany; Hemmoor and near Hemmoor-Basbeck (both Lower Saxony, Germany); Kunrade beds near Benzenrade, Heerlen municipality, Limburg, Netherlands; Nasiłów, Gmina Janowiec, Lublin Voivodeship, Poland. Danian (?), Kazimierz Dolny, Lublin Voivodeship, Poland.

Stratigraphical range: Early Maastrichtian to late Maastrichtian or Danian.

Remarks: *Coscinopleura elegans* is the type species of *Coscinopleura* MARSSON, 1887.

Coscinopleura elegans beisseli

VOIGT, 1956

(Fig. 51a–b)

*# 1956 *Coscinopleura elegans beisseli* n. subsp. – VOIGT, p. 45, Pl. 4, figs. 1–5.

Holotype: SMF 24053 (VOIGT, 1956, Pl. 4, figs. 1, 4).

Original label: VOIGT collection number 2392 (= VOIGT collection number 2420).

Locus typicus: Aachen-Vetschau, North-Rhine Westphalia, Germany.

Stratum typicum: Vetschau Chalk of the *Belemnitella junior* belemnite Zone.

Further distribution: Late Maastrichtian (*Belemnitella junior* belemnite Zone), Saint-Symphorien, Mons municipality, Wallonia, Belgium; Sehnde-Ilten, Lower Saxony, Germany; Voerendaal-Kunrade, Limburg, Netherlands.

Stratigraphical range: Late Maastrichtian.

Remarks: The differences between *Coscinopleura elegans* and the subspecies *C. elegans beisseli* are minimal, *C. elegans beisseli* having slightly smaller autozooids, opesia with shorter opesiules and more kenozooids at the edges of each branch. VOIGT (1956) indicated 2420 as the VOIGT collection number of the holotype. However, a sample with this collection number could not be found, and the correct VOIGT collection number of the holotype is 2392. *Coscinopleura elegans beisseli* was reported from the late Maastrichtian chalk tuff of Saint-Symphorien by VOIGT (1957a).

Coscinopleura elegans praecursor

VOIGT, 1956

(Fig. 51c–d)

*# 1956 *Coscinopleura elegans praecursor* n. subsp. – VOIGT, p. 42, Pl. 2, figs. 5–6.

Holotype: SMF 24061 (VOIGT, 1956, Pl. 2, fig. 5).

Original label: VOIGT collection number 2418.

Locus typicus: Ascheberg-Herbern, North-Rhine Westphalia, Germany.

Stratum typicum: Marl from the *Hoplitoplacenticeras vari* ammonite Zone (middle Campanian).

Stratigraphical range: Middle Campanian.

Remarks: The only two specimens reported of this subspecies are only moderately preserved. The subspecies differs from *Coscinopleura elegans* only in having somewhat smaller autozooids.

Coscinopleura elegans rarepunctata

VOIGT, 1956

(Fig. 51e–f)

*# 1956 *Coscinopleura elegans rarepunctata* n. subsp. – VOIGT, p. 44, Pl. 3, figs. 5–6]

Holotype: SMF 24056 (VOIGT, 1956, Pl. 3, fig. 5).

Original label: VOIGT collection number 2309.

Locus typicus: Stubbenkammer, island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of the *Belemnella lanceolata* belemnite Zone.

Stratigraphical range: Early Maastrichtian.

Remarks: This subspecies differs from *Coscinopleura elegans* in having larger and less numerous pores in the vibracula.

Coscinopleura lamourouxii

(HAGENOW, 1851)

(Fig. 52a–b)

1851 *Eschara microstoma*, HAG. – HAGENOW, p. 73, Pl. VIII, fig. 19.

*# 1851 *Eschara Lamourouxii*, HAG. – HAGENOW, p. 73, Pl. VIII, fig. 20, Pl. XII, fig. 11.

?p# 1865 *Eschara pulchra* BRONN – BEISSEL, Pl. I, fig. 11 (non Pl. I, fig. 10).

1920 *Coscinopleura lamourouxii* HAGENOW, 1851 – CANU, p. 194.

p# 1930 *Coscinopleura elegans* v. HAGENOW – VOIGT, p. 490, Pl. 25, figs. 16–17.

non# 1930 *Coscinopleura lamourouxii* v. HAGENOW – VOIGT, p. 491, Pl. 25, fig. 18.

1956 *Coscinopleura lamourouxii* (v. HAG.), 1851 – VOIGT, p. 45, Pl. 1, figs. 1–6, Pl. 2, figs. 1–4.

1963 *Coscinopleura lamourouxii* (von HAGENOW, 1851) – VEENSTRA, p. 126, Pl. 7, fig. 12.

1979b *Coscinopleura lamourouxii* (von HAGENOW, 1851) – VOIGT, p. 48, Pl. 10, fig. 4.

1988 *Coscinopleura lamourouxii* (HAGENOW) – FAVORSKAYA, Pl. II, figs. 2–5.

1996 *Coscinopleura lamourouxii* (v. HAGENOW) – FAVORSKAYA, Pl. 4, fig. 7.

2001 *Coscinopleura lamourouxii* – HÅKANSSON & THOMSEN, Figs. 11.4.C, 11.5.D.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Maastricht, Limburg, Netherlands.

Stratum typicum: Tuffeau de Maastricht.

Neotype: SMF 24081 (VOIGT, 1956, Pl. 1, fig. 1).

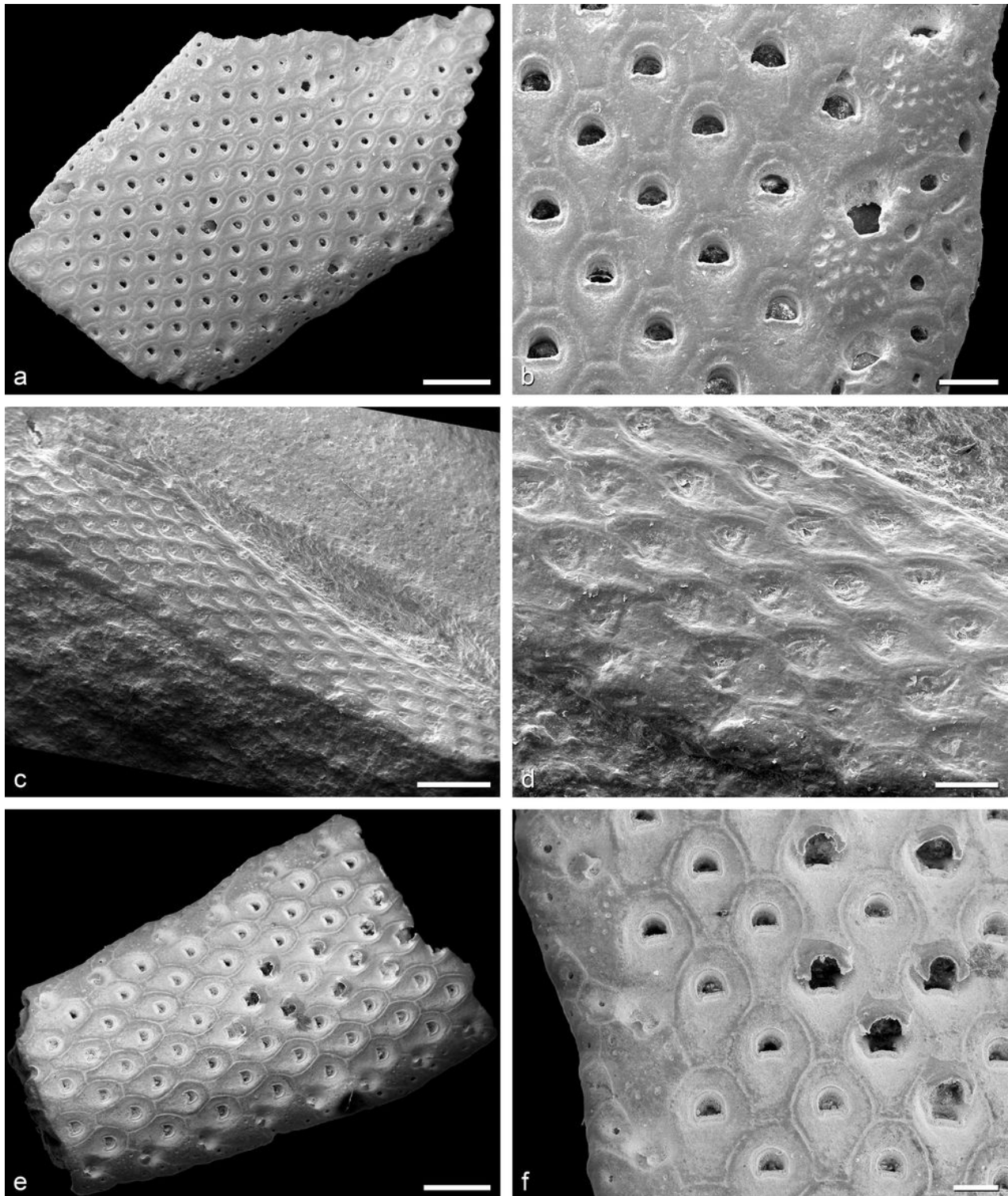


Figure 51: a-b *Coscinopleura elegans beisseli* VOIGT, 1956, holotype, SMF 24053, late Maastrichtian (*Belemnittella junior* belemnite Zone), Aachen-Vetschau, North-Rhine Westphalia, Germany. c-d *Coscinopleura elegans praecursor* VOIGT, 1956, holotype, SMF 24061, middle Campanian (*Hoplitoplacenticerus vari ammonite* Zone), Ascheberg-Herbern, North-Rhine Westphalia, Germany. e-f *Coscinopleura elegans rarepunctata* VOIGT, 1956, holotype, SMF 24056, early Maastrichtian (*Belemnella lanceolata* belemnite Zone), Stubbenkammer on the island of Rügen, Mecklenburg-Vorpommern, Germany.

Scale bars: a, c, e 1 mm; b, d, f 250 μ m.

Original label: VOIGT collection number 2425.

Locus neotypicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum neotypicum: Tuffeau de Maastricht.

Further distribution: Maastrichtian: Saint-Gaudens; Cazeneuve (both Haute-Garonne, Midi-Pyrénées, Occitanie, France); Olazti/Olazagutía,



Navarra, Spain. Late Maastrichtian, Albert Canal near Riemst, Flanders, Belgium; Saint-Symphorien, Mons municipality, Wallonia, Belgium; Sehnde-Ilten, Lower Saxony, Germany; Tuffeau de Maastricht, Sint Pieter neighbourhood, Maastricht; Voerendaal-Kunrade; abandoned van der Zwaan Quarry and a layer of coprolites at Slavante, Sint-Pietersberg hill (all Limburg, Netherlands); unspecified locality in Tadjikistan; central Kyzylkum Desert, Uzbekistan. Late Maastrichtian (*Belemnitella junior* belemnite Zone), Hemmoor and Hemmoor-Basbeck, Lower Saxony, Germany.

Stratigraphical range: Maastrichtian.

Remarks: *Coscinopecten lamourouxii* was reported from the late Maastrichtian chalk tuff of Saint-Symphorien by VOIGT (1957a) and from Tadjikistan by VOIGT (1967).

Genus *Tremocoscinopecten* VOIGT, 1956

Tremocoscinopecten holsatica VOIGT, 1956

(Fig. 52c–d)

- *# 1956 *Tremocoscinopecten holsatica* n.g. n.sp. – VOIGT, p. 61, Pl. 8, figs. 1–5.

Holotype: SMF 24042 (VOIGT, 1956, Pl. 8, figs. 1–3).

Original label: VOIGT collection number 1852.

Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk of the *Belemnitella mucronata senior* belemnite Zone (early Campanian).

Further distribution: Early Campanian (*Goniothis quadrata* belemnite Zone), Hannover-Misburg, Lower Saxony, Germany; Lägerdorf, Schleswig-Holstein, Germany.

Stratigraphical range: Early Campanian.

Tremocoscinopecten monops VOIGT, 1956

(Fig. 52e–f)

- *# 1956 *Tremocoscinopecten monops* n.g. n.sp. – VOIGT, p. 60, Pl. 7, figs. 1–5.

Holotype: SMF 24046 (VOIGT, 1956, Pl. 7, fig. 6).

Original label: VOIGT collection number 2393.

Locus typicus: Voerendaal-Kunrade, Limburg, Netherlands.

Stratum typicum: Kunrade beds, *Belemnitella junior* belemnite Zone.

Further distribution: Late Maastrichtian, Saint-Symphorien, Mons municipality, Wallonia, Belgium; Sehnde-Ilten, Lower Saxony, Germany.

Stratigraphical range: Late Maastrichtian.

Remarks: *Tremocoscinopecten monops* is the type species of *Tremocoscinopecten* VOIGT, 1956.

Family Lunulitidae LAGAII, 1952

Genus *Discoflustrellaria* ORBIGNY, 1853

Discoflustrellaria cerioporacea (HAGENOW, 1840)

(Fig. 53a–b)

- *# 1840 *Eschara cerioporacea* n.sp. – HAGENOW, p. 643.
1959a *Discoflustrellaria cerioporacea* (v. HAGENOW), 1840 – VOIGT, p. 46, Pl. VII, fig. 5.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 26409 (VOIGT, 1959a, Pl. VII, fig. 5).

Original label: VOIGT collection number 408.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

Further distribution: Early Maastrichtian, Germany: Hemmoor, Lower Saxony.

Stratigraphical range: Early Maastrichtian.

Remarks: This species was referred by HAGENOW to the undescribed genus named *Delopora* in GEINITZ (1849, p. 246), the spelling of which was later corrected to *Thelopora* (HAGENOW, 1851, p. 6). Both generic names have to be regarded as *nomina nuda*.

Genus *Lunulites* LAMARCK, 1816

Lunulites conulus HÅKANSSON & VOIGT, 1996

- *# 1996 *Lunulites conulus* n.sp. – HÅKANSSON & VOIGT, p. 193, Pl. 3, fig. 5C–E.

Holotype: Not found (HÅKANSSON & VOIGT, 1996, Pl. 3, fig. 5C–E).

Original label: VOIGT collection number 438.

Locus typicus: "Lundergård", probably Lundergård near Aalborg, Nordjylland Region, Denmark.

Stratum typicum: Late early Maastrichtian.

Further distribution: Early Maastrichtian, Rørdal, Aalborg, Nordjylland Region, Denmark. Late Maastrichtian, Blegkilde, Gudumlund and Rørdal near Aalborg, Nordjylland Region, Denmark.

Stratigraphical range: Maastrichtian.

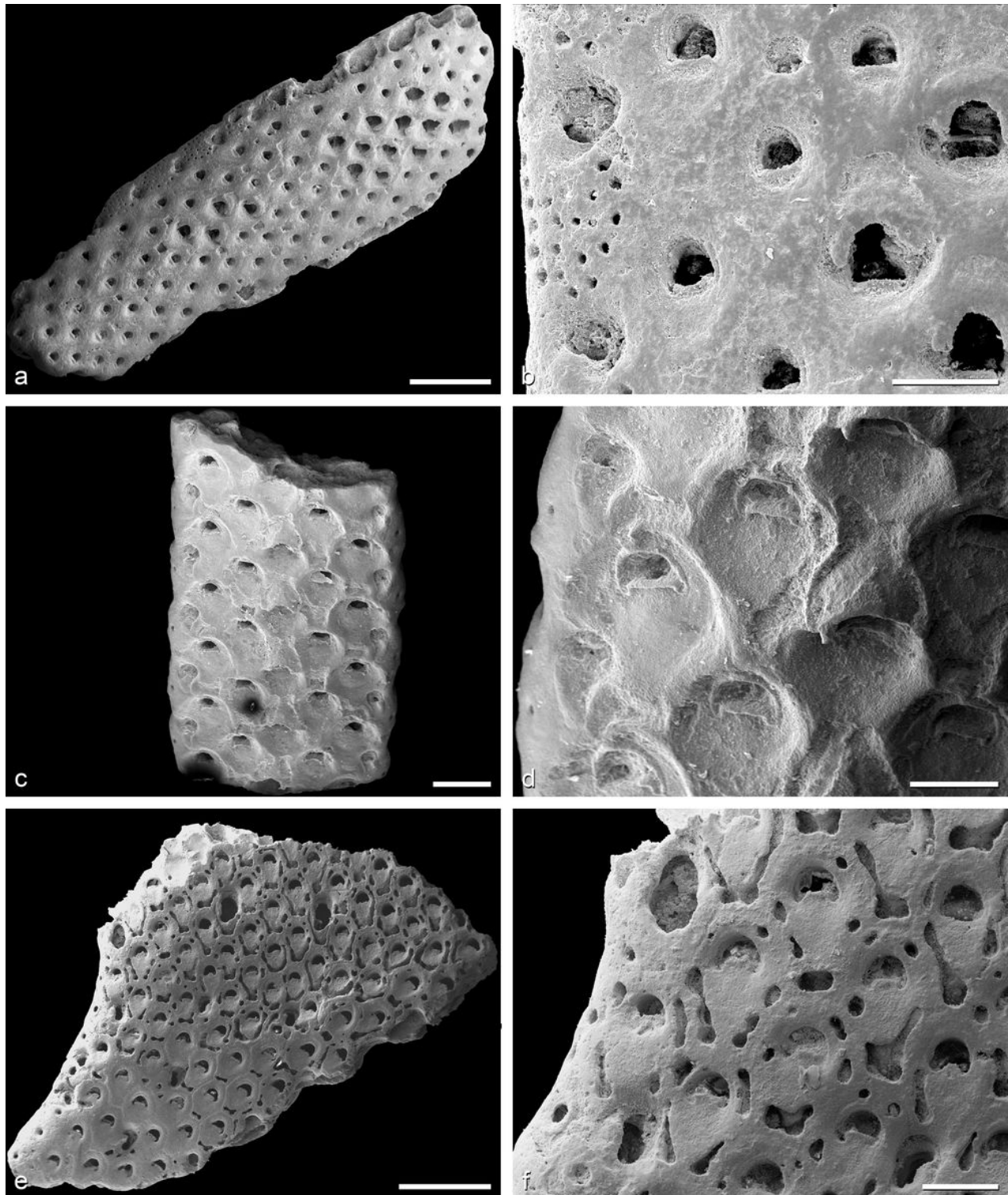


Figure 52: a-b *Coscinopleura lamourouxi* (HAGENOW, 1851), holotype, SMF 24081, late Maastrichtian, Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands. c-d *Tremocoscinopecten holsatica* VOIGT, 1956, holotype, SMF 24042, early Campanian (*Belemnitella mucronata senior* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. e-f *Tremocoscinopecten monops* VOIGT, 1956, holotype, SMF 24046, late Maastrichtian (*Belemnitella junior* belemnite Zone), Voerendaal-Kunrade, Limburg, Netherlands. Scale bars: a, e 1 mm; c 500 µm; b, d, f 250 µm.

Remarks: The holotype was listed by EISERHARDT (1998) and may be in Perth, Australia with Eckart Håkansson along with the rest of the material described by HÅKANSSON and VOIGT (1996).

***Lunulites vespertilio*
HÅKANSSON & VOIGT, 1996**

*# 1996 *Lunulites vespertilio* n.sp. – HÅKANSSON & VOIGT, p. 195, Pl. 3, fig. A, B, G.



Holotype: Not found (HÅKANSSON & VOIGT, 1996, Pl. 3, fig. 5A, B, G).

Original label: VOIGT collection number 6650.

Locus typicus: Hemmoor, Lower Saxony, Germany.

Stratum typicum: White chalk of late Maastichtian age.

Stratigraphical range: Late Maastichtian.

Remarks: The holotype was listed by EISERHARDT (1998) and may be in Perth, Australia with Eckart HÅKANSSON along with the rest of the material described by HÅKANSSON and VOIGT (1996).

***Lunulites voighti* BUGE, 1973**

(Fig. 53c–d)

?# 1952 *Lunulites* sp. – LAGAAIJ, p. 18, Pl. II, fig. 6a–b.

*# 1973 *Lunulites voighti* nov. sp. – BUGE, p. 38, Pl. 6, figs. 7–8.

Holotype: SMF 26445 (BUGE, 1973, Pl. 6, figs. 7–8).

Original label: None.

Locus typicus: Reinbek, Schleswig-Holstein, Germany.

Stratum typicum: Serravalian, Miocene.

Further distribution: Burdigalian, Miste near Winterswijk, Gelderland, Netherlands. Serravalian (Helvetian), Hamminkeln-Dingden, North Rhine-Westphalia, Germany; Twistringen, Lower Saxony, Germany. Late Miocene, Flensburg, Schleswig-Holstein, Germany.

Stratigraphical range: Burdigalian to Late Miocene.

Genus *Pavolunulites* ORBIGNY, 1852

Pavolunulites lehmanni

VOIGT & SCHNEEMILCH, 1986

(Fig. 54a–b)

*# 1986 *Pavolunulites lehmanni* n.sp. – VOIGT & SCHNEEMILCH, p. 116, Pl. 1, fig. 8, Pl. 3, figs. 1–13.

Holotype: SMF 25910 (VOIGT & SCHNEEMILCH, 1986, Pl. 3, figs. 6–8).

Original label: VOIGT collection number 10927.

Locus typicus: Alemannia quarry near Sehnde-Höver, Lower Saxony, Germany.

Stratum typicum: Chalk marl of early Campanian age (*Goniotheutis quadrata* belemnite Zone).

Further distribution: Early Campanian, chalk pit of the cement factory Alsen-Breitenburg near Lägerdorf, Schleswig-Holstein, Germany.

Stratigraphical range: Early Campanian.

***Pavolunulites siemersi* VOIGT, 1962**

(Fig. 54c–d)

*# 1962a *Pavolunulites siemersi* n.sp. – VOIGT, p. 249, Fig. 1, Pl. 27, figs. 1–3.

1996 *Pavolunulites siemersi* VOIGT – HÅKANSSON & VOIGT, Fig. 10H.

2005 *Pavolunulites siemersi* VOIGT, 1962 – HINZ-SCHALLREUTER & SCHALLREUTER, p. 546.

Holotype: SMF 24125 (VOIGT, 1962a, Pl. 27, fig. 1).

Original label: VOIGT collection number 404.

Locus typicus: Quarry near Tornesch, Schleswig-Holstein, Germany.

Stratum typicum: Glacial drift deposits containing white chalk of late Maastichtian age.

Further distribution: Late Maastichtian, glacial drift deposit with white chalk near Hamburg-Hummelsbüttel, Hamburg, Germany; Götzberg near Henstedt-Ulzburg, Schleswig-Holstein, Germany; Neu Wulmstorf, Lower Saxony, Germany.

Stratigraphical range: Late Maastichtian.

Family Microporidae GRAY, 1848

Genus *Puncturiella* LEVINSSEN, 1925

Subgenus *Puncturiellina* VOIGT, 1987

***Puncturiella (Puncturiellina) subsculpta* VOIGT, 1987**

(Fig. 54e–f)

p# 1886 *Vincularia sculpta*, d'ORBIGNY – PERGENS & MEUNIER, p. 231.

1892 *Steganoporella? sculpta* d'ORB. sp. – HENNIG, p. 35, Pl. 1, fig. 20.

1930 *Microporella* cf. *pulchra* ULRICH und BASSLER – VOIGT, p. 476, Pl. 24, fig. 20.

p# 1962 *Puncturiella sculpta* (d'ORBIGNY) – BERTHESEN, p. 155, Pl. 17, figs. 1–2.

1964 *Puncturiella* cf. *sculpta* (d'ORBIGNY, 1851) – VOIGT, p. 448, Pl. VII, fig. 8.

*# 1987a *Puncturiella (Puncturiellina) subsculpta* n.sp. – VOIGT, p. 67, Pl. 15, figs. 1–10.

1996 *Puncturiella (Puncturiellina) subsculpta* VOIGT – FAVORSKAYA, Pl. 7, fig. 1.

Holotype: SMF 25527 (VOIGT, 1987a, Pl. 15, fig. 3).

Original label: VOIGT collection number 2532 (VOIGT collection number 2523).

Locus typicus: Ciply, Mons municipality, Walloon, Belgium.

Stratum typicum: Basal beds (Tuffeau de la Malogne) of the Tuffeau de Ciply.

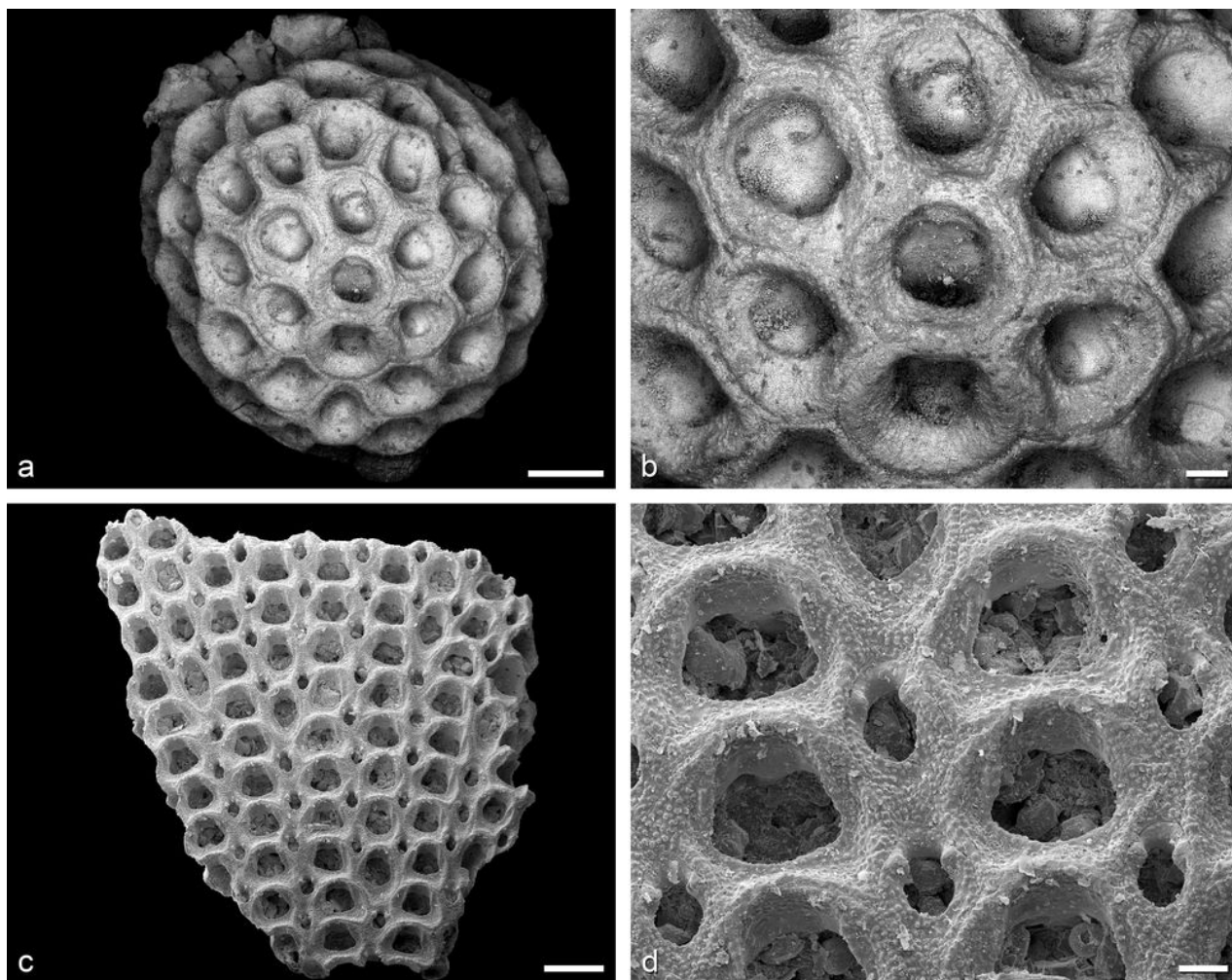


Figure 53: a-b *Discoflustrellaria cerioporacea* (HAGENOW, 1840), neotype, SMF 26409, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. c-d *Lunulites voighti* BUGÉ, 1973, holotype, SMF 26445, Serravalian, Reinbek, Schleswig-Holstein, Germany.

Scale bars: a, c 500 µm; b 250 µm; d 100 µm.

Further distribution: Danian, Mons drilling and F.P. Mons drilling in Mons, Wallonia, Belgium; Waterschei drilling in Genk; Eisden shaft near Maasmechelen (both Flanders, Belgium); Faxø quarries; Herfølge in the Køge Kommune; Kagstrup in the Solrød Kommune, Stevns Klint in the Stevns Kommune (all Zealand Region, Denmark); Klintholm on the Island of Funen, South Denmark Region, Denmark; Island of Saltholm, Capital Region, Denmark; Ratheim drilling near Erkelenz, North Rhine-Westphalia, Germany; Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands; Boryszew drilling near Boryszew in the Gmina Wiązowna, Masovian Voivodeship, Poland; unknown locality in the Autonomous Republic of Crimea; Annetorp in Malmö, Skåne län, Sweden.

Stratigraphical range: Danian.

Remarks: *Puncturiella* (*Puncturiellina*) *subsculpta* is the type species of the subgenus *Puncturiellina* VOIGT, 1987.

Puncturiella* (*Puncturiellina*) *tenera
(VOIGT, 1924)
(Fig. 55a–b)

- *# 1924c *Homalostega tenera* v. HAGENOW – VOIGT, p. 8, Pl. I, figs. 32–33.
- # 1930 *Micropora tenera* VOIGT – VOIGT, p. 476, Pl. 22, fig. 22.
- ?# 1962 *Puncturiella tenera* (VOIGT) – BERTHELSEN, p. 156, Pl. 17, fig. 3.
- # 1987a *Puncturiella* (*Puncturiellina*) *tenera* (VOIGT, 1924) – VOIGT, p. 69, Pl. 15, figs. 16–19.
- # 2005 *Puncturiella* (*Puncturiellina*) *tenera* (VOIGT, 1924) BERTHELSEN, 1962 (VOIGT, 1987) – HINZ-SCHALLREUTER & SCHALLREUTER, p. 549.

Lectotype (defined in VOIGT, 1987a): VOIGT (1924c, Pl. I, fig. 33). This material belonged to the first VOIGT Collection that was destroyed in a fire at the Geologisches Staatsinstitut Hamburg in 1943.

Locus typicus: Köthen (Anhalt), Saxony-Anhalt, Germany.

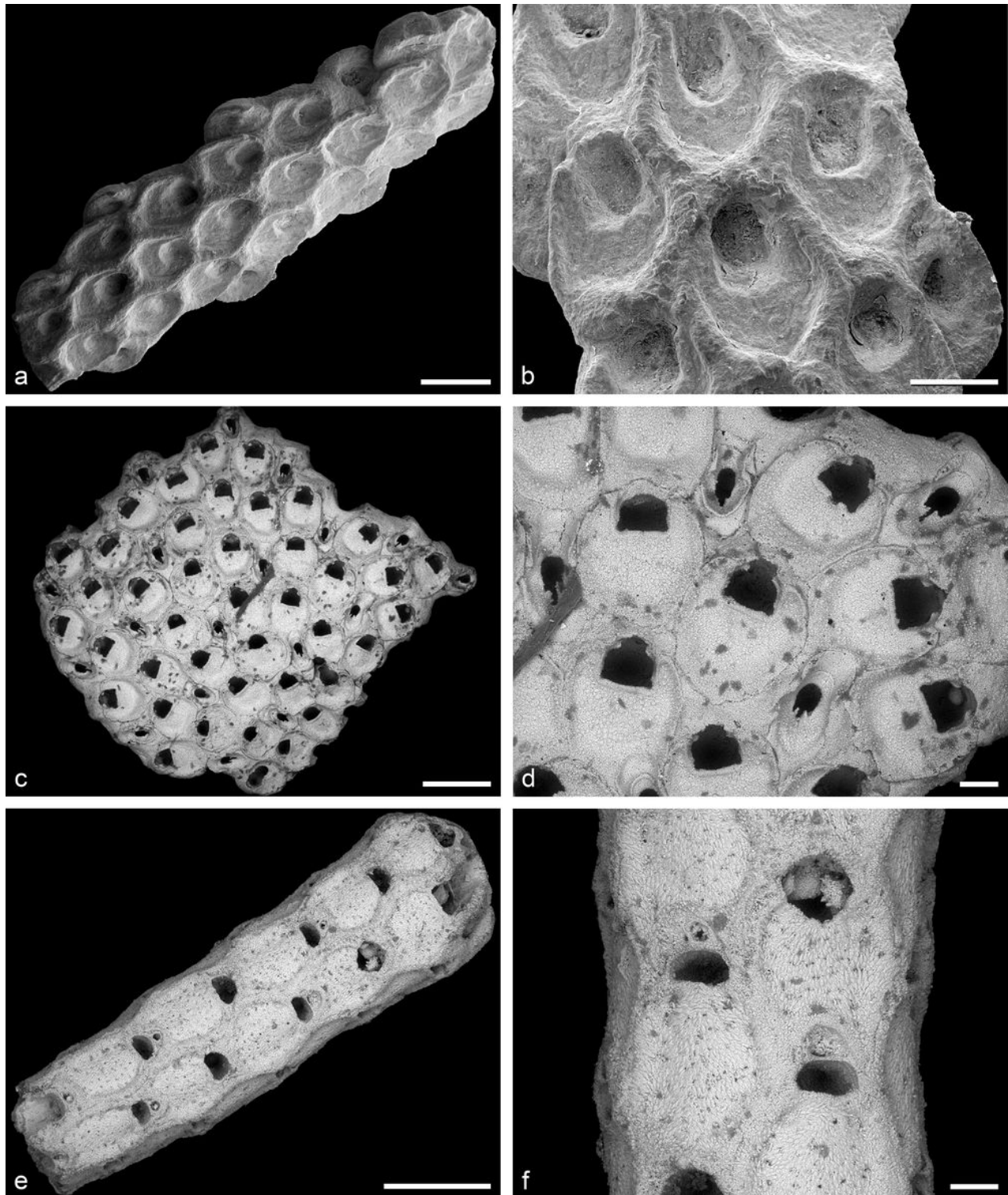


Figure 54: a-b *Pavolunulites lehmanni* VOIGT & SCHNEEMILCH, 1986, holotype, SMF 25910, early Campanian (*Goniotheutis quadrata* belemnite Zone), Alemannia quarry near Sehnde-Höver, Lower Saxony, Germany. c-d *Pavolunulites siemersi* VOIGT, 1962, holotype, SMF 24125, late Maastrichtian, quarry near Tornesch, Schleswig-Holstein, Germany. e-f *Puncturiella* (*Puncturiellina*) *subsculpta* VOIGT, 1987, holotype, SMF 25527, Danian, Ciply in the municipality Mons, Wallonia, Belgium.

Scale bars: e 1 mm; a, c 500 µm; b 250 µm; d, f 100 µm.

Stratum typicum: Glacial drift deposits of Danian age.

Neotype: SMF 25528 (VOIGT, 1987a, Pl. 15, figs. 18–19).

Original label: VOIGT collection number 7661.

Locus neotypicus: Oststeinbek-Havighorst, Schleswig-Holstein, Germany.

Stratum neotypicum: Erratic glacial drift deposits of Danian age.

Further distribution: Danian, Mons borehole,



Mons municipality, Wallonia, Belgium; Blaue Berge near Dessau-Roßlau, Saxony-Anhalt, Germany; Faxe quarries and Herfølge in the Køge Kommune, Zealand Region, Denmark; Klintholm, island of Funen, South Denmark Region.

Stratigraphical range: Danian.

Family Monoporellidae HINCKS, 1882

Genus *Stichomicropora* VOIGT, 1949

Stichomicropora biconstricta (HAGENOW, 1839)

(Fig. 55c–d)

- *# 1839 *Cellepora biconstricta* nob. – HAGENOW, p. 272.
- ?# 1911 *Micropora convexa*, nov. sp. – CANU, p. 250, Pl. VII, figs. 1–3.
- # 1925 *Micropora erecta* (v. HAG.). Var. b – LEVINSSEN, p. 362, Pl. 4, fig. 50.
- # 1930 *Micropora convexa* CANU – VOIGT, p. 474, Pl. 22, figs. 6–7.
- # 1959a *Stichomicropora biconstricta* (v. HAGENOW), 1839 – VOIGT, p. 21, Pl. VI, fig. 3.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 26403 (VOIGT, 1959a, Pl. VI, fig. 3).

Original label: VOIGT collection number 402.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

Further distribution: Late Campanian, Staversvad near Kristianstad-Arkelstorp, Skåne län, Sweden. Early Maastrichtian, Island of Møn; Stevns Klint in the Stevns Kommune, Zealand Region, Denmark; Aalborg, Region Nordjylland, Denmark. Danian: General Roca, Río Negro Province, Argentina; Faxe quarries, Zealand Region, Denmark.

Stratigraphical range: Late Campanian to Danian.

Stichomicropora sicksi VOIGT, 1949

(Fig. 55e–f)

- *# 1949 *Stichomicropora sicksi* n.g. n.sp. – VOIGT, p. 34, Pl. 7, figs. 1–3.
- # 1953 *Stichomicropora sicksi* VOIGT, 1920 [sic] – BASSLER, p. G171, fig. 130.2.

Holotype: SMF 26286 (VOIGT, 1949, Pl. 7, figs. 2–3).

Original label: VOIGT collection number 137.

Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk of the *Goniot euthis quadrata* belemnite Zone.

Further distribution: Early Campanian (*Belemnitella mucronata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany.

Stratigraphical range: Early Campanian.

Remarks: *Stichomicropora sicksi* is the type species of *Stichomicropora* VOIGT, 1949.

Family Onychocellidae JULLIEN, 1882

Genus *Aechmellina* TAYLOR et al., 2018

Aechmellina falcifera VOIGT, 1949

(Fig. 56a–b)

- *# 1949 *Aechmella falcifera* n.sp. – VOIGT, p. 28, Pl. 6, figs. 2–3.
- # 1996b *Aechmella falcifera* VOIGT – VOIGT, Fig. 32.
- # 2018 *Aechmellina falcifera* (VOIGT, 1949) – TAYLOR et al., Fig. 3a–d.

Holotype: SMF 26280 (VOIGT, 1949, Pl. 6, fig. 2).

Original label: VOIGT collection number 136.

Locus typicus: Lägerdorf, Schleswig-Holstein, Germany.

Stratum typicum: White chalk of the *Goniot euthis quadrata* belemnite Zone.

Further distribution: Early Campanian, marl pit near Lahstedt-Oberg, Lower Saxony, Germany.

Stratigraphical range: Early Campanian.

Remarks: *Aechmellina falcifera* is the type species of *Aechmellina* TAYLOR et al., 2018.

Genus *Ehrhardina*

MARTHA & TAYLOR, 2016

Ehrhardina pikeae

MARTHA & TAYLOR, 2016

(Fig. 56c–d)

- *# 2016 *Ehrhardina pikeae* n.sp. – MARTHA & TAYLOR, p. 316, Fig. 3A–E.

Holotype: SMF 29988 (MARTHA & TAYLOR, 2016, Fig. 3A–E).

Original label: VOIGT collection number 11345.

Locus typicus: Kassenberg, Rauhen Quarry in Mülheim an der Ruhr-Broich, North Rhine-Westphalia, Germany.

Stratum typicum: Red limestone from the rocky shore facies of the Essen Greensand Formation, *Neostlingoceras carcitense* ammonite Zone.

Stratigraphical range: Earliest Cenomanian.

Genus *Euritina* CANU, 1900

Euritina seroniae (VOIGT, 1985)

(Fig. 56e–f)

- *# 1985b *Callopora* (?) *seroniae* n.sp. – VOIGT, p. 139, Fig. 4c–e.

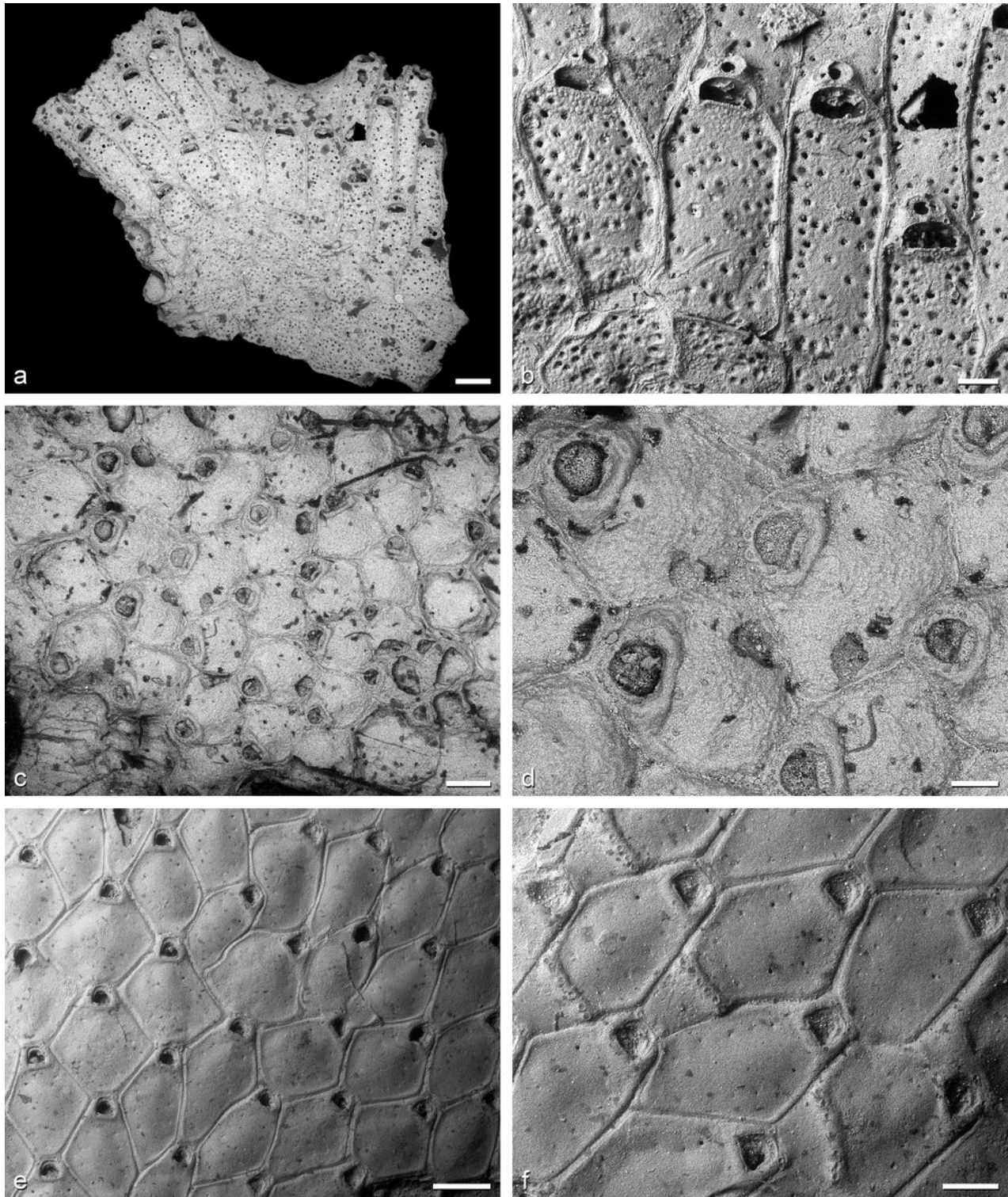


Figure 55: a-b *Puncturiella* (*Puncturiellina*) *tenera* (VOIGT, 1924), neotype, SMF 25528, Danian, Oststeinbek-Havighorst, Schleswig-Holstein, Germany. c-d *Stichomicropora biconstricta* (HAGENOW, 1839), neotype, SMF 26403, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. e-f *Stichomicropora sicksi* VOIGT, 1949, holotype, SMF 26286, early Campanian (*Gonioteuthis quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. Scale bars: e 500 µm; a, c, f 250 µm; b, d 100 µm.

Holotype: Not found (VOIGT, 1985b, Fig. 4c).

Original label: Not specified.

Locus typicus: Detritus along the A10 autoroute (E05) near Jonzac, Charente Maritime, France.

Stratum typicum: Aubeterre Formation, Campanian.

Further distribution: Late Campanian, Royan, Charente Maritime, Nouvelle-Aquitaine, France.

Stratigraphical range: Late Campanian.

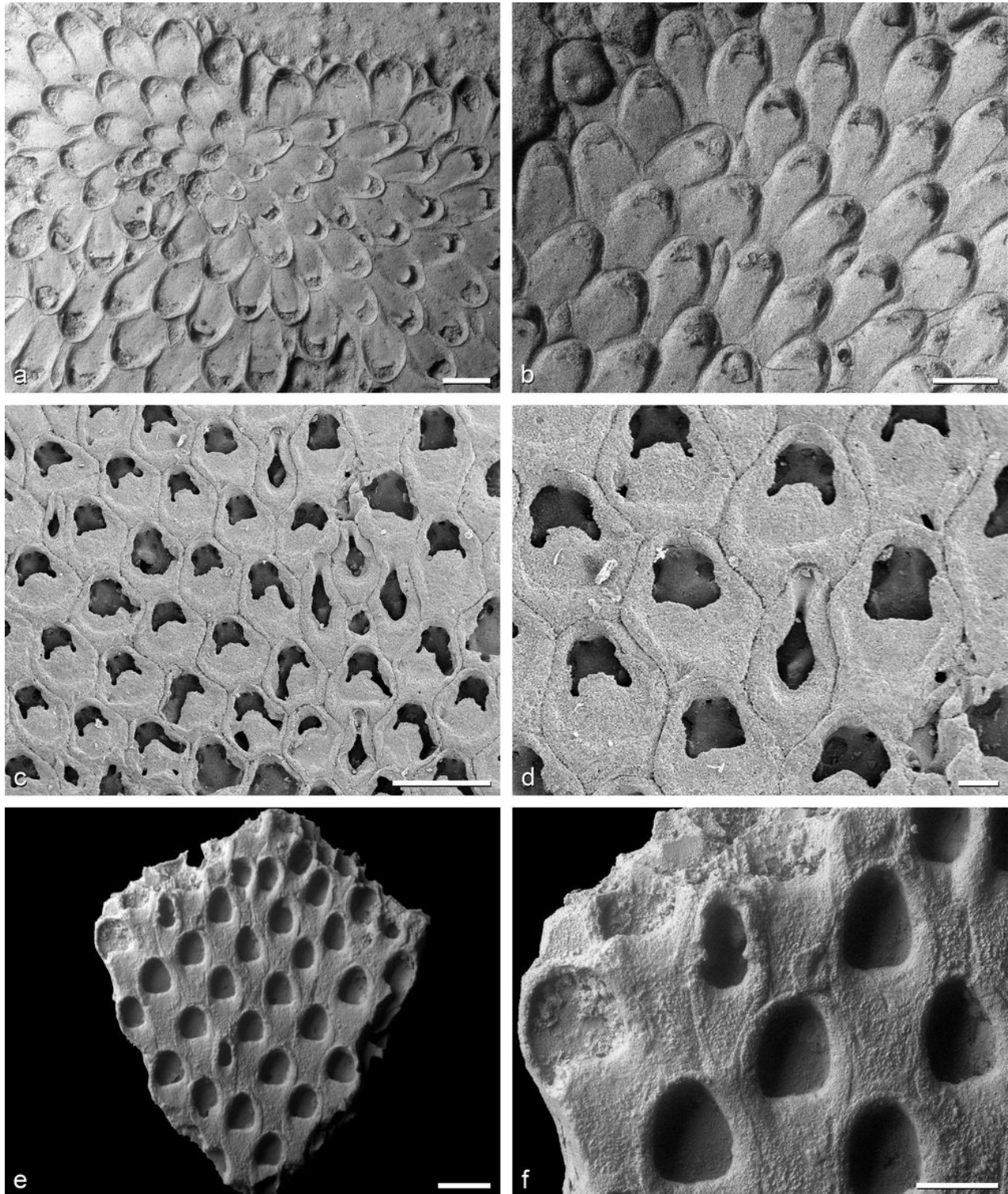


Figure 56: a-b *Aechmella falcifera* VOIGT, 1949, holotype, SMF 26280, early Campanian (*Gonioteuthis quadrata* belemnite Zone), Lägerdorf, Schleswig-Holstein, Germany. c-d *Ehrhardina pikeae* MARTHA & TAYLOR, 2016, holotype, SMF 29988, early Cenomanian (*Neostlingoceras carcitanense* ammonite Zone), Kassenberg, Rauen Quarry in Mülheim an der Ruhr-Broich, North Rhine-Westphalia, Germany. e-f *Euritina seroniae* (VOIGT, 1985), SMF 25310, late Campanian, Conche des Nonnes near Royan, Nouvelle-Aquitaine, France. Scale bars: a-c, e 500 µm; f 250 µm; d 100 µm.

Remarks: No collection number for the holotype was provided by VOIGT (1985b). Furthermore, it is unclear whether the holotype belonged to the VOIGT Collection or to the collections of the *Muséum National d'Histoire Naturelle* (MNHN) in Pa-

ris. None of the specimens of the VOIGT Collection resembles the holotype. Françoise Bigey, who searched the MNHN collections, was also unable to find the holotype there. Here, we image specimen SMF 25310 (VOIGT collection number 8919),



which was figured by VOIGT (1985b, Fig. 4e).

Genus *Floridina* JULLIEN, 1882

***Floridina eisdenensis* VOIGT, 1987**

(Fig. 57a–b)

*# 1987a *Floridina eisdenensis* n.sp. – VOIGT, p. 59, Pl. 13, figs. 13–16.

Holotype: Not found (VOIGT, 1987a, Pl. 13, figs. 13–14).

Original label: VOIGT collection number 2321.

Locus typicus: Eisden shaft near Maasmechelen, Flanders, Belgium.

Further distribution: Danian, Mons borehole and Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Danian calcarenite.

Stratigraphical range: Danian.

Remarks: The holotype was listed by EISERHARDT (1998). Here, we image specimen SMF 31563 (VOIGT collection number 2553), which has not previously been depicted.

***Floridina impressipora* (MARSSON, 1887)**

(Fig. 57c–d)

p# 1839 *Cellepora gothica* nob. – HAGENOW, p. 276.

*# 1887 *Semieschara impressipora* n.sp. – MARSSON, p. 75, Pl. VII, fig. 4.

1881 *Cellepora gothica* HAGENOW, 1839 – QUENSTEDT, p. 313, Pl. 154, fig. 40.

1925 *Thalamoporella impressipora* (MARSSON) – LEVINSSEN, p. 372.

1930 *Floridina impressipora* MARSSON – VOIGT, p. 472, Pl. 20, fig. 17.

1942 *Micropora* (*Semieschara*) *impressipora* MARSSON sp. – BRYDONE, p. 62.

1959a *Floridina impressipora* (MARSS.) – VOIGT, Pl. VI, fig. 7.

1979b *Floridina impressipora* (MARSSON, 1887) – VOIGT, p. 47, Pl. 9, figs. 4–5.

Holotype: The material of MARSSON (1887) belonged to the collections of the *Preußische Geologische Landesanstalt* (Prussian Geological Land Survey) that VOIGT (1982a) reported to have been destroyed during World War II. However, a part of the collection has been recovered (MARTHA, 2014).

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastichtian age.

Neotype: SMF 26404 (VOIGT, 1959a, Pl. VI, fig. 7).

Original label: VOIGT collection number 403.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastichtian age.

Further distribution: Late Maastichtian, Saint-Symphorien, Mons municipality, Wallonia, Bel-

gium; Voerendaal-Kunrade, Limburg, Netherlands.

Stratigraphical range: Maastichtian.

Remarks: *Floridina impressipora* was reported from the late Maastichtian chalk tuff of Saint-Symphorien by VOIGT (1957a).

***Floridina membraniporoides* VOIGT, 1987**

(Fig. 57e–f)

*# 1987a *Floridina membraniporoides* n.sp. – VOIGT, p. 60, Pl. 14, figs. 1–11.

Holotype: SMF 25529 (VOIGT, 1987a, Pl. 14, fig. 2).

Original label: VOIGT collection number 7304.

Locus typicus: Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Tuffeau de Ciply.

Further distribution: Danian, Mons borehole, Mons municipality, Wallonia, Belgium; Albert Canal near Riemst-Vroenhoven, Flanders; Belgium; Curfs Quarry near Berg, Valkenburg aan de Geul municipality, and Beatrix borehole near Neer, Leudal municipality (both Limburg, Netherlands).

Stratigraphical range: Danian.

Remarks: The holotype is broken into two fragments, but all features of the species are still recognizable.

***Floridina scutata brevior* VOIGT, 1987**

(Fig. 58a–b)

*# 1987a *Floridina scutata brevior* n. subsp. – VOIGT, p. 62, Pl. 13, figs. 5–6.

Holotype: SMF 25530 (VOIGT, 1987a, Pl. 13, fig. 5).

Original label: VOIGT collection number 2528.

Locus typicus: Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Basal beds (Tuffeau de la Malogne) of the Tuffeau de Ciply.

Further distribution: Danian, Mons and F.P. Mons boreholes, Mons municipality, Wallonia, Belgium.

Stratigraphical range: Danian.

Remarks: *Floridina scutata brevior* is a subspecies of *Floridina scutata* (LEVINSSEN, 1925).

Genus *Holsacella* VOIGT, 1999

***Holsacella biserialis* VOIGT, 1999**

(Fig. 58c–d)

*# 1999 *Holsacella biserialis* n.g. n.sp. – VOIGT, p. 305, Pl. 2, figs. 17–20.

2018 *Holsacella biserialis* VOIGT – TAYLOR et al., Fig. 13a–c.

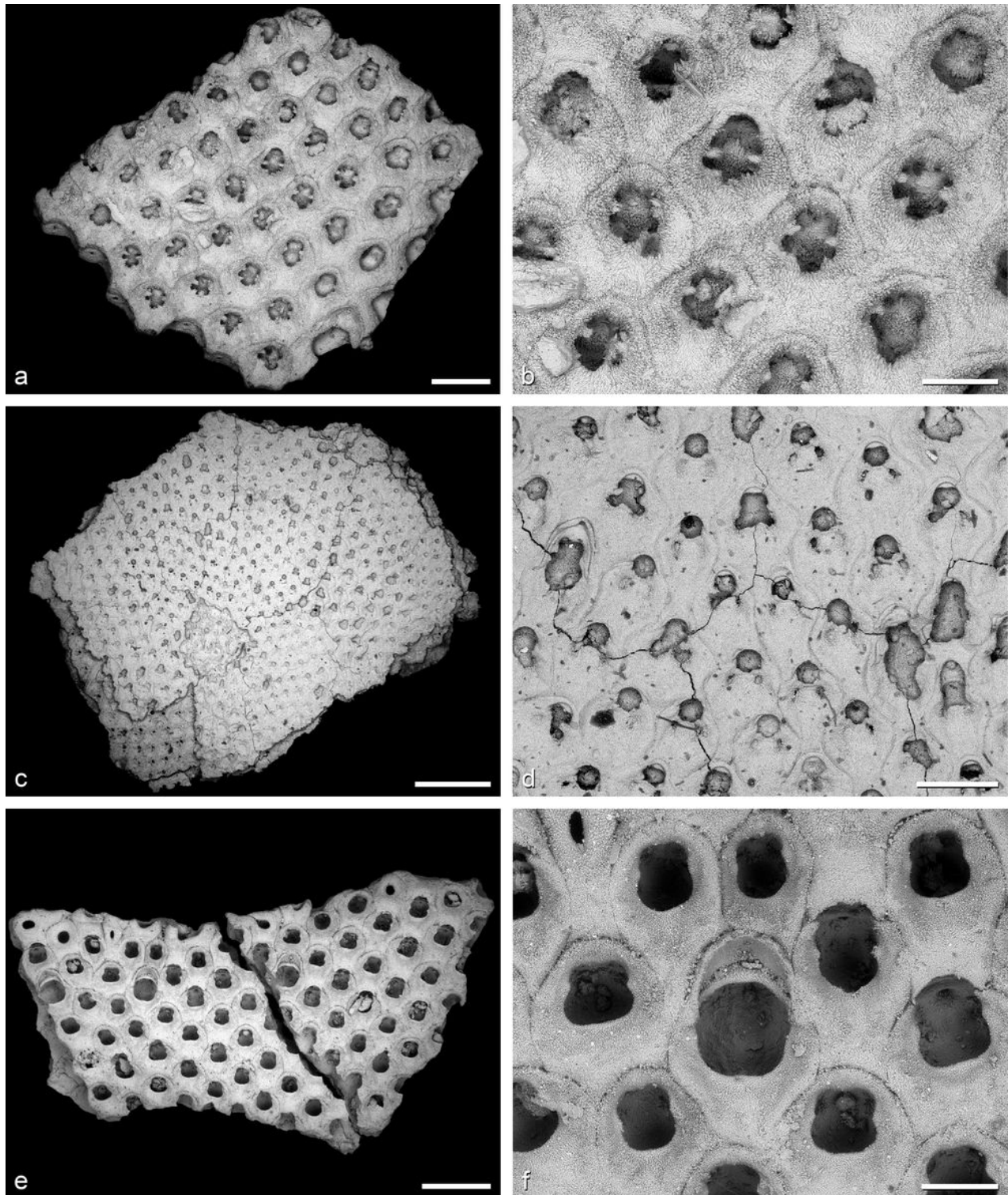


Figure 57: a-b *Floridina eisdenensis* VOIGT, 1987, SMF 31563, Danian, Ciply in the municipality Mons, Wallonia, Belgium. c-d *Floridina impressipora* (MARSSON, 1887), neotype, SMF 26404, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. e-f *Floridina membraniporoides* VOIGT, 1987, holotype, SMF 25529, Danian, Ciply in the municipality Mons, Wallonia, Belgium.
Scale bars: c 2.5 mm; e 1 mm; a, d 500 µm; b, f 250 µm; 100 µm.

Holotype: SMF 26223 (VOIGT, 1999, Pl. 2, figs. 17–20).

Original label: VOIGT collection number 7467.

Locus typicus: Glacial drift deposit near Neu Wulmstorf-Daerstorf, Lower Saxony, Germany.

Stratum typicum: Glacial drift deposits of Danian age.

Stratigraphical range: Danian.

Remarks: *Holsacella biserialis* is the type species of *Holsacella* VOIGT, 1999. The holotype is the only reported specimen of this species.

**Genus *Inversaria* HAGENOW, 1851*****Inversaria crassipes* (MARSSON, 1887)**

(Fig. 58e–f)

- ?# 1839 *Eschara infundibulata* nob. – HAGENOW, p. 264.
1839 *Ceripora milleporacea* (?) GOLDF. – HAGENOW, p. 282.
1841 *Eschara irregularis* N. – ROEMER, p. 17.
p# 1881 *Ceripora milleporacea* GOLDFUSS – QUENSTEDT, p. 273, Pl. 153, fig. 77 (non Pl. 153, fig. 76).
*# 1887 *Eschara crassipes* n.sp. – MARSSON, p. 68, Pl. VI, fig. 15.
1925 *Membranipora crassipes* (MARSS.) – LEVINSSEN, p. 309.
1930 *Onychocella crassipes* MARSSON – VOIGT, p. 456, Pl. 15, fig. 18.
1959a *Onychocella crassipes* (MARSSON), 1887 – VOIGT, p. 35.
1963 *Onychocella crassipes* (MARSSON, 1887) – VEENSTRA, p. 109, Pl. 5, fig. 1.
1973 *Inversaria crassipes* (MARSSON, 1887) – VOIGT & WILLIAMS, p. 155, Pl. 7, figs. 1–9; Pl. 16, figs. 3–4.

Holotype: The material of MARSSON (1887) belonged to the collections of the *Preußische Geologische Landesanstalt* (Prussian Geological Land Survey) that VOIGT (1982a) reported to have been destroyed during World War II. However, a part of the collection has been recovered (MARTHA, 2014).

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 24480 (VOIGT & WILLIAMS, 1973, Pl. 7, fig. 2).

Original label: VOIGT collection number 6548.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

Further distribution: Early Maastrichtian, Island of Møn, Zealand Region, Denmark; glacial drifts containing white chalk in northern Germany; deep drilling near Rypin, Kuyavian-Pomeranian Voivodeship, Poland. Late Maastrichtian (?), sandy tills in the "*Blaue Berge*" near Dessau-Roßlau, Saxony-Anhalt, Germany.

Stratigraphical range: Early (to late) Maastrichtian.

Remarks: The species was also mentioned as *Inversaria ramosa* nom. nud. in a list compiled by HAGENOW in GEINITZ (1849).

***Inversaria flabellula* (HAGENOW, 1846)**

(Fig. 59a–b)

- *# 1846 *Ceripora flabellula* v. HAG. – HAGENOW, p. 596; Pl. XXIII.b, fig. 11.
1909 *Ceripora flabellula*, HAGENOW, 1846 – GREGORY, p. 169

p# 1930 *Onychocella flabellula* v. HAGENOW – VOIGT, p. 456, Pl. 15, fig. 19–20, Pl. 39, fig. 6 (non Pl. 15, fig. 21).

1973 *Inversaria flabellula* (v. HAGENOW, 1846) – VOIGT & WILLIAMS, p. 161, Pl. 7, figs. 1–9, Pl. 16, figs. 3–4.

2018 *Inversaria flabellula* (von HAGENOW) – TAYLOR et al., Fig. 15f.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 24478 (VOIGT & WILLIAMS, 1973, Pl. 9, figs. 1, 7).

Original label: VOIGT collection number 6540.

Locus neotypicus: Staversvad near Kristianstad-Arkelstorp, Skåne län, Sweden.

Further distribution: *Inversaria* aff. *flabellula* in the late Campanian of Hemmingslycke near Kristianstad, Skåne län, Sweden.

Stratum neotypicum: Rubbly limestone of late Campanian age.

Stratigraphical range: Late Campanian.

***Inversaria trigonopora* HAGENOW, 1851**

(Fig. 59c–d)

*# 1851 *Inversaria trigonopora*, HAG. – HAGENOW, p. 57, Pl. VI, fig. 8.

1881 *Inversaria tubiporacea* (GOLDFUSS) – HAMM, p. 39.

1899 *Inversaria trigonopora*, von HAGENOW, 1851 – GREGORY, p. 354.

1973 *Inversaria trigonopora* v. HAGENOW, 1851 – VOIGT & WILLIAMS, p. 161, Pl. 5, figs. 1–5, Pl. 6, figs. 1–6; Pl. 15, figs. 5–6, Pl. 16, figs. 1–2.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Maastricht, Limburg, Netherlands.

Stratum typicum: Tuffeau de Maastricht.

Neotype: SMF 24484 (VOIGT & WILLIAMS, 1973, Pl. 5, fig. 1).

Original label: VOIGT collection number 6582.

Locus neotypicus: Voerendaal-Kunrade, Limburg, Netherlands.

Stratum neotypicum: Chalk tuff of late Maastrichtian age (Mb to Md).

Further distribution: Late Maastrichtian, Curfs Quarry near Berg and Blom Quarry near Terblijt (both Valkenburg aan de Geul municipality); abandoned van der Zwaan Quarry and ENCI (*Eerste Nederlandse Cement Industrie*) pit on the hill Sint-Pietersberg (all Limburg, Netherlands); Albert Canal near the Château Neercanne, Riemst-Kanne, Flanders, Belgium.

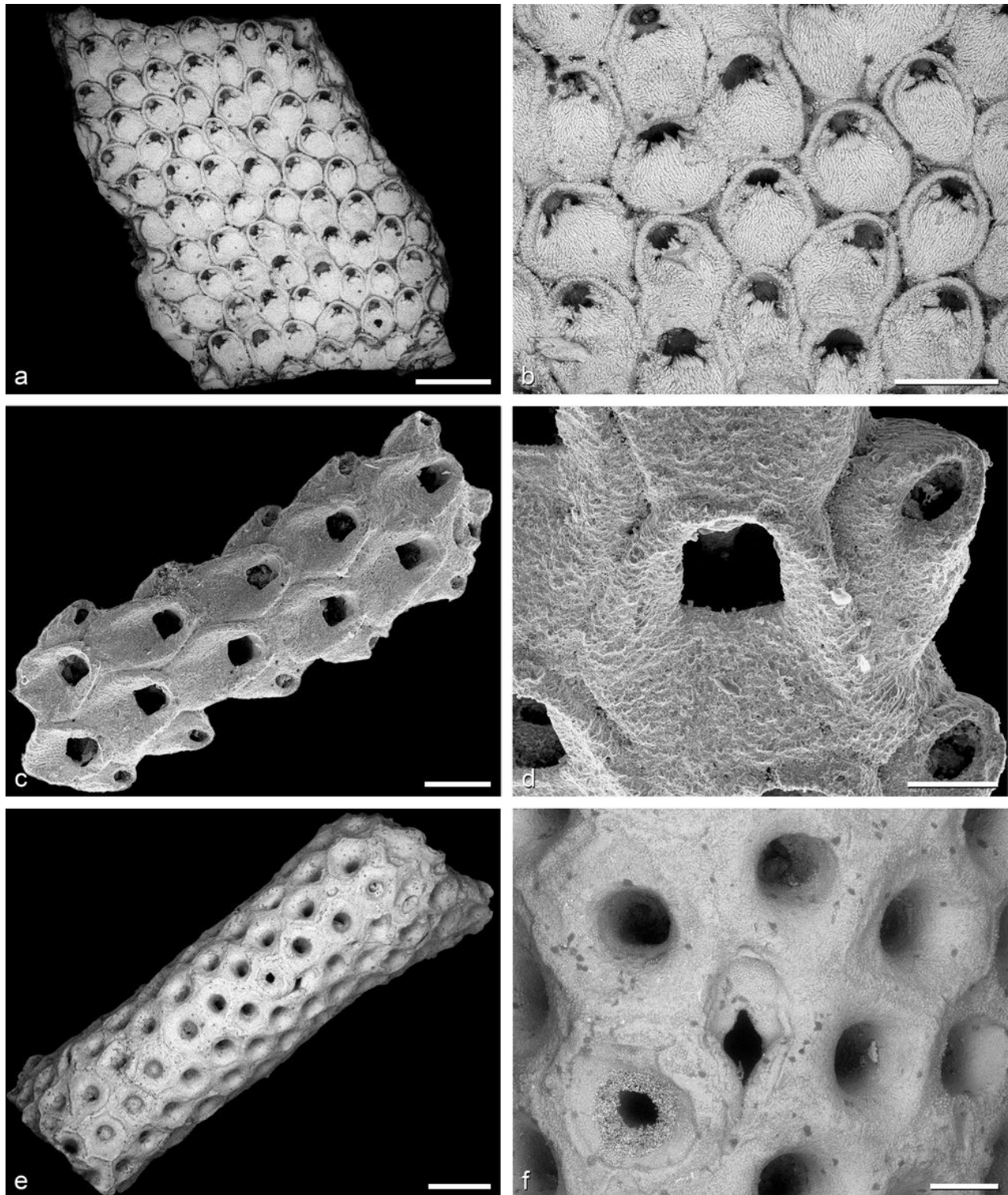


Figure 58: a-b *Floridina scutata brevior* VOIGT, 1987, holotype, SMF 25530, Danian, Ciply in the municipality Mons, Wallonia, Belgium. c-d *Holsacella biserialis* VOIGT, 1999, holotype, SMF 26223, Danian, Neu Wulmstorf-Daerstorf, Lower Saxony, Germany. e-f *Inversaria crassipes* (MARSSON, 1887), neotype, SMF 24480, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. Scale bars: e 1 mm; a 500 µm; b-c, f 250 µm; d 100 µm.

Stratigraphical range: Late Maastrichtian.

Remarks: *Inversaria trigonopora* is the type species of *Inversaria* HAGENOW, 1851. In the figure captions, Curfs Quarry is named as the type locality, while the original label shows that the specimen came from Kunrade.

***Inversaria tuber* VOIGT & WILLIAMS, 1973**
(Fig. 59e-f)

- *# 1973 *Inversaria tuber* n.sp. – VOIGT & WILLIAMS, p. 159, Pl. 7, fig. 10, Pl. 8, figs. 1–4.
- # 1979b *Inversaria tuber* VOIGT & WILLIAMS, 1973 – VOIGT, p. 44, Pl. 7, figs. 1–3.



- # 2018 *Inversaria tuber* VOIGT and WILLIAMS – TAYLOR *et al.*, Fig. 15d–e.

Holotype: SMF 24524 (VOIGT & WILLIAMS, 1973, Pl. 8, figs. 2–4).

Original label: VOIGT collection number 6545.

Locus typicus: Voerendaal-Kunrade, Limburg, Netherlands.

Stratum typicum: Bryozoan-rich layers of the Kunrade Limestone.

Further distribution: Late Maastrichtian, abandoned Schunk Quarry near Voerendaal-Kunrade and along the A76 motorway near Benzenrade in the Heerlen municipality (both Limburg, Netherlands).

Stratigraphical range: Late Maastrichtian.

***Kamilocella barbata*
(MARTHA *et al.*, 2017)**

(Fig. 60a–b)

- *# 2017 "*Onychocella*" *barbata* sp. nov. – MARTHA *et al.*, p. 39, Fig. 11f1–5.

Holotype: SMF 29981 (MARTHA *et al.*, 2017, Fig. 11f1–f5).

Original label: SMF 29981.

Locus typicus: Hoher Stein, Dresden-Plauen, Saxony, Germany.

Stratum typicum: Rocky shore facies of the Dölzschen Formation, *Actinocamax plenus* ammonite Zone (latest Cenomanian).

Stratigraphical range: Late Cenomanian.

Remarks: The holotype is the only reported specimen of this species.

Genus *Latereschara* ORBIGNY, 1851

***Latereschara galeata* (HAGENOW, 1839)**

(Fig. 60c–d)

- *# 1839 *Eschara galeata* nob. – HAGENOW, p. 264.
1841 *Eschara galeata* v. HAG. – ROEMER, p. 16.
1846 *Eschara galeata* v. HAG. – HAGENOW, p. 609, Pl. XXIII.b, fig. 31.
?# 1851 *Eschara pavonia*, HAG. – HAGENOW, p. 83, Pl. X, fig. 6.
1865 *Eschara galeata* v. HAGEN. – BEISSEL, p. 22, Pl. 1, figs. 16–20, Pl. 2, fig. 21.
1887 *Eschara galeata* v. HAGENOW – MARSSON, p. 71.
?# 1892 *Rhagasostoma galeatum* v. HAG. sp. – HENNIG, p. 29.
1925 *Rhagasostoma galeatum* (v. HAG.) – LEVINSSEN, p. 369.
1930 *Latereschara ovigera* – BRYDONE, p. 50, Pl. XXIX, figs. 6–10.
1930 *Onychocella galeata* v. HAGENOW – VOIGT, p. 462, Pl. 18, fig. 1.
1930 *Onychocella galeata* v. HAGENOW – WAHLE, p. 29, Pl. I, fig. 5.
1959a *Latereschara galeata* (v. HAGENOW), 1839 – VOIGT, p. 10, Fig. 1.
1967 *Latereschara galeata* (v. HAGENOW, 1839) – VOIGT, p. 43, Pl. 19, figs. 2–3.
?# 1969 *Latereschara galeata* (HAG., 1839) – MA-

RYŃSKA, p. 111, Pl. IX, fig. 7.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 26416 (VOIGT, 1959a, Fig. 1).

Original label: VOIGT collection number 668.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

Further distribution: Late Campanian, "Kredin" gorge, Kopet Dag Mountains northwest of Ashgabat, Turkmenistan. Early Maastrichtian, Island of Møn, Zealand Region, Denmark; Aalborg, Nordjylland Region, Denmark; Zeltberg near Lüneburg, Lower Saxony, Germany; Friedrichberg and Preusberg near Aachen, North-Rhine Westphalia, Germany; Trimingham, Norfolk, England, United Kingdom. Late Maastrichtian, Saint-Symphorien, Mons municipality, Wallonia, Belgium; Hillerslev, Thisted Kommune and Gudumlund, near Aalborg (both Nordjylland Region, Denmark); Nasiłów, Gmina Janowiec, Lublin Voivodeship, Poland. Maastrichtian or Danian, glacial drift deposits near Wierzbno, Lubusz Voivodeship, Poland.

Stratigraphical range: Late Campanian to late Maastrichtian.

Remarks: VOIGT collection number 668 contains two specimens of the species, the right one being the neotype. The species was reported from Lüneburg-Zeltberg by VOIGT (1995c).

**Genus *Nudonychocella*
VOIGT & ERNST, 1985**

***Nudonychocella nuda*
VOIGT & ERNST, 1985**

(Fig. 60e–f)

- p# 1930 *Membranipora subsimplex* d'ORBIGNY – VOIGT, p. 414, Pl. 2, figs. 11–12.
*# 1985b *Nudonychocella nuda* n.g.n.sp. – VOIGT & ERNST, p. 59, Figs. 1.1–5, 2.1–5.
2018 *Nudonychocella nuda* VOIGT and ERNST – TAYLOR *et al.*, Fig. 19a–b.

Holotype: SMF 25383 (VOIGT & ERNST, 1985b, Figs. 1.2–3).

Original label: VOIGT collection number 9571.

Locus typicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum typicum: *Belemnites* junior belemnite Zone, Tuffeau de Maastricht.

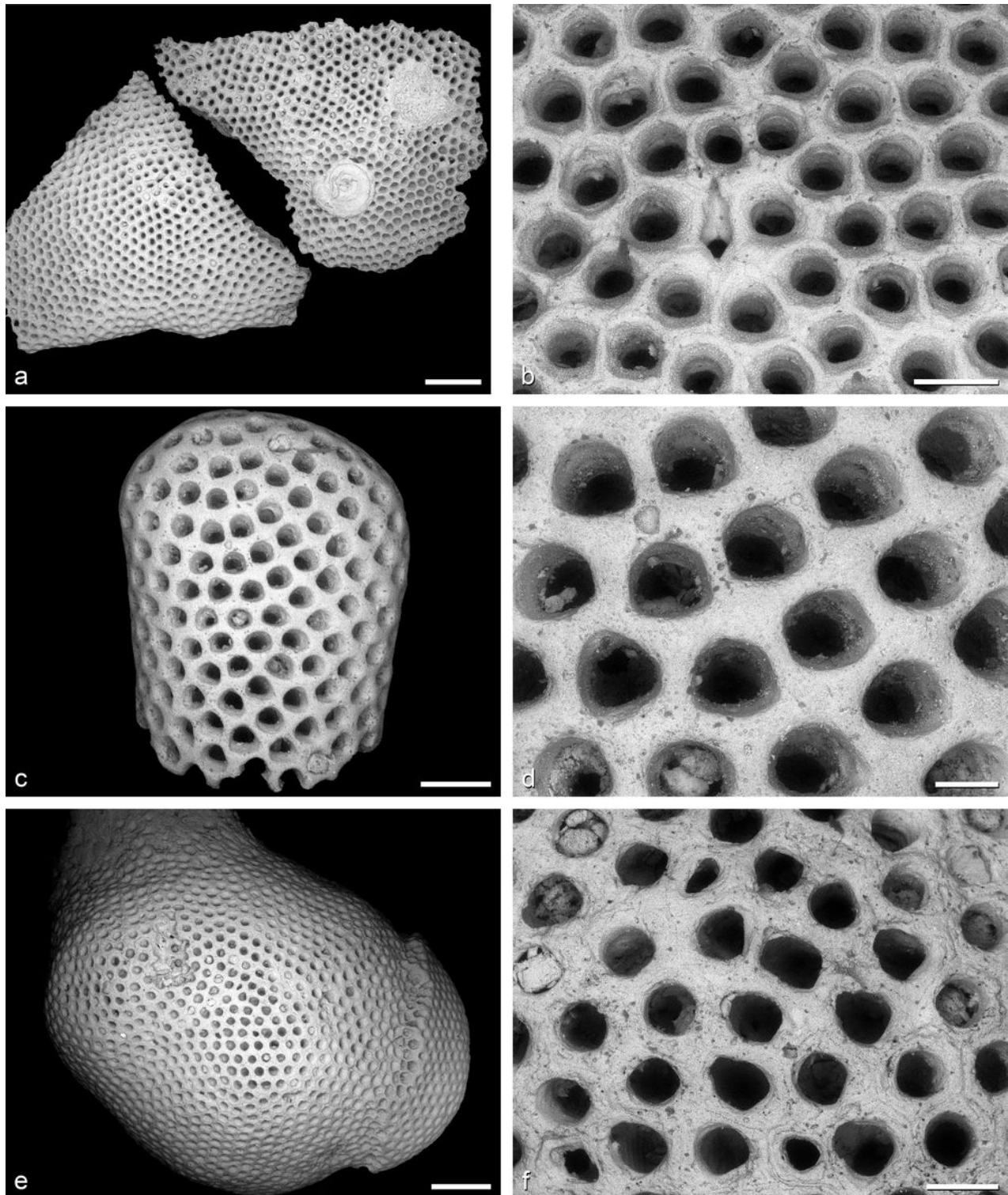


Figure 59: a-b *Inversaria flabellula* (HAGENOW, 1846), neotype, SMF 24478, late Campanian, Staversvad near Kristianstad-Arkelstorp, Skåne län, Sweden. c-d *Inversaria trigonopora* HAGENOW, 1851, neotype, SMF 24484, late Maastrichtian, Voerendaal-Kunrade, Limburg, Netherlands. e-f *Inversaria tuber* VOIGT & WILLIAMS, 1973, holotype, SMF 24524, late Maastrichtian, Voerendaal-Kunrade, Limburg, Netherlands. Scale bars: a, e 2.5 mm; c 1 mm; b, f 500 µm; d 250 µm.

Further distribution: Late Maastrichtian, Tuffeau de Maastricht and equivalent strata in Voerendaal-Kunrade, Limburg, Netherlands.

Stratigraphical range: Late Maastrichtian.

Remarks: *Nudonychocella nuda* is the type species of *Nudonychocella* VOIGT & ERNST, 1985.

Genus *Ogiva* JULLIEN, 1882

Ogiva ellinorvoigtae MARTHA *et al.*, 2015

(Fig. 61a–b)

p# 1924a *Ogiva promonturiorum* n.sp. – VOIGT, p. 209, Pl. VII, fig. 22 (non Pl. VII, figs. 21, 23–24).

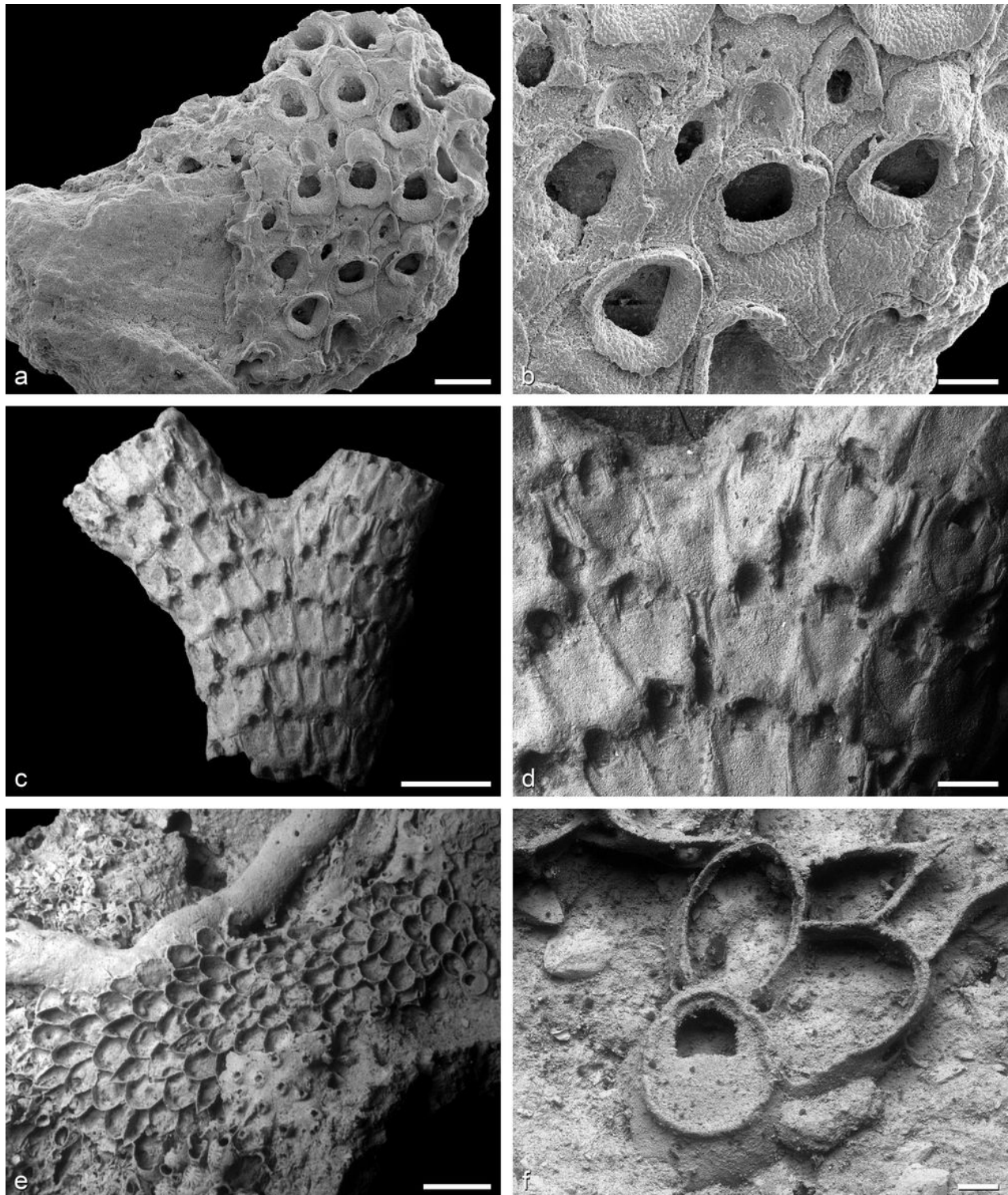


Figure 60: a-b *Kamilocella barbata* (MARTHA *et al.*, 2017), holotype, SMF 29981, late Cenomanian (*Actinocamax ple-nus* ammonite Zone), Hoher Stein in Dresden-Plauen, Saxony, Germany. c-d *Latereschara galeata* (HAGENOW, 1839), neotype, SMF 26416, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. e-f *Nudonychocella nuda* VOIGT & ERNST, 1985, holotype, SMF 25383, late Maastrichtian (*Belemnitella junior* belemnite Zone), Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands, d shows the ancestrula with a crypto-cyst.
Scale bars: c, e 1 mm; a, d 250 µm; b, f 100 µm.

*# 2015 *Ogiva ellinorvoigtae* sp. nov. – MARTHA *et al.*, p. 700, Figs. 6a–f, 7.

Holotype: SMF 29995 (MARTHA *et al.*, 2015, Fig. 6a–b).

Original label: VOIGT collection number 4505.

Locus typicus: Abandoned quarry of the former iron-ore mine of Bülten-Adenstedt near Ilse-de-Groß Bülten, Lower Saxony, Germany.



Stratum typicum: Glauconitic arenaceous limestone of the Gehrden Formation, *Gonioteuthis westfalica* belemnite Zone, middle Santonian.

Paratypes: SMF 29996–29998.

Further distribution: Coniacian or early Santonian, *Siphonia* marl of the Emscher Formation, foot of the Sudmerberg near Goslar, Lower Saxony, Germany. Middle Santonian, Barbara pit near Lengede-Barbecke; abandoned iron-ore mine Vallstedt, northeast of Lengede-Broistedt; Sudmerberg Formation from a former excavation on the Butterberg in Bad Harzburg (all Lower Saxony, Germany). Late Santonian (doubtful), Blumenauer Straße, Hannover-Linden, Germany.

Stratigraphical range: Early Santonian (Coniacian?) to late (?) Santonian.

Genus *Onychocella* JULLIEN, 1882

Genus *Kamilocella* TAYLOR et al., 2018

'*Onychocella*' *cavernosa* VOIGT & SCHNEEMILCH, 1986

(Fig. 61c–d)

*# 1986 *Onychocella cavernosa* n.sp. – VOIGT & SCHNEEMILCH, p. 118, Pl. 2, figs. 1–4.

Holotype: SMF 25909 (VOIGT & SCHNEEMILCH, 1986, Pl. 2, figs. 1–4).

Original label: VOIGT collection number 10814.

Locus typicus: Alemannia quarry near Sehnde-Höver, Lower Saxony, Germany.

Stratum typicum: Chalk marl of early Campanian age (*Goniotheutis quadrata* belemnite Zone).

Stratigraphical range: Early Campanian.

Remarks: The holotype is the only reported specimen of this species. It consists of two fragments that were parts of the same colony according to VOIGT & SCHNEEMILCH (1986). One branch displays cavities around the opesia of each autozooid that were termed "periphere Cavernen" by VOIGT & SCHNEEMILCH (1986). However, they clearly differ from peripheral caverns found in other species of *Onychocella*, and in some coscinopleurid species, since they are very regular in shape, size and position. Furthermore, the cavities are always surrounded by a raised margin and sometimes furrows are recognizable separating them from the adjacent autozooids. Therefore, these are not the same as the hollow peripheral caverns defined above but are instead kenozooids. The generic affinity of this species is uncertain.

Onychocella depressa (HAGENOW, 1851)

(Fig. 61e–f)

- *# 1851 *Cellepora* (*Discop.*) *depressa*, HAG. – HAGENOW, p. 93, Pl. XI, fig. 13.
- non# 1872 *Membranipora depressa* HAG. sp. – REUSS, p. 103, Pl. 25, fig. 1.
- non# 1874 *Membranipora depressa* HAG. sp. – REUSS, p. 128.
- non# 1877 *Membranipora depressa* v. HAG. sp. – NOVÁK, p. 88, Pl. II, figs. 9–10.
- non# 1892 *Membranipora depressa* von HAGENOW sp. – POČTA, p. 31, Pl. IV, fig. 18.
- non# 1895 *Membranipora depressa* n.sp. – MACGILLIVRAY, p. 37, Pl. V, fig. 3.
- non# 1900 *Onychocella depressa* HAG. – CANU, p. 391.
- non# 1911 *Membranipora depressa*, HAG. sp. – FRIČ, p. 61.
- non# 1924a *Onychocella depressa* v. HAGENOW – VOIGT, p. 202.
- ?# 1927 *Onychocella depressa* HAG. – ZUFFARDI COMERCI, p. 15, Pl. II, fig. 6–7.
- p# 1930 *Onychocella depressa* v. HAGENOW – VOIGT, p. 454, Pl. 15, fig. 2.
- # 1989b *Onychocella depressa* (v. HAGENOW, 1851) – VOIGT, p. 57, Pl. 13, figs. 3–7.
- ?# 2003 *Onychocella depressa* (v. HAGENOW, 1851) – ŽÁGORŠEK & KROH, p. 10, fig. 4b.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Maastricht, Limburg, Netherlands.

Stratum typicum: Tuffeau de Maastricht.

Neotype: SMF 25863 (VOIGT, 1989b, Pl. 13, fig. 4).

Original label: VOIGT collection number 1370.

Locus neotypicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum neotypicum: Tuffeau de Maastricht (Meerssen Limestone).

Further distribution: Late Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratigraphical range: Maastrichtian.

'*Onychocella*' *discerpta* (VOIGT, 1962)

(Fig. 62a–b)

- *# 1962a *Membranipora discerpta* n.sp. – VOIGT, p. 244, Pl. 27, figs. 4–8.
- # 2005 *Membranipora discerpta* VOIGT, 1962 – HINZ-SCHALLREUTER & SCHALLREUTER, p. 545.

Holotype: SMF 24127 (VOIGT, 1962a, Pl. 27, figs. 7–8).

Original label: VOIGT collection number 875.

Locus typicus: Glacial drift A containing flint in a gravel pit near Neu Wulmstorf, Lower Saxony, Germany.

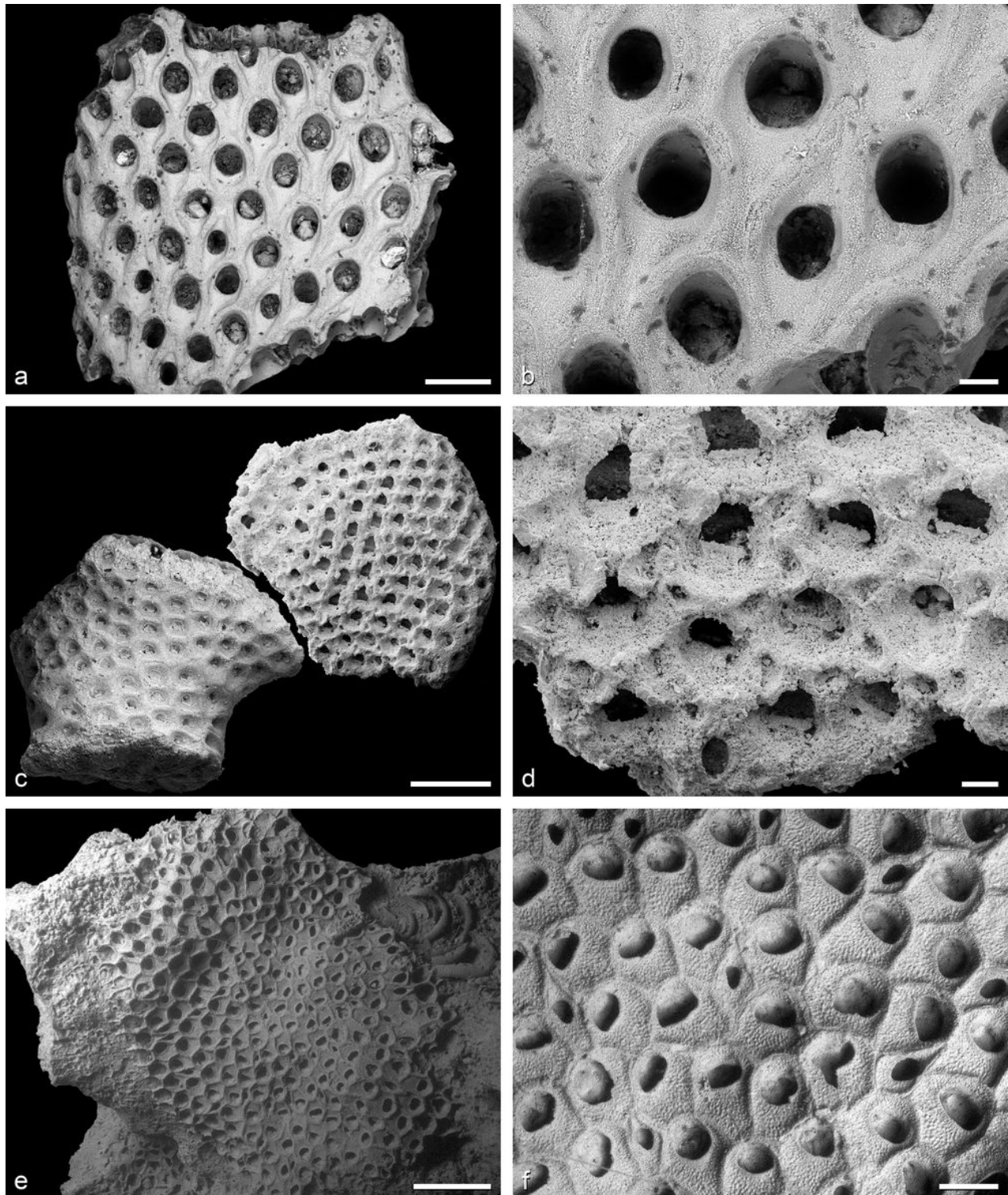


Figure 61: a-b *Ogiva ellinorvoigtae* MARTHA *et al.*, 2015, holotype, SMF 29995, middle Santonian (*Gonioteuthis westfalica* belemnite Zone), abandoned quarry of the former iron-ore mine of Bülten-Adenstedt near Ilsede-Groß Bülten, Lower Saxony, Germany. c-d '*Onychocella*' *cavernosa* VOIGT & SCHNEEMILCH, 1986, holotype, SMF 25909, early Campanian (*Gonioteuthis quadrata* belemnite Zone), Alemannia quarry near Sehnde-Höver, Lower Saxony, Germany. e-f *Onychocella depressa* (HAGENOW, 1851), neotype, SMF 25863, late Maastrichtian, Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands. Scale bars: e 2.5 mm; c 1 mm; a, f 500 µm; b, d 100 µm.

Stratum typicum: Glacial drift deposit containing white chalk of late Maastrichtian age (*Pteria danica* bivalve Zone).

Stratigraphical range: Late Maastrichtian.

Remarks: The holotype colony is broken, but the characteristic features of the species are still all visible on the largest fragment. The generic assignment of this species is very tentative.



'Onychocella' hexagona
(HAGENOW, 1839)

(Fig. 62c–d)

- *# 1839 *Cellepora hexagona* nob. – HAGENOW, p. 276, Pl. IV, fig. 12a–c.
1887 *Membranipora velamen* GOLDFUSS sp. – MARSSON, p. 56, Pl. V, fig. 12.
p# 1930 *Membranipora velamen* GOLDFUSS – VOIGT, p. 415, Pl. 2, fig. 16.
1959a *Membranipora hexagona* (v. HAGENOW), 1839 – VOIGT, p. 29, Pl. V, fig. 1.

Holotype: The originals of the HAGENOW collection from the the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of the early Maastrichtian.

Neotype: SMF 26398 (VOIGT, 1959a; Pl. V, fig. 1).

Original label VOIGT collection number 395.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of the early Maastrichtian.

Further distribution: Early Maastrichtian, Hemmoor and Lüneburg, Lower Saxony, Germany. Late Maastrichtian to middle Danian, Hemmoor, Lower Saxony, Germany.

Stratigraphic range: Early Maastrichtian to middle Danian.

Remarks: By assigning the HAGENOW species to *Membranipora* BLAINVILLE, 1830, VOIGT (1959a) created a homonym of *M. hexagona* BUSK, 1856 (see discussion in HASTINGS, 1966, p. 67). Although BUSK's species has not been re-imaged and a proper classification is still pending, it is unlikely from the description given in HASTINGS (1966) that the HAGENOW and the Busk species are congeneric. The assignment of this species can only be very tentative.

***Onychocella meijeri* VOIGT, 1987**

(Fig. 62e–f)

- *# 1987a *Onychocella meijeri* n.sp. – VOIGT, p. 52, Pl. 12, figs. 1–3.

Holotype: SMF 25531 (VOIGT, 1987a, Pl. 12, fig. 1).

Original label: VOIGT collection number 7505.

Locus typicus: Ciply, Mons municipality, Wallonia, Belgium.

Stratum typicum: Basal beds (Tuffeau de la Malogne) of the Tuffeau de Ciply.

Further distribution: Danian, F.P. Mons borehole, Mons, Wallonia, Belgium; Albert Canal near Riemst-Vroenhoven, Flanders, Belgium; Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands; Pisolith limestone

near Vigny, Île-de-France, France.

Stratigraphical range: Danian.

***Onychocella pockrandti* VOIGT, 1975**

(Fig. 63a–b)

- *# 1975a *Onychocella pockrandti* n.sp. – VOIGT, p. 247, Pl. 12, figs. 1–3.
1983 *Onychocella pockrandti* VOIGT – VOIGT, Pl. 4, fig. 1.

Holotype: SMF 24557 (VOIGT, 1975a, Pl. 4, figs. 1–2).

Original label: VOIGT collection number 7173.

Locus typicus: Sehnde-Höver, Lower Saxony, Germany.

Stratum typicum: Late early Campanian.

Further distribution: Santonian, Lägerdorf, Schleswig-Holstein, Germany. Early late Campanian, chalk pit of the cement factory Alsen-Breitenburg near Lägerdorf, Schleswig-Holstein, Germany. Earliest Maastrichtian, Saturn pit near Krons Moor, Schleswig-Holstein, Germany.

Stratigraphic range: Santonian to earliest Maastrichtian.

Remarks: W. POCKRANDT collected the holotype and gave it to VOIGT. In the species descriptions, Lägerdorf is named as the type locality, while the original label shows that the specimen comes from Höver.

'Onychocella' prismatica
(HAGENOW, 1839)

(Fig. 63c–d)

- *# 1839 *Glauconome prismatica* nob. – HAGENOW, p. 293.
?# 1851 *Vincularia bisinuata*, d'ORB., 1851 – ORBIGNY, p. 85, Pl. 659, figs. 1–3.
1887 *Vincularia canalifera* v. HAGENOW – MARSSON, p. 64.
1959 *Vincularia prismatica* (v. HAGENOW), 1839 – VOIGT, p. 45, Pl. VII, figs. 7–8.
1962 *Vincularia prismatica* (v. HAGENOW) – BERTHESEN, p. 67, Pl. 4, fig. 5.
1963 "*Vincularia*" *prismatica* (von HAGENOW, 1839) – VEENSTRA, p. 113, Pl. 2, figs. 12–14.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 26411 (VOIGT, 1959a, Pl. VII, fig. 7).

Original label: VOIGT collection number 410.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

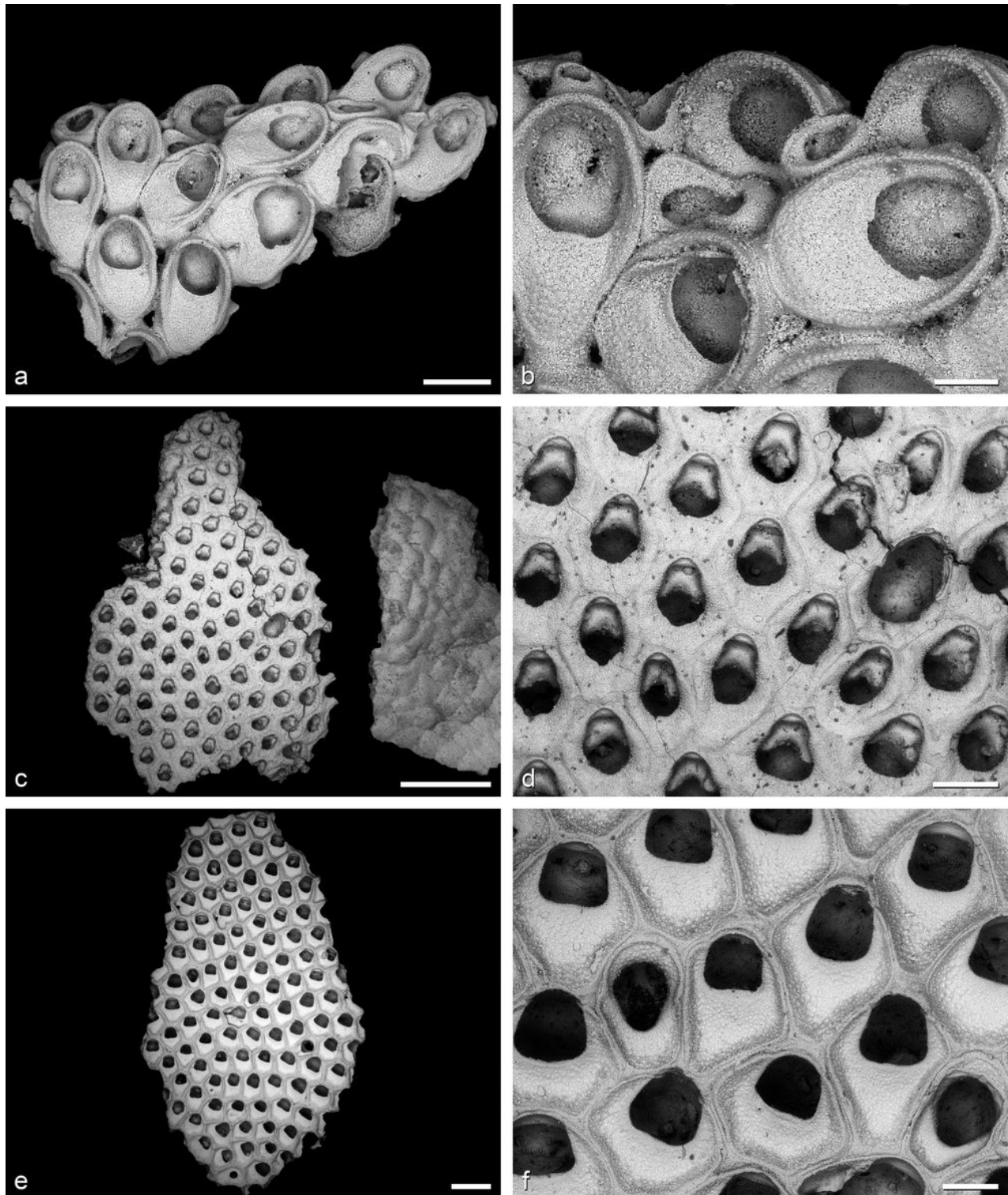


Figure 62: a-b '*Onychocella*' *discerpta* (VOIGT, 1962), holotype, SMF 24127, late Maastrichtian (*Pteria Danica* bivalve Zone), Neu Wulmstorf, Lower Saxony, Germany. c-d '*Onychocella*' *hexagona* (HAGENOW, 1839), neotype, SMF 26398, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. e-f *Onychocella* *meijeri* VOIGT, 1987, holotype, SMF 25531, Danian, Ciply in the municipality Mons, Wallonia, Belgium. Scale bars: c 2.5 mm; e 1 mm; d 500 µm; a, f 250 µm; b 100 µm.

Stratum neotypicum: White chalk of early Maastrichtian age.

Further distribution: Danian, Faxø quarries, Herfølge, Køge Kommune; Kagstrup, Solrød Kommune; Stevns Klint in the Stevns Kommune (all Zealand Region, Denmark); Island of Saltholm

and Torslunde near Taastrup, Capital Region, Denmark; Klintholm on the Island of Funen, South Denmark Region, Denmark.

Stratigraphical range: Early Maastrichtian to Danian.



Remarks: The species is here transferred provisionally to *Onychocella* pending proper revision.

***Onychocella pseudoirregularis*
(VOIGT, 1924)**

(Fig. 63e–f)

- # 1851 *Cellepora (Discopora) irregularis*, HAG. – HAGENOW, p. 92, Pl. XI, fig. 14.
 *p# 1924b *Onychocella pseudoirregularis* nom. nov. – VOIGT, p. 203, Pl. VII, figs. 13–14.
 p# 1930 *Onychocella pseudoirregularis* VOIGT – VOIGT, p. 453, Pl. 15, fig. 5.
 ?# 1958 *Onychocella pseudoirregularis* VOIGT, 1924 – DUCASSE, p. 50, Pl. V, fig. 3.
 # 1989b *Onychocella pseudoirregularis* VOIGT, 1924 – VOIGT, p. 53, Pl. 11, figs. 2–6.
 non# 2003 *Onychocella pseudoirregularis* VOIGT, 1924 – ZÁGORŠEK & KROH, p. 10, Fig. 4d.

Syntypes: This material belonged to the first VOIGT Collection that was destroyed in a fire at the *Geologisches Staatsinstitut Hamburg* in 1943.

Locus typicus: Gehrden; Sudmerberg near Goslar; Ilsede-Groß Bülten (all Lower Saxony, Germany); Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: (Ober-)Emscher Formation and glauconitic arenaceous limestone of the Gehrden Formation, *Gonioteuthis westfalica* belemnite Zone, middle Santonian.

Neotype: SMF 26103 (VOIGT, 1989b, Pl. 3, figs. 3–4).

Original label: VOIGT collection number 10691A.

Locus neotypicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum neotypicum: Tuffeau de Maastricht.

Further distribution: Late Maastrichtian, Tuffeau de Maastricht in the area around Maastricht, Limburg, Netherlands.

Stratigraphical range: Late Maastrichtian.

Remarks: VOIGT (1924b) selected *Onychocella pseudoirregularis* as a replacement name for material from Maastricht of *Cellepora irregularis* HAGENOW, 1851, as the name *Onychocella irregularis* was preoccupied by *Eschara irregularis* HAGENOW, 1839, from Rügen. Although no material from Maastricht was examined by VOIGT (1924b), VOIGT (1989b) selected a sample from Maastricht as the neotype and reinterpreted the species strictly in the sense of HAGENOW (1851). Whether the German Santonian material and the material from the early Maastrichtian of Rügen are conspecific with the material from Maastricht remains unresolved as all material was destroyed during World War II. However, VOIGT (1989b) expressed concerns on its conspecificity and did not include the Santonian localities in his revision.

***Onychocella regularis* (HAGENOW, 1846)**

(Fig. 64a–b)

- # 1846 *Cellepora regularis* v. HAG. – HAGENOW, p. 619, Pl. XXIII.b, fig. 45.
 *# 1959a *Onychocella regularis* (v. HAGENOW), 1846 – VOIGT, p. 55, Pl. VII, figs. 3–4.

Holotype: The originals of the HAGENOW collection in the Stettiner Museum were lost during World War II.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

Neotype: SMF 26408 (VOIGT, 1959a, Pl. VII, figs. 3–4).

Original label: VOIGT collection number 407.

Locus neotypicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum neotypicum: White chalk of early Maastrichtian age.

Stratigraphical range: Early Maastrichtian.

Remarks: CHIPLONKAR (1939) described a new species named *Eschara regularis* from the Bagh Beds (?Turonian) of Madhya Pradesh, India. This species was later referred to *Onychocella* JULLIEN, 1882, by TAYLOR and BADVE (1994), therefore creating a secondary homonym of *O. regularis*, which requires a replacement name.

'*Onychocella*' spinifera VOIGT, 1981

(Fig. 64c–d)

- *# 1981c *Onychocella spinifera* n.sp. – VOIGT, p. 291, Fig. 3A–G.
 # 1992b *Onychocella spinifera* VOIGT – VOIGT, Pl. 6, figs. 1–3.

Holotype: Not found (VOIGT, 1981c, Fig. 3A).

Original label: VOIGT collection number 9194.

Locus typicus: Abandoned Schunk Quarry near Voerendaal-Kunrade, Limburg, Netherlands.

Stratum typicum: Kunrade Limestone IV d.

Stratigraphical range: *Belemnitella junior* belemnite Zone in the Late Maastrichtian.

Remarks: The holotype was listed by EISERHARDT (1998). Here, we image specimen SMF 24802 (VOIGT collection number 9192), which was figured by VOIGT (1981c, Fig. 3D).

***Onychocella subirregularis* VOIGT, 1959**

(Fig. 64e–f)

- non# 1839 *Eschara irregularis* nob. – HAGENOW, p. 264, Pl. IV, fig. 2a–b.
 # 1839 *Cellepora irregularis* nob. – HAGENOW, p. 276.
 ?# 1841 *Discopora (Cellepora) irregularis* v. HAGENOW – ROEMER, p. 12.
 # 1846 *Cellepora irregularis* v. HAG. – HAGENOW, p. 619.
 non# 1851 *Cellepora (Discopora) irregularis*, HAG. – HAGENOW, p. 92, Pl. XI, fig. 14.

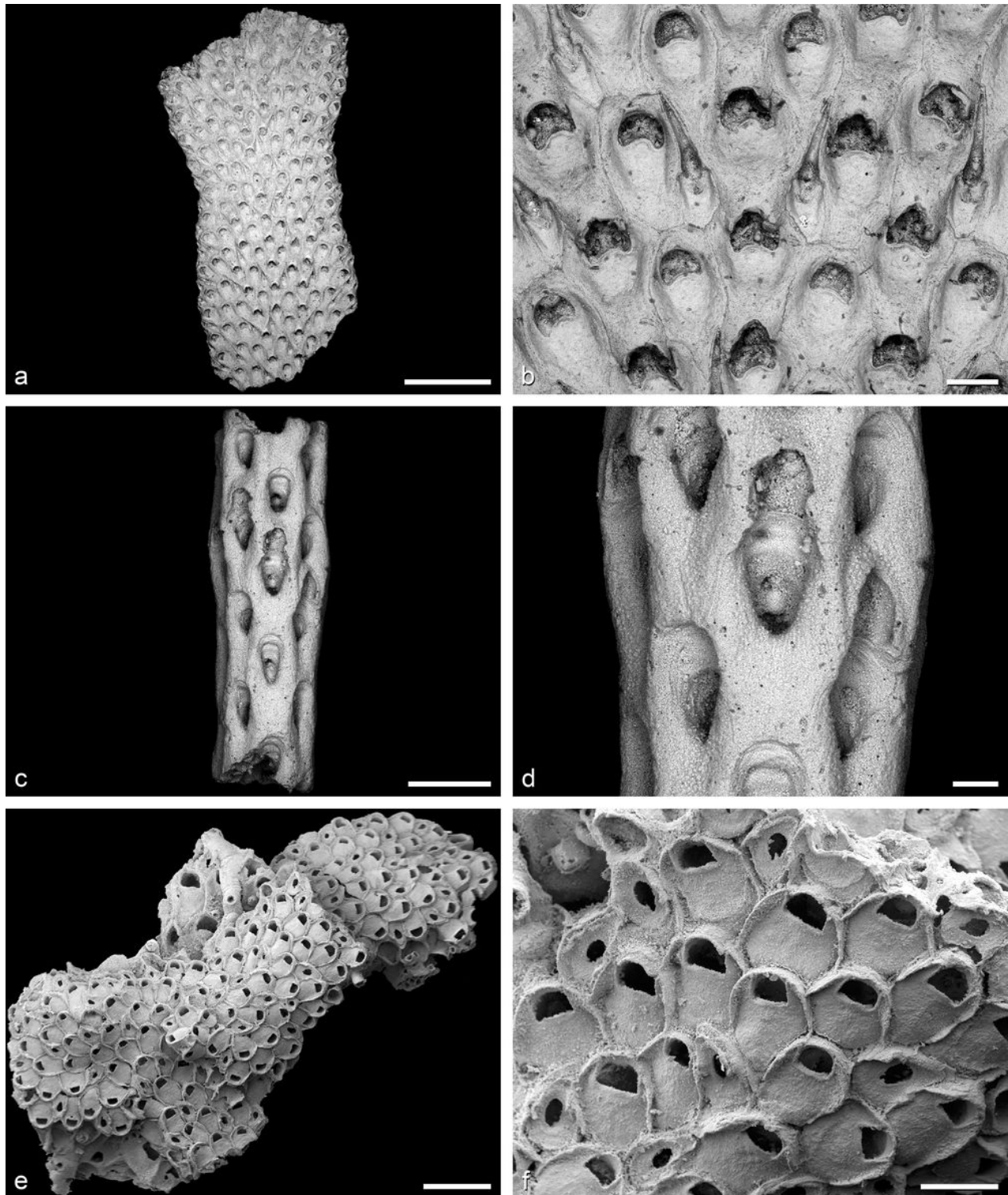


Figure 63: a-b *Onychocella pockrandti* VOIGT, 1975, holotype, SMF 24557, early Campanian, Sehnde-Höver, Lower Saxony, Germany. c-d '*Onychocella*' *prismatica* (HAGENOW, 1839), neotype, SMF 26411, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. e-f *Onychocella pseudoirregularis* (VOIGT, 1924), neotype, SMF 26103, late Maastrichtian, Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands. Scale bars: a 2.5 mm; e 1 mm; c 500 µm; b, f 250 µm; d 100 µm.

*# 1959a *Onychocella subirregularis* nom. nov. – VOIGT, p. 28, Pl. VII, fig. 2.

1989b *Onychocella subirregularis* VOIGT, 1959 – VOIGT, p. 52, Pl. 11, fig. 1.

Holotype: SMF 26407 (VOIGT, 1959a, Pl. VII, fig. 2).

Original label: VOIGT collection number 351.

Locus typicus: Island of Rügen, Mecklenburg-Vorpommern, Germany.

Stratum typicum: White chalk of early Maastrichtian age.

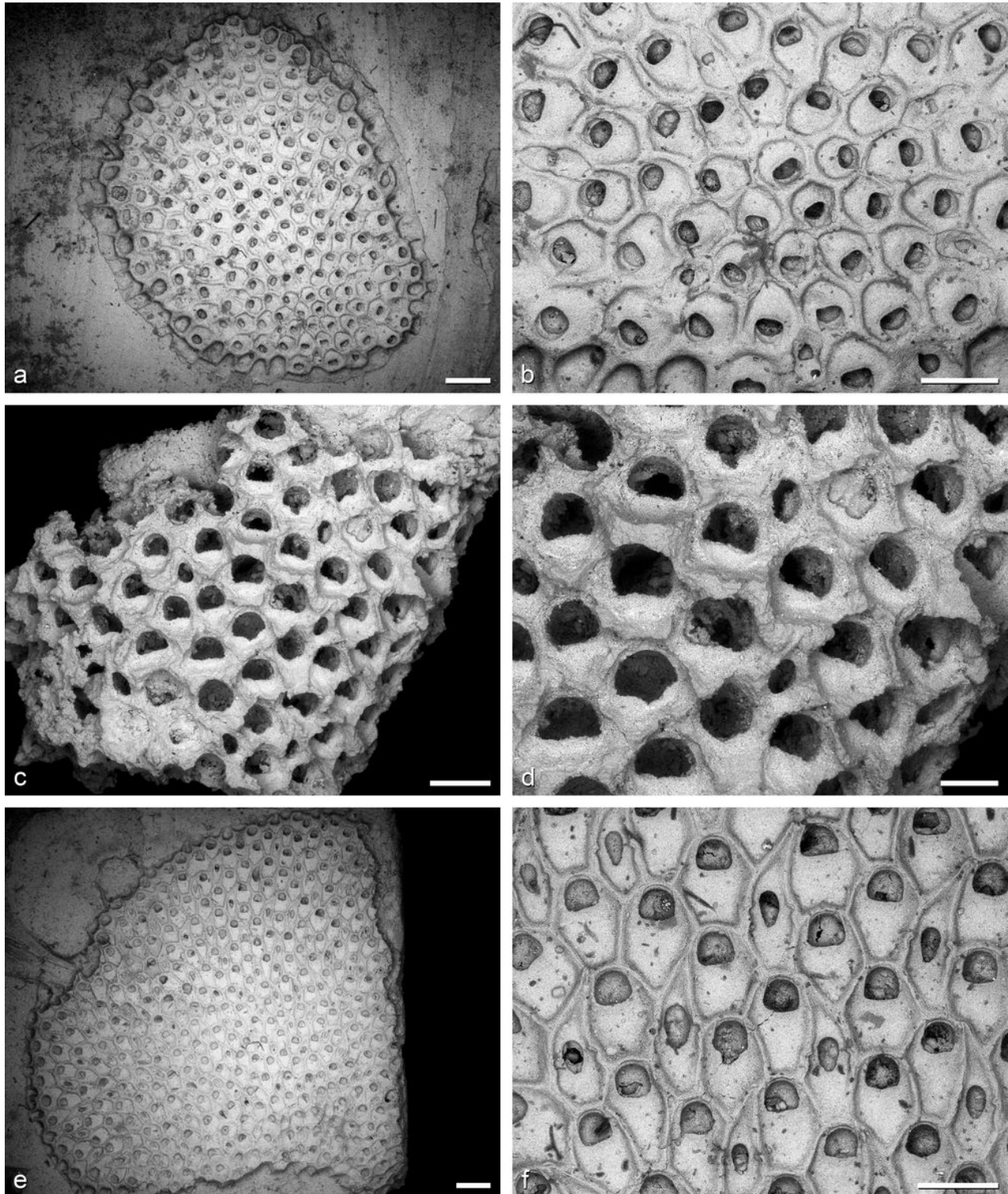


Figure 64: a-b *Onychocella regularis* (HAGENOW, 1846), neotype, SMF 26408, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany. c-d '*Onychocella*' *spinifera* VOIGT, 1981, SMF 24802, late Maastrichtian (*Belemnitella junior* belemnite Zone), Schunk Quarry near Voerendaal-Kunrade, Limburg, Netherlands. e-f *Onychocella subirregularis* VOIGT, 1959, holotype, SMF 26407, early Maastrichtian, Island of Rügen, Mecklenburg-Vorpommern, Germany.

Scale bars: a, e 1 mm; b-c, f 500 µm; d 250 µm.

Stratigraphical range: Early Maastrichtian.

Remarks: VOIGT (1959a) suggested *Onychocella subirregularis* as a replacement name for material of *Cellepora irregularis* HAGENOW, 1839,

since the name *O. irregularis* was preoccupied by another Rügen species, *Eschara irregularis* HAGENOW, 1839, introduced in the same publication.

***Onychocella subpalpiger* VOIGT, 1985**

(Fig. 65a–b)

- *# 1985a *Onychocella subpalpiger* nov. sp. – VOIGT, p. 634, Pl. 5, figs. 1–4.

Holotype: SMF 25361 (VOIGT, 1985a, Pl. 5, fig. 1).

Original label: VOIGT collection number 8771.

Locus typicus: Fécamp, Normandy, France.

Stratum typicum: Coniacian.

Paratype: SMF 25361.

Further distribution: Coniacian to Santonian, Gorges du Nant near Cognin-les-Gorges, Isère, Auvergne-Rhône-Alpes, France. Coniacian, Vattetot-sur-Mer, Seine-Maritime, Normandy, France. Coniacian (*Marsupites testudinarius* crinoid Zone), Sainte-Marguerite-sur-Mer, Seine-Maritime, Normandy, France.

Stratigraphical range: Coniacian to Santonian.

Remarks: The holotype and the paratype designated by VOIGT (1985a) are in the same cavity slide.

***Onychocella tuberculata* VOIGT, 1992**

(Fig. 65c–d)

- *# 1992b *Onychocella tuberculata* n.sp. – VOIGT, p. 151, Pl. 4, fig. 4, Pl. 5, figs. 1–5.

Holotype: Not found (VOIGT, 1992b, Pl. 5, fig. 1).

Original label: VOIGT collection number 4241.

Locus typicus: Voerendaal-Kunrade, Limburg, Netherlands.

Stratum typicum: Kunrade Limestone, late Maastrichtian (*Belemnella casimirovensis* belemnite Zone).

Further distribution: Late Maastrichtian, Blom Quarry near Terblijt, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratigraphical range: Late Maastrichtian.

Remarks: The holotype was listed by EISERHARDT (1998). Here, we image specimen SMF 25893 (VOIGT collection number 12103), which was figured by VOIGT (1992b, Pl. 4, fig. 4).

Genus *Rhagasostoma* KOSCHINSKY, 1885***Rhagasostoma hexagonum*****KOSCHINSKY, 1885**

(Fig. 65e–f)

- *# 1885 *Rhagasostoma hexagonum* n.sp. – KOSCHINSKY, p. 30, Pl. V, figs. 5–7.
- # 1920 *Rhagasostoma hexagonum* KOSCHINSKY, 1885 – CANU & BASSLER, Fig. 66A.
- # 1923 *R. hexagonum* KOSCHINSKY, 1885 – CANU & BASSLER, Fig. 8G.
- # 1953 *R. hexagonum* – BASSLER, p. G174, Fig. 133.9.
- # 2018 *Rhagasostoma hexagonum* KOSCHINSKY – TAYLOR *et al.*, Fig. 26a–g.

Holotype: The type material of *Rhagasostoma hexagonum* could not be located according to Martin Nose (Bayerische Staatssammlung für Paläontologie und Geologie in Munich, Germany) and Kamil ZÁGORŠEK (Technická univerzita v Liberci, Liberec, Czech Republic).

Locus typicus: 'Götzreuth', graben near Siegsdorf-Gerhartsreit, Traunstein, Bavaria, Germany.

Stratum typicum: Gosau mergel (Gosau marls) of the Gerhartsreiter Schichten.

Neotype: SMF 29757 (TAYLOR *et al.*, 2018, Fig. 26a–d).

Original label: None.

Locus neotypicus: Rollgraben near Teisendorf, Bavaria, Germany.

Stratum neotypicum: Lutetian, Eocene.

Stratigraphical range: Lutetian.

Remarks: *Rhagasostoma hexagonum* is the type species of *Rhagasostoma* KOSCHINSKY, 1885.

Genus *Solenonychocella***VOIGT & WILLIAMS, 1973*****Solenonychocella hennigi*****VOIGT & WILLIAMS, 1973**

(Fig. 66a–b)

- # 1892 *Membranipora rustica* d'ORB. sp. – HENNIG, p. 15, Pl. 1, fig. 14.
- p# 1930 *Onychocella flabellula* v. HAGENOW – VOIGT, p. 456, Pl. 15, fig. 21 (non Pl. 15, figs. 19–20, Pl. 39, fig. 6).
- *# 1973 *Solenonychocella hennigi* n.g. n.sp. – VOIGT & WILLIAMS, p. 172, Pl. 11, figs. 1–8, Pl. 12, figs. 1–9, Pl. 13, figs. 1–5, Pl. 16, figs. 5–6, Pl. 18, figs. 1–2; Pl. 19, figs. 1–2, Pl. 20, figs. 1–2.
- # 1983 *Solenonychocella hennigi* VOIGT [sic] – VOIGT, Pl. 4, fig. 6.
- # 2018 *Solenonychocella hennigi* VOIGT and WILLIAMS – TAYLOR *et al.*, Fig. 30a–d.

Holotype: SMF 24512 (VOIGT & WILLIAMS, 1973, Pl. 11, figs. 1–2).

Original label: VOIGT collection number 6672.

Locus typicus: Maltesholms slott near Kristianstad, Skåne län, Sweden.

Stratum typicum: Early Campanian.

Further distribution: (?) Coniacian to Santonian: "Ringelesnätt" near Ignaberga, Hässleholms kommun. Early Campanian, Karlshamn, Blekinge län, Sweden; Hemmingslycke near Kristianstad; Balsberg north of Kristianstad; Ignaberga, Hässleholms kommun (all Skåne län, Sweden); "Ifö" (probably the island Ivön, formerly spelled Ifön near Bromölla, Skåne län, Sweden). Late Campanian, Staversvad near Kristianstad-Arkeltorp; Hemmingslycke near Kristianstad; Båstad (all Skåne län, Sweden).

Stratigraphical range: Coniacian to late Campanian.

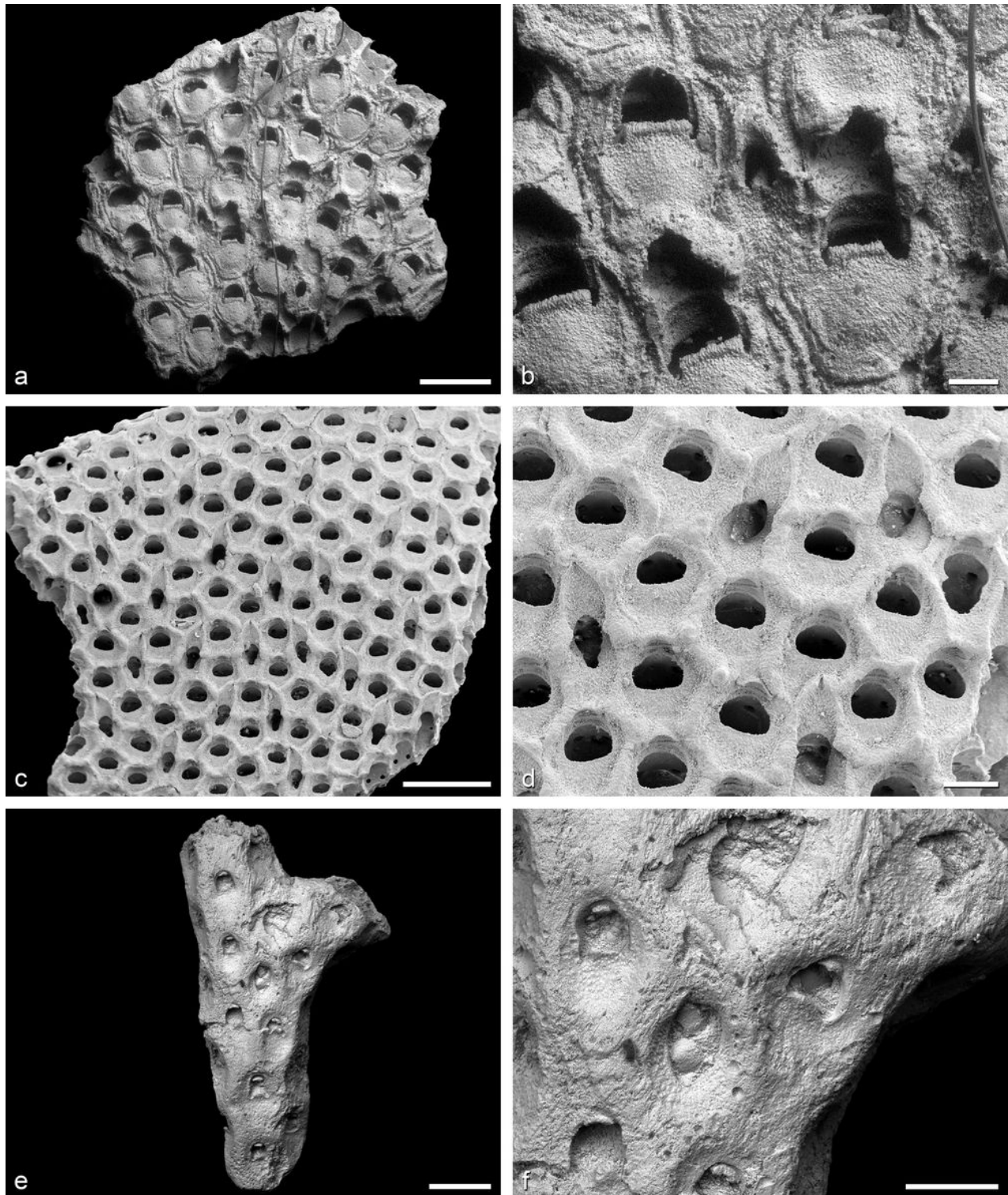


Figure 65: a-b *Onychocella subpalpiger* VOIGT, 1985, holotype, SMF 25361, Coniacian, Fécamp, Normandy, France. c-d *Onychocella tuberculata* VOIGT, 1992, SMF 25893, late Maastrichtian, Blom Quarry near Terblijt in the municipality Valkenburg aan de Geul, Limburg, Netherlands. e-f *Rhagasostoma hexagonum* KOSCHINSKY, 1885, SMF 29757, Lutetian, Rollgraben near Teisendorf, Bavaria, Germany. Scale bars: c 1 mm; a, e 500 μ m; d, f 250 μ m; b 100 μ m.

Remarks: *Solenonychocella hennigi* is the type species of *Solenonychocella* VOIGT & WILLIAMS, 1973. In the original species description, Hemmingslycke is named as the locality of the holotype,

while the label with the specimen and the figure captions indicate that the specimen comes from Maltesholms slott.

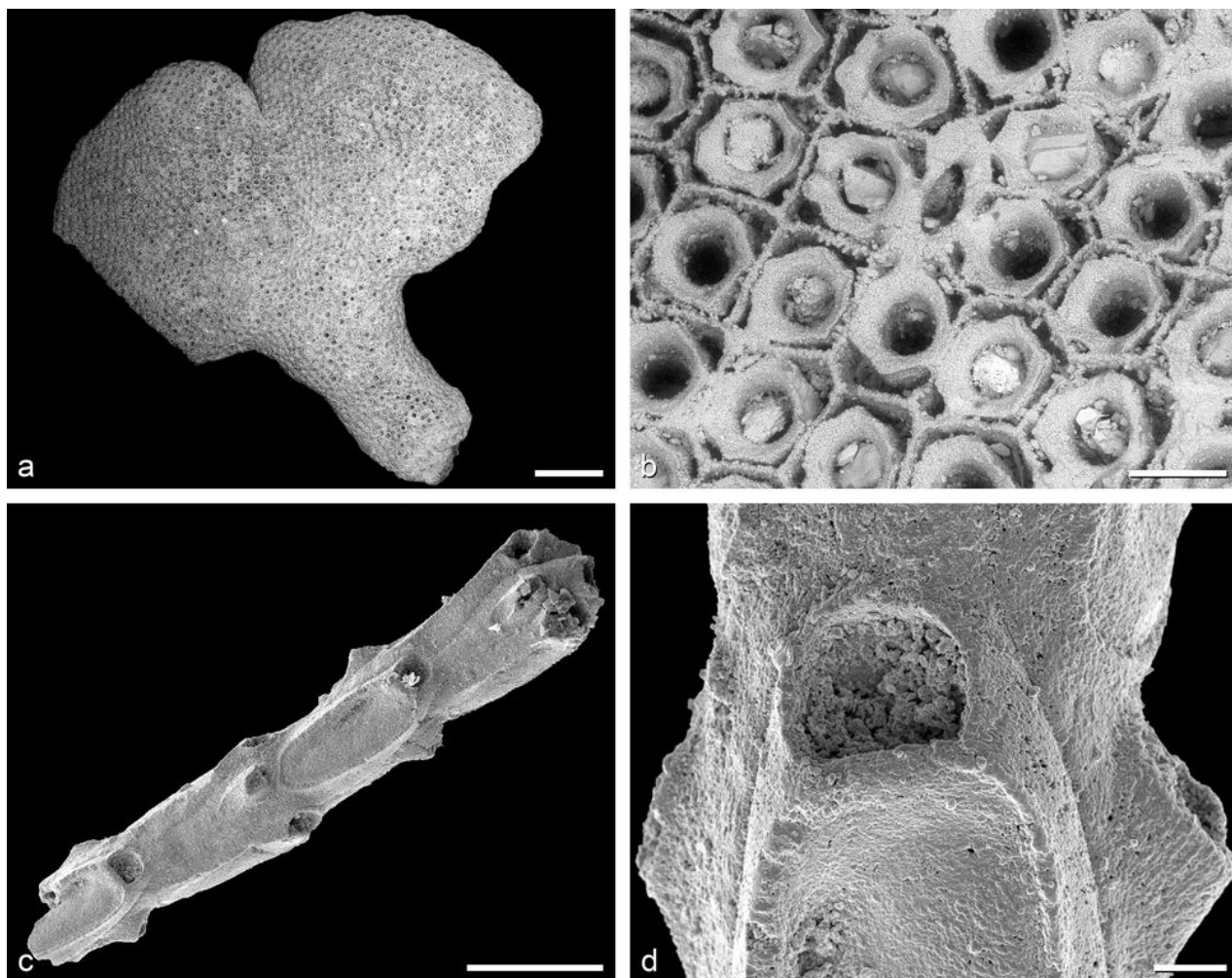


Figure 66: a-b *Solenonychocella hennigi* VOIGT & WILLIAMS, 1973, holotype, SMF 24512, early Campanian, Maltesholms slott near Kristianstad, Skåne län, Sweden. c-d *Poricellaria daniensis* VOIGT, 1999, holotype, SMF 26233, Danian, near the lighthouse Staberhuk in Fehmarn-Staberdorf, Schleswig-Holstein, Germany. Scale bars: a 2.5 mm; b-c 250 µm; d 25 µm. (.../...)

Family Poricellariidae HARMER, 1926

Genus *Poricellaria* ORBIGNY, 1854

Poricellaria daniensis VOIGT, 1999 (Fig. 66c-d)

*# 1999 *Poricellaria daniensis* n.g. n.sp. – VOIGT, p. 307, Pl. 5, figs. 35–46.

Holotype: SMF 26233 (VOIGT, 1999, Pl. 5, fig. 35).

Original label: VOIGT collection number 12989.

Locus typicus: Glacial drift deposit near the Staberhuk lighthouse, Fehmarn-Staberdorf, Schleswig-Holstein, Germany.

Stratum typicum: Bryozoan limestone of the Baltic Danian.

Further distribution: Danian, glacial drift deposits near Neu Wulmstorf-Daerstorf, Lower Saxony, Germany.

Stratigraphical range: Danian.

Unplaced Family

Family Bicorniferidae KEIJ, 1977

Genus *Voorthuyseniella* SZCZECURA, 1969

Voorthuyseniella incrustans SPIEGLER & EISERHARDT, 2002

*# 2002 *Voorthuyseniella incrustans* SPIEGLER & EISERHARDT, n.sp. – SPIEGLER & EISERHARDT, p. 9, Pl. 1, figs. 1–4, Pl. 2, figs. 1–4.

Holotype: Not found (SPIEGLER & EISERHARDT, 2002, Pl. 1, fig. 1, Pl. 2, figs. 1–4).

Original label: VOIGT collection number 7390-A.

Locus typicus: Curfs Quarry near Berg, Valkenburg aan de Geul municipality, Limburg, Netherlands.

Stratum typicum: Base of Geulhem Chalk, Houthem Formation.

Stratigraphical range: Danian.

Remarks: All material from the publication of SPIEGLER and EISERHARDT (2002) is missing.