Genrotella n. gen. and Choffatella caronae n. sp. from the Lower Senonian of Southern France

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Gendrotella n. gen. and *Choffatella caronae* n. sp. from the Lower Senonian of Southern France

By WOLF MAYNC[1])

ABSTRACT

Gendrotella n. gen., based on *Choffatella rugoretis* GENDROT 1968, from the Santonian of southern France, is erected and figured. The new genus lacks the reticulate-alveolar subepidermal layer which is characteristic of the genus *Choffatella* SCHLUMBERGER.

The new species *Choffatella caronae* n. sp., from the Santonian of southern France is described and figured. It is so far the youngest representative of the genus.

ZUSAMMENFASSUNG

Beschrieben und abgebildet wird *Gendrotella* n. gen, mit *Choffatella rugoretis* GENDROT 1968, aus dem Santonien des Marseille-Beckens, als Typusart. Dieser Form fehlt die alveoläre subepidermale Schicht, welche für die Gattung *Choffatella* charakteristisch ist.

Choffatella caronae n. sp., als neue und bisher jüngste Spezies der Gattung *Choffatella*, wird aus dem Santonien derselben Gegend beschrieben.

RESUMÉ

Choffatella rugoretis GENDROT 1968, décrite du Santonien de la région de Martigues près Marseille, est placée dans le nouveau genre *Gendrotella* n. gen. puisque dite forme manque le réseau alvéolaire sous-épidermique qui caractérise le genre *Choffatella*.

La nouvelle espèce *Choffatella caronae* n. sp. est établie pour des petits tests provenant du Santonien de la même région. Jusqu'ici, c'est donc l'espèce la plus jeune connue de *Choffatella*.

Introduction

Choffatella rugoretis GENDROT, present in the well-known reefoid deposits of Santonian (Lower Senonian) age of the region of Les Martigues near Marseille (France), was described and figured by CÉCILE GENDROT (1968). *Choffatella* sp. had previously been recorded from the Coniacian-Santonian beds of the same area (MARIE 1959a) but neither a description nor illustrations of that form were given. *Choffatella* sp. was also listed from the Coniacian of Foissac (Gard), southern France (MARIE 1959b).

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A large number of *Choffatella*, derived from the Santonian of Etang de Caronte, West of Les Martigues, have been stored in the writer's collection during the past 12 years but could, on account of continuous consulting work, not be dealt with in a publication up till now.

When *Choffatella rugoretis* GENDROT from the same stratigraphic section and horizons was recorded (GENDROT 1968), the writer assumed that also the numerous small tests of *Choffatella* in his collection would belong to that new species. A recent study of some topotypes of *Choffatella rugoretis*, which CÉCILE GENDROT most kindly placed at the writer's disposal, proved, however, that *Choffatella rugoretis* cannot be placed in the genus *Choffatella* and that the true *Choffatella* from the Santonian of Etang de Caronte hence remained undescribed. It is discussed and figured in the present paper as *Choffatella caronae* n.sp.

Gendrotella rugoretis (GENDROT)

(Pl. I, Fig. 1–5)

Type species: Choffatella rugoretis GENDROT 1968.

Holotype: GENDROT 1968, Pl. IV, Fig. 6–7.

1966 *Stomatostoecha* sp. BANNER, Acad. Nauk USSR, *10*, Pl. IX, Fig. 1–2.

1968 *Choffatella rugoretis* n.sp. GENDROT, Eclogae. geol. Helv. 61/2, 675, Pl. IV, Fig. 6–13.

The tests of *Choffatella rugoretis* have the aspect of *Choffatella*, *viz.* a *Choffatella*-like, laterally compressed form with numerous recurved narrow chambers and apparently a row of apertural pores arranged in a vertical depression of the apertural face (Pl. I, Fig. 1–4). The interior organization also shows the delicate curved septa which are regularly pierced by the numerous apertural passages (Pl. I, Fig. 5). Contradictory to the original description (GENDROT 1968), however, *Choffatella rugoretis* lacks an alveolar-reticulate subepidermal layer. The wall shows a homogeneous microgranulaf structure and the fictitious coarse meshwork is merely feigned by the presence or incorporated small quartz grains. On account of the absence of a genuine alveolar subepidermis, *Choffatella rugoretis* cannot be placed in any *spirocyclinid* (*choffatelline*) genus like *Choffatella* or *Feurtillia*[2]) *Hemicyclammina*, *Pseudocyclammina*, *Alveolophragmium*, *Reticulophragmium*, etc.

Similar external features displays the monotypic genus *Stomatostoecha*, with *Stomatostoecha plummerae* APPLIN, LOEBLICH et TAPPAN from the Albian of Texas as type species (APPLIN, LOEBLICH and TAPPAN 1950) which is, however, characterized by compact, not pierced septa (examination of topotype material, Pl. I., Fig. 6). This fact definitely speaks against the presence of a multiple, *Choffatella*-like aperture (linear series of pores) as claimed by the authors and does not permit an alignment of *Choffatella rugoretis* with *Stomatostoecha*[3]).

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[2]) F. T. BANNER (1966) has postulated the synonymy between *Feurtillia* MAYNC 1958 and *Everticyclammina* REDMOND 1964, which is refuted by the writer as well as by L. HOTTINGER (1967). The latter considers *Mayncella* BANNER 1966 (with *Mayncella greigi* (HENSON) as type species) a junior synonym of *Everticyclammina*.

[3]) Prior to the publication by CÉCILE GENDROT (1968) on *Choffatella rugoretis*, the same form from the Santonian of the area of Les Martigues (Bouches-du-Rhône) was figured as *Stomatostoecha* sp. (BANNER 1966, Pl. IX, Fig. 1–2).

Daxia CUVILLIER et SZAKALL, another genus of the simple *Haplophragmoidinae*, discloses a nummulitoid spire, compact homogeneous walls and septa (Pl. I., Fig. 7–10). M. NEUMANN has shown that the aperture of the type species *Daxia cenomana* CUV. et SZAK. is neither slit-like as supposed by its authors (CUVILLIER and SZAKALL 1949; LOEBLICH and TAPPAN 1964) nor multiple as suggested by the writer, but consists of a simple rounded interio-areal opening (NEUMANN 1965). These criteria of *Daxia* clearly reveal that *Choffatella rugoretis* does not belong to that genus either.

Daxia orbignyi CUV. et SZAK. differs from *Daxia cenomana* i.a. by its areally distributed cribrate aperture and, accordingly, the pierced septa, on which account the new genus *Mayncina* was erected (NEUMANN 1965). With a view to size, shape, the absence of an alveolar subepidermis, and the septa interrupted by apertural passages, *Mayncina* would correspond with the features of *Choffatella rugoretis* except for the difference of the apertural character (Pl. II., Fig. 1–3).

Choffatella rugoretis which, as pointed out above, cannot be lodged in any *spirocyclinid* (*choffatelline*) genus with an alveolar-reticulate subepidermal layer like *Choffatella* or *Feurtillia*, nor with *haplophragmoidine* genera like *Stomatostoecha*, *Daxia*, or *Mayncina*, is therefore considered to have a different generic status. In honor of CÉCILE GENDROT, who established the type species "*Choffatella*" *rugoretis* (GENDROT 1968), the new genus *Gendrotella* n.gen. is herewith proposed.

Table 1. Characteristics of some lituolid genera and of *Gendrotella* n.gen.

Genus	Aperture			Septa			Alveolar-Reticulate Subepidermis	
	Simple, rounded	Simple, slit	Cribrate	Linear series of pores	Compact-homogeneous	Pierced by multiple apertural passages	Present	Lacking
Choffatella				★		★	★	
Feurtillia		★			★		★	
Stomatostoecha		★			★			★
Daxia	★				★			★
Mayncina			★			★		★
Gendrotella				★		★		★

Choffatella caronae n. sp.

(Pl. III, Fig. 1–9)

Derivatio nominis: The specific name was chosen in honor of MICHÈLE CARON, Geological Institute of Fribourg (Switzerland), from whose thorough knowledge of Upper Cretaceous planktonic Foraminifera the writer has so often received benefit.

Holotype: Pl. III, Fig. 1.

Locus typicus: South of Etang de Caronte (Bouches-du-Rhône), West of Marseille, southern France.

Stratum typicum: Upper Santonian (*Lacazina compressa-Archiacina munieri* zones).

Diagnosis: A very small representative of the genus *Choffatella* (megalospheric generation) which is common in the Upper Cretaceous semi-reefal beds (Coniacian-Santonian) of the region of Marseille, southern France.

Description

Very small lenticular-discoid test, involute, with regular spire; aperture obscure, probably a vertical series of pores as in *Choffatella decipiens* SCHLUMBERGER.

In its external features, *Choffatella caronae* n.sp. does not differ from megalospheric specimens of the Lower Cretaceous species *Choffatella decipiens* except for its small dimensions. The largest specimen observed shows a diameter of 0,53 mm and a thickness of 0,12 mm, the dimensions of the smallest one attain 0,22 mm and 0,07 mm, respectively. The diameters of the A-1 forms of *Choffatella decipiens*, on the other hand, range between 0,6 mm and 1,6 mm, the axial diameter between 0,85 mm and 0,1 mm. The selected holotype shows a spiral diameter of 0,45 mm, a thickness of 0,08 mm (ratio D:T = 5,6:1). The average values, based on the measurements of 80 isolated tests, are 0,33 mm (spiral diameter), 0,08 mm (axial diameter), and 4,8:1 (ratio D:T).

The interior structure which, unfortunately, can only be clearly recognized in the few tests that show an iron-oxide staining, is identical to that displayed in small specimens (A form) of *Choffatella decipiens*, both with regard to the character of the coiling, septa, and of the alveolar-reticulate meshwork of the subepidermis (Pl. II, Fig. 4–6; Pl. III, Fig. 1–7).

Smaller tests of *Choffatella decipiens* (A generation) with a size of 0,5 mm to about 1,7 mm in diameter disclose 13–22 chambers in the last-formed whorl. In *Choffatella caronae* n.sp., no specimens with a spiral diameter of more than 0,53 mm were observed and the number of chamber lumina in the last whorl amounts to 13–18.

The type material of *Choffatella caronae* n.sp. is derived from a locality south of Etang de Caronte, West of Les Martigues. Whether the recorded tests of *Choffatella* sp. (MARIE 1959a, 1959b), found in the semi-reefal Coniacian-Santonian beds of Etang de Berre and Foissac also belong to *Choffatella caronae* n.sp. can only be ascertained by a study of that material.

In the sample from Etang de Caronte, *Choffatella caronae* n.sp. is associated with *Dictyopsella kiliani* SCHLUMB., *Cuneolina pavonia* D'ORB., *Pseudocyclammina sphaeroidea* GENDROT, etc.

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Plate I

Fig. 1–5 *Gendrotella rugoretis* (GENDROT).
Upper Santonian, Les Martigues (Bouches-du-Rhône), southern France.
Fig. 1. Holotype, 33 ×.
Fig. 2. Topotype (side view), 40 ×.
Fig. 3–4 Topotypes (apertural views).
Fig. 3, 25 ×.
Fig. 4, 50 ×.
Fig. 5. Median section showing pierced septa and absence of alveolar subepidermal layer.

Fig. 6 *Stomatostoecha plummerae* APPLIN, LOEBLICH et TAPPAN. Walnut formation (Middle Albian) NW of Austin, Travis Cty., Texas, USA. Paratype (leg. A.R. LOEBLICH). Equatorial section revealing homogeneous, not pierced septa. 40 ×.

Fig. 7–10 *Daxia cenomana* CUVILLIER et SZAKALL.
Fig. 7–8. External views, 34 ×. Upper Cenomanian Ile Madame (Charente-Maritime), western France (ex NEUMANN 1965, Revue de Micropaléontologie *8*/2, Pl. 1, Fig. 1–2).
Fig. 9. Axial section, 45 ×. Cenomanian Audignon (Carrière de la ferme Maçon), Aquitaine (France).
Fig. 10. Equatorial section, 45 ×. Aptian La Clape, southern France.

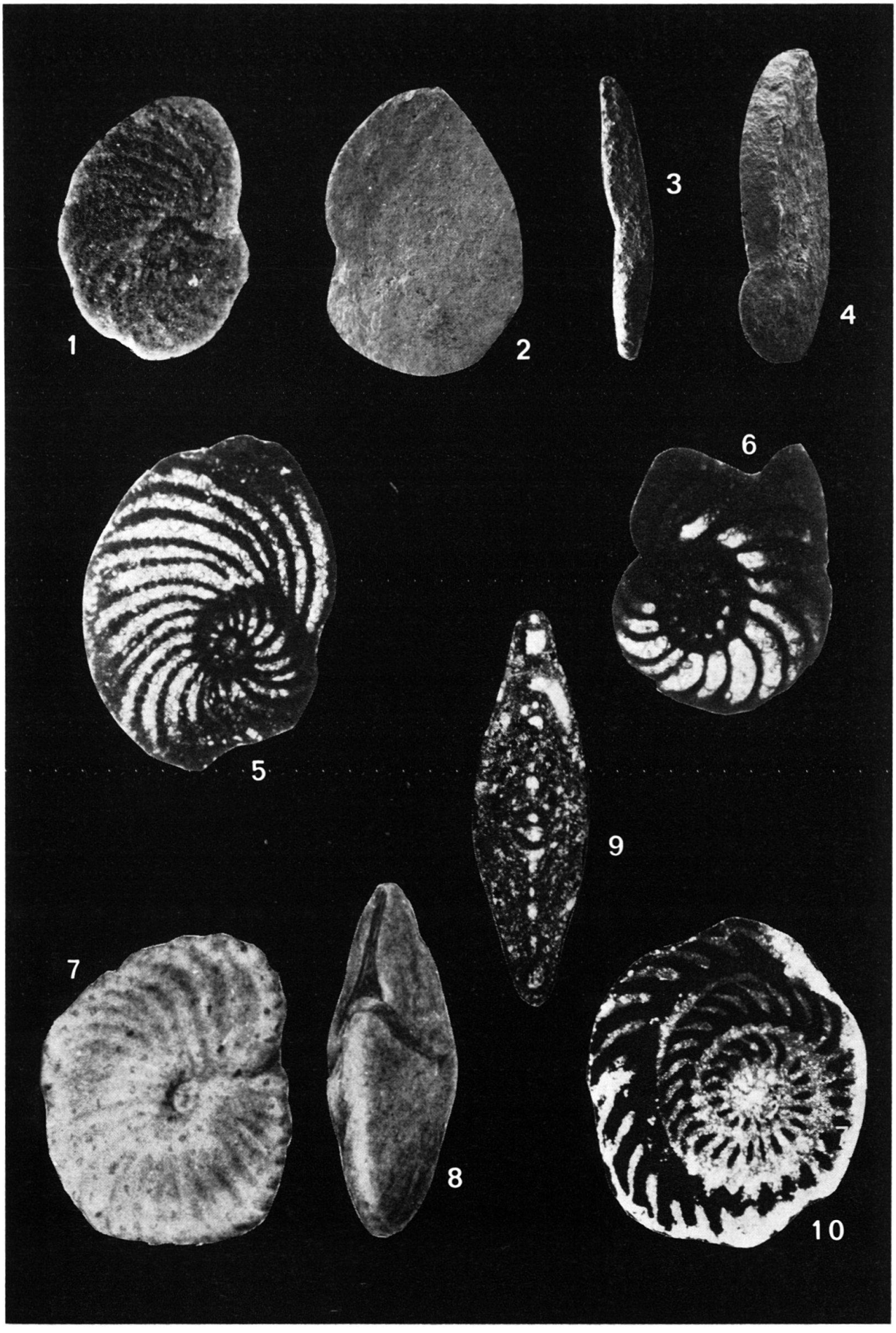
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Plate II

Fig. 1–3 *Mayncina d'orbignyi* (CUVILLIER et SZAKKALL). Cenomanian Ile Madame (Charente-Maritime), western France.
Fig. 1–2. External views (cribrate aperture), 34 × (ex NEUMANN 1965, Revue de Micropaléontologie *8*/2, Pl. 1, Fig. 9–10).
Fig. 3. Median section (B form) showing pierced septa, 29 × (ex NEUMANN 1965, Revue de Micropaléontologie *8*/2, Pl. 1, Fig. 8).

Fig. 4–6 *Choffatella decipiens* SCHLUMBERGER.
Fig. 4. External view of a group of tests of different size, 13,5 ×. Hauterivian, well Heletz-2 (core 20), Israel.
Fig. 5–6. Sections of tests, 19 ×. Lower Cretaceous Senegal, West Africa.

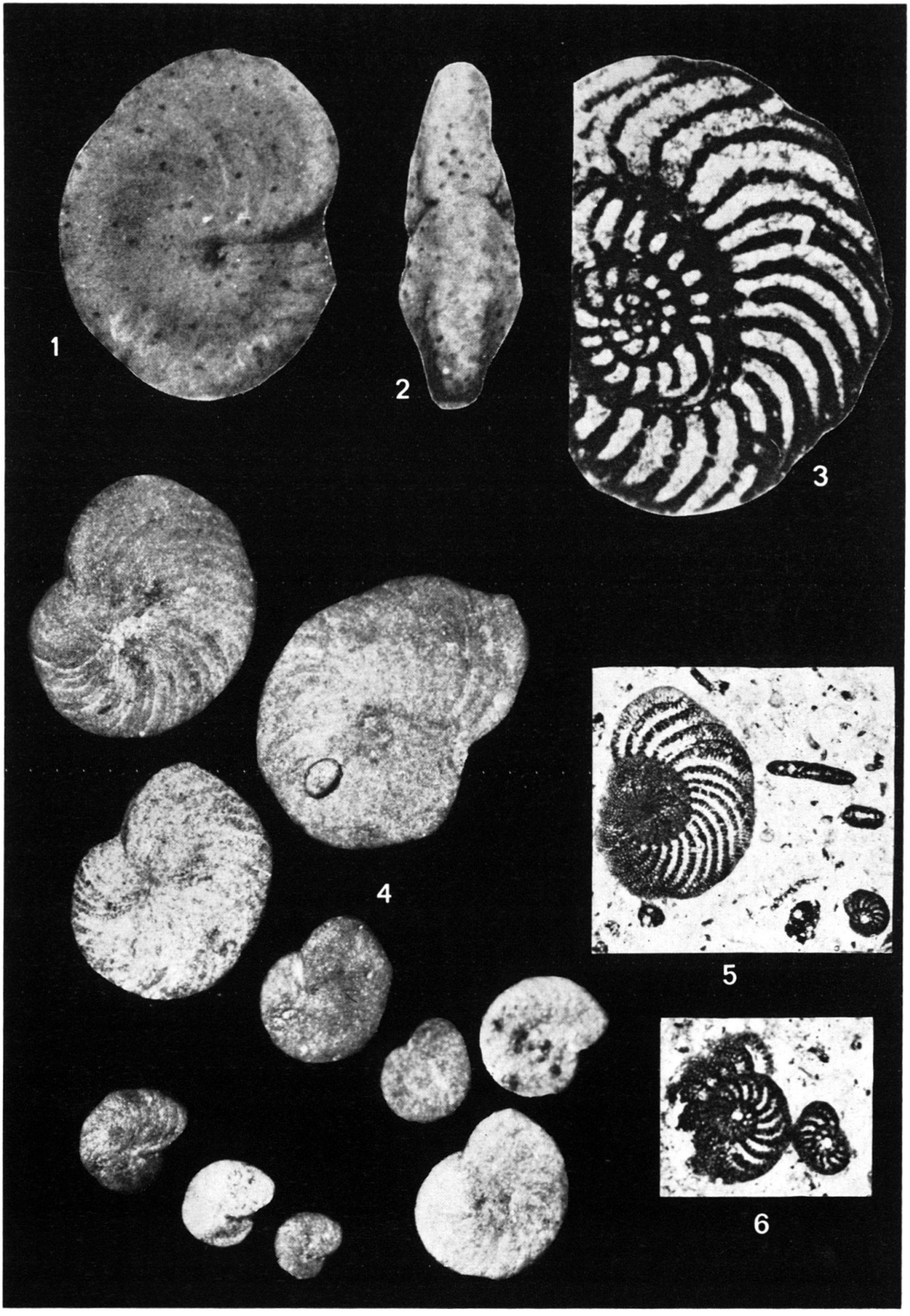
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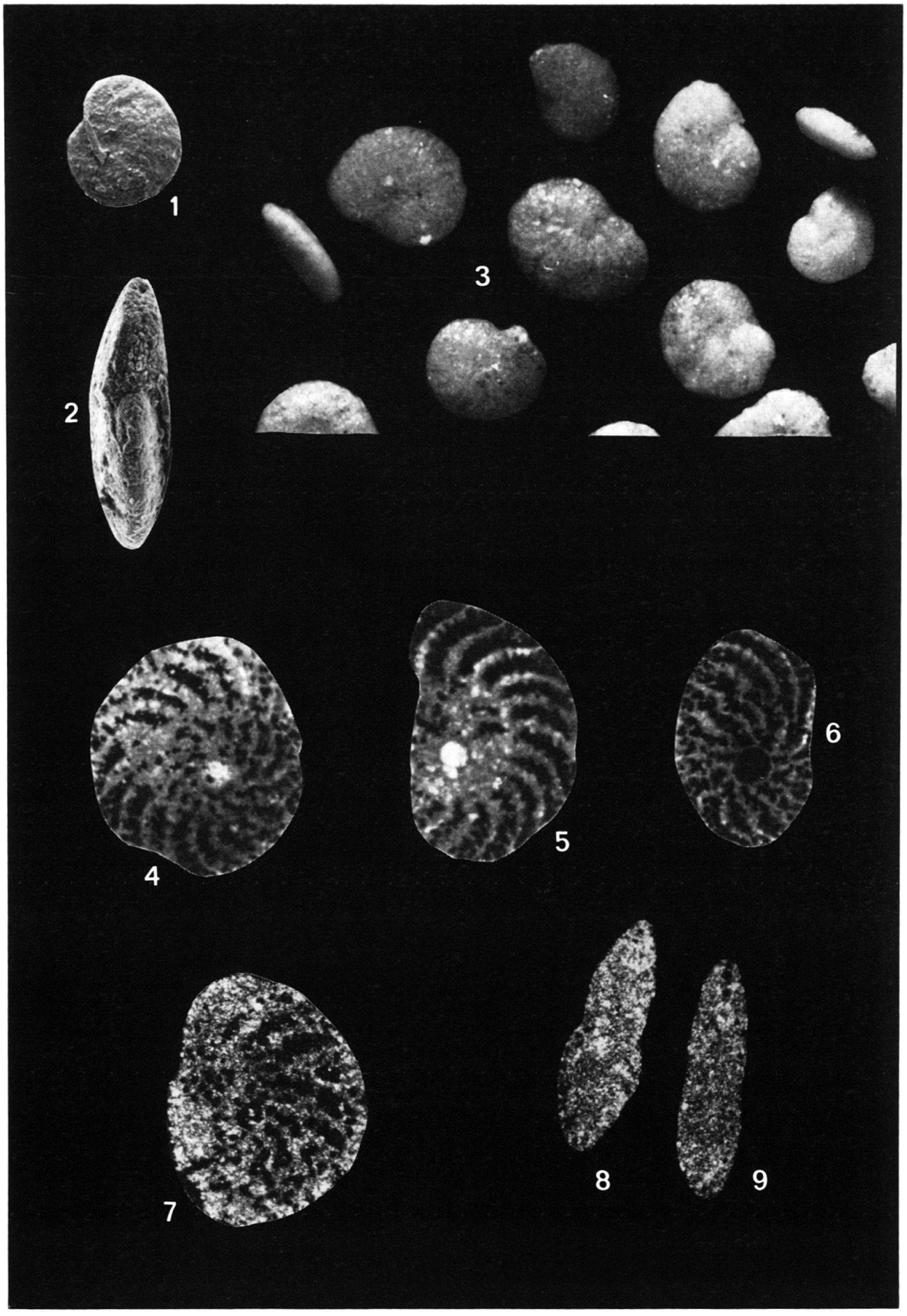
Plate III

Fig. 1–9 *Choffatella caronae* n. sp. Upper Santonian, Etang de Caronte (Bouches-du-Rhône), southern France.
Fig. 1. Holotype, 50 ×.
Fig. 2. Paratype (apertural view), 100 ×.
Fig. 3. Assemblage of paratypes, 45 ×.
Fig. 4–7. Equatorial sections of megalospheric tests showing pierced septa, open lumina, and alveolar subepidermal layer, 100 ×.
Fig. 8–9. Subaxial sections (with trace of apertures), 100 ×.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