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Clypeina tibanai, sp. nov. (Polyphysacea, Dasycladales, Chlorophyta), mid-Cretaceous green alga from the Potiguar Basin, Brazilian margin of the young South Atlantic Ocean

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ABSTRACT

The fossil genus *Clypeina* (Michelin, 1845) comprises some 40 species. We describe *Clypeina tibanai*, a new species from ? upper Albian–Cenomanian strata of the Potiguar Basin, Brazil, characterised by closely set verticils of tubular, bended laterals. It is compared with *Clypeina hanabataensis* Yabe & Toyama, 1949, a Late Jurassic species, and with *Pseudoactinoporella fragilis* (Conrad, 1970), an Early Cretaceous taxon. The new species belongs to a short list of green algae found in the young South Atlantic oceanic corridor, an assemblage defining a phycological paleobioprovince discrete from that of the Tethyan realm.

KEYWORDS **Dasycladales. Polyphysaceae. *Clypeina*. Cladosporate. Cretaceous. Albian. Cenomanian.**

INTRODUCTION

Many Dasycladalean genera are monospecific or comprise few species. By contrast, *Clypeina* (Michelin, 1845) looks like it had a relatively stable and successful history with more than forty species (see Appendix I) found over almost 200My, from the Late Triassic up to the Palaeogene times. However moving from simple counting of the morphospecies and going to the morphogroup reveal it was probably more heterogeneous than previously thought. This new taxon is part of the earliest benthic assemblages, poorly diversified, colonizing the shallow-water marine carbonate ramps of the young South Atlantic Ocean.

A summary review of genus *Clypeina* (Michelin, 1845)

The type species of *Clypeina*, the fossil *Clypeina marginiporella* (Michelin, 1845), was originally described as a coral-like animal by Michelin (1840-1847; p. 177-178, pl. 46, fig. 26 a-b). The generic name was given after the Latin word "*clypeus*", meaning shield, because the first specimens collected by Michelin looked like "perfect rings" and "half rings". These individual calcareous structures were easily picked from the loose Cenozoic calcareous sands of the Paris Basin. In contrast, our specimens are embedded in a hard limestone and studying them requires petrographic thin sections, roughly 30μm thick.

In the second half of the 19th Century, there was no consensus regarding the systematic position of these isolated "whorls". They were re-assigned to foraminifera as "*Dactylopora cylindracea* var. *marginiporella*" by Parker and Jones (1860; p. 473-474), as "*Dactylopora clypeina*" by Carpenter (1862; p. 130-131, fig. XXVIII.A–B), or as "*Haploporella marginiporella*" by Gümbel (1872; p. 262-

263, pl. IV, fig. 6.a–b) before they were correctly ascribed to the algae, *i.e.* to the "Siphonées verticillées", by Munier-Chalmas (1877). Later, L. and J. Morellet (1913; p. 34, pl. III, figs. 20-25) included them in the "Acétabulariées". They illustrated funnels ("entonnoirs") and discs that were thought to represent terminal caps as in the living thalli of *Acetabularia* (see photomicrographs in Berger, 2006). The fossil remains consisting of several superposed and imbricated umbels led L. and J. Morellet (1918) to revise this assumption and to provide a modern and synthetic view of the generic concept, which was not formalized until Bassoullet *et al.* (1978) sixty years later.

In their early contribution, L. and J. Morellet (1918) introduced a new species, *Clypeina helvetica*, adding it to the two species already known from Cenozoic strata, *i.e. C. marginiporella* (Michelin, 1845) and *C. digitata* (Parker & Jones, 1860). However, there was still no record of a Mesozoic representative of the genus *Clypeina* until the description of *Clypeina jurassica* Favre, 1927, from uppermost Jurassic Purbeckian strata (Favre and Richard, 1927; p. 34-35, figs. 10-11, pl. I, figs. 2-3), which was originally studied from thin sections and which later proved to be a junior synonym of *Actinoporella sulcata* Alth, 1882. It is worth mentioning that *Clypeina sulcata* (Alth, 1882) is part of a small group of Dasycladales the calcification of which is calcitic and mostly intracellular, instead of aragonitic and extracellular as in most other species (Granier, 2012).

Deloffre and Génot (1982) listed eleven Cenozoic *Clypeina* species while ten years later Deloffre and Granier (1992) reported twelve. The catalogue of Jurassic and Cretaceous algae published by Bassoullet *et al.* (1978) included nine species while Granier and Deloffre (1992) reported twenty-one for the same time interval. To complete the record there is also one Triassic representative: *Clypeina besici* Pantić in Granier & Deloffre, 1993, non 1965, and a number of recently described species: *C. parasolkani* Farinacci & Radoičić, 1991, *C. bavarica* Schlagintweit & Ebli, 1997, *C. dragastani* Dieni & Radoičić, 1999, *C. dusanbrstinai* Radoičić, 1997, *C. isabellae* Masse *et al.*, 1999, *C. bucuri* Barattolo & Romano, 2002, *C. lucana* Barattolo & Romano, 2002, *C. ummshaifensis* Granier, 2002, *C. loferensis* Schlagintweit *et al.*, 2009, and *C.* ? *teakolarae* Radoičić *et al.*, 2011, transferred to *Falsolikanella* by Sokač *et al.* (2012). Finally, there are also some new additions due to revision and subsequent new combinations: for instance, *Heteroporella paucicalcarea* Conrad, 1970 was re-ascribed to the genus *Clypeina* (Granier, 2013). To date there are forty valid species (see appendix for detailed listing).

There were many revisions of the generic diagnosis of *Clypeina* (see Rezak, 1957; Elliott, 1968; Bassoullet *et al.*, 1978). The last one by the "French Group Studying Fossil Algae" (Bassoullet *et al.*, 1978) takes into account the observation of J. and L. Morellet (1918) who found pores on the cap (top) of the algal thallus corresponding to the mark of a terminal tuft of sterile "hairs". It also incorporates an opinion since J. and L. Morellet (1918; p. 104, § "4°") report the occurrence of tubes with rows of pores, *i.e.* verticils of sterile laterals. Such features are observed in some modern *Acetabularia* (see for instance, Granier, 1994; pl. 4, figs. 6-9). According to them, these tubes should represent the bottom parts of some *Clypeina* thalli. However neither were they part of the material they studied, which is now deposited at the Muséum National d'Histoire Naturelle in Paris, nor were they observed in newly collected material (P. Génot, personal communication to B.G., June 6, 2012). Finally, Bassoullet *et al.* (1978) introduced a new feature, *i.e.* the possible occurrence of sterile verticils between fertile ones. This feature was observed in *Clypeina sulcata* (Alth, 1881), but it does not exist in the type-species, *i.e. C. marginiporella* (Michelin, 1845). In our opinion, other key features, such as the presence or absence of large interverticilar spacings, should also be taken into consideration. However the revision of the whole group is beyond the aim of this study that focuses on the sole description of a new species found in ? upper Albian–Cenomanian strata of Brazil.

GEOLOGICAL INFORMATION

Locality

Petrobras Well 1-RNS-11 (Fig. 1), 30km North of Macau, State of Rio Grande do Norte, SAD 69 (Brazil): UTM 24S 776981.92E 9461584.57N as indicated by the Banco de Dados de Exploração e Produção (BDEP) of the Agência Nacional do Petróleo (ANP) (latitude 4°51'59.198"S, longitude 36°30'9.655"W; see Google Maps: -4.866444, -36.502682).

Stratigraphic level

Uppermost part of the Ponta do Mel Formation, ? late Albian–Cenomanian in age (Tibana and Terra, 1981; Granier *et al.*, 2008). Ponta do Mel is a facies-driven lithostratigraphic unit represented by a dominantly calcareous interval sandwiched in the dominantly siliciclastic Açu Formation (Neto *et al.*, 2007); locally, the upper siliciclastics are missing and replaced by the pelagic facies of the Jandaíra Formation (see Granier *et al.*, 2008; Fig. 1).

Facies and assemblage

The microfacies (Fig. 2A) displays a grain-dominated fabric, commonly bioturbated: it is a floatstone of large

FIGURE 1. Location of the Petrobras well 1-RNS-11, 30km North of Macau, offshore of the State of Rio Grande do Norte (Brazil).

aggregates and solenoporacean nodules with a poorly sorted grainstone matrix. The smaller grains are pelletoids and micritic ooids. There are few bioclasts, partly micritized and commonly microbially coated: echinoderms, small gastropods, mollusc shells, few benthic foraminifers, including *Trocholina silvai* Petri, 1962, and calcareous green algal remains (*Neomeris srivastavai* Granier *et al.*, 2012, the new species of *Clypeina*, and *Linoporella* ? sp.). The intergranular space is filled with drusy calcitic cements and locally on echinodermal remains by syntaxial rim cements. Locally there are patches consisting of micrite and small grains, geopetally arranged that possibly percolated through the grainy column above.

SYSTEMATIC PALAEONTOLOGY

Phylum: Chlorophyta Pascher, 1914
Class: Dasycladophyceae Hoek *et al.*, 1995
Order: Dasycladales Pascher, 1931
Family: Polyphysaceae (Kützing, 1841)

GENUS ***Clypeina*** (Michelin, 1845)
Clypeina tibanai nov. sp. (Figs. 2B-H; 3A-E)

Previous reference. 2008 Polyphysaceae ind. - Granier *et al.*, p. 313, pl. 1, figs. D, F: Potiguar Basin (NE Brazil), Ponto do Mel Formation (? upper Albian-Cenomanian).

Origin of the name. The species is named after our friend and colleague, Paulo Tibana, who has dedicated his entire career to studying and teaching carbonate rocks in Brazil.

Material studied. The material studied is housed at the Université de Bretagne Occidentale, Brest (France), Laboratoire de Paléontologie, catalogue number LPB 27381–27395. It consists of two acetate peels (LPB 27394–27395) and ten petrographic thin sections cut from a core sample at 1638.00m depth (LPB 27381–27390), as well as three additional thin sections cut from core sample at 1641.70m depth (LPB 27391–27393).

Type material. The holotype consists of an oblique section (Fig. 2F) from the thin-section LPB 27381 cut from a core sample at 1638.00m, well 1-RNS-11 (offshore Rio Grande do Norte, Brazil).

Description. The thallus is roughly cylindrical, actually slightly club-shaped, bearing closely set verticils of laterals. The narrow part, *i.e.* with a stem diameter not exceeding 0.4mm (Fig. 2B, F), corresponds probably to the lower part of the thallus; it is also the part where the laterals are the shortest and less numerous. Complementary to this hypothesis we assume that the wider part, *i.e.* with a stem diameter larger than 0.7mm (Fig. 3A–C), represents the upper part of the thallus where the laterals reach their maximum length and are more numerous. The laterals are tubular in shape, with a diameter of 0.08mm on average. They communicate with the axial cavity through a proximal, narrow pore. The laterals forming a verticil are arranged at an upward acute angle on the axial stem, they rapidly bend to be almost orthogonal to the axis for the longest ones. They are closely set in the proximal part before the curve and the resulting general shape of a verticil is that of a funnel as for many representatives of the genus *Clypeina*. Beyond the bending the laterals diverge radially and form discrete rays (Fig. 3A–C) as observed for

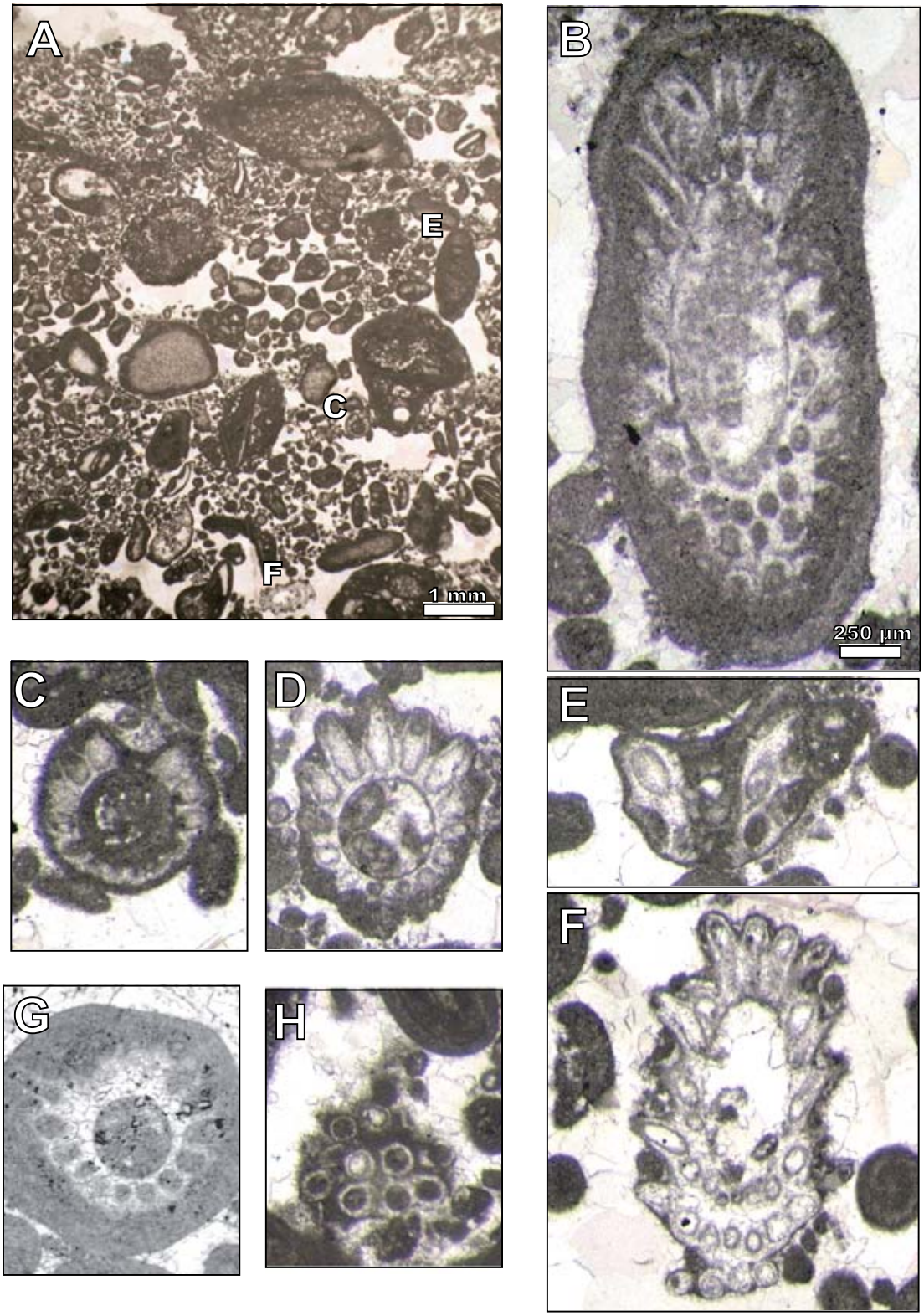

FIGURE 2. *Clypeina tibanai* sp. nov. A) Microfacies. The "type" thin section (LPB 27381). Arrows point to the specimens of subfigure F (the holotype), C and E. Thin section 1-RNS-11 1638.00m (A*). B) Oblique section with about 9 successive verticils. Thin section 1-RNS-11 1638.00m (B*): LPB 27382. C) Subtransverse section. Thin section 1-RNS-11 1638.00m (A*): LPB 27381. D) Subtransverse section. Thin section 1-RNS-11 1638.00m (A*): LPB 27381. E) Subaxial section with 2 verticils only. Thin section 1-RNS-11 1638.00m (A*): LPB 27381. F) Holotype. Oblique section with about 6 successive verticils. Thin section 1-RNS-11 1638.00m (A*): LPB 27381. G) Subtransverse section. Peel 1-RNS-11 1638.00m (1): LPB 27394. H) Tangential section. Thin section 1-RNS-11 1638.00m (A): LPB 27389. All photos same scale, except 2A.

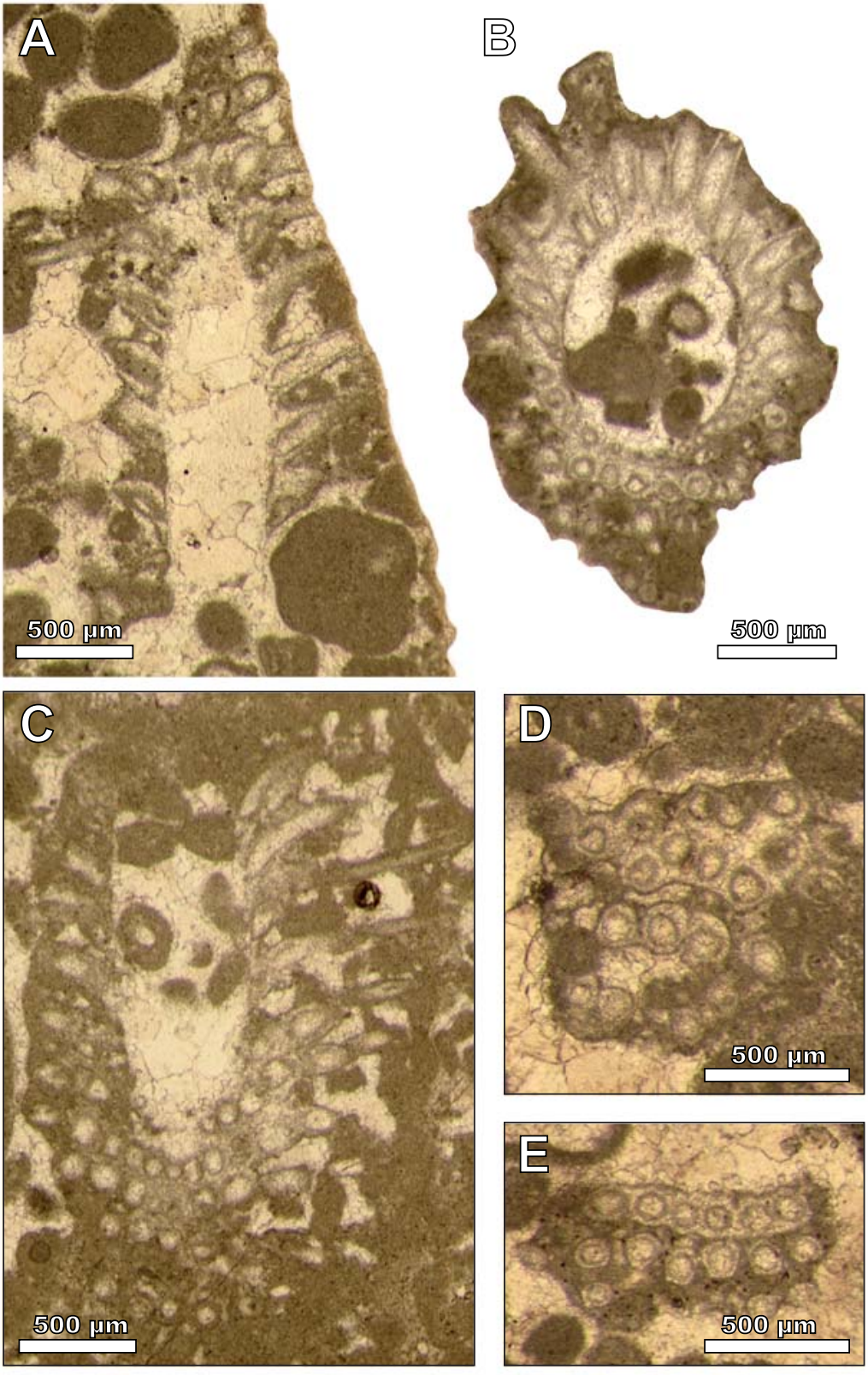

FIGURE 3. *Clypeina tibanai* sp. nov. A) Subaxial section with the distal part of the laterals almost perpendicular to the main axis. Thin section 1-RNS-11 #2 1641.70m (E): LPB 27393. B) Oblique section with about 9 successive verticils. Thin section 1-RNS-11 #2 1641.70m (E): LPB 27393. C) Subaxial section with the distal part of the laterals almost perpendicular to the main axis. Thin section 1-RNS-11 #2 1641.70m (E): LPB 27393. D) Tangential section with about 5 verticils. Thin section 1-RNS-11 1641.70m (A): LPB 27391. E) Tangential section with 3 verticils. Thin section 1-RNS-11 1641.70m (A): LPB 27391.

TABLE 1. Biometric data of *Clypeina tibanai* nov. sp., *C. hanabataensis* Yabe & Toyama, *C. caliciformis* Nikler & Soka and *Pseudoactinoporella fragilis* (Conrad, 1970) for comparisons. (L: maximum length; D: external diameter of a verticil; d: diameter of the stem; w: number of laterals per "whorl"; h: spacing of two successive verticils, from center to center; α: angle of the laterals to the main axis; l: length of a lateral; p: width of a lateral)

(in mm)	*Clypeina tibanai* n. sp.	*Clypeina hanabataensis* Yabe & Toyama	*Clypeina caliciformis* Nikler & Sokač= *C. hanabataensis*	*Pseudoactinoporella fragilis* (Conrad)
L	2.48	-	-	2.7 and more
D	1.45 and more	3-4.5	2.22-3.70	up to 2.7
d	0.31-0.74	1.25	0.55-0.96	0.22-0.59
w	14-16 in the lower part, up to ? 30 (estimated) in the upper part	27 in average	33-38	9-22
h	0.130-0.185	-	-	0.11-0.13
α	20-90°	-	60-72°	25-45°
l	0.98 and more	-	-	1.25 and more
p	0.035 (proximal part), 0.075-0.085	0.25 in average	0.10-0.22 (distal part)	-
p	cladosporous	cladosporous	cladosporous	"(?) choristosporous"

example in *Clypeina stelliformis* L. & J. Morellet 1939 (see Génot, 2009; pl. 10) and in *Clypeina digitata* (Parker & Jones, 1860) (see Génot and Granier, 2011; pl. 4). Cysts were not detected: they were probably sited in the primary laterals (there are no secondaries); the corresponding reproductive structure is cladosporate.

Diagnosis. *Clypeina* with a slightly club-shaped thallus. Closely set, funnel-like verticils consisting of 14 to 16 laterals, tubular in shape, with a diameter of 0.08mm on average. Laterals inserted at an upward acute angle on the axial stem, then bent to be almost orthogonal to the main axis distally. Joined together in their proximal part, neighboring laterals diverge radially and form discrete rays after the bending. Laterals are/grew longer in the upper part of the thallus, giving the calcareous coating a spiny morphology. Its measurements are given in the first column of Table 1.

Differences. The new species shows some affinity to *Clypeina caliciformis* Nikler & Sokač in Granier & Deloffre, 1992, non 1970, a junior synonym of *Clypeina hanabataensis* Yabe & Toyama, 1949, according to Granier (2002). However, it is easy to distinguish them when comparing the general measurements: there are less laterals per "whorl" (w) in the new species and these laterals are broader (p). The external, spiny shape of the thin calcareous (originally aragonitic) coating of the new *Clypeina* reminds that of *Pseudoactinoporella fragilis* (Conrad, 1970), however the lack of a proximal "short secondary branchlet" on the tubular laterals allow us not to increase the comparison.

DISCUSSION

With the exception of the Solenoporaceae, relatively few Cretaceous algal species from the Tethyan tropical realm are found in the young South Atlantic Ocean. With respect to the Dasycladalean algae, many Tethyan genera for the Albian – Cenomanian interval, such as the classical genera *Cylindroporella, Cymopolia, Salpingoporella*, and *Triploporella*, or the *Harlanjohnsonella* and *Pseudocymopolia*, are not found in these southern areas. Exceptions include *Genotella pfenderae* (Konishi & Epis, 1962), *Heteroporella lepina* (Praturlon, 1967), *Neomeris cretacea* Steinmann, 1899, and *Trinocladus tripolitanus* Raineri, 1922 (Fig. 4):

i) within Family Dasycladaceae, *Neomeris cretacea* is often mentioned in the Cretaceous strata (Bassoullet *et al.*, 1978). However, after the taxonomic revision carried out by Barattolo (1990), only two occurrences (Mexico and Brazil) can be taken into account. Similarly, *Genotella pfenderae*, quoted as "*Neomeris pfenderae*", was also commonly reported from the Atlantic (Bassoullet *et al.*, 1978; Granier *et al.*, 1991) but the valid records are restricted to Arizona (USA), Nigeria and Portugal (Granier and Berthou, 2002). So far the two remaining Brazilian Dasycladacean species, *Brasiliporella nkossaensis* (P. Masse, 1995) and *Neomeris srivastavai* Granier *et al.*, 2012, are only known from the South Atlantic Ocean. Note that the first one was originally described from the Republic of the Congo as "*Holosporella nkossaensis*";

ii) *Heteroporella lepina* is the only Thyrsoporellacean species widely distributed in both the Tethys realm and the South Atlantic Ocean (stars on Fig. 4). The species names "*Neomeris budaense* Johnson, 1968" (from Texas) or "*Heteroporella potiguraensis* Srivastava, 1982" (from Brazil) are both junior synonyms of *H. lepina* (Granier *et al.*, 1994);

iii) finally, the newly described *Clypeina tibanai*, which represents the first record of a fossil Polyphysacean alga in South America, is completing the short list of calcareous green algae occurring in the young South Atlantic Ocean (Granier *et al.*, 1991, 2008, 2012).

This assemblage consisting of few cosmopolitan species and fewer endemic species allow us to define

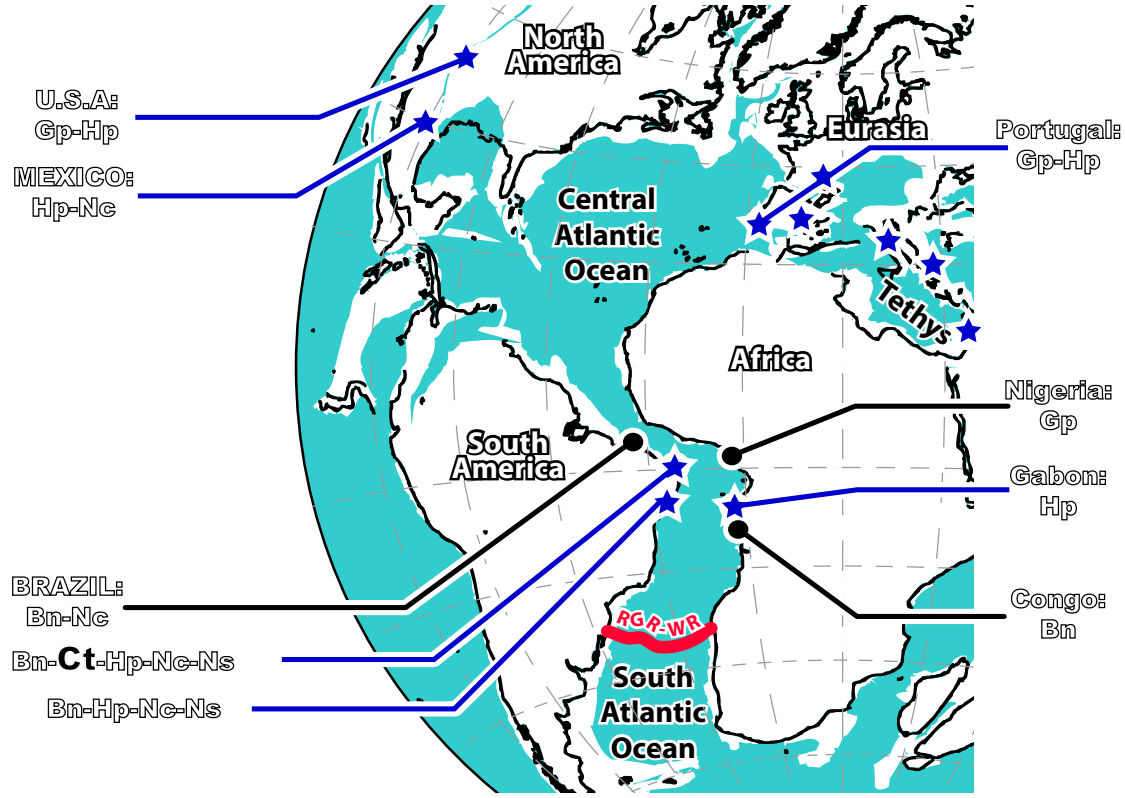

FIGURE 4. Palaeogeographic map of the Atlantic and eastern Tethys at -100Ma indicating the localities with Albian–Cenomanian dasycladalean algae. Legend: Brasiliporella nkossaensis (Bn), *Clypeina tibanai* n. sp. (Ct: in a larger bold font), *Genotella pfenderae* (Gp), *Heteroporella lepina* (Hp: these localities are starred), *Neomeris cretacea* (Nc), and *N. srivastavai* (Ns). The Lambert Azimuthal map projection in the background was generated using the ODSN (Ocean Drilling Stratigraphic Network) Plate Tectonic Reconstruction Service established by GEOMAR, Research Center for Marine Geosciences / Kiel and the Geological Institute of the University Bremen (URL: http://www.odsn.de/odsn/services/paleomap/paleomap.html). Caption - gridline intervals: 15°; plate fragments: white; present-day shorelines: black; approximate position of the Río Grande Rise–Walvis Ridge barrier (RGR-WR): dark grey.

a phycological paleobioprovince, *i.e.* the South-Atlantic province, discrete from that of the Tethyan realm. Although the list of Dasycladalean species is not that short when compared to some other classical groups of Tethyan organisms. Specifically, rudists and some large benthic foraminifers are notably absent within the narrow oceanic corridor between Africa and South America (Granier and Dias-Brito, 2013). This absence was thought to be due to salinity anomalies in the Atlantic basins of the north-eastern margin of Brazil. However, because we found these green calcareous algae associated to red algae we can exclude this hypothesis. For multiple reasons, including paleogeography (Rio Grande Rise-Walvis Ridge barrier, Fig. 4) or inappropriate paleolatitude, these green calcareous algae have probably colonized the South Atlantic seaway from a northern route, not a southern route. In conclusion some taxa or fossil groups known in the Tethyan realm are probably missing along the South Atlantic coasts only because they or their ancestors did not find a route to the South.

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APPENDIX I

List of the species ascribed to the genus *Clypeina* (Michelin, 1845) Bassoullet *et al.*, 1978

TRIASSIC

1. *C. besici* Pantić in Granier & Deloffre, 1993, non 1965

JURASSIC–CRETACEOUS

1. *C. alrawii* Radoičić, 1978
2. *C. bavarica* Schlagintweit & Ebli, 1997
3. *C. catinula* Carozzi, 1956
4. *C. croatica* Gusić in Deloffre & Radoičić, 1978, non 1967
5. *C. dragastani* Dieni & Radoičić, 1999
6. *C. dusanbrstinai* Radoičić, 1997
7. *C. estevezii* Granier, 1987b
8. *C. gigantea* Sokač, 1996
9. *C. hanabataensis* Yabe & Toyama, 1949
10. *C. isabellae* Masse *et al.*, 1999
11. *C. loferensis* Schlagintweit *et al.*, 2009
12. *C. marteli* Emberger, 1956, non 1955
13. *C. maslovi* (Praturlon, 1964), Conrad *et al.*, 1974
14. *C. neretvae* Radoičić, 1979
15. *C. onogosti* Radoičić, 1986
16. *C. parasolkani* Farinacci & Radoičić, 1991
17. *C. pastriki* Radoičić, 1983
18. *C. paucicalcarea* (Conrad, 1970) Granier, 2013
19. *C. pejovicae* Radoičić, 1975, non 1969 (transferred to Milanovicella by Bucur (2000))
20. *C. radici* Sokač, 1986
21. *C.* ? *solkani* Conrad & Radoičić, 1972
22. *C. sulcata* (Alth, 1881), Granier & Brun, 1991
23. *C. valachia* Dragastan, 1978
24. *C. ummshaifensis* Granier, 2002
25. *C. zumetae* Jaffrezo & Fourcade in Bassoullet *et al.*, 1978, non 1973

PALEOGENE

1. *C. bucuri* Barattolo & Romano, 2002
2. *C. digitata* (Parker & Jones, 1860), L. & J. Morellet, 1913
3. *C. elliotti* J.P. & R. Beckmann, 1966
4. *C. hadithae* Radoičić, 1990
5. *C. haglani* Radoičić, 1990
6. *C. helvetica* L. & J. Morellet, 1918
7. *C. johnsoni* Rezak, 1957
8. *C. liburnica* Radoičić in Buser & Radoičić, 1987
9. *C. lucana* Barattolo & Romano, 2002
10. *C. marginiporella* Michelin, 1845
11. *C. rotella* Wang, 1976
12. *C. sahnii* Varma, 1952
13. *C. socaensis* Deloffre & Radoičić, 1978
14. *C. stelliformis* L. & J. Morellet, 1939

List of additional taxa, valid or not, that were originally assigned to genus *Clypeina*

- *C. caliciformis* Nikler & Sokač in Granier & Deloffre, 1992, non 1970, a junior synonym of *C. hanabataensis* Yabe & Toyama, 1949
- *C. delmatarum* Sokač & Velić, 1981, transferred to genus *Humiella* (Sokač & Velić, 1981) Sokač, 1987
- *C.* ? *delphica* Carras, 1989, transferred to *Suppiluliumaella* by Senowbari-Daryan *et al.* (1994)
- *C. durandelgai* Jaffrezo & Fourcade, 1973, *nomen nudum*, transferred to genus *Actinoporella* (Gümbel in Alth, 1881), now appearing as *Actinoporella durandelgai* Jaffrezo & Fourcade ex Jaffrezo in Bassoullet *et al.*, 1978
- *C. harrazaensis* Emberger, 1961, *nomen nudum*
- *C. infundibuliformis* L. & J. Morellet, 1939, a junior synonym of *C. marginiporella* Michelin, 1845, according to Génot (1987)
- *C. inopinata* (Favre, 1932), a junior synonym of *Clypeina sulcata* (Alth, 1881)
- *C. jurassica* Favre in Favre & Richard, 1927, a junior synonym of *Clypeina sulcata* (Alth, 1881)
- *C. lucasi* Emberger, 1956, transferred to genus *Actinoporella* (Gümbel in Alth, 1881)
- *C. merienda* Elliott, 1955, transferred to genus *Uteria* (Michelin, 1845)
- *C. nigra* Conrad & Peybernès, 1978, transferred to genus *Actinoporella* (Gümbel in Alth, 1881) by Granier (1994)
- *C. occidentalis* Johnson & Kaska ex Granier & Radoičić in Granier *et al.* 2013, non 1965, a junior synonym of *Clypeina elliotti* J.P. & R. Beckmann, 1966, according to Granier and Radoičić (Granier *et al.*, 2013)

- *C. parvissima* Dragastan, 1966, excluded from the Dasycladales, according to Radoičić (1969)
- *C. parvula* Carozzi, 1946, excluded from the Dasycladales, according to Radoičić (1969)
- *C. pejovicae* Radoičić, 1975, non 1969 (transferred to *Milanovicella* Granier & Berthou, 1994, by Bucur (2000))
- *C. pezanti* L. & J. Morellet, 1922, a junior synonym of *Clypeina digitata* (Parker & Jones, 1860)
- *C. somalica* Conrad *et al.*, 1983, transferred to genus *Holosporella* Pia, 1930, belonging to *Similiclypeina* in the opinion of Bucur (1993)
- *C.* ? *teakolarae* Radoičić *et al.*, 2011 (transferred to *Falsolikanella* Granier, 1987a, by Sokač *et al.* (2012)).