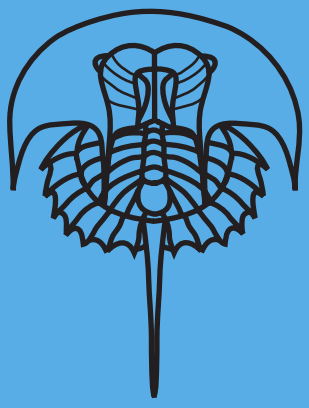

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Part F, Revised, Volume 2, Chapter 15: Systematic Descriptions of the Scleractinia Family Negoporitidae

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PART F, REVISED, VOLUME 2, CHAPTER 15: SYSTEMATIC DESCRIPTIONS OF THE SCLERACTINIA FAMILY NEGOPORITIDAE

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INTRODUCTION

The Negoporitidae is the smallest Scleractinia family and consists of two genera, *Negoporites* Eliášová, 1989 and *Litharaeopsis* Beauvais, 1982. Eight valid species (five species of *Negoporites;* three species of *Litharaeopsis*) pertain to this family (Eliášová, 1989, p. 116–119; 1995a, p. 28–29, Table 1; 1995b, p. 36; Baron-Szabo, 2002, p. 138–139; 2014, p. 66–67; and updated herein). They are exclusively fossil. So far, representatives of the Negoporitidae have been reported from a very small number of Upper Cretaceous localities in Europe, West Asia, and North Africa (Eliášová, 1989, p. 116–119; 1995a, p. 28–29, Table 1; Baron-Szabo, 2002, p. 155–156; 2014, p. 66–67; and updated herein). According to Eliášová (1989, p. 116–119; 1995a, p. 27–29), the genus *Negoporites* shows similarities especially to genera of the Actinacididae and Poritidae, from which they are distinguished by the lack of pennulae. The most important feature of the family Negoporitidae is the presence of specially developed pennulae that are somewhat forklike in shape (Fig. 1). This chapter is organized in the following manner: the diagnosis of the family is followed by the descriptions of its type genus and an additional genus. Table 1 (p. 2) provides a list of negoporitid genera, including their geographic distributions and stratigraphic ranges. Table 2 (p. 4) provides a comprehensive overview of the key characteristics of negoporitid genera.

NEGOPORITIDAE Eliášová, 1995

[Negoporitdae Eliášová, 1995a, p. 28]

Colonial; astreoid, plocoid, cerioid, meandroid; costosepta have irregular and sparse pores; lateral flanks granular and have forklike-shaped pennulae, which appear as a set of two spines; height of septal lateral ornamentations between 10–100 µm; shapes of granulae highly irregular and include spiniform, rounded, angular, and moniliform-like structures; budding extracalicular and intracalicular; paliform structures present or absent; columella present, generally variably parietal, lamellar, or made of twisted lamellar segments; wall parasynapticulothecal, complete, incomplete, or absent; synapticulae present; endothecal dissepiments present, sparse; microstructure made of fibrous portions 50–600 µm in diameter; coenosteum spongy or reticulate, present or absent. *Upper Cretaceous (Cenomanian–Maastrichtian).*

Negoporites Eliášová, 1989, p. 116 [**Porites michelini* Reuss, 1846; OD; neotype, ČGS (formerly ÚÚG) HF 1.488 and thin sections ČGS (=ÚÚG) 54230/II and 54231/II] [=*Paractinacis* Löser, & Heinrich, 2018, p. 130 (type, *P. uliae,* OD)]. Colonial, cerioplocoid, plocoid, astreoid; corallites arranged in meandroid series present or absent; budding mainly extracalicular, occasionally intracalicular; corallites distinct, may be subdistinct when arranged in meandroid series; costosepta generally thick (approximately one-seventh the size of corallite diameter in type species [=300 µm], larger in other species; width includes lateral ornamentations of septa), nonconfluent to subconfluent, and have irregularly occurring pores; septal lateral flanks have

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TABLE 1. Synopsis of Negoporitid genera, including a short characterization and stratigraphic ranges.

Negoporitid genera	Geographic distributions	Stratigraphic ranges	Remarks
Negoporites Eliášová, 1989, p. 116 [**Porites michelini* Reuss, 1846; OD]	Upper Cretaceous: Eastern, southern, and Western Europe; North Africa	Cenomanian–Campanian	Neotype designation by Eliášová (1989, p. 116); genus well described by Eliášová (1989, p. 116–119; 1995a, p. 27–29); contains the junior synonym *Paractinacis* Löser & Heinrich, 2018
Litharaeopsis Beauvais, 1982, vol. 2, p. 35 [**Litharaea latistellata* Felix, 1903, p. 180; OD]	Upper Cretaceous: Eastern and Western Europe; West Asia	Cenomanian–Maastrichtian	Contains the junior synonym *Larisolena* Eliášová,1995b

rounded and small spiniform granulae (up to approimately 100 µm tall) and uniquely shaped, somewhat forklike pennulae that resemble a set of two granulae; upper surface of costosepta moniliform or granular; columella spongy-papillose or made of small number of lamellar segments; endothecal dissepiments thin; wall absent or parasynapticulothecal with occasional pores; coenosteum mainly reticulate, spongy in a small number of places; paliform structures irregularly present; dissociated calcification deposits are 50–150 µm in diameter. [Emended from ELIÁŠOVÁ, 1989, p. 117–119, and updated herein.] *Upper Cretaceous (Cenomanian–Campanian). Cenomanian–Turonian:* Eastern Europe. *Cenomanian–Santonian:* Western Europe. *Turonian:* North Africa. *Campanian:* Southern Europe.——FIG. 2,*a–b. *N. michelini* (REUSS), upper Cenomanian, Czech Republic (Netreba at Korycany, Bohemia), neotype, ČGS HF 1.488; *a,* calicular view of colony, thin section, showing

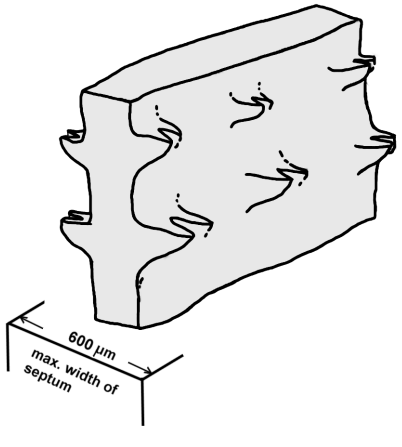

FIG. 1. Sketch of septum showing specially developed pennulae that are somewhat forklike in shape and appear as two spines, a feature that characterizes the family Negoporitidae. The septal width includes its lateral ornamentations (adapted from Eliášová, 1995a, fig. 1).

dissociated fibrous portions,"isolated centers of calcification" *sensu* ELIÁŠOVÁ (1995a, p. 28) (*arrows*) (Eliášová, 1989, pl. 4,*1a*); *b,* lateral-oblique view of colony, thin section showing pennular developments terminating in forklike structures (*arrows*) (Eliášová, 1989, pl. 4,*1b*).——FIG. 2,*c–h. N. spissus* (POČTA, 1887); *c–d,* upper Cenomanian, Czech Republic (Netreba at Korycany, Bohemia), topotype, ČGS HF 1.543; *c,* calicular view of colony, thin section (Eliášová, 1989, pl. 6,*1a*); *d,* upper surface of colony, calicular view (Eliášová, 1989, pl. 6,*2*); *e–f,* upper Cenomanian (Peruc-Korycany Formation), Czech Republic (Korycany), holotype, NM O 7587; *e,* calicular view of holotype, thin section; *f,* close-up of fig. *e* (*e–f,* courtesy of Lenka Váchová, Národní Muzeum, Prague, Czech Republic); *g–h,* upper Cenomanian, Czech Republic (Korycany, Bohemia); *g,* calicular view of topotype, thin section, ČGS 88863/II (Eliášová, 1995a, pl. 4,*1a*); *h,* lateral view of topotype, thin section, ČGS 88862/II, showing pennular developments terminating in forklike structures (*arrows*) (Eliášová, 1995a, pl. 4,*1b;* images *a–d* and *g–h,* courtesy of Helene Eliášová).——FIG. 3,*a–c. a, N. quartus* ELIÁŠOVÁ, 1995a, upper Cenomanian, Czech Republic (Netreba at Korycany, Bohemia), calicular view of holotype ČGS HF 1.725, thin section (Eliášová, 1995a, pl. 2,*2*); *b–c, N.* cf. *quartus* ELIÁŠOVÁ, 1995a, lower Coniacian, Austria (Gosau Formation at Brandenberg), SNSB-BSPG 1997/V/101b (=45-I); *b,* calicular view, slightly oblique, thin section; *c,* longitudinal view of colony, thin section showing pennular developments terminating in forklike structures (*arrows*) (new; *b–c,* photos, Baron-Szabo, Baron-Szabo collection).

Litharaeopsis BEAUVAIS, 1982, vol. 2, p. 35 [**Litharaea latistellata* FELIX, 1903, p. 180; OD] [=*Larisolena* ELIÁŠOVÁ, 1995b, p. 35 (type, *L. bona,* OD)]. Colonial, cerioid, cerio-plocoid, meandroid; astreoid corallites present or absent; corallites distinct to indistinct; coenosteum spongy to reticulate or absent; corallites arranged in meandroid series separated by tholiform to tectiform collines; budding extracalicular and intracalicular; costosepta subcompact with irregular perforations,

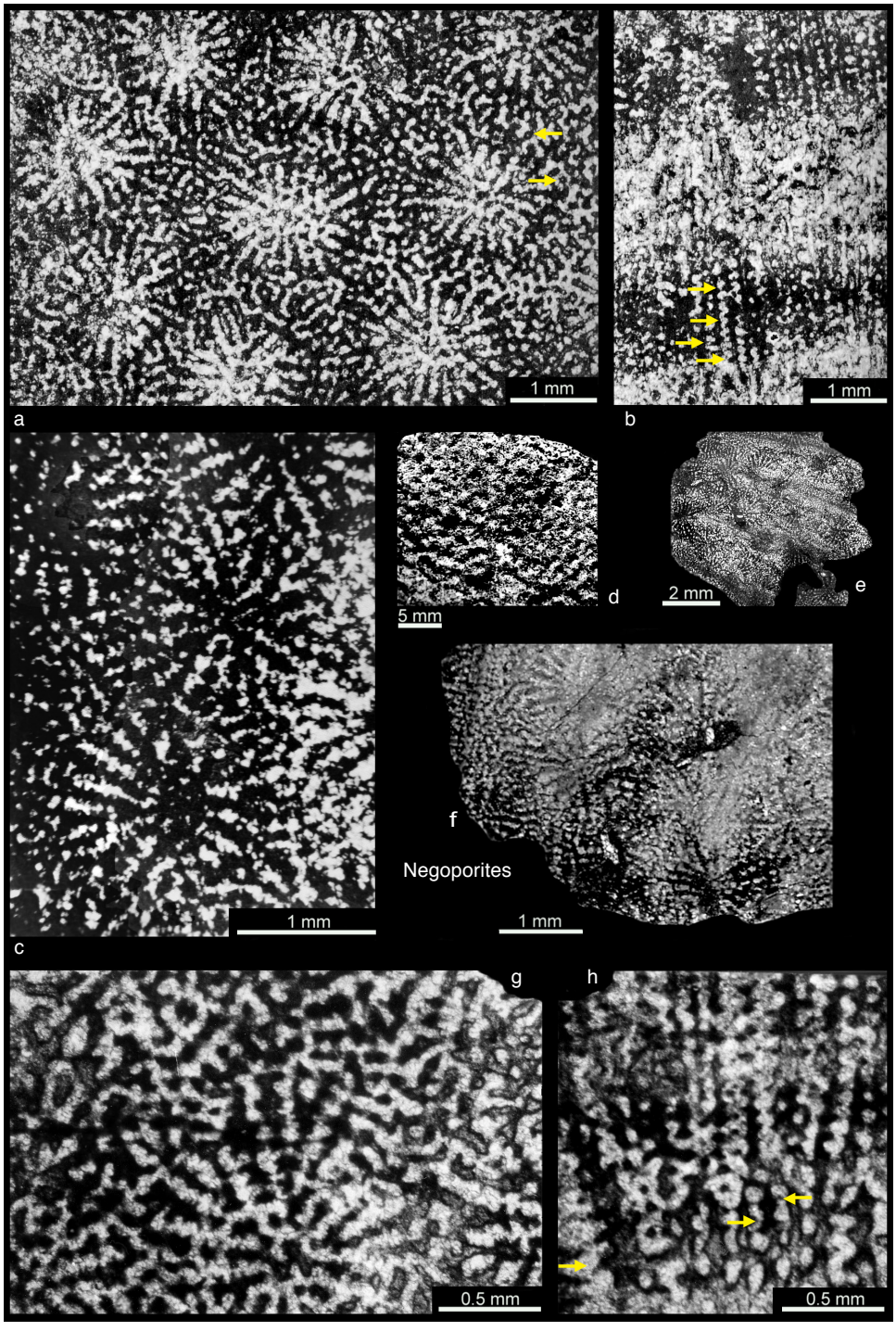

FIG. 2. Negoporitidae (p. 1–2).

TABLE 2. Key characteristics of negoporitid genera. Present (x); present or absent (+/-); character absent (empty box).

Key Characteristics of Negoporitid Genera	Corallum					Budding		Wall		Septa									Columella			
	Colonial																					
	plocoid	cerio-plocoid	cerioid	meandroid	astreoid	extracalicular (incl. marginal)	intracalicular	parasynapticulotheca	pores	pores	nonconfluent	subconfluent	confluent	granular and pennular	endothecal dissepiments	calcification centers (µm)	coenosteum	costae	lamellar	irregularly shaped segments	spongy-papillose	paliform structures
Negoporites	×	×		+/-	×	×	+/-	+/-	×	×	×	×		×	×	50–>300	×	×		×	×	+/-
Litharaeopsis		×	×	×	+/-	×	×	+/-	×	×	×	×	+/-	×	×	70–600	+/-	×	×	+/-	×	+/-

nonconfluent to subconfluent, rarely confluent; septal lateral flanks have spiniform but mainly rounded granulae (height of up to 100 µm) and pennulae with forklike distal ends; columella irregularly spongy-papillose, often large (occupying up to 30% of lumen) or lamellar; columellar papillae free or connected, sometimes forming twisted lamellar segments; paliform structures irregularly present; endothecal dissepiments subtabulate, thin; parasynapticulothecal wall incomplete or absent; maximum width of septa (including lateral ornamentations of septa) 70–600 µm [Endothecal developments and pennular arrangement closely resemble the kinds seen in the latomeandrid genus *Trochoplegmopsis* RONIEWICZ, 1976 (also see MORYCOWA & RONIEWICZ, 1995, fig. 3A); in having thamnasterioid to submeandroid polyp integration and haplaraeid *sensu lato* structures, the material described as *Larisolena* sp. from the upper Valanginian of Spain (LÖSER, ARIAS, & VILAS, 2019) corresponds to the genus *Meandrophyllia* and is, therefore, excluded]. *Upper Cretaceous (Cenomanian–Maastrichtian). Cenomanian, Coniacian–Maastrichtian:* Eastern Europe. *Turonian–Santonian:* Western Europe, West Asia.——FIG. 4,*a–c. *L. latistellata* (FELIX), Turonian, Austria (Gosau Group at St. Gilgen), holotype, SNSB-BSPG 1878/XI/388; *a,* upper surface of holotype, calicular view of colony (new; photo courtesy of Georg Jannsen, formerly at SNSB-BSPG); *b,* polished surface of holotype, calicular view (new; Baron-Szabo); *c,* close-up of calicular view (new; Baron-Szabo).——FIG. 4,*d–f. L. vaughani* (FELIX), Turonian, Austria (Gosau Group at St. Gilgen), holotype, SNSB-BSPG 1878/XI/387; *d,* calicular view of colony; *e,* lateral and calicular views of colony, polished surface; *f,* close-up of *e,* showing lateral view of colony with

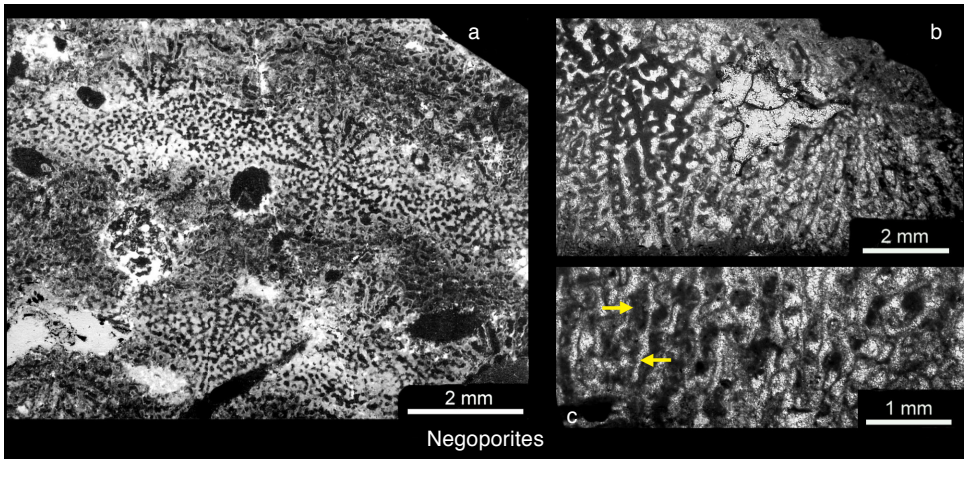

FIG. 3. Negoporitidae (p. 1–2).

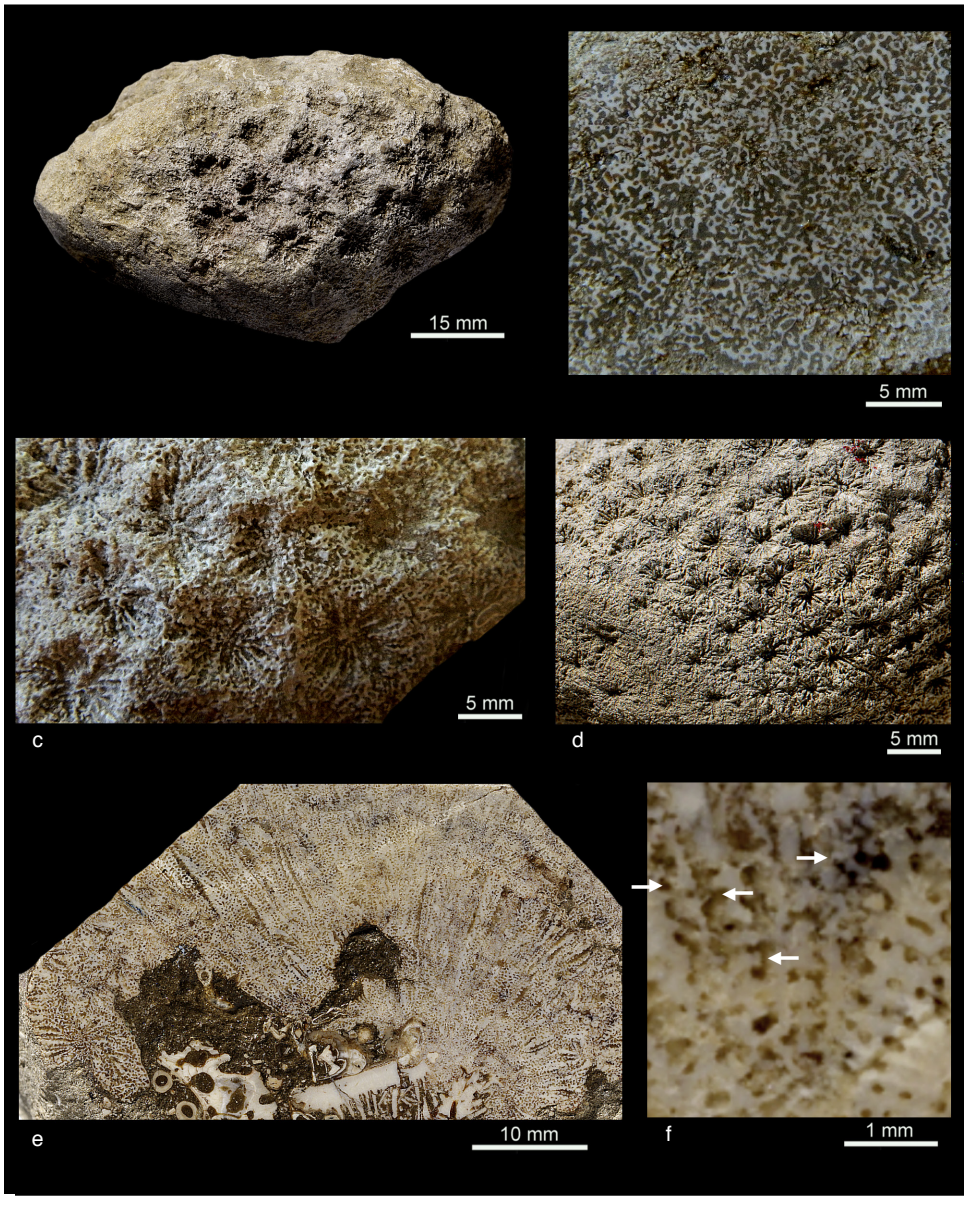

FIG. 4. Negoporitidae (p. 2–4).

pennular developments terminating in forklike structures (*arrows*) (new; photos *d–f*, courtesy of Georg Jannsen, formerly at SNSB-BSPG).

ABBREVIATIONS FOR MUSEUM REPOSITORIES

ČGS: Ceská geologická služba (Czech Geological Survey), Prague, Czech Republic (formerly ÚÚG)
NM: Národní Muzeum, Prague, Czech Republic
SNSB-BSPG: Bayerische Staatssammlung für Paläontologie und historische Geologie, Munich, Germany
ÚÚG: Ústředního Ústavu Geologického (Geological Institute, University of Prague), Prague, Czech Republic

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