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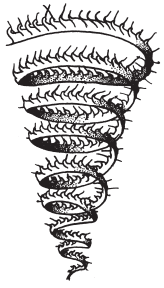
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## A NEW RHIZANGIID GENUS FROM THE MIOCENE OF NORTH AMERICA (*SCLERANGIA* N. GEN.; FLORIDA, USA)

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### ABSTRACT

The colonial rhizangiid genus *Sclerangia* n. gen. is described from the Miocene of the USA (Chipola Formation, Florida). The new genus is characterized by plocoid to subcerioid polyp integration, cylindrical to subcylindrical or tympanoid corallites, and an endotheca that is generally absent or made of a very small number of vesicular dissepiments. Compared to other rhizangiid genera, the new taxon is characterized by rather weakly dentate septa. In addition, the new genus differs from all the rhizangiid genera by its consistent encrustation of dead gastropod shells that are inhabited by sipunculid worms.

Keywords: Chipola Formation, Scleractinia, *Thysanus*

### INTRODUCTION

Based on the holotype CH 4-1a (housed at the Department of Geology, FSU) of the species *Thysanus vaughani* Weisbord, 1971, from the Miocene Chipola Formation of Florida, Wells (1972) created the rhizangiid genus *Symbiangia*. In addition, Wells (1972, pl. 1, fig. 1-8) included seven topotypes in his new genus, all of which are housed at the Smithsonian Institution, Washington, DC, under USNM I171258-I171264. However, recent investigations by the authors of the current work (unpublished data) revealed that the holotype of *Thysanus vaughani* Weisbord differs from six of the topotypes in that it 1) represents a flabellate form with intracalicular budding; 2) has parathecal structures which appear to be irregularly internally thickened by a stereome (not mentioned by Weisbord); 3) is reported to have a lamellar columella (see Weisbord, 1971, p. 23); and, unlike rhizangiid forms, 4) seems to have less developed septal teeth and granules, hence resembling the mussid genus "*Thysanus* Duncan, 1863" (the assumed presence of a stereome in Weisbord's material might, however, distinguish it from "*Thysanus* Duncan, 1863"; for key characteristics of "*Thysanus*" see further down). In contrast, six of the topotypes: 1) show rhizangiid structures that are developed as in e.g., *Arctangia* Wells, 1937, *Astrangia* Milne Edwards and Haime, 1848, and *Cladangia* Milne Edwards and Haime, 1851;

2) have plocoid to subcerioid corallites produced by extracalicular budding; 3) generally lack endothecal dissepiments; and 4) have occasional septoparathecal developments. Therefore, these six topotypes are removed from the genus *Symbiangia* Wells, 1972, and assigned to the new genus *Sclerangia*. The seventh topotype which was originally included by Wells (=specimen I171264) is excluded here because its septal flanks are smooth or have very delicate ornamentations and it has thin, vesicular endothecal dissepiments.

It should be noted, that the genus "*Thysanus* Duncan, 1863", is a junior homonym of the hymenopteran genus *Thysanus* Walker, 1840. Because, up to now, no replacement taxon has been created for Duncan's genus, here the name is solely used in reference to its genus concept as it has an invalid nomenclatural status. "*Thysanus* Duncan, 1863" is characterized by: 1) a flabellate corallum formed by intracalicular budding, resulting in polyps arranged in one linear series; 2) compact costosepta that have lobate to claviform axial edges (especially referring to oldest septa); 3) a parathecal wall; 4) fine spiniform granules on the septal flanks, youngest septa often nearly smooth; 4) an endotheca consisting of both large and short vesicular dissepiments; and 5) a lamellar columella, discontinuous.

In the current paper, the material (USNM I171258-I171263) that was formerly considered as topotypes of the type species of the

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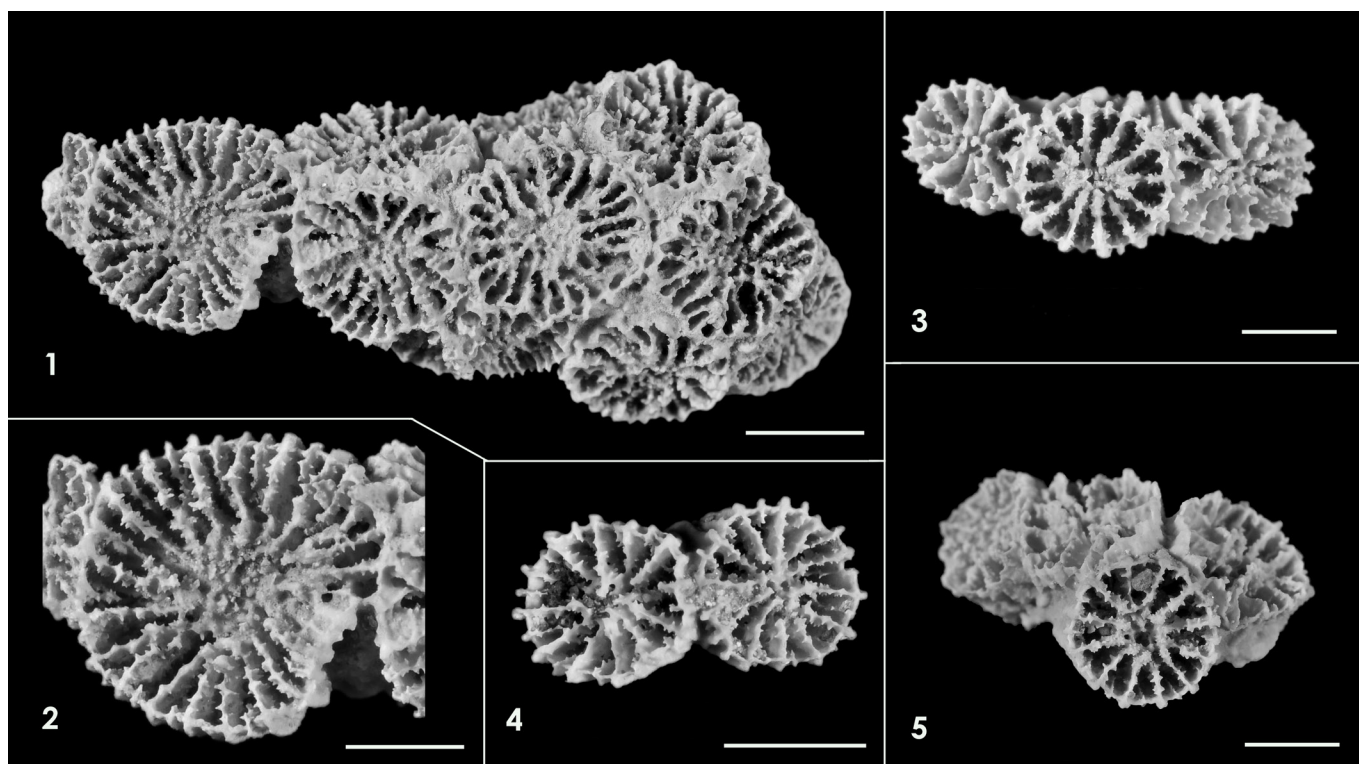


Figure 1. 1–5. *Sclerangia floridana* n. gen. and sp., Miocene, Chipola Formation, Calhoun County, Florida, United States; 1, 2. holotype, USNM I171263; upper surface of colony (1) and close-up of 1 (2); 3–5, paratypes USNM I171260 (3), USNM I171259 (4), and USNM I171258 (5) (scale bars: 1, 4 = 2.5 mm; 2, 3, 5 = 2 mm).

rhizangiid genus *Symbiangia* Wells, 1972, is used as the basis for the new genus *Sclerangia*, with the holotype USNM I171263 and the paratypes USNM I171258–I171262.

#### Genus SCLERANGIA, new genus

*Type species*.—*Sclerangia floridana* n. sp., here designated.

*Etymology*.—Combination of the word stem *scler-* [Greek, meaning hard; also the root of Scleractinia] with the ending *-angia* [Greek, meaning small vessel or container (referring to shape of the corallites)]; the latter is commonly used for rhizangiid genera.

*Diagnosis*.—Corallum colonial, plocoid to subcerioid. Budding extracalicular. Colonies always encrust shells of dead gastropods that are inhabited by sipunculids. Corallites cylindrical to subcylindrical or tympanoid. Costosepta have spiniform and rounded granules laterally, developed as in e.g., *Arctangia* Wells, 1937, *Astrangia* Milne Edwards and Haime, 1848, and *Cladangia* Milne Edwards and Haime, 1851. Axial edges of all septa coarsely dentate. Costae short or absent. Columella spongy-papillose or formed by irregularly shaped trabecular segments. Paliform structures irregularly present before all septa. Endotheca generally absent or made of a very small number of vesicular dissepiments. Wall parathecal and septoparathecal.

*Comparison*.—The new genus is closely related to *Astrangia* Milne Edwards and Haime, 1848, and *Cladangia* Milne Edwards and Haime, 1851 but, in *Astrangia*, the wall is septoparathecal and is incomplete, ramose colonies are formed, and endothecal dissepiments

occur throughout the colony. In *Cladangia* subramose and fasciculate types of polyp integration occur, extra- and intracalicular budding types are present, endothecal dissepiments occur throughout the colony, and more solid wall structures (septothecal-septoparathecal) are developed.

#### *Sclerangia floridana*, new species

##### Figure 1. 1–5

*Holotypus*.—USNM I171263.

*Etymology*.—Refers to the location from which the material was collected (Florida, USA).

*Locus typicus*.—Calhoun County, Florida, USA.

*Stratum typicum*.—Chipola Formation, Miocene.

*Diagnosis*.—As for genus.

*Description*.—Corallites are shallow, 3.0–4.5 mm in diameter, and rounded to subpolygonal in outline. Costosepta are developed in 3 complete cycles in 6 systems. In some corallites, septa of the incipient 4th cycle are present. Septa of the first two cycles (S1–S2) are subequal or irregularly alternate in length and thickness. In some corallites, S1 are slightly longer than S2. Trabecular prolongations of axial edges of S1–S2 generally reach the corallite center where they fuse with the columella. Septa of the 3rd cycle are generally significantly shorter, often spine-like.

*Material*.—Five paratypes USNM I171258–I171262.

*Comparison*.—Monotypic.

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