

## CORALLITE INCREASE IN A LICHENARIID (TABULATA, ORDOVICIAN, TENNESSEE)

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*Lichenaria* is a representative of the most primitive stock of tabulate corals. Despite its phylogenetic significance, our understanding of this Ordovician genus is strikingly poor because very little work has been done on it. This study documents and assesses modes of increase in *Lichenaria globularis* Bassler, 1932 from the upper Hermitage Formation (Upper Ordovician, Mohawkian Series, Chatfieldian Stage) of the Nashville Dome, Tennessee, U.S.A.

Corallite increase in *L. globularis* is exclusively lateral, but five types are recognized. Type 1 increase is most common in this species. As is typical for tabulate corals, an offset begins as a protuberance located in a corner of the parent corallite. Within a short vertical distance (0.2 mm), the opening between the protuberance and the parent corallite closes due to the extension and fusion of walls from opposite sides, yielding an offset. Unlike „typical“ tabulates (especially favositids), however, such offsets arise not only from „adult“ corallites but often from „juveniles“ in this species. Type 2 increase is similar to Type 1, but involves the development of two lateral offsets simultaneously on opposite sides of a single parent corallite. This process has not been reported previously in tabulates. In Type 3 increase, the formation of an offset involves two corallites. Development of a protuberance in a corner of the parent corallite is followed by opening of the wall between the protuberance and an adjacent corallite. Dividing walls then form, one after the other or simultaneously, separating the offset from the two corallites. A similar process is recognized in a species of the Ordovician tabulate coral *Manipora*. Type 4 increase is essentially the same as Type 3, but it involves the development of an offset in conjunction with commonly three to rarely five adjacent corallites. This type of increase is comparable with that known in the problematic Ordovician genus *Agetolites*, which possesses characteristics of both tabulate and rugose corals. In Type 5 increase, two offsets begin simultaneously as protuberances in the corners of two facing or adjoining parent corallites. The wall between the protuberances opens, either before or after the development of walls separating the protuberances from their parents. A dividing wall then forms in the fused offset („pseudo-axial increase“), thereby separating the two individuals. This process is observed in some Ordovician tabulates (e.g., *Manipora*). In contrast with its simple morphology, *L. globularis* exhibits an unprecedented range in types of lateral increase. Some of these types are comparable with those in a few other Ordovician tabulate corals, but most are unknown from „typical“ tabulates. The coordinative process during lateral offsetting (reflected by synchronous and apparently cooperative behavior and function among polyps) is one of the characteristic features in *L. globularis*, suggesting a higher level of colony integration than originally expected.