

## SYSTEMATICAL IMPORTANCE OF THE SKELETAL ELEMENTS OF DEVONIAN CYSTIMORPH RUGOSE

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Cystimorphs as all representatives of this subclass are characterized by two forms of the growth: «solitary» and «colonial». The fundamental type of the solitary rugose reproduction was sexual. Colonial rugose had the sexual and asexual reproduction. It is necessary to distinguish the colonial (*Phyllipsastrea*, *Bensonastrea*, *Mackenziphyllum*) and pseudocolonial (*Microplasma*, *Loboplasma*, *Rhizophylloides*, *Utaratuia* et al.) forms among the representatives of superorder *Associata*. Some solitary cystimorphs form occasionally the buds, which create the resemblance with the colony. Such formations are not real colony and we suggest to name them quasicolonies. Apparently this formation is characteristic for representatives of some genera.

Skeleton of cystimorphs has a complex structure. It consists of the vertical and horizontal elements. The first of them are the septal apparatus formed by ectoderma of mesenteries. In majority of rugose of this group the septal apparatus is represented with the spines or a number of spines of different structure (holacanth, monacanth, rhabdacanth et al.), different forms, length and orientation. The development of lamellar (mainly monolamellar) septa of different structure is marked in other group of cystimorphs, widespread mainly in Devonian (*Digonophyllum*, *Dialithophyllum*, *Atelophyllum* and some others). The septal apparatus of some Devonian rugose is characterized with combination of the lamellar septa with arch lamellar, developed on the periphery of the corallites (*Mesophyllum*, *Scissoplasma*). The horizontal skeletal elements of all cystiphyllida are represented with vesicular endothecal formations - dissepiments and also with stereoplasma crusts developed in some genera (Tsyganko, 1972).

The development of these formations testify about important functional peculiarities inherent to the polyps of this group of cystimorphs (Tsyganko, 1996). Apparently it is the feature of high order. Among the stereoplasma crusts we distinguished earlier the complete and incomplete crusts depending on the degree of their development (Tsyganko, 1972). Functionally complete stereoplasma crusts were connected with basal and lateral ectoderma of polyps. The formation of the incomplete stereoplasma crust is connected with the vital processes proceeding in basal (descendent crust) or in lateral (ascendent crust) ectoderma (Tsyganko, 1981, 1996). Accordingly to the character of dissepimentarium, building the internal cavity of the corallite there are the forms with differentiation of the dissepiments on the sizes, orientation and the forms with two or three distinct zones of dissepiments.

It is necessary to use as the basis of the classification of cystimorphs the following features (accordingly to degree of their importance):

- 1) the form of existence («solitary» and «colonial»)
- 2) the type of the septal apparatus;
- 3) the presence or the absence of stereoplasma crusts;
- 4) the character of stereoplasma crust;
- 5) the character of the dissepiments

The type of the septal apparatus (acanth or lamellar) is inherent to the different suborders of cystimorph rugose. True coloniality and pseudocoloniality is the feature of high order. They

characterize suborders or families as a last resort. The presence or the absence of stereoplasma crusts as a degree of development of dissepimentarium are characteristic for the family. It is necessary to consider the peculiarities of septa microstructure, the character of stereoplasma crusts (complete or incomplete - descendent or ascendent) and the character of dissepiments as the features of genus. Structure of septal apparatus (a number of septa and so on), frequency and thickness of the stereoplasma crusts are the features of species.

### References

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