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Morphological variation of the tabulate coral *Paleofavosites* cf. *collatatus* Klaamann, 1961 from the Silurian of the Bagovichka River localities, Podolia (Ukraine)

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Abstract. *Paleofavosites* cf. *collatatus* Klaamann occurs abundantly in marls and bioherms of the Muksha Member of the Bagovitsa Formation (Upper Silurian, Ludlow). The morphological variation of this species identified in different localities is analysed. The biometrical data show that there is no substantial variation among specimens from different localities except that corallum shapes are taller in marls than in bioherms and corallites are slightly smaller in specimens from bioherms. The irregular growth of coralla is common to this area.

Key words: Silurian, Ludlow, Podolia, Tabulata, morphological variation.

INTRODUCTION

The aim of the present study is to illustrate the morphological variation of *Paleofavosites* cf. *collatatus* Klaamann for its taxonomic revision. The morphology of this species is largely dependent on the environmental conditions. Therefore, specimens were collected from localities with different facies for analysis of the relationship between the species and environment. *Paleofavosites* cf. *collatatus* is the dominant tabulate coral in the Muksha Member in the outcrops along the Bagovichka River. The tabulate species diversity is relatively low, with the faunas containing in addition to *P.* cf. *collatatus* only *Thecia confluens* (Eichwald) (Tsegelnjuk et al. 1983).

This same *Paleofavosites* species from the Muksha Member has previously been identified as *Favosites* (*Calamopora*) ?*alveolaris* Goldfuss by Tesakov (1971), *P. jaaniensis* Sokolov (Nikiforova et al. 1972), and *P. collatatus* Klaamann (Tsegelnjuk et al. 1983). It is therefore important to analyse the variation of *P.* cf. *collatatus*. The large coral-rich localities in Podolia suit well for such studies.

Paleofavosites collatatus was first described from the Jaagarahu Stage (Wenlock) of the Sepise outcrop in Saaremaa, Estonia. It can be easily recognized by the bulbous or spherical shape of the corallum. Due to the simple morphology of internal characters like the polygonal corallites, pores predominantly located in corners, variable thickness of corallite wall and septal development, and by the similar size of corallites, this species is easily confused with *P. tersus* and *P. jaaniensis*, especially because the intraspecies variation has not been studied in any of these species.

There is no doubt that the three different localities studied contain the same species because the morphology of specimens is very similar. Bulbous coralla from bioherms and marls have slightly different parameters. Wider bulbous coralla are common in bioherms and taller bulbous coralla are common in marls. Different environmental conditions have affected their growth. This pattern also shows that coralla occur in situ and have not been transported from bioherms to marls.

MATERIAL AND LOCALITIES

The material studied consists of 42 specimens collected from three localities in the valley of the Bagovichka River close to Bagovitsa village (Fig. 1). All selected specimens are from the Muksha Member, Bagovitsa Formation, corresponding by Tsegelnjuk et al. (1983) to the Lower Ludlow (Fig. 2).

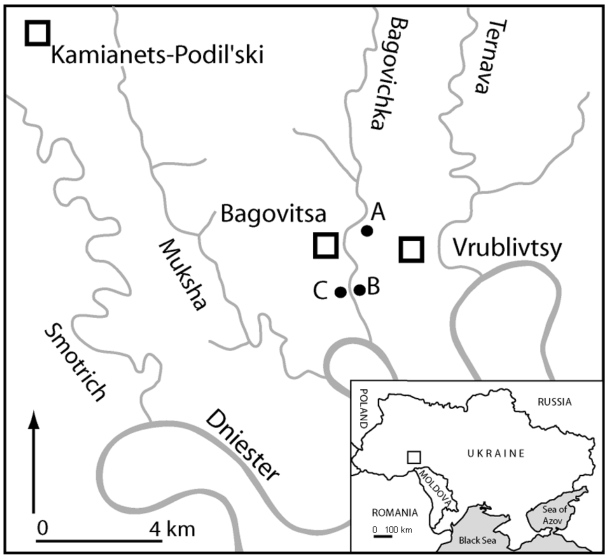


Fig. 1. Map of locality position in Podolia. Rectangles mark the settlements and black dots mark localities A, B, and C.

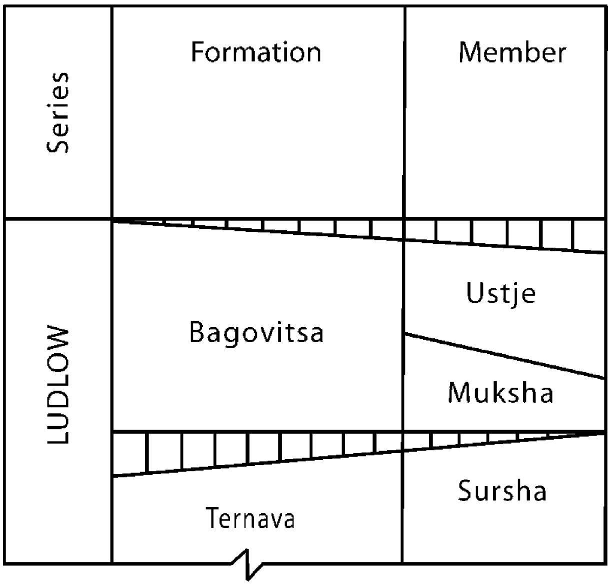


Fig. 2. Stratigraphical scheme of the study interval after Tsegelnjuk et al. (1983).

The biometric analyses of all specimens are based on a pair of thin sections. For three coralla additionally a series of peels was analysed, made at a distance of 1 cm from the axial part and side parts of the corallum. The material is deposited in collection No. 481 of the Institute of Geology at Tallinn University of Technology (GIT).

TERMINOLOGY AND MEASUREMENT METHODS

The terminology of bulbous corallum shapes follows Young & Scrutton (1991) and Young & Elias (1995). Bulbous coralla have a wide convex upper surface and a narrow base, the width to height ratio is less than 3 : 1, and their widest part is either above or at the midpoint of the height. Coralla with rounded shapes are termed as spherical.

The minimum, maximum, and mean measurement values of corallites were calculated for each specimen and the range of means for a species is shown. The average transverse axis method (Sutton 1966) is applied here to measure corallite dimensions. Two measurements of dimension for each corallite are made at right angles to one another, between corallite midwalls. The mean of these is used to describe the corallite size. For a corallite that is not equidimensional, the axis around which the corallite is closest to being bilaterally symmetrical is used to orient the first measured dimension (see also Young & Elias 1995). Dimensions and areas of only adult corallites (corallites which have six or more sides; see Young & Elias 1993) were measured. The number of corallites in one square centimetre was counted separately for adult corallites and for all corallites. The ratio of juvenile corallites to all corallites was calculated to illustrate the proportion of juvenile corallites in the section, which shows the intensity of corallites offsetting. The length of septa was measured as the distance between the outer side of the wall and the end of a septum. The longest septal spine, the mean length of septal spines, and wall thickness were measured for selected corallites in each specimen. The thickness of the thickest septa in the section was determined for each specimen. The wall thickness was measured between the septa. The diameters of pores (corner and wall pores) were measured. Similar measurements of each section of a corallum were made for intracolonial data. The number of tabulae was counted along a 5 mm interval; the beginning of the 5 mm interval was placed on a tabula, which was not included in the count. The number of tabulae from vertical sections through a corallum was counted along the cyclomorphic zone. Cyclomorphic zones with denser and wider spacing of tabulae were recognized in corallites in the vertical section of a corallum. The beginning of the interval of one cyclomorphic zone was placed on the tabula which was not included in the count. All measurements of skeletal elements were made from transverse sections, except the number of tabulae which was found from the vertical section.

GEOLOGICAL BACKGROUND

The Bagovitsa Formation comprises the Muksha and Ustje members. The Muksha Member is exposed in the valleys of the Smotrich, Muksha, Bagovichka, and Dniester rivers. It consists of an intercalation of marls and limestones with a total thickness of 12–19 m (Fig. 3). Bioherms of variable size and position (Nikiforova et al. 1972), about 10–11 m thick, form the lower part of the Muksha Member (Tsegelnjuk et al. 1984). Bioherms consist of cemented bioclastic limestones. They contain abundant stromatoporoids and tabulates, and less abundant crinoids and colonial rugose corals (Nikiforova et al. 1972). The bioherms of the Muksha Member belong to the shallow shelf environment with strong turbulence (Gritsenko et al. 1999). Marls of the Muksha Member are massive or indistinctly bedded with a thickness of 0.8–2.6 m (Tsegelnjuk et al. 1984). Limestones are bioclastic, massive or thin-bedded and often dolomitized in the upper part of the Muksha Member.

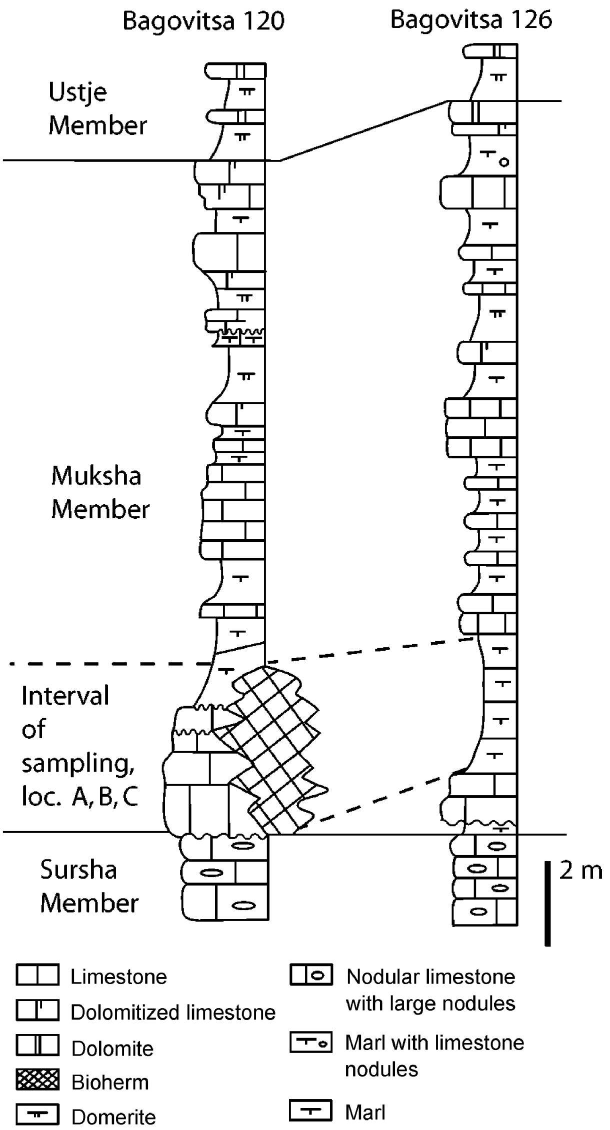


Fig. 3. Localities with the tabulate-bearing bioherm and marls (after Tsegelnjuk et al. 1983). Bagovitsa 126 is close to locality B.

Lithologies of rocks and their thickness are changing laterally, but the faunas are similar (Nikiforova et al. 1972). The fauna consists of the brachiopods *Howellella*, *Kozlowskiellina*, *Meristina*, *Atrypa*, *Protozeuge*, *Sulcatina*, *Rhynchotreta*, *Ancillotoechia*, and *Lepidoleptaena*; trilobites *Warburgella* and *Encrinurus*; ostracods *Craspedobolbina* and *Beyrichia*; algae *Wetheredella*, *Rothpletzella*, *Spongiostroma*, *Hedstroemia*, and *Solenopora*; stromatoporoids *Labechia*, *Stelodictyon*, and *Ecclimadictyon*; and rugose corals *Rhegmaphyllum*, *Neocystiphyllum*, *Acervularia*, *Tryplasma*, and *Spongophylloides* (Tsegelnjuk et al. 1984). Tabulate corals, which are mainly represented only by *Paleofavosites* cf. *collatatus*, occur both in biohermal limestones and in marls. The Muksha Member is correlated with the *nilssoni* Zone by Tsegelnjuk et al. (1983), although according to Kaljo (1987), it corresponds to the range of the *nassa* Zone. It is possible that the Muksha Member belongs to the Wenlock.

TAXONOMIC DESCRIPTION

Paleofavosites cf. *collatatus* Klaamann, 1961

Description. All numerical data for taxonomic description of *Paleofavosites* cf. *collatatus* are given in Tables 1 and 2. Coralla are bulbous and spherical in shape. Corallite growth in spherical coralla was circumrotatory, and upward and outward or irregular (mixed growth orientation) in bulbous coralla. Polygonal corallites have 3 to 9, rarely to 10, 11 sides and they are regular or irregular in shape in transverse section. Mean corallite dimensions are 1.14–1.74 mm and the largest corallite dimension is 2.0 mm. Mean corallite areas are 1.00–2.17 mm^2.

The corallite wall is usually straight or slightly wavy in transverse section (Fig. 4A, C, E, F, G, and J) and also in vertical section (Fig. 4I, K).

Table 1. Corallum parameters

Specimen number	Locality	Width, cm	Height, cm	Height to the widest midpoint, cm	Colony shape	Irregular growth present
481-77	A	3	3		Spherical	
481-103	A	4.5	4	2.5	Bulbous	
481-95	A	7.5	6	3.5	Bulbous	
481-70	A	2.5	1.3		Spherical	
481-92	A	5	2	1.3	Bulbous	
481-66	A	4.5	2.5	1.3	Bulbous	
481-94	A	9	8.6	4.8	Bulbous	
481-75	A	2	1.5		Spherical	
481-74	A	2.5	1.4		Spherical	
481-64	A	4.2	2.5	1.3	Bulbous	
481-89	A	3.2	3.5		Spherical	
481-91	A	4	2.5	1.5	Bulbous	+
481-65	A	3	2.5		Spherical	
481-98	A	6	6	3	Bulbous	
481-93	A	6	8	6	Bulbous	+
481-78	B	5	4	2	Bulbous	+
481-97	B	5	5	2.5	Bulbous	
481-99	B	8	7	3.5	Bulbous	+
481-72	B	2.7	1.3		Spherical	
481-71	B	2.5	2.3		Spherical	
481-67	C	4.5	2.5	1.5	Bulbous	+
481-102	C	9	4	2.5	Bulbous	+
481-73	C	2	1.5	1	Bulbous	+
481-83	C	2	1.5		Spherical	
481-84	C	5.5	3.2	2.5	Bulbous	+
481-104	C	3.5	2.8	1.5	Bulbous	+
481-87	C	4	2.5	1.8	Bulbous	+
481-79	C	9	5.5	3	Bulbous	+

The thickness of the corallite wall is variable (Fig. 4A–L). Mean thickness of the wall is 0.08 mm (Table 2). Cyclomorphic thickening of the wall occurs in some specimens (Fig. 4H, J, K). Microstructure is variously preserved and is observed where the corallite wall is thick (Fig. 4L). A dark median line is visible in the middle of the corallite wall and is covered with a thick outer wall on both sides, which has a fibrous structure.

Septal spines are well developed in all specimens. Some specimens have more septa and longer septal spines than others (Fig. 4A, C, G, H). Septa are rare or absent in some corallites whereas they are thick and abundant in others (Fig. 4A, C, J). The abundance of septa varies also with the cyclomorphic zones (Fig. 4I, K). Septal spines are short and thick (Fig. 4B) or long with sharp tips and pointed upwards (Fig. 4H, K, L). The mean length of septal spines is 0.22 mm, reaching up to 0.5 mm (Table 2).

Both corner pores and mid-wall pores are developed, but mid-wall pores are rare. Five mid-wall pores were found in three specimens. Corner pores have a maximum diameter of 0.17 mm and mid-wall pores have a maximum diameter of 0.14 mm. Thin and straight or slightly curved pore-plates are common (Fig. 4A, B). The corallite wall adjacent to a pore is usually square or bulges slightly (Fig. 4D) or it is sometimes sharp (Fig. 4B). Corner pores connecting two corallites are

Table 2. Numerical data for *Paleofavosites* cf. *collatatus*. All measurements are made from one transverse and one vertical section of the specimen

	Corallite area, mm^2	Corallite dimensions, mm	Number of all corallites in cm^2	Number of adult corallites in cm^2	Thickness of corallite wall, mm	Maximum length of septa, mm	Mean length of septa, mm	Number of septa in corallites	Thickness of septa, mm	Diameters of corner pores, mm	Diameters of mid-wall pores, mm	Number of tabulae in 5 mm
Minimum value	0.21	0.78	60	35	0.04	0.1	0.1	1	0.04	0.06	0.1	6
Maximum value	3.2	2.01	126	62	0.14	0.8	0.5	18	0.14	0.17	0.14	17
Mean value	1.45	1.36	92.32	48.84	0.08	0.36	0.22	8.51	0.1	0.11	0.124	9.49
Range of means	1.0–2.17	1.14–1.74	–	–	–	–	–	–	–	–	–	–
Number of specimens	42	40	19	19	40	40	40	40	40	40	3	25
Number of measurements	731	728	–	–	156	156	156	156	40	128	5	122

– not measured.

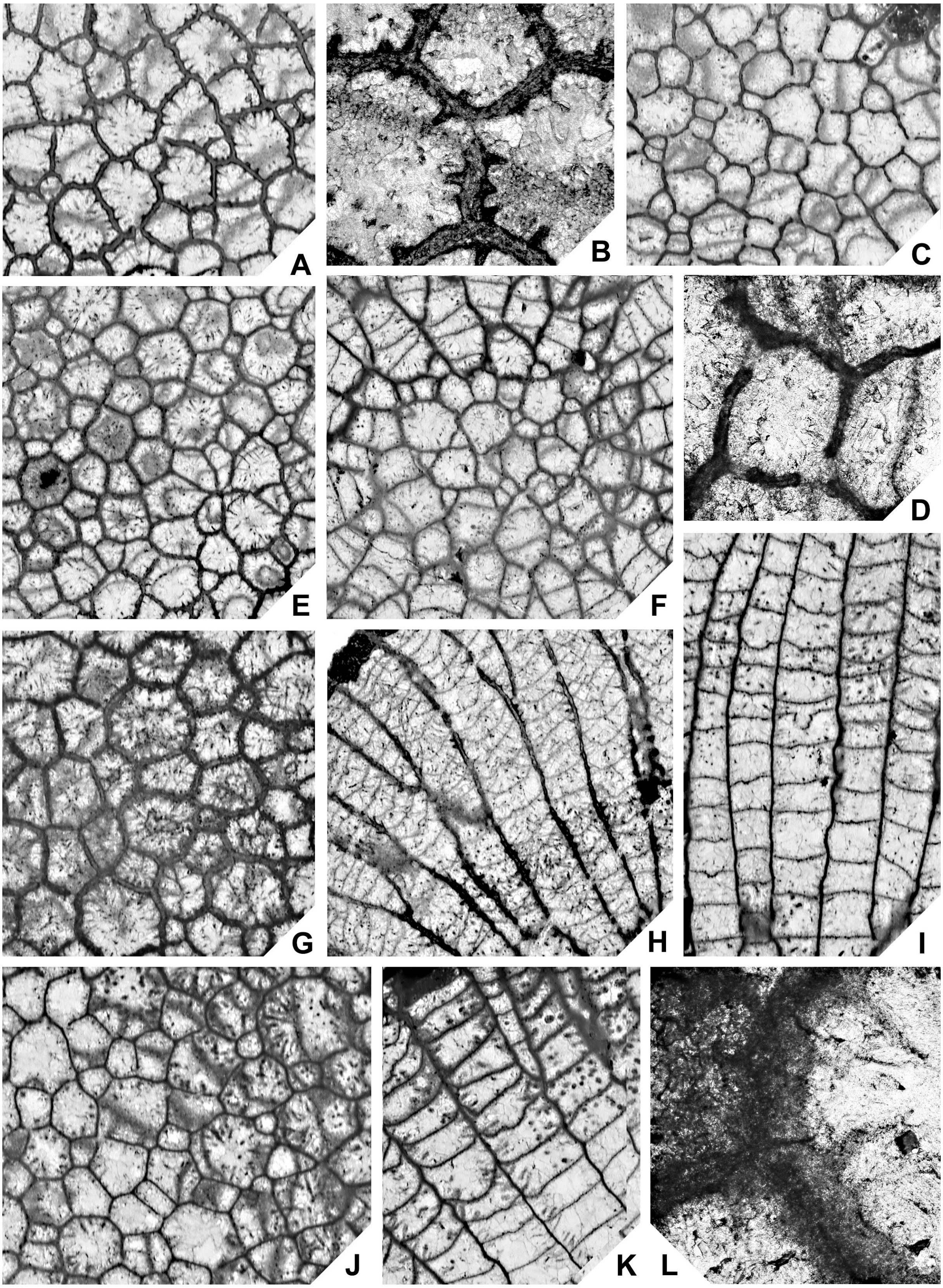
common and the corner pores connecting three corallites are rare (Fig. 4B, D).

Tabulae are mostly flat, complete and moderately thin. Sometimes they are curvy, concave, and rarely convex (Fig. 4H, I, K). Very rarely they are incomplete. The number of tabulae in 5 mm ranges from 6 to 17 (Table 2).

Discussion. These specimens are very similar to *Paleofavosites collatatus* Klaamann, 1961 from the Wenlock of Estonia, in the spherical and bulbous shapes of coralla, corallite sizes, and presence of septal spines. The dimensions of the corallites of *P. collatatus* are 0.9–2.2 mm and the mean dimensions of corallites in *P.* cf. *collatatus* are 1.14–1.74 mm. However, the described species has thicker walls and generally more abundant septal spines, therefore its attribution to *P. collatatus* is tentative. The corallite size (1–2 mm in *P. tersus*), thick corallite walls, and well-developed septa of this species also resemble those of *P. tersus* Klaamann from the Wenlock of Estonia, but the corallum shape of the latter is not spherical as in *P. collatatus*. Nikiforova et al. (1972) note that *P. jaaniensis* Sokolov is common in the Muksha Member. This is the same species as the one described in the current work. *Paleofavosites* cf. *collatatus* resembles *P. jaaniensis* from the Wenlock of Estonia also by corallite dimensions (the latter has corallites 1.5–2.2 mm in size), thick walls, and abundant septa, but the zonation of the corallite wall is less developed in the former species. The same species was named *Favosites* (*Calamopora*) ?*alveolaris* Goldfuss by Tesakov (1971). The validity of the genus name *Calamopora* was discussed by Oekentorp (1971), who suggested to retain the well-known genus *Paleofavosites* for stability. *Paleofavosites alveolaris* differs from the species considered here in its much larger corallites; corallite dimensions are 2.7–3.0 mm, sometimes 3.6 mm (Oekentorp 1976).

Occurrence. Muksha Member, Bagovitsa Formation, Ludlow.

Localities and material. Localities Bagovitsa A, B, C, on the banks of the Bagovichka River, Podolia; 42 specimens: locality A: GIT 481-64, -65, -66, -70, -74, -75, -76, -77, -86, -88, -89, -90, -91, -92, -93, -94, -95, -96, -98, -103; locality B: GIT 481-68, -71, -72, -78, -82, -97, -99, -100; locality C: GIT 481-63, -67, -69, -73, -79, -80, -81, -83, -84, -85, -87, -101, -102, -104.


A
B
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MORPHOLOGICAL VARIATION OF *PALEOFAVOSITES* CF. *COLLATATUS*

Coralla of *Paleofavosites* cf. *collatatus* are bulbous and spherical (Table 1), often of irregular growth. The growth of spherical coralla was circumrotatory – corallites grew outwards in all directions (Kissling 1973). Most of the spherical coralla are small (about 3 cm in diameter and less, Table 1). Some bulbous coralla continued to grow upwards and outwards after circumrotatory growth (Fig. 5B, C, E). Some coralla grew in varied directions, making their corallum shapes irregular. Some coralla could possibly grow together to form one corallum in these localities (Fig. 5E, F, H).

The studied specimens are from two different palaeoenvironments. Those from bioherms are lower and wider in shape than the ones from marls. This probably indicates the response of the colony to the sedimentary regime (Young & Scrutton 1991). In muddy environments, colonies grew more vertically because the sedimentation rate was high, but they grew more laterally in bioherms where the wave and current energy was stronger. Coralla from marls and bioherms are often irregularly grown.

The narrow range of only spherical and bulbous corallum shapes in *Paleofavosites* cf. *collatatus* is possibly genetically limited. Despite the adaptation of *P*. cf. *collatatus* to two palaeoenvironments, the internal characters of coralla are not very variable between localities. A small difference is observed in the mean corallite size of coralla from different localities (Table 3). The specimens collected from bioherms have slightly smaller corallites than specimens from marls. However, the difference is small because the corallite sizes in all specimens are not very variable: the mean corallite dimension is 1.36 mm and the largest dimension is 2.01 mm (Table 2). The mean number of corallites per square centimetre also differs between localities. The mean number of septal spines is also different – 6.19 in bioherms and 9.58 and 8.01 in marls (Table 3). This depends somewhat on corallite size – a larger corallite can contain more septa (Fig. 6). Cyclomorphic variation is evident in the spacing of tabulae in every specimen. The cyclomorphic variation expressed in the thickening of corallite walls and septa in dark zones is not very common in *P*. cf. *collatatus*. Some specimens contain more septa with a thicker corallite wall. Wall thickness and number of septa are obviously not dependent on each other (Fig. 7). The variation in the development of septa and wall thickness is widely observed in specimens, but also in a corallum (Fig. 4E, F). This corallum is probably formed from different coralla. Corallite walls thicken slightly in dark zones (Fig. 4H, J, K) or remain almost the same in both zones (Fig. 4I). The abundance of septa usually increases in dark zones (Fig. 4I–K), but sometimes this is not very clear in all corallites of the section (Fig. 4H). The prevalence in the abundance of septa in dark zones over those in light zones is visible in vertical sections through whole coralla (Table 4).

Corallite sizes vary inside a corallum, but there is no connection of mean corallite size with the different parts (sides and axial part) of the corallum (Fig. 8, Table 5). The ratio of young corallites to all corallites in a square centimetre shows the formation of juveniles in different sections of different parts (sides and the axial part) of coralla (Fig. 9, Table 5). The proportion of young corallites in sections of the axial part of the corallum GIT 481-99 is more stable than in its side parts (Fig. 9). However, the proportion of young corallites in sections of the axial parts of other coralla is uneven, which can be explained by the irregular or outward growth of corallites. The part of the corallum growing upwards did not produce many offsets (Fig. 5E), but the other parts of the corallum and the other coralla produced more offsets due to irregular or outward growth.

Fig. 4. Photographs of thin sections of *Paleofavosites* cf. *collatatus*. All specimens are from the Muksha Member. **A**, **B**, GIT 481-64, locality A, transverse sections; A, ×8; B, short and thick septal spines and pore with pore-plate, ×30. **C**, **D**, GIT 481-101, locality C, transverse sections; C, ×8; D, pores and a corner pore connecting three corallites, ×30. **E**, **F**, GIT 481-78, locality B, transverse sections; E, ×6; F, ×6. **G**, **H**, GIT 481-73, locality C; G, transverse section, ×8; H, vertical section, ×8. **I**, GIT 481-81, locality C, vertical section, ×8. **J**, GIT 481-66, locality A, transverse section, ×8. **K**, GIT 481-98, locality A, vertical section, ×8. **L**, GIT 481-78, locality B, transverse section showing microstructure of corallite wall, ×50.

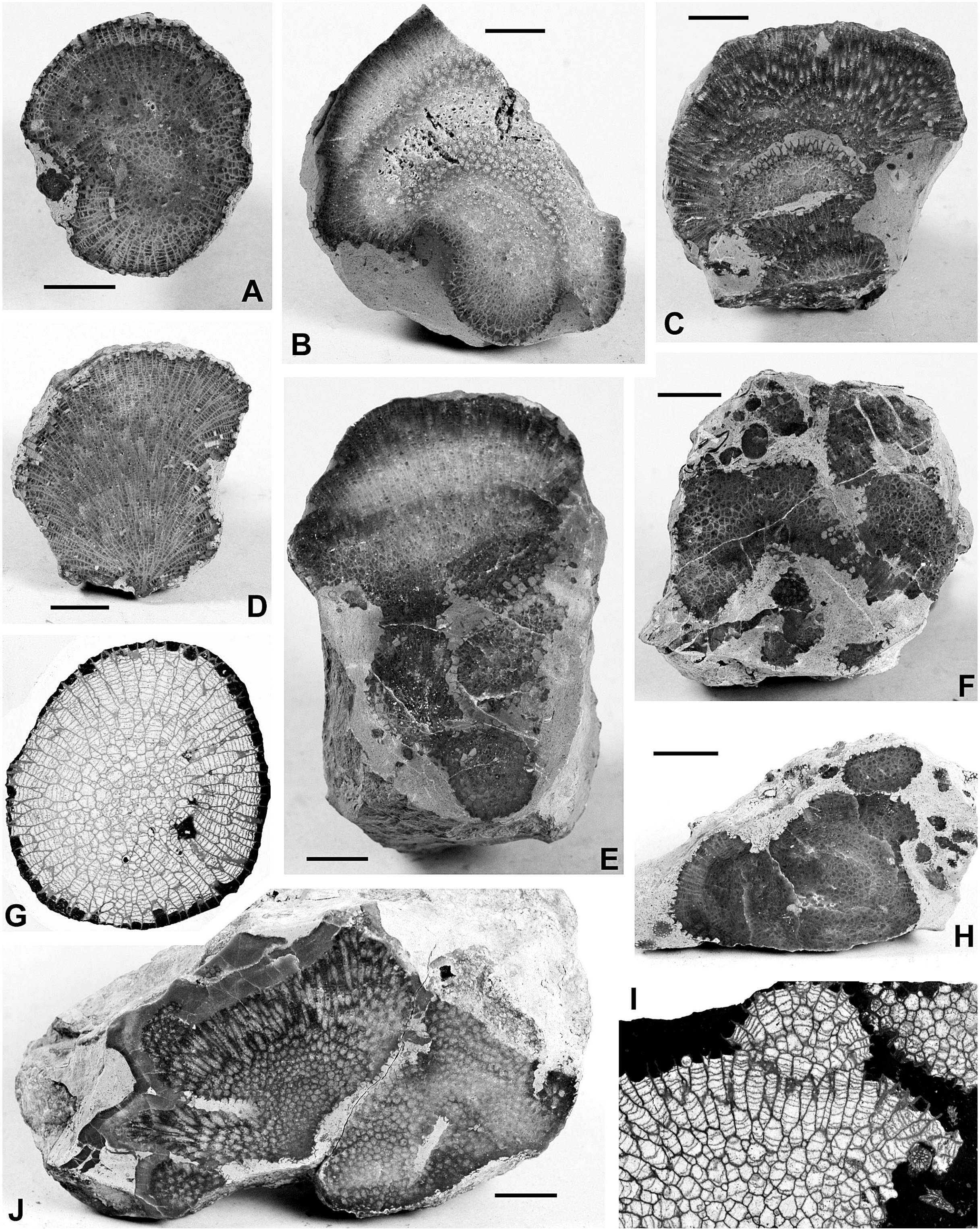

Fig. 5. Sections through coralla of *Paleofavosites* cf. *collatatus* (all are slab surfaces except thin sections G, I). All specimens are from the Muksha Member. The scale bar is 1 cm. **A**, GIT 481-89, locality A. **B**, GIT 481-100, locality B. **C**, GIT 481-97, locality B. **D**, GIT 481-103, locality A. **E**, GIT 481-99, locality B. **F**, GIT 481-101, locality C. **G**, GIT 481-65, thin section, transverse section, locality A, ×1.7. **H**, **I**, GIT 481-87, locality C; H, corallum; I, thin section, transverse section, ×2.4. **J**, GIT 481-79, locality C.

Table 3. Mean numerical data for *Paleofavosites* cf. *collatatus* from different localities

Locality	Corallite area, mm	Corallite dimensions, mm	Corallites in 1 cm	Number of septa
A	1.5	1.38	82.78	9.58
B	1.47	1.37	98.5	8.01
C	1.36	1.33	102.5	6.19

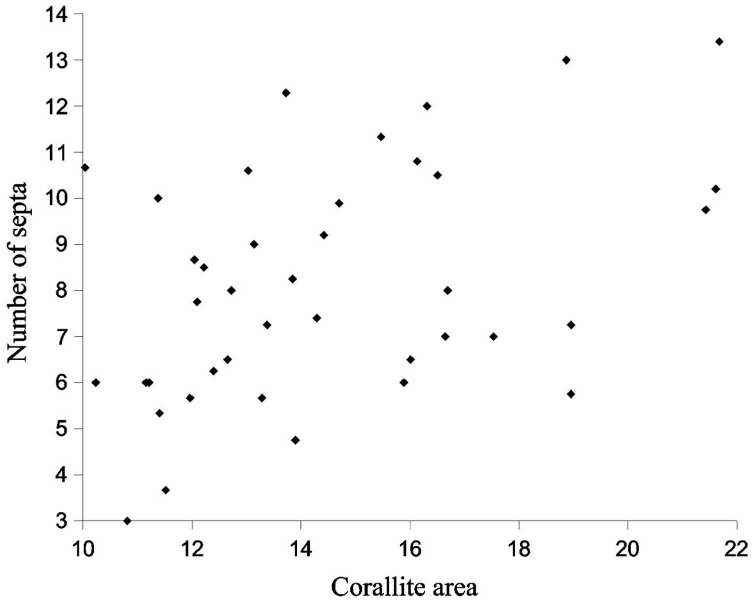

Fig. 6. Number of septa in corallites with the increase in corallite areas (in mm, multiplied by 10) in *Paleofavosites* cf. *collatatus*.

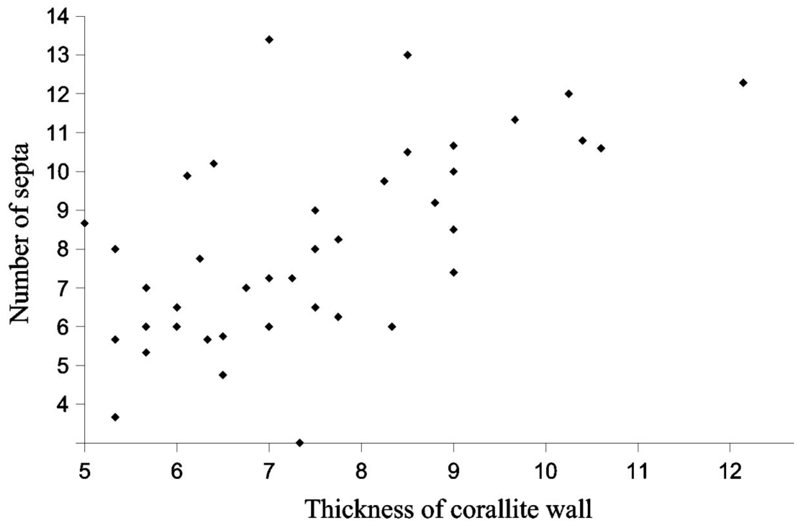

Fig. 7. Number of septa with the increase in the thickness of corallite wall (in mm, multiplied by 100) in *Paleofavosites* cf. *collatatus*.

Table 4. Cyclomorphic variation in coralla

Specimen number	Corallites measured	Zone	Zone extension, mm	Number of tabulae in zone	Wall thickness, mm	Septal development
481-98	Corallite 1	Dark	7.72	13	0.09	Many
		Light	7.52	10	0.08	Few
	Corallite 2	Dark	6.3	11	0.09	Many
		Light	6.3	7	0.07	Few
	Corallite 3	Dark	5.16	8	0.09	Many
		Light	5.16	6	0.08	Few
481-93	Corallite 1	Dark	6	12	0.08	Many
		Light	6	8	0.07	Few
	Corallite 2	Dark	4.07	10	0.1	Few
		Light	4.05	6	0.09	Few
481-95	Corallite 1	Dark	4.37	11	0.1	Many
		Light	4.37	9	0.09	Few
	Corallite 2	Dark	4.7	11	0.08	Many
		Light	4.7	7	0.08	Few
481-99	Corallite 1	Dark	4	11	0.1	Many
		Light	4	8	0.1	Few
	Corallite 2	Dark	7.27	14	0.1	Many
		Light	7.05	10	0.09	Few
	Corallite 3	Dark	5.35	10	0.1	Many
		Light	5	7	0.09	Few

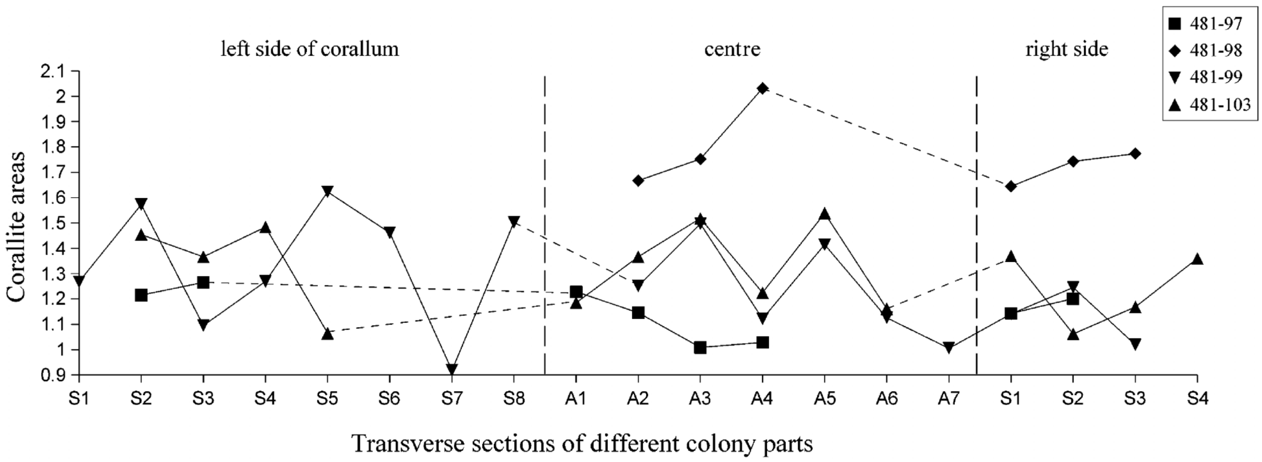

Fig. 8. Corallite areas in transverse sections from different parts of selected coralla of *Paleofavosites* cf. *collatatus* (S = side part, A = axial part, numbers with letters S1, S2 … represent transverse sections). The collection numbers of the specimens are shown in the legend.

Table 5. Mean values of numerical data in different parts of the corallum, the axial part, and one or two side parts of the corallum

Specimen number	Colony part	Mean of corallite areas, mm^2	Mean of corallite dimensions, mm	Number of all corallites in cm^2	Number of adult corallites in cm^2	Mean ratio of juvenile corallites to all corallites in cm^2	Wall thickness, mm	Maximum length of septa, mm	Mean length of septa, mm	Number of septa in corallites	Mean diameters of corner pores, mm	Thickness of the thickest septa, mm
481-97	Axial part	1.1	1.21	113	53	1.95	0.09	0.31	0.19	7.33	0.1	0.11
	Side part 1	1.24	1.28	105	50	1.91	0.08	0.33	0.17	7.83	0.1	0.12
	Side part 2	1.17	1.23	82	47	2.35	0.09	0.38	0.22	8.5	0.1	0.13
481-98	Axial part	1.82	1.49	86	40	1.87	0.07	0.35	0.24	4.83	0.12	0.1
	Side part	1.72	1.47	75	40	2.19	0.09	0.37	0.23	8.17	0.12	0.11
481-99	Axial part	1.24	1.26	94	46.8	1.99	0.08	0.28	0.19	4.5	0.1	0.1
	Side part 1	1.32	1.26	99	57	2.36	0.08	0.33	0.26	4.54	0.11	0.11
	Side part 2	1.34	1.29	104	53	2.05	0.08	0.31	0.2	5.25	0.11	0.11
481-103	Axial part	1.33	1.29	95.25	49	2.13	0.07	0.32	0.24	6.78	0.12	0.12
	Side part 1	1.34	1.3	105	52	2.0	0.06	0.32	0.23	5	0.12	0.12
	Side part 2	1.24	1.26	–	–	–	0.06	0.24	0.16	3.88	0.12	0.12

– not measured.

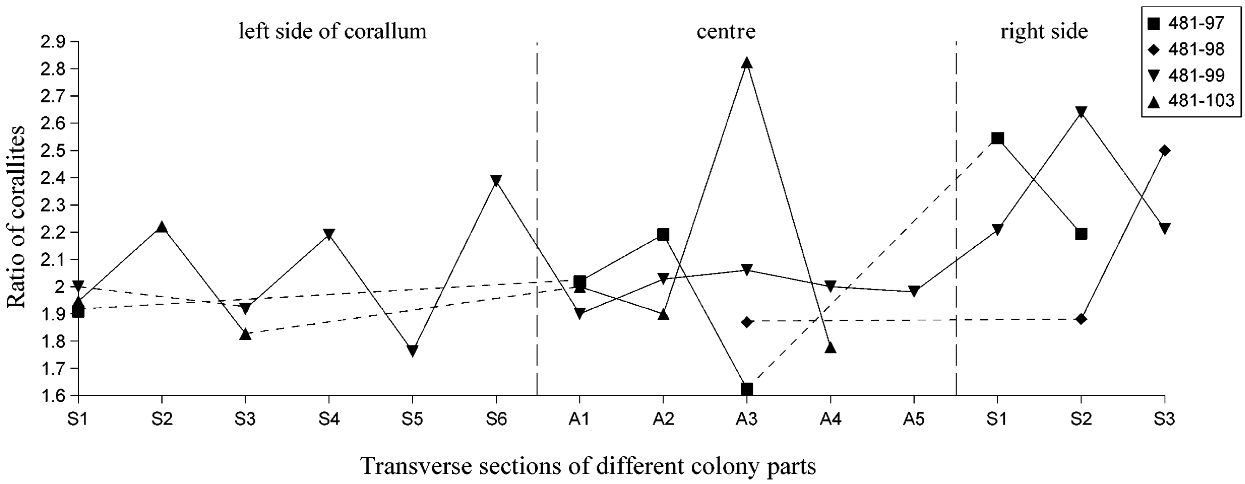

Fig. 9. Ratio of juvenile corallites to all corallites in a square centimetre in transverse sections of different parts of selected coralla of *Paleofavosites* cf. *collatatus* (S = side part, A = axial part, numbers with letters S1, S2 … represent transverse sections). The collection numbers of the specimens are shown in the legend.

The number of offsets rose with the increase in the maximum growth angle of corallum, when the corallum grew broader and oppositely, with the reduction of the growth angle, fewer new corallites were initiated (Young & Elias 1999).

The characters of *P.* cf. *collatatus* are more variable between coralla than within a corallum (Tables 2, 5).

CONCLUSIONS

- The differences in the width and height of *Paleofavosites* cf. *collatatus* coralla from different facies indicate that these parameters change with the environmental conditions.
- The patterns of cyclomorphic variation differ in specimens of *P.* cf. *collatatus*. The zonal spacing of tabulae occurs in every specimen, but the pattern of zonal development of septa and corallite wall thickening are variable in specimens.
- There is no connection between the variation of corallite size and the sections of different sides of coralla. As seen in one corallum, the proportion of young corallites remained stable during the upward growth of corallites, but changed with irregular or outward growth.

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Tabulaadi *Paleofavosites* cf. *collatatus* Klaamann, 1961 morfoloogiline muutlikkus Bagovichka jõe paljandites (Silur, Ludlow) Podoolias Ukrainas

Mari-Ann Mõtus ja Volodymyr Grytsenko

Paleofavosites cf. *collatatus* Klaamann on sageli esinev liik Muksha kihistikus Dnisteri jõe ja selle lisajõgede äärsetes paljandites. Sama liiki on eelnevalt kirjeldatud erinevate nimede all mitme autori poolt. Kõige sarnasem liik *Paleofavosites collatatus* pärineb Sepise paljandist Saaremaalt Jaagarahu lademest. Muksha kihistikus levivale liigile on antud *conformis*'e staatus, sest selle liigi seinad on paksemad ja septid tihedamad kui *P. collatatus*'el. Kahjuks ei ole selliste liikide muutlikkust uuritud. *Paleofavosites* cf. *collatatus*'e morfoloogilist muutlikkust on uuritud selliste Dnisteri lisajõe Bagovichka kolmest paljandist. Liiki iseloomustava ümara ja mugulja koloonia kuju on laiem ning lühem biohermides ja kitsam ning kõrgem merglites, sest see muutub koos keskkonnatingimustega. Kolmest paljandist kogutud kolooniate koralliitide keskmised erinevad natuke paljandite kaupa. Koloonia seesmised tunnused ei muutu üksteisest sõltuvalt. Eksemplaridevaheline muutlikkus on suurem kui muutlikkus ühes eksemplaris – koloonia sees. Liigi morfoloogilise muutlikkuse hindamine suurema arvu eksemplaride baasil ja nende võrdlemine erinevatest paljanditest pärinevate eksemplaridega aitab selgitada teiste sarnaste liikide olemust ning revideerida nende taksonoomiat.