

LOWER CRETACEOUS CNIDARIANS
FROM EASTERN SERBIA

(WITH 11 FIGURES IN TEXT AND 50 PLATES IN ANNEX)

SPODNJEKREDNI KNIDARIJI IZ VZHODNE SRBIJE

(Z 11 SLIKAMI V BESEDILU IN 50 TABLAMI V PRILOGI)

DRAGICA TURNŠEK, MILENA MIHAJLOVIĆ

INTRODUCTION

The Lower Cretaceous coral occurrences in eastern Serbia have been known since last century already. *TOULA* (1880, 1889) described about 20 species from terrains between Leskovac and Pirot. Between the two world wars *PETKOVIĆ* and *BOJIĆ* (1932) investigated Aptian molluscs, and they announced also the investigation of rich occurrences of corals, which unfortunately never was achieved.

After the war the examination of Aptian corals was started simultaneously by *V. KOCHANSKY-DEVIDÉ* and *O. MARKOVIĆ*. *KOCHANSKY-DEVIDÉ* (1951) investigated the collection of corals from the localities Barovac and Periš. She described 16 species. *MARKOVIĆ* (1951) described 22 species from the village Sukovo. She announced also further investigations of the abundant collection of the University, which unfortunately also never came true. *SUČIĆ* (1953) described 3 species from Svrljiška Topla.

The present work deals with cnidarians from the collection of the Prirodnjački muzej (Museum of Natural Science) in Belgrade. The collection was started in 1910 by *P. PAVLOVIĆ*, then being the director of the Museum, and Professor *D. STOJICEVIĆ*. In recent years the collection has been supplied by *M. MIHAJLOVIĆ-PAVLOVIĆ*, the co-author of this proceedings.

The fauna is derived from three areas: (1) the Žljebine creek, (2) surroundings of Temska, and (3) Skuvija and Planinica. The collection contains more than 500 specimens, of which 355 thin sections were made. In this manner we were able to investigate all macroscopic as well as microscopic properties which enabled us to introduce certain revisions of the system.

Determined were 59 species of corals and four species of hydrozoans and chaetetids. Of these, 40 species were first found in Yugoslavia. Ten species, three genera and one family are new to paleontology, and have been described for the first time.

The investigated cnidarians confirm the Barremian — Lower Aptian age of finding-places. Only a few species are known also from Hauterivian. At Skuvija there are among Lower Cretaceous species also some Upper Jurassic forms redeposited from older reefs.

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DESCRIPTION OF LOCALITIES

by Milena Mihajlović

Localities from which the investigated material was derived belong to a part of Carpatho-Balkanides of eastern Serbia, called the Tupižnica-Tepoš structural-facial zone, or, according to the tectonical subdivision, to the Tupižnica—Knjaževac syncline. In this syncline, striking NW-SE, appear from Knjaževac towards Kalna, Temska and Pirot beds of Barremian and Aptian stages in the Urgonian facies. In the treatise by J. JANKIČEVIĆ (1978) horizons containing reef fauna are investigated in detail; the work gives a good insight into the stratigraphical position of these beds, especially of the localities which supplied the fauna collected during 1910, for which the field notes are scarce.

The strata of the Barremian and Aptian stages are represented by carbonate and terrigenous non-carbonate beds 450—500 m. thick. An abundant reef fauna (orbitolines, corals, pachyodont lamellibranchs and urchins) occurs exclusively in beds and layers of the bioclastic limestone up to 70 m. thickness, which are interbedded in bioclastic sandstones. These beds contain an abundance of dendroidal and spherical coral colonies which often occur in lumachelles; they represent a characteristic member of the limestone facies with pachyodont lamellibranchs, and are of Upper Barremian and Lower Aptian age. These strata may be compared in a number of properties to the Urgonian facies of the classical terranes in France and Switzerland.

The cnidarian fauna comes from the following localities (Fig. 1):

(1) The ŽLJEBINE creek near Donja Kamenica (Knjaževac—Kalna). The coral fauna in this locality was found in gray brown marly and sandy limestones, and is in good state of preservation. This is the richest and most varied finding-place having supplied 308 specimens.

(2) The surroundings of TEMSKA. The coral fauna from the wider surroundings of the village Temska, consisting of several localities: brdo Miro (the Miro hill), Rajčinica and Bunovo creeks, Donja Dubica and Sopot, has been collected entirely from sandy brown and yellowish limestones. Most abundant is the Rajčinica locality with 72 specimens, followed by Sopot with 59, Bunovo 10, Miro 9 and by Donja Dubica with 5 specimens.

(3) SKUVIJA AND PLANINICA on southwestern slopes of the Stara Planina Mountain. In whitish to light brown, partly recrystallized limestones an abundant coral fauna has been found next to a diverse fauna of lamellibranchs, gastropods, hydrozoans and other reef fauna. It is obvious that a large part of the colonies was redeposited, as specimens are rolled and partly also damaged; this may be observed, to a certain degree, also on the material from almost all other localities. From the Skuvija locality 47 specimens were collected, and at Planinica 17. They belong to corals, hydrozoans and chaetetids.

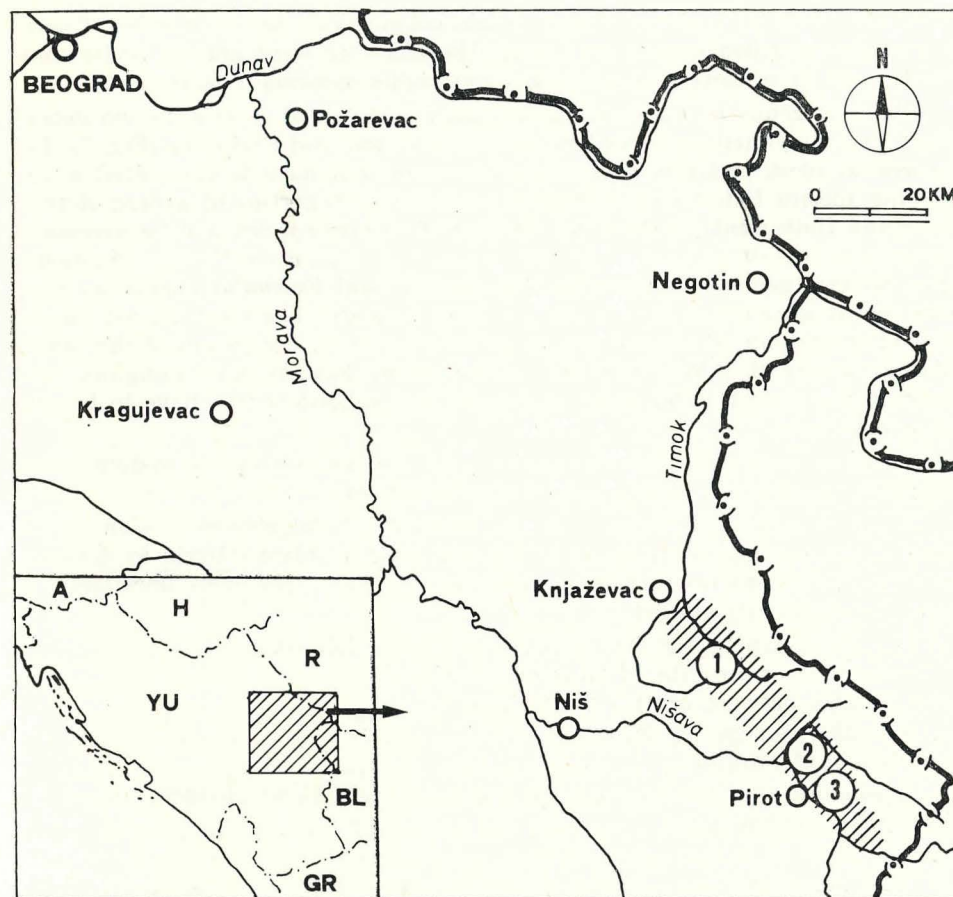


Fig. 1. Situation map of Cnidarian localities in eastern Serbia: (1) Žljebine, (2) Temska, (3) Skuvija and Planinica

DESCRIPTION OF FAUNA

by Dragica Turnšek

The determined coral species are ranged into the presently valid system which is based on systems of VAUGHAN and WELLS (1943), WELLS (1956) and ALLOITEAU (1952, 1957). Considered are smaller changes introduced by BENDUKINDZE (1961), BEAUVAIS (1964), MORYCOWA (1964, 1971), RONEWICZ (1966, 1976), TURNŠEK (1972, 1976), and by others.

The corals from eastern Serbia are preserved in entire colonies. We were able to perform serial sections and therefore to compare macroscopic and micro-

scopic structures. It was found that certain colonies combine properties of several already described species or genera. Therefore we were able to revise some genera, and to propose revisions for some higher systematic categories.

The new genus *Floria* shows individual properties of several known genera which are attributed to suborders Archaeocaeniina and Stylinina (Fig. 2). For this reason most probably these two suborders will have to be united again. Also the species *Heliocoenia actinastrae* combines properties of genera *Actinastraea* and *Heliocoenia*, and so the revision of certain species will be necessary. The genera *Axosmia* and *Peplosmia* show in sections different columellar types, so that genera *Pleurosmilia*, *Plesiosmia* and *Epismilia* appear as their more recent synonyms. The genus *Trochoidomeandra* has been placed on the basis of special lateral outgrowths into a new family. Some genera of the family Latomeandridae display properties of suborders Faviina and Fungiina, and therefore the present subdivision into these two suborders will have to be placed on new basis.

It can be seen from these examples that the revision of the system seems necessary, and this will be the task of all investigators.

It has been also indicated that the macrostructural elements, such as the shape of colonies and the manner of growth, are important criteria in systematics (Fig. 4). The microstructure is, however, in many specimens unreliable, as it may be secondarily altered.

The abbreviations for dimensions in text are following:

- d=diameter of corallite, of calice or of series
- c=c=distance between centres of corallites
- s=number of septa or density of septa
- h=height of corallum

In colonies the dimensions are measured as follows: longer diameter × shorter diameter × height.

Classis: Anthozoa

Subordo: Archaeocaeniina ALLOITEAU 1952

Familia: Actinastraeidae ALLOITEAU 1952

Genus: *Actinastraea* d'ORBIGNY 1849

Actinastraea pseudominima major MORYCOWA 1971

Pl. 1, figs. 1—5

1971 *Actinastraea pseudominima major* n. subsp. — MORYCOWA; 37—39, pl. 1, fig. 3; pl. 2, fig. 1; textfigs. 13—14.

Detailed description has been provided by MORYCOWA (1971). Dimensions of our specimens are: colony=60×30×25 mm, d=2—3 mm, s=24+s₄, thickness of wall=0.2—0.4 mm, thickness of columella=0.5—0.7 mm.

Localities: Žljebine (M2878), Rajčinica (M2925/1—2, M2926/1—5). Barremian — Lower Aptian.

?Subordo: Stylinina ALLOITEAU 1952

Familia: Euhelliidae VAUGHAN & WELLS 1943

Genus: *Enallhelia* MILNE-EDWARDS & HAIME 1848

Enallhelia sp.

Some fragments of the ramose corals (size 5 to 10 mm) show a typical lateral arrangement of corallites which is characteristic of the genus *Enallhelia*. The structure is poorly preserved therefore no more detailed comparison was possible.

Locality: Žljebine (M2911/1—2, M2912/1—15). Barremian — Lower Aptian.

Genus: *Heliocoenia* ÉTALLON 1859

Heliocoenia actinastrae n. sp.

Pl. 2, figs. 1—4, pl. 3, figs. 1—2

Name: Surface looks like *Actinastraea*.

Holotypus: Sample M2836.

Locus typicus: Žljebine.

Age: Barremian — Lower Aptian.

Material: 14 specimens with 12 thin sections.

Diagnosis: *Heliocoenia* with narrow polygonal peritheca, which on the surface looks like actinastraeid cerioid wall. d=1.2—2 mm, s=24+s₄, costae 10—12/2 mm.

Description: The massive colony is of nodular or cylindrical shape, the largest measuring 70×60×40 mm. On the surface, the corallites are polygonal with slightly depressed calices, similarly to species of the genus *Actinastraea*. In thin sections roundish corallites can be seen, with narrow costate peritheca in-between. The septa are compact and laterally dentate. About 12 of them reach to the center, where they are connected with thick round to lamellar columella. In the vicinity of the wall septa are thickened. The third cycle is short, and is continued in the peritheca on the outer side of calice. The inner wall is paratheca and locally septotheca. Endotheca is of vesicular dissepiments. The microstructure is not preserved.

Comparison: In the thick columella which connects with septa and in polygonal corallites the species is similar to the genus *Actinastraea*. In inner wall and peritheca it is a typical *Heliocoenia*. It is distinguished from the species *Heliocoenia rarauensis* MORYCOWA 1971 in having more frequent calices, and from *H. carpathica* MORYCOWA 1964 in a larger columella.

Localities: Žljebine (M2834/1—7, M2835/1—2, M2836); Donja Dubica (M2917); Rajčinica (M2942, ?M2943). Barremian — Lower Aptian.

Heliocoenia carpathica MORYCOWA 1964

Pl. 4, figs. 1—3

1964 *Heliocoenia carpathica* n. sp. — MORYCOWA; 42—44, pl. 6, fig. 3; pl. 7, figs. 4—5; pl. 8, figs. 1—2; pl. 11, fig. 3; textfig. 5.

A detailed description has been presented by MORYCOWA (1964). Dimensions of our specimen are: $d=2$ mm, $c=c=2-2.5$ mm, $s=24$, $c=ca$ 48.

Comparison: The Serbian specimen fits in with the description of *H. carpathica*. Corallites are all of equal size. Septal apparatus of this species is similar to the species *Columnocoenia ksiazkiewiczzi* MORYCOWA 1964 which does not have lamellar columella.

Locality: Planinica (M2822). Barremian — Lower Aptian.

Heliocoenia rozkowskai MORYCOWA 1964

Pl. 4, figs. 4—7

1964 *Heliocoenia rozkowskai* n. sp. — MORYCOWA; 40—42, pl. 7, fig. 6; pl. 8, figs. 3—4; textfig. 4.

Dimensions: colony= $40 \times 50 \times 30$ mm, $d=3-5$ mm, $c=c=5-8$ mm, $s=32+s_4(c)$.

Comparison: Our specimens display a somewhat less constant number of septa, and costae are less clear.

Locality: Skuvija (M2789, M2790/1—5). Barremian — Lower Aptian.

Genus: *Floria* nov. gen.

Name: The colony is flower-like (lat. flos, floris=flower).

Type species: *Floria planinensis* n. sp.

Diagnosis: The cerioid-plocoid-phaceloid colony with lateral and afterwards spiral budding. Septa irregularly hexamerall, slightly assymetrical. Columella styliform to lamellar. Wall is inner paratheca, and a kind of narrow polygonal peritheca. Endotheca is of rare tabulate dissepiments. Microstructure is of simple and segmented trabeculae.

Comparison: The new genus *Floria* combines some of the properties of various presently known genera, and it differs from them in the others (Fig. 2.):

— It is similar to *Actinastraea* in septal apparatus, and differs in the locally plocoid or even phaceloid colony and in budding (compare *A. pseudominima*, MORYCOWA 1971: 33).

— It approaches *Heliocoenia* in lamellar columella, septa and wall, but differs from it in the absence of a clearly expressed costate peritheca.

— It is similar to *Stylosmilia* in lamellar columella and lateral budding, and differs in the predominant presence of the cerioid colony.

— It is similar to *Stylina* in the same septal structure and partly in columella, and differs in the cerioid colony and budding as well.

— It has the same budding as *Latusastraea* but differs from it in septal and columellar structures.

Systematic position: In the septal apparatus, columella, and wall, the new genus is closest to *Heliocoenia*, although according to individual parts

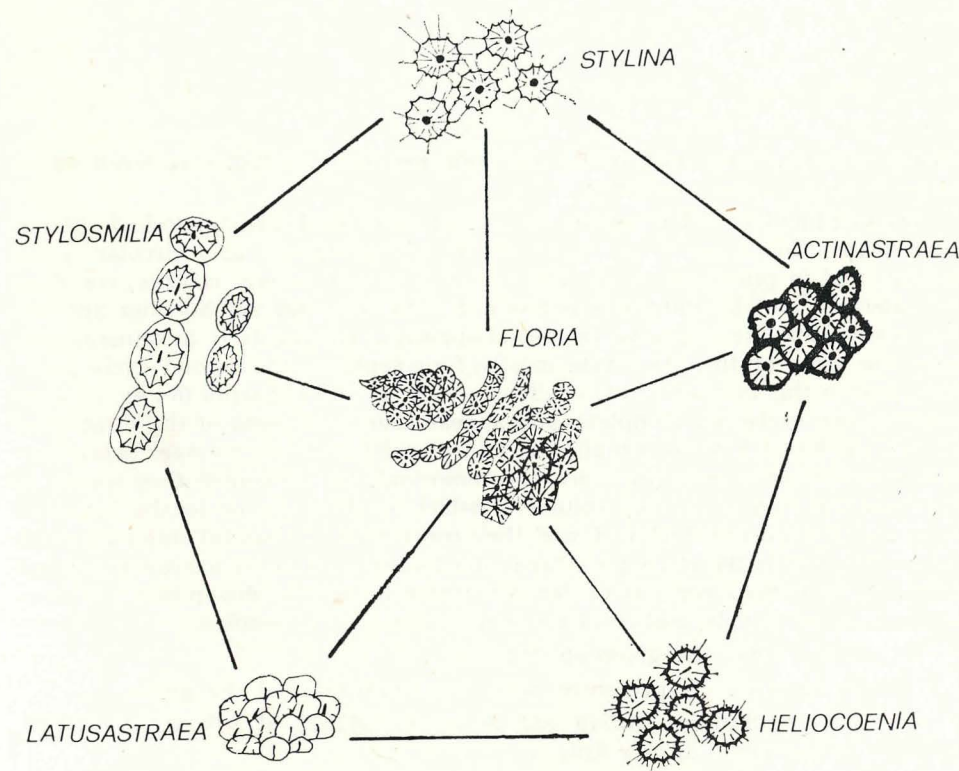


Fig. 2. *Floria* gen. nov. and its relation to other genera.

of colony, it is closer to *Actinastraea* or *Stylina*. Therefore I range it into the family Euhelliidae, to which RONEWICZ (1976) attributed the genus *Heliocoenia*.

The following question arises: does the new genus *Floria* suggest that all mentioned genera are in fact a single genus? Do they differ only due to different degrees of preservation, or differing stages of the budding process? Should all these genera be actually united into the oldest genus *Stylina*? If so, than suborders Archaeocaeniina and Stylinina must be united. The example of the genus *Floria* may indicate also that evolution in corals took course in several directions simultaneously.

Floria planinensis n. sp.

Pl. 5, figs. 1—6, pl. 6, figs. 1—3, pl. 7, figs. 1—2

Name: Is given after the Mountain Stara planina, where the locality Skuvija is situated.

Holotypus: Sample M2784.

Locus typicus: Skuvija.

Age: ?Barremian — Lower Aptian.

Material: 8 colonies with 5 thin sections.

Diagnosis: Floria with $d=0.7-1.3$ mm, $s=10-16$, distance between »blossoms« in the colony $=12-20$ mm.

Description: The colony is cerioid to plocoid, also phaceloid, of nodular shape. Corallites in the cross section are polygonal, also circular, semi-circular, and in places roundish. The colony grows of several centres; corallites bud laterally, and in addition circularly. In this way several bunches are formed which look like blossoms. The septal apparatus is irregularly hexameral. Between the septa of the first cycle mostly four septa of the second cycle penetrate, and in this manner most corallites consist of 10 long septa ($6+4$); in some corallites two cycles are complete, and appear also some septa of the third cycle ($12+s3$). In total, they are usually 16. In the axial part the younger septa connect with the older ones (they are anostomosing). In the centre they touch, or they join the very developed columella which is styliform or locally lamellar. Septa are of differing thickness, and they contain on the lateral side rare thick grains. The wall is the inner paratheca, and locally a sort of a narrow polygonal peritheca. Endotheca consists of tabulate thick horizontal dissepiments. Microstructure shows simple, and less frequently segmented trabeculae.

Dimensions: are given at diagnosis.

Comparison: is presented with the description of the genus.

Locality: Skuvija (M2779, M2780, M2781, M2782, M2783, M2784, M2785, M2786).? Barremian — Lower Aptian.

Familia: Stylinidae d'ORBIGNY 1851

Genus: *Stylina* LAMARCK 1816

Stylina parvistella VOLZ 1903

Pl. 8, figs. 1—3

1903 *Stylina parvistella* n. sp. — VOLZ; 19—20, pl. 3, figs. 13—20.

1954 *Stylina parvistella*. — KOLOSÁRY; 73, pl. 3, figs. 12—15.

?1961 *Stylina solomkoi*. — BENDUKIDZE; 8—9, pl. 1, fig. 1; pl. 4, figs. 3—5.

1971 *Stylina parvistella*. — MORYCOWA; 45—47, pl. 7, fig. 1.

A modern description has been given by BENDUKIDZE (1961), and MORYCOWA (1971).

Dimensions: $d=0.7-1.2$ mm, $c-c=1-1.5$ mm, $s=16+s3$, colony to $70 \times 80 \times 50$ mm.

Comparison: Species *S. solomkoi* differs only in the size of the colony, and is, according to my opinion, a synonym of *S. parvistella*.

Localities: Žiljebine (M2904); Rajčinica (M2937); Skuvija (M2804). Barremian — Lower Aptian.

Stylina regularis FROMENTEL 1867

Pl. 8, figs. 4—5

1974 *Stylina regularis*. — TURNŠEK & BUSER; 93, pl. 4, figs. 2—3 (here the older synonymy).

This species differs from *S. parvistella* in larger dimensions ($d=1.5-2$ mm, $s=12$).

Locality: Skuvija (M2805), Barremian — Lower Aptian.

Genus: *Stylosmilia* MILNE-EDWARDS & HAIME 1848

Stylosmilia alpina KOBY 1897

Pl. 9, figs. 1—3

1897 *Stylosmilia alpina*. — KOBY; 36—37, pl. 7, figs. 6—7.

Description: Dendroid corallites bud under an acute angle of 30 to 45°, laterally. Septa reach to the centre and touch lamellar columella. Lateral sides contain grains. The wall is septoparathecal. Endotheca is of frequent tabulate dissepiments. The microstructure is of simple trabeculae.

Dimensions: $d=2-2.8$ mm, $s=12-16$, colony $=100 \times 40 \times 30$ mm.

Comparison: In our specimen predominate grown up corallites with somewhat longer septa of the third cycle.

Locality: Skuvija (M2809). Barremian — Lower Aptian.

Genus: *Pseudocoenia* d'ORBIGNY 1850

Pseudocoenia annae (VOLZ 1903)

Pl. 10, fig. 5

1903 *Cyathophora annae* nov. spec. — VOLZ; 26, pl. 4, figs. 9—13.

?1951 *Cyathophora annae*. — KOCHANSKY-DEVIDÉ; 107.

1954 *Cyathophora annae*. — KOLOSÁRY; 75.

1964 *Adelocoenia annae*. — MORYCOWA; 27—28, pl. 5, fig. 6; pl. 11, fig. 2.

1971 *Pseudocoenia annae*. — MORYCOWA; 42—43.

A detailed description has been presented by MORYCOWA.

Dimensions: $d=2.5$ mm, $c-c=2.5-3.5$ mm, $s=12-24$. Serbian material coincides entirely with all specimens described until present.

Locality: Žiljebine (M2870/1—2). Barremian — Lower Aptian.

Pseudocoenia hexaphyllia (d'ORBIGNY 1850)

Pl. 10, figs. 3—4

1972 *Pseudocoenia hexaphyllia*. — TURNŠEK; 162—163, pl. 3, figs. 1—3, (here the older synonymy).

Description and comparison: The specimen M2796 from Skuvija shows all the characteristics of the genus *Pseudocoenia*. In its dimensions ($d=3-4$ mm, $c-c=4-5$ mm, $s=12$) it entirely coincides with the Jurassic species

P. hexaphyllia. Since it was found together with Lower Cretaceous corals, it might be redeposited.

Pseudocoenia cf. *suboconis* d'ORBIGNY 1850

Pl. 10, figs. 1—2

1850 *Pseudocoenia suboconis*. — d'ORBIGNY; t. II, 34.

1931 *Pseudocoenia suboconis*. — COTTREAU; 158.

1966 *Pseudocoenia suboconis*. — RONIEWICZ; 185, pl. 4, figs. 1—2; textfigs. 6—7, (here the complete synonymy).

A detailed description has been given by RONIEWICZ (1966). Serbian specimen in the structure of its octameral system of septa and dimensions ($d=2-3$ mm, $c-c=4-5$ mm, $s=16$ (8+8) entirely coincides with this Jurassic species. Our specimen has however, a somewhat denser costae. I marked it with »cf.«.

Locality: Skuvija (M2797). Since it was found in the Lower Cretaceous locality it might be redeposited.

Genus: *Pseudocoeniopsis* RONIEWICZ 1976

Pseudocoeniopsis jurassica (TURNŠEK 1972)

Pl. 9, fig. 4

1972 *Columnocoenia jurassica* n. sp. — TURNŠEK; 183, pl. 22, figs. 1—2; pl. 23, figs. 1—4.

1976 *Pseudocoeniopsis jurassica*. — RONIEWICZ; 54, pl. 7, figs. 3a—b.

In decameral system of septa as well as in all structural elements Serbian specimens entirely coincide with this Jurassic species. Also dimensions are the same: $d=3-4$ mm, $c-c=4-6$ mm, $s=20$ (10+10).

Locality: Skuvija (M2798, M2799), specimens might be redeposited.

Genus: *Eugyra* FROMENTEL 1857

Eugyra digitata KOBY 1896

Pl. 11, figs. 1—2

1896 *Eugyra digitata* KOBY. — KOBY; 21—22, pl. 8, figs. 4—7.

1905 *Eugyra digitata*. — ANGELIS d'OSSAT; 36, pl. 2, figs. 18—19.

1909 *Eugyra digitata*. — PREVER; 116, pl. 11, figs. 1—3.

1937 *Eugyra digitata*. — BATALLER; 86—87.

1951 *Eugyra digitata*. — KOCHANSKY-DEVIDÉ; 107, pl. 1, fig. 1; pl. 2, fig. 1.

1964 *Eugyra digitata*. — MORYCOWA; 47—48, pl. 5, fig. 9; pl. 9, figs. 2a—b.

1971 *Eugyra digitata*. — MORYCOWA; 56—57, pl. 9, fig. 2.

EUGYRA

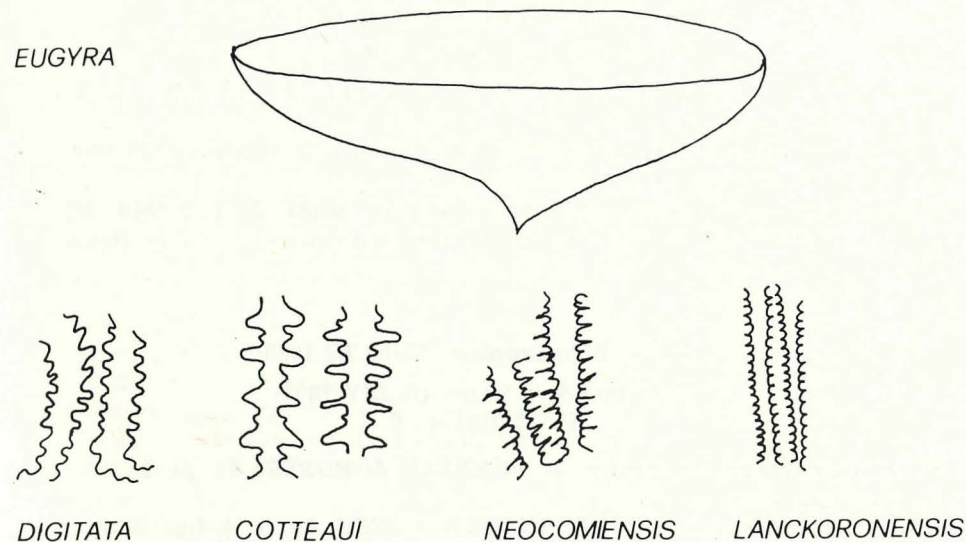


Fig. 3. Development of septa in some species of the genus *Eugyra*.

Dimensions: colony to $100 \times 100 \times 45$ mm, $s=3-5/2$ mm, $c-c$ of two series = 2 mm. Septa of both cycles are equal in size. (Fig. 3).

Locality: Žljebine (M2841/1—4, M2842/1—2, M2843, M2844). Barremian — Lower Aptian.

Eugyra cotteau FROMENTEL 1857

Pl. 11, figs. 3—4

1976 *Eugyra cotteau*. — TURNŠEK & BUSER; 48—49, pl. 2, figs. 3—6, (the older synonymy).

Dimensions: d (of series) = 2—3 mm, $s=4/2$ mm, the septa of second cycle being very short.

Locality: Žljebine (M2852, M2853/1—2). Barremian — Lower Aptian.

Eugyra neocomiensis FROMENTEL 1857

Pl. 11, figs. 5—6

1857 *Eugyra neocomiensis*. — FROMENTEL; 31, pl. 3, figs. 6—7.

1896 *Eugyra neocomiensis*. — KOBY; 19—20, pl. 5, fig. 1.

?1951 *Eugyra neocomiensis*. — KOCHANSKY-DEVIDÉ; 107.

1951 *Eugyra neocomiensis*. Č MARKOVIĆ; 183, pl. 1, figs. 2a—bf.

Dimensions: $c-c$ (of two series) = 2 mm, $s=6-9/2$ mm, the septa of the second cycle are much shorter than of the first one.

Locality: Žljebine (M2850/1—10, M2851). Barremian — Lower Aptian.

Eugyra lanckoronensis (MORYCOWA 1964)

Pl. 12, figs. 1—3

1976 *Eugyra lanckoronensis*. — TURNŠEK & BUSER; 49, pl. 3, figs. 1—4 (here the older synonymy).

Septa are all of the same size. From *E. pusilla* it differs in much more widely spaced septa. $d=1-2$ mm, $s=4-6/2$ mm.

Localities: Žljebine (M2845/1—2, M2846, M2847/1—4, M2848, M2849); Rajčinica (M2931/1—2, M2932); Sopot (M2955). Barremian — Lower Aptian.

Genus: *Eohydnophora* EGUCHI 1936*Eohydnophora picteti* (KOBY 1897)

Pl. 12, figs. 4—6

1974 *Eohydnophora* aff. *picteti*. — TURNŠEK & BUSER; 95, pl. 5, figs. 3—4 (here the older synonymy).

1976 *Eohydnophora picteti*. — TURNŠEK & BUSER; 50, pl. 4, figs. 3—6.

In the material from Serbia entire colonies are preserved.

Localities: Sopot (M2954); Planinica (M2811, M2812, M2813). Barremian — Lower Aptian.

Familia: Cyathophoridae VAUGHAN & WELLS 1943

Genus: *Cyathophora* MICHELIN 1843*Cyathophora pygmaea* VOLZ 1903

Pl. 13, figs. 1—2

1974 *Cyathophora pygmaea*. — TURNŠEK & BUSER; 92—93, pl. 4, fig. 1 (here the older synonymy).

1976 *Cyathophora pygmaea*. — TURNŠEK & BUSER; 47, pl. 1, figs. 1—2.

Localities: Rajčinica (M2935/1—19, M2936/1—2); Sopot (M2948/1—3, M2949/1—3, M2950/1—32); Bunovo (M2921); brdo Miro (M2913, M2914/1—3). Barremian — Lower Aptian.

Cyathophora steinmanni FRITZSCHE 1924

Pl. 13, figs. 3—4

1976 *Cyathophora steinmanni*. — TURNŠEK & BUSER; 48, pl. 2, figs. 1—2. (here the older synonymy).

Specimens from Serbia are large. $d=2-3$ mm, $c-c=3-5$ mm.

Localities: Žljebine (M2879/1—2, M2880); Rajčinica (M2933, M2934); Bunovo (M2922, M2923/1—6); D. Dubica (M2920). Barremian — Lower Aptian.

Genus: *Holocystis* LONSDALE 1848*Holocystis bukowinensis* VOLZ 1903

Pl. 13, figs. 5—6

1903 *Holocystis bukowinensis* n. sp. — VOLZ; 27—28, pl. 4, figs. 14—17.

1964 *Holocystis bukowinensis*. — MORYCOWA; 25—26, pl. 3, fig. 3; pl. 5, fig. 1.

1971 *Holocystis bukowinensis*. — MORYCOWA; 44—45, pl. 6, fig. 4.

The description has been given by MORYCOWA (1964, 1971). The dimensions of our specimens are: $d=1-2$ mm, $c-c=2-3$ mm, $s=16$ ($4+4+8$).

Comparison: *Holocystis* is distinguished in the tetrameral system from *Cyathophora*, and from *Pseudocoenia*. As the genus *Stylina* englobes species of differing septal systems (hexameral, octomeral, decameral), also the above mentioned genera should be united into the first of them, *Cyathophora*. Nevertheless, they differ in length of septa and in microstructure. RONIEWICZ (1976) observed in microstructure such a difference, that she attributed *Pseudocoenia* even to a different family than *Cyathophora*.

Locality: Žljebine (M2837, M2838). Barremian — Lower Aptian.

Subordo: Heterocoeniina M. BEAUVAIS 1975

Familia: Heterocoeniidae OPPENHEIM 1930

Genus: *Latusastraea* d'ORBIGNY 1850*Latusastraea decipiens* (PREVER 1909)

Pl. 13, figs. 7—8

1974 *Latusastraea decipiens*. — TURNŠEK & BUSER; 96—97, pl. 6, fig. 3 (here the older synonymy).

Specimens from Serbia are nodules of different size about 30—60 mm, or branches up to 10 mm in diameter and up to 50 mm long. (see also the comparison of *Floria* n. gen.).

Localities: Žljebine (M2862/1—15, M2863/1—2, M2864/1—2); Rajčinica (M2927/1—2, M2928/1—5). Barremian — Lower Aptian.

Subordo: Amphistraeina ALLOITEAU 1952

Familia: Amphistraeidae OGILVIE 1897

Genus: *Pleurophyllia* FROMENTEL 1861*Pleurophyllia skuvienensis* n. sp.

Pl. 14, figs. 1—4, pl. 15, figs. 1—2

Name: After the locality Skuvija.

Holotypus: sample M2795.

Locus typicus: Skuvija.

Age: Barremian — Lower Aptian.

Material: 3 colonies with 4 thin sections.

Diagnosis: *Pleurophyllia* with the bilateral system of septa, the first and second cycles being equal. $d=4-4.5$ mm, $s=24(26)$.

Description: The colony is phaceloid. Corallites are round, and have a thick septothecal wall. The septal apparatus is bilateral. The principal septum is long, and reaches somewhat beyond the centre of the corallite. To the centre approach further 11 septa of the first two cycles. Septa of the third cycle are half shorter. All parts of the corallites are not equal. The endotheca consists of horizontal and inclined, bent dissepiments. The microstructure is of simple trabeculae which thicken at lateral dents, and is badly preserved.

Dimensions: $d=4-4.5$ mm, $s=24(26)$ ($=1+1+4+6$ + rarely s_4), size of the colony up to $80 \times 60 \times 40$ mm.

Comparison: Only Jurassic species of this genus are known. *Pleurophyllia trichotoma* FROMENTEL 1856 and *P. rugosa* (BECKER 1875) have larger corallites (6–8 mm). *P. minuscula* RONEWICZ 1976 has smaller corallites (2.2–3 mm). *P. cara* ELIAŠOVÁ 1975 has corallites of the same size but septa are much shorter and more irregular. *P. gracilis* GEYER 1955 has also corallites of the same size; septa of the first two cycles are of different length. In the new species, however, 11 septa of the first and second cycles are of equal length, and they reach to the centre.

Locality: The only type locality until present at Skuvija (M2793, M2794, M2795).

Subordo: Faviina VAUGHAN & WELLS 1943

Familia: Placocoeniidae ALLOITEAU 1952

Genus: *Columnocoenia* ALLOITEAU 1952

Columnocoenia ksziazkiewiczii bucovinensis MORYCOWA 1971

Pl. 16, figs. 1–2

1971 *Columnocoenia ksziazkiewiczii bucovinensis* n. subsp. — MORYCOWA; 96–98, pl. 24, figs. 2–3; pl. 25, fig. 1; textfigs. 30 C, D.

Our specimen coincides entirely with the original material. $d=2-2.2$ mm, $c-c=2.5$ mm, $s=24$.

Locality: Planinica (M2821). Barremian — Lower Aptian.

Familia: Placosmiliidae ALLOITEAU 1952

Genus: *Placophyllia* d'ORBIGNY 1850

Placophyllia curvata TURNŠEK 1974

Pl. 16, figs. 3–5

1974 *Placophyllia curvata* n. sp. — TURNŠEK & BUSER; 98, pl. 8, figs. 1–2; pl. 9, figs. 1–2.

The colony from Serbia measures $100 \times 90 \times 40$ mm, $d=5-9$ mm, $s=ca$ 20.

Locality: Skuvija (M2807). Barremian — Lower Aptian.

Familia: Isastraecidae ALLOITEAU 1952

Genus: *Diplocoenia* FROMENTEL 1857

Diplocoenia saltensis major MORYCOWA 1971

Pl. 17, figs. 1–4

1971 *Diplocoenia saltensis major* n. subsp. — MORYCOWA; 87–88, pl. 15, figs. 2a–b.

Dimensions: colony $=30 \times 18 \times 15$ mm, d of inner calice 1.5–2 mm, d of corallites 3–4 mm, $c-c=3-4$ mm, $s=24+s_4$.

Locality: Žljebine (M2899). Barremian — Lower Aptian.

Familia: Montlivaltiidae DIETRICH 1926

Genus: *Clausastraea* d'ORBIGNY 1850

Clausastraea bolzei ALLOITEAU 1960

Pl. 17, figs. 5–6

1974 *Clausastraea bolzei*. — TURNŠEK & BUSER; 97–98, pl. 7, figs. 1–2 (here the older synonymy).

1976 *Clausastraea bolzei*. — TURNŠEK & BUSER; 53–54, pl. 10, figs. 1–4.

Dimensions: colony $=90 \times 50 \times 25$ mm, $d=4-8$ mm, $s=16-32$, dissepiments 5/5 mm in axial part, and 9/5 mm in the peripheral part of corallites (see TURNŠEK & BUSER 1974: 98, 115).

Locality: Skuvija (M2802, M2803/1–3). Barremian — Lower Aptian.

Familia: Axosmiliidae GEYER 1955

Genus: *Axosmilia* MILNE-EDWARDS & HAIME 1848

(Syn. *Pleurosmilia* FROMENTEL 1856)

Plesiosmilia MILASCHEWITSCH 1876)

Genera *Axosmilia*, *Pleurosmilia* and *Plesiosmilia* are distinguished from each other by length and thickness of columella: *Axosmilia* having a short and thick columella, *Pleurosmilia* a lamellar one which is connected with the major septum, and *Plesiosmilia* a thin and free columella (see also ALLOITEAU 1957: 100–102, 363–364). In specimens from Serbia which are very well preserved, I made serial sections of corallums, and got all types of columella on the same specimen. Also the wall is always parathecal, however, due to recrystallization locally the neighbouring septa fuse into a sort of an apparent septotheca. Therefore all three genera have been united into *Axosmilia*.

Axosmilia bofilli ANGELIS d'OSSAT 1905

Pl. 18, figs. 1–4

1905 *Axosmilia Bofilli* n. sp. — ANGELIS d'OSSAT; 236–237, pl. 16, figs. 4a–c.

1937 *Axosmilia Bofilli*. — BATALLER; 257–258.

Description: Corallum is turbinate. The exterior is costate and locally the epitheca is preserved. The calice is oval. Septa are compact, in 4 to 5 cycles.

They are thicker on the periphery, become thinner in the axial part, and get thicker again in the centre. Their lateral side is smooth. The wall is parathecal. Endotheca is of abundant vesicular dissepiments. Columella is lamellar, large. In the upper part it is usually free, in lower sections it touches in places the first cycle of septa, especially, the two opposite ones. The microstructure is made of simple trabeculae which occur in the peripheral part of septa in several rows, and form the lamellar microstructure. Locally the central dark line is segmented in the zig-zag pattern.

Dimensions: h of corallum 60—80 mm, d of calice ca 30×40 mm, $s=48+s5$.

Comparison: In Serbian material the epitheca is worse preserved as in originals. This species is distinguished from the type species »*Caryophyllia*« *extinctorum* MICHELIN 1840 generally only in a longer columella (see ALLOITEAU 1957: 363). In lamellar microstructure it resembles the genus *Aulosmilia* (ALLOITEAU 1952: 636; 1957: 85) which, however, has a septothecal costate wall.

Localities: Žljebine (M2884/1—2, M2885); Bunovo (M2924/1—2). Barremian — Lower Aptian.

Axosmilia kobyi (ANGELIS d'OSSAT 1905)

Pl. 19, figs. 1—7

1905 *Pleurosmilia Kobyi* n. sp. — ANGELIS d'OSSAT; 233—234, pl. 15, figs. 11a—e.

1937 *Pleurosmilia Kobyi*. — BATALLER; 233—234.

1951 *Pleurosmilia kobyi*. — MARKOVIĆ; 190, pl. 4, figs. 4a—b.

?1953 *Pleurosmilia* cf. *kobyi*. — SUČIĆ; 104.

Description: As in previous described species.

Dimensions: h of corallum=40—45 mm, d of calice=18—25 mm, $s=48+s5$.

Comparison: *A. kobyi* is distinguished from *A. bofilli* in smaller corallums.

Locality: Žljebine (M2891, M2892/1—3, M2893/1—2, M2894/1—2). Barremian — Lower Aptian.

Axosmilia villersensis (KOBY 1898)

Pl. 20, figs. 1—6

1898 *Pleurosmilia Villersensis*. — KOBY; 89—90, pl. 22, figs. 2—7.

1905 *Axosmilia almerai* n. sp. — ANGELIS d'OSSAT; 237—238, pl. 16, figs. 5a—e.

?1936 *Pleurosmilia villersensis*. — ALLOITEAU; 507, pl. 36, figs. 1—3.

1937 *Axosmilia almerai*. — BATALLER; 257.

This species differs from *A. bofilli* and *A. kobyi* in smaller size (h of corallum=15—30 mm, d of calices=10—20 mm, $s=48+s5$).

Locality: Žljebine (M2886/1—2, M2887, M2888/1—2, M2889/1—5, M2890/1—5). Barremian — Lower Aptian.

Genus: *Peplosmilia* MILNE-EDWARDS & HAIME 1848

In 1974 I ascribed the genus *Peplosmilia* to *Axosmilia* because of its same columella. But *Peplosmilia* is distinguished from *Axosmilia* in broader base of corallum, a rich laterall septal dentations, and a rich endotheca, which was shown by a lot of Serbian material. So I additionally accept the genus *Peplosmilia*.

Peplosmilia fromenteli ANGELIS d'OSSAT 1905

Pl. 21, figs. 1—6

1905 *Peplosmilia fromenteli* n. sp. — ANGELIS d'OSSAT; 242—243, pl. 17, figs. 6a—g.

1951 *Peplosmilia fromenteli*. — MARKOVIĆ; 192, pl. 4, fig. 5.

1974 *Axosmilia fromenteli*. — TURNŠEK & BUSER; 99, pl. 10, fig. 1.

Description: Corallum is cylindrical with broad round base. Calice is slightly oval. Septa are developed in five cycles; the first two are long and thick, the younger gradually shorter and thinner. In the axial part septa tend to thicken, and than terminate freely, or they touch columella. Their lateral side abound with grains. Endotheca is very abundant and consists of vesicular and partly tabulate dissepiments. Columella is lamellar, very thin, in places broken. The wall is incomplete paratheca. Microstructure is of simple and segmented trabeculae.

Dimensions: h of corallum=30—80 mm, d of calices 20—30 mm, $s=60—90$.

Locality: Žljebine (M2865/1—9, M2866/1—2, M2867/1—2, M2868). Barremian — Lower Aptian.

Peplosmilia stutzi (KOBY 1896)

Pl. 22, figs. 1—3

1896 *Pleurosmilia stutzi*. — KOBY; 17—18, pl. 3, figs. 1—3.

1905 *Peplosmilia Thildae*. — ANGELIS d'OSSAT; 238—239, pl. 16, fig. 6; pl. 17, fig. 1.

1905 *Peplosmilia Coquandi*. — ANGELIS d'OSSAT; 239, pl. 17, figs. 2a—b.

?1905 *Peplosmilia Catalaunica*. — ANGELIS d'OSSAT; 240, pl. 17, figs. 3a—b.

1905 *Peplosmilia Iberica*. — ANGELIS d'OSSAT; 240—241, pl. 17, figs. 4a—c.

?1905 *Peplosmilia Cassanasi*. — ANGELIS d'OSSAT; 241—242, pl. 17, figs. 5a—d.

?1905 *Epismilia Frechi*. — ANGELIS d'OSSAT; 229—230, pl. 15, figs. 9a—c.

1937 *Pleurosmilia stutzi*. — BATALLER; 234.

?1951 *Epismilia frechi*. — MARKOVIĆ; 190, pl. 5, figs. 1a—b.

Description: All the structural elements are similar to those of previous species.

Dimensions: h of corallum ca 100 mm, d of calices 25—45(60) mm, $s=96$ (5 cycles).

Comparison: ANGELIS d'OSSAT (1905) distinguished several species of the genus *Peplosmilia* only on the basis of slightly different shapes of corallum. It can be seen, however, that the shape varies irregularly, while the struc-

ture remains the same. Therefore I united all these species. Koby's »*Pleurosmilia stutzi*« is a cylindrical (not conical) corall with a broad base, the skeleton has a rich endotheca, and septa are strongly dentate, which all is characteristic for the genus *Peplosmilia*. In corallum and structure it resembles also *Epismilia frechi* which, according to the author, does not have columella. However, all specimens which do not show any columella at the upper calice, display in thin sections a thin lamellar columella. Therefore the species *E. frechi* suits to *Peplosmilia stutzi*.

Locality: Žljebine (M2859/1—10, M2860/1—2, M2861/1—2). Barremian — Lower Aptian.

Familia: Heliastreaeidae ALLOITEAU 1957

Genus: *Procladocora* ALLOITEAU 1957

Procladocora sp.

Pl. 17, figs. 7—9

Among the Serbian material there are many fragments of dendroid corals which have a more or less ribbed wall, and which bud under a sharp angle. Septa are subcompact, columella spongy. Diameter of corallites is 3—7 mm, and in larger specimens also 10 mm. Such structure and shape indicate the genus *Procladocora*. Owing to the bad preservation the determination of species is not possible.

Localities: Žljebine (M2908/1—49, M2909/1—2); Rajčinica (M2946/1—2). Barremian — Lower Aptian.

?Subordo: Meandriina ALLOITEAU 1952

Familia: Smilotrochidae ALLOITEAU 1952

Genus: *Smilotrochus* MILNE-EDWARDS & HAIME 1851

Smilotrochus tuberosus (MILNE-EDWARDS & HAIME 1850)

Pl. 23, figs. 1—7

1850 *Trochosmilia tuberosa*. — M. EDWARDS & HAIME; 58, pl. 10, fig. 2.

1869 *Smilotrochus tuberosus*. — Duncan; 19.

Description: The trochoid coral has a narrowed base. Calice is oval, septa are compact, in 5 to 6 cycles. Into the empty fossula reach only septa of the first two cycles. Wall is septothecal. The outer side of corallum is finely ribbed. The lateral side of septa is smooth. Dissepiments are rare. Columella is absent? Microstructure is of simple trabeculae with thickenings perpendicular to the median axis.

Dimensions: h of corallum=20—30 mm, d of calices 11—18 mm, s=80—100.

Comparison: In the first description the two authors mention the absence of endotheca. In the revision, however, ALLOITEAU (1957: 82) determined dissepiments comparable to those in our specimens.

Localities: Rajčinica (M2941/1—4); Sopot (M2951/1—2, M2952/1—7, M2953/1—2). Barremian — Lower Aptian.

Familia: Dendrogyridae ALLOITEAU 1952

Genus: *Meandroria* ALLOITEAU 1952

?*Meandroria pirotensis* (TOULA 1884)

Pl. 23, figs. 8—9

1884 *Meandrina pirotensis* n. sp. — TOULA n. v.

1951 *Meandrina pirotensis*. — MARKOVIĆ; 188, pl. 3, fig. 4.

Description: Colony is of cylindrical shape. Corallites widen in series meandrically on the surface between sinuous sharp collines which are only slightly elevated. Septa occur in two cycles. The first cycle reaches far into the middle of the series where it joins with the lamellar columella.

Dimensions: distance between collines=2 mm, s=6—8/2 mm.

Comparison: The genus *Meandrina* is a recent genus. The species *M. pirotensis* has all the characteristics of the genus *Meandroria* (ALLOITEAU 1957: 168). Our specimens correspond entirely to specimens described by MARKOVIĆ (1951: 188).

Localities: Sopot (M2947/1—2); Donja Dubica (M2919). Barremian — Lower Aptian.

Subordo: Rhipidogyrina RONIEWICZ 1976

Among our materials two genera have been attributed to this suborder: the genus *Acanthogyra* which in its structure approaches the suborder Amphiastra-eina, and the genus *Trochoidomeandra* which is closer to the suborder Caryophylliina.

Familia: Rhipidogyridae Koby 1904

Genus: *Acanthogyra* OGILVIE 1897

Acanthogyra aptiana n. sp.

Pl. 24, figs. 1—4

Name: After the Aptian age of locality.

Holotypus: Sample M2869.

Locus typicus: Žljebine.

Age: Barremian — Lower Aptian.

Material: The only specimen is holotype.

Diagnosis: *Acanthogyra* with polygonal corallites, d=8—12 mm, and 20—24 irregular septa along which the division takes place.

Description: The massive colony is of semi-circular shape. The upper surface is regularly convex with cerioid polygonal corallites which irregularly divide into two, three or even four individuals. Septa occur in 2—3 cycles. The first is very thick, the second thinner, while the third and the fourth develop unequally different quadrants. They end freely in the axial part, and contain rare lateral dents. The wall is septothecal. Due to division of corallites it is locally double, or irregular. Columella is absent. Endotheca is of lonsdaleoid dissepiments. Microstructure is of simple trabeculae with median dark line.

Locus typicus: Žljebine.

Age: Barremian — Lower Aptian.

Material: holotype, 9 paratypes, with 4 thin section.

Diagnosis: *Palaeopsammia* of ceratoid shape. Compact, strongly dentate septa, synapticuloseptothecal wall with rare pores, spongy columella, $d=10$ mm, $h=20-30$ mm, s =about 70.

Description: The small solitary coral is of ceratoid shape. Base is sharp. Corallum widens slightly upwards. It is round to oval in cross section. The external side is ribbed, and contains in places epithelial rings. The septal apparatus is hexamerous in four complete, and the fifth incomplete cycles. Septa are compact, laterally dentate. Locally the two neighbouring dents join. Wall is sinapticuloseptothecal, with very rare pores. Endotheca consists of rare thin dissepiments and rare synapticalae, which are more frequent in the periphery. The axial ends of septa are as a rule anostomosal, i.e. they are always connected with septa of older cycles. Inner ends of the first two cycles join with their trabeculae to the parietal columella. Microstructure is similar to the caryophylliid one, consisting of simple trabeculae. Very well visible are calcification centres in the form of the dark median line which runs along the entire septum to the end of the wall. At lateral dents this line thickens.

Dimensions: are given in diagnosis.

Comparison: The new species has all characteristics of the genus *Palaeopsammia*, with the exception of more compact septa, and the presence of pores in the wall only. These properties approach it to the genus *Stylocyathus* (Caryophylliina) which, however, does not have synapticalae. The presently known species of the genus *Palaeopsammia* are Upper Cretaceous. *P. multiformis* WANNER (type species), *P. zitteli* WANNER, both from Danian of Lybia, and *P. mitsinjoensis* ALLOITEAU 1958, from Maastrichtian of Madagascar. The new species has more straight septa, and more regular and compact septal apparatus.

Locality: Žljebine (M2905/1—8, M2906, M2907=holotype). Barremian — Lower Aptian.

Subordo: Fungiina VERRILL 1865

Familia: Latomeandridae ALLOITEAU 1952

Representatives of the family Latomeandridae have only sparsely perforated septa, and could be ranged, according to this property, into the suborder Faviina. They bear, however, pennular ornamentations of septa, and have rare synapticalae, therefore most investigators attribute them to the suborder Fungiina.

Genus: *Ovalastraea* d'ORBIGNY 1849

ALLOITEAU (1958) ranges the genus *Ovalastraea* into the family Faviidae, since mentioning the compact septa. However, the genus has rare pores in the axial part of corallites, and besides also synapticalae. Therefore it has been attributed into the family Latomeandridae-suborder Fungiina (BEAUVAIS 1964, RONIEWICZ 1966, 1976, TURNSEK 1972 and others).

Ovalastraea polygonalis ALLOITEAU 1958

Pl. 28 figs. 1—5

1958 *Ovalastraea polygonalis* nov. sp. — ALLOITEAU; 116—117, pl. 5, fig. 4; pl. 17, fig. 9; pl. 32, fig. 9.

Dimensions: colony $50 \times 70 \times 40$ mm, d of corallites = 4—7 mm, $c-c=6-9$ mm, $s=30-36$.

Comparison: Some of our colonies are larger than the originals due to their total preservation. From *Orbicella simonyi* (FELIX 1903: 256—257) it is distinguished in thicker axial septa).

Localities: Žljebine (M2876/1—2, M2877/1—2); Rajčinica (M2944). Barremian — Lower Aptian.

Genus: *Plesiofavia* ALLOITEAU 1957

During revision of the original material ALLOITEAU (1957: 122) renamed the species *Phyllocoenia dubia* FROMENTEL 1857 into his new genus *Plesiofavia*. He compared it to numerous similar genera of faviids. Besides, the genus *Plesiofavia* displays similarities also with several latomeandrids, as *Ovalastraea* d'ORBIGNY 1849, *Ellipsocoenia* d'ORBIGNY 1850, *Diploastraea* MATTHAI 1914 (see BENDUKIDZE 1961), which ALLOITEAU does not include into comparison. *Plesiofavia* is distinguished by the specific colony which conserves the phaceloidity on the external side, while the corallites are joined with perithecium within the colony. As it shows rare pores in the axial part of corallites, and has synapticalae, it has been ranged into the family Latomeandridae, and not to Faviidae.

Plesiofavia dubia (FROMENTEL 1857)

Pl. 29, figs. 1—4

1857 *Phyllocoenia dubia*. — FROMENTEL; 50, pl. 7, figs. 3—4.

1957 *Plesiofavia dubia*. — ALLOITEAU; 122, pl. 8, fig. 2.

Dimensions: colony = to $140 \times 100 \times 70$ mm, d of calice = 4—7 mm.

Locality: Žljebine (M2832/1—3, M2833). Barremian — Lower Aptian

Genus: *Thamnoseriis* ETALLON 1864

RONIEWICZ attributed this genus to the family Latomeandridae (1976), and discussed it homeomorphs (1979).

Thamnoseriis carpathica MORYCOWA 1971

Pl. 31, figs. 4—5

1971 *Thamnoseriis carpathica* n. sp. — MORYCOWA; 106—108, pl. 28, fig. 1; textfig. 32.

Dimensions: colony = $70 \times 50 \times 30$ mm, $d=2.5-4$ mm, $s=24-48$ (7/2 mm)

Comparison: Our specimen has several corallites with a larger number of septa, where the fourth cycle is completely developed. In appearance it is similar to *Siderofungia zitteli* (BENDUKIDZE 1961: 30) which has more confluent septa.

Locality: Skuvija (M2806). Barremian — Lower Aptian.

Genus: ?*Latiastrea* BEAUVAIS 1964

The comparisons of this genus see in BEAUVAIS 1964: 247—262; MORYCOWA 1964: 89—95, TURNŠEK 1972: 53—55, 1976: 61—62).

Latiastrea kaufmanni (KOBY 1897)

Pl. 30, figs. 1—5, pl. 31, figs. 1—3

1897 *Latimeandra Kaufmanni*. — KOBY; 45—46, pl. 11, figs. 1—2.

1914 *Latimeandra Kaufmanni*. — FELIX; 39.

1953 *Latimeandra kaufmanni*. — SUČIĆ; 104, pl. 1, fig. 4.

Description: The massive colony is of nodular, semisphaerical or mushroom-like shapes. The upper surface is convex. Corallites are cerioid, monocentric, only rarely in short series. Between calices which are depressed, occur prominent collines which give the corallites a polygonal appearance. Septa are developed in 3—4 cycles. In the axial part they are perforated and form with their prolongations the spongy or parietal columella. The wall, which is in collines, is synapticuloseptothecal, incomplete, so that septa often are completely confluent. Endotheca is rich, consisting of thin vesicular dissepiments and many synapticululae. The lateral side of septa is strongly dentate. Microstructure is of large sclerodermites.

Dimensions: d of corallites=3—6 mm, s=42—57 (16—17/5 mm).

Comparison: Our specimens have somewhat denser septa as mentioned by KOBY in the original specimens. However, they were counted in thin sections where the fourth cycle of septa is better visible, while their density on the surface corresponds to that of Koby's specimens.

Localities: Žljebine (M2854/1—14, M2855, M2856, M2857, M2858/1—2); Rajčinica (M2929/1—2, M2930/1—4); D. Dubica (M2916). Barremian — Lower Aptian.

Genus: *Gyrodendron* Quenstedt 1880

Gyrodendron serbica n. sp.

Pl. 32, figs. 1—5, pl. 33, figs. 1—3

Name: It is found in Serbia.

Holotypus: Sample M2873.

Locus typicus: Žljebine.

Age: Barremian — Lower Aptian.

Material: 11 colonies with 7 thin sections.

Diagnosis: *Gyrodendron* with irregularly ramified polycentric series connected by septa of walleyes, d of series 5—10 mm, s=7/5 mm.

Description: The colony is fasciculate. In the centre it is massive, afterwards series of polycentric corallites ramify in all directions irregularly into two, three, four or more directions. Septa are thick, dentate, and locally perforated in the axial part. Centres are connected with the septa of walleyes. Columella is absent. Endotheca is of thin vesicular dissepiments. Septa are at least in three cycles. Microstructure is of simple and compound trabeculae which are thickened at lateral dents.

Comparison: The new species differs from *G. lobatum* by longer and less regular series.

Locality: Žljebine (M2873, M2874/1—7, M2875/1—3). Barremian — Lower Aptian.

Genus: *Baryphyllia* FROMENTEL 1857

Baryphyllia haimeii FROMENTEL 1857

Pl. 34, figs. 1—4

1857 *Baryphyllia haimeii*. — FROMENTEL; 28, pl. 3, fig. 1.

?1964 *Dermoseris* sp. — MORYCOWA; 84—85, pl. 25, fig. 7.

Description: Small nodular plocoid colony has a thin stem. Corallites are round and grow into all directions of the surface, also downwards. Margins of calices are slightly protruding, calice is almost even, or very slightly convex. Septa are dense, compact, with rare pores, subconfluent. The wall is synapticuloseptothecal, incomplete. Columella is spongy. Endotheca is of synapticululae and rare dissepiments. Microstructure is of simple trabeculae.

Dimensions: colony=35×30×22 mm, d of calices=5—11 mm, c=c=6—12 mm, s=48—65.

Comparison: To this species corresponds also the specimen which was described by MORYCOWA as *Dermoseris* sp. in structure and size. The genus *Dermoseris* is a phaceloid colony, while that of MORYCOWA is plocoid. The species *Baryphyllia barottei* FROMENTEL which was described by MARKOVIĆ (1951: 188, pl. 3, fig. 3) from the Sukovo, differs from *B. haimeii* by smaller corallites (d=2—5 mm) of oval shape.

Locality: Žljebine (M2895). Barremian — Lower Aptian.

Familia: Haplaraeidae VAUGHAN & WELLS 1943

Genus: *Meandrophyllia* d'ORBIGNY 1849

Meandrophyllia cf. *lotharinga* (MICHELIN 1843)

Pl. 35, fig. 1

1843 *Meandrina Lotharinga*. — MICHELIN; n. v.

1964 *Meandrophyllia* aff. *lotharinga*. — MORYCOWA; 72—74, pl. 21, fig. 1, pl. 25, fig. 1 (here the older synonymy).

Dimensions: d=3—5 mm, s=26—42.

Comparison: This species resembles somehow the genus *Thamnoseris* which, however, has synapticoloseptothecal wall, while *Meandrophyllia* has no wall.

Localities: Rajčinica (M2945); brdo Miro (M2915). Barremian — Lower Aptian.

Genus: *Meandraraea* ÉTALLON 1859

WELLS (1956: 392) considered the genus *Meandraraea* as synonymous to the *Meandrophyllia* d'ORBIGNY. ALLOITEAU (1957: 327) established during the revision that *Meandrophyllia* has more perforated and sinuous septa. The genus *Meandraraea* has been recognized also by later investigators: Bendukidze (1961: 32), MORYCOVA (1964: 87, 1971: 120), and others.

By its circumoral distribution of corallites the genus *Meandraraea* resembles mostly the genus *Dimorphastraea*, but in the latter the surface of the colony is always convex (Fig. 4).

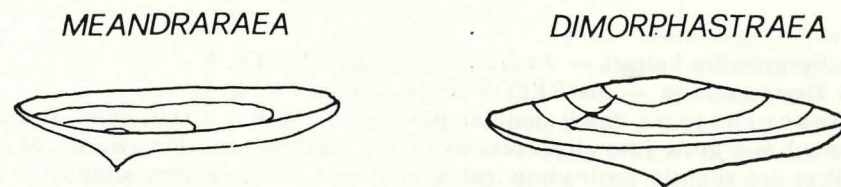


Fig. 4. The shape and growth of colonies in the genera *Meandraraea* and *Dimorphastraea*.

RONIEWICZ (1976) replaced *Meandraraea* from the family Microsolenidae to Haplaraeidae, because its septa are less porous, and menians less developed as in Microsolenidae.

Meandraraea duboisi (KARAKAŠ 1907)
Pl. 36, figs. 1—4

1907 *Latimeandraraea Duboisi* n. sp. — KARAKAŠ; n. v.

1961 *Meandraraea duboisi*. — Bendukidze; 34—35, pl. 3, fig. 7; pl. 7, figs. 1,5. (see the older synonymy).

Description: The massive colony is funnel-shaped. The upper surface is concave. Corallites occur in concentric series, the first calice being excentric. Collines are rounded. On the lower side of the colony annular epitheca is often preserved; otherwise longitudinal ribs of costae are visible. Septa are perforated in axial parts. Between series they are confluent, without wall; the lateral side of septa has thick dents. Endotheca consists of synapticalae and thin vesicular dissepiments. Columella is parietal. Microstructure is of large sclerodermites.

Dimensions: colony=to 150×130×60 mm, d of series=10 mm, width of collines=5—6 mm, c—c in series=4—7 mm, s=12—15/5 mm.

Comparison: Our specimens correspond to the species *M. duboisi* as described by BENDUKIDZE (1961).

Locality: Žljebine (M2827, M2828/1—2, M2829/1—9). Barremian — Lower Aptian.

Meandraraea meandroides KOBAY 1898

Pl. 35, fig. 2

1898 *Meandraraea meandroides*. — KOBAY; 85—86, pl. 20, figs. 3—6.

1961 *Meandraraea meandroides*. — BENDUKIDZE; 33—34, pl. 7, figs. 3—4.

Description: The shape of the colony and structural elements are the same as in the afore described species.

Dimensions: colony=50×70×30 mm, c—c (of series)=4—5 mm, c—c (in the same series)=2—3 mm, s=10—12/3 mm.

Locality: Žljebine (M2830, M2831/1—7). Barremian — Lower Aptian.

Genus: *Truncoconus* nov. gen

Type species: *Truncoconus inclinatus* n. sp.

Name: lat. truncus=truncate, conus=cone. Corallum has the shape of a truncated cone.

Diagnosis: Corallum has the shape of a truncated cone. Basal plate is even with epitheca. Corallum narrows upwards and is truncated in the upper part. Septa are compact and contain rare pores. Lateral dents are very big. Fossula is elongated, locally filled with septa. Endotheca consists of tabulate and long dissepiments and rare synapticalae. Microstructure is of simple trabeculae, calcification centers are visible.

Comparison: A similar growth of corallum has been known at present only in the type species of the genus *Peplosmilia* (*P. austeni* MILNE-EDWARDS et HAIME 1850; see WELLS 1956: 400), which however, has a lamellar columella. A completely corresponding shape has the species *Haplaraea pratzi* (FELIX 1903: 184), but with stronger perforated septa. This species will have to be included into our new genus. According to the structure of septa there are similar the genera *Haplaraea* and *Epistreptophyllum* which have a spongy columella and a different corallum. The new genus is distinguished from all by a cyclo-lithoidal basal plate, which approaches it to the family Cunnolitidae. Septal structure is, however, more important, and this is closer to the family Haplaraeidae. Therefore the new genus has been ranged into this family.

The generic composition: *Truncoconus inclinatus* n. sp., and »*Haplaraea*« *pratzi* (FELIX 1903).

Truncoconus inclinatus n. sp.
Pl. 37, figs. 1—6, pl. 38, figs. 1—3

Name: After the inclined corallum.

Holotypus: Specimen M2897.

Locus typicus: Žljebine.

Age: Barremian — Lower Aptian.

Material: holotype, 6 paratypes, with 6 thin sections.

Diagnosis: *Truncoconus* with an irregular excentric calice and inclined corallum. d (of basal plate)=30 mm, h (of corallum)=15—40 mm, s=about 120.

Description: The solitary coral has the shape of truncated cone. Corallum is always inclined, so that the lateral border is on one side even, and on the other side inclined. The basal plate is plain, cyclolithoidal, round, covered by epitheca, and has a sharp margin. Also calice is roudish, with an irregular, slightly excentric oval or elongated fossula. The margin of calice is rounded, and unclear on the inclined side of corallum. Septa are compact in the lower part of corallum, and porous in its upper part. They are developed in 5 to 6 cycles. Columella is absent. Fossula is in places filled with the first and second cycle septa which are rophaloidally thickened. Endotheca consists of tabulate and long dissepiments and rare synapticalae. Microstructure is of sclerodermites joined into simple trabeculae which are thickened perpendicularly in some distances.

Dimensions: are given in diagnosis.

Comparison: is given in the determianion of the genus.

Locality: Žljebine (M2896/1—3, M2897 — holotype, M2898/1—3), Barremian — Lower Aptian.

Familia: Siderastraeidae VAUGHAN & WELLS 1943
Genus: *Siderastraea* BLAINVILLE 1830
Subgenus: *Siderofungia* REIS 1889

Siderastraea (Siderofungia) irregularis FELIX 1891
Pl. 39, figs. 3—4

1891 *Siderofungia irregularis* n. sp. — FELIX; n. v.

1961 *Siderofungia irregularis*. — BENDUKIDZE; 31, pl. 3, fig. 5.

Description: has been given by BENDUKIDZE (1961).

Dimensions: colony=160×110×60 mm, d=5—6 mm, s=60—70.

Comparison: Our material has been compared with Bendukidze's specimens, and correspondance is complete.

Siderofungia differs from *Siderastraea* only in sightly less developed synapticalotheca, and consequently in slightly more confluent septa (ALLOITEAU 1952: 668, WELLS 1956: 389). Therefore it is better to consider *Siderofungia* as the subgenus of *Siderastraea*.

Locality: Skuvija (M2787, M2788). Barremian — Lower Aptian.

Familia: Thamnasteriidae VAUGHAN & WELLS 1943

Genus: *Thamnasteria* LESAUVAGE 1823

Thamnasteria cotteau FROMENTEL 1857

Pl. 39, figs. 1—2

1857 *Thamnastraea Cotteau*. — FROMENTEL; 60, pl. 11, fig. 2.

1961 *Thamnasteria cotteau*. — BENDUKIDZE; 22—23, pl. 3, fig. 1; pl. 6, fig. 1.

This species has very thick septa, thick and slightly perforated columella. Our specimens coincide with all descriptions until present.

Dimensions: d=5—8(10) mm, s=18—24.

Locality: Žljebine (M2871, M2872). Barremian — Lower Aptian.

Genus: *Mesomorpha* PRATZ 1883

A modern description and problematics of the genus *Mesomorpha* as well as its comparison with the genus *Ahrdorffia* were presented by KUZMICEVA (1970: 82—85) and MORYCOWA (1971: 108—109).

Mesomorpha excavata (d'ORBIGNY 1850)

Pl. 40, figs. 1—5

1850 *Centrastraea excavata*. — d'ORBIGNY; II, 93.

1964 *Ahrdorffia excavata*. — MORYCOWA; 80—81, pl. 24, fig. 3.

1971 *Mesomorpha excavata*. — MORYCOWA; 109.

A modern description has been given by MORYCOWA (1964, 1971).

Dimensions: d=0.8—1.5 mm, s=(12)16(18).

Comparison: The specimen from Serbia has somewhat smaller corallites than those mentioned by MORYCOWA, but there are all transitions, and they can be considered as the variation range of species.

Locality: Žljebine (M2900). Barremian — Lower Aptian.

Familia: Microsolenidae KOBY 1889
Genus: *Microsolena* LAMOUROUX 1821

Microsolena guttata KOBY 1898

Pl. 41, figs. 1—5

1898 *Microsolena guttata*. — KOBY; 83—84, pl. 21, figs. 1—2.

1974 *Microsolena guttata*. — TURNŠEK & BUSER; 101, pl. 11, fig. 1.

Corallites of Serbian specimens are sightly larger (d=5—9 mm) than that of Slovenian ones, and are thus even closer to Koby's originals.

Locality: Žljebine (M2839/1—10, M2840/1—2). Barremian — Lower Aptian.

Genus *Fungiastraea* ALLOITEAU 1952

Subgenus: *Fungiastraeopsis* MORYCOWA 1971

Fungiastraea (*Fungiastraeopsis*) *subpolygonalis* MORYCOWA 1971

Pl. 41, fig. 6

1971 *Fungiastraea* (*Fungiastraeopsis*) *subpolygonalis* n. sp. — MORYCOWA; 113—116 pl. 27, fig. 1; tetfig. 34.

A detailed description is given by MORYCOWA. Dimensions of our specimens are: $c-c=4-6$ mm, s =about 22.

Locality: Skuvija (M2801). Barremian — Lower Aptian.

Genus: *Polyphylloseris* FROMENTEL 1857

Polyphylloseris convexa FROMENTEL 1857

Pl. 42, figs. 1—4

1857 *Polyphylloseris convexa*. — FROMENTEL; 68—69, pl. 10, figs. 11—13.

1898 *Polyphylloseris convexa*. — KOPY; 84—85, pl. 21, figs. 3—4.

1971 *Polyphylloseris convexa*. — MORYCOWA; 118—120, pl. 32, fig. 1.

1974 *Ovalastraea turbinata*. — TURNSEK & BUSER; 102, pl. 11, fig. 3.

A modern description was presented by MORYCOWA. Dimensions of our specimens are: colony= $100 \times 70 \times 40$ mm, $d=6-10$ mm, s =ca 80.

Comparison: To this species I revise also the specimen from the Lower Cretaceous of Slovenia which I described as *Ovalastraea turbinata* (FROMENTEL). I had at disposition only a fragment without surface; individual corallites there are clearly separated from peritheca, and show the appearance of the genus *Ovalastraea*. However, only the present comparison with well preserved specimens showed characteristics of the genus *Polyphylloseris*. Whether also Fromentel's original of *Ovalastraea turbinata* belongs to the genus *Polyphylloseris*, I can not decide.

Locality: Žljebine (M2826/1—2, M2834, M2883/1—2). Barremian — Lower Aptian.

Genus: *Microsolenastraea* nov. gen.

Type species: *Microsolenastraea balcanica* n. sp.

Name: In structure it resembles microsolenids, in shape clausastraeins.

Diagnosis: Massive roundish colony with confluent septa without wall. Fossulae are well visible, with a dense parietal columella. Septa are strongly perforated, double, connected with many synapticalae. Septa bear lateral thorns, pennulae and menianae. Dissepiments are vesicular and blistered, which gives the entire skeleton a vermiculate appearance.

Comparison and systematics: A similar septal structure display several genera of families Latomeandridae and Microsolenidae. These two families are distinguished by RONIEWICZ (1976: 95) after synapticalae which occur in Microsolenidae across the entire skeleton, and in the family Latomeandridae only in the periphery, and after endotheca, which is in Latomeandridae

dissepimental, whereas in the family Microsolenidae pennular menianae occur. In determining the new genus the present author was in an embarrassment, as the fossil contains pennulae and also dissepiments. The new genus has been attributed to the family Microsolenidae, as it corresponds also in the growth of corallites.

From all presently known genera the *Microsolenastraea* is distinguished by double septa.

Microsolenastraea balcanica n. sp.

Pl. 43, figs. 1—4, pl. 44, figs. 1—3

Name: It is named after the Balkan peninsula.

Holotypus: Sample M2792.

Locus typicus: Skuvija.

Age: ?Barremian — Lower Aptian.

Material: holotype, and one paratype, with four thin sections.

Diagnosis: *Microsolenastraea* with confluent double septa reaching to the center; d (of corallites)= $7-10$ mm, d (of fossula)= $2-3$ mm, double $s=12-24$.

Description: Colony is massive, corallites are roundish to elongate. They are connected with confluent septa. Septa are strongly perforated, have long lateral dents and pennulae, and also axial protuberances. Septa occur two by two closer together, and are connected with many synapticalae. Spaces between double septa are slightly wider, and they are as well interlaced with many transversal elements. Endotheca consists of numerous synapticalae, and vesicular and blistered dissepiments. Axial protuberances form a dense porous or spongy columellar structure. The porous septa appear as hollow lamellae with numerous lateral ornamentations. In tangential section they are hollow globules, in vertical section which runs along the axis of the septum they are ditches. A similar structure is characteristic for several microsolenids and also spongiomorphids (Stromatoporoidea). It is possible these hollow elements may be recrystallized sclerodermites or trabeculae. In the sample M2791 the skeleton is slightly different. There, centers of sclerodermites are preserved, and rims of septa and interspaces are not clear.

Comparison: is given with the description of the genus.

Locality: Skuvija (M2791, 2792=holotype). Barremian — Lower Aptian.

Familia: Actinacididae VAUGHAN & WELLS 1943

Genus: *Actinaraea* d'ORBIGNY 1849

Actinaraea cf. *tenuis* MORYCOWA 1971

Pl. 45, figs. 1—4

1971 *Actinaraea tenuis* n. sp. — MORYCOWA, 128—130, pl. 35, fig. 1; pl. 36, fig. 1; textfig. 37.

Description: Our specimen coincides in all structural characteristics with the material which was very carefully described by MORYCOWA, but skeletal elements are sparser. Therefore the species has been marked with cf.

Dimensions: $c-c=4-5$ mm, $s=12-24$ mm, density of septa in peritheca $=5/2$ mm.

Locality: Planinica (M2823). Barremian — Lower Aptian.

Genus: *Thamnaraea* ETALLON 1864

The first description of the genus *Thamnaraea* is not at my disposition. ALLOITEAU does not mention it in his revisions in 1952 and 1957. VAUGHAN et WELLS (1943: 151) and WELLS (1956: 393) consider it as a synonym of the genus *Dendraraea* d'ORBIGNY. They state this genus has an expressively dense coenenchyme and reduced costosepta. FELIX (1903: 182—183) mentions in *Thamnaraea* compact regular septa and clear costosepta. Therefore I recognize the genus *Thamnaraea* in the way as its species were described by FELIX.

Thamnaraea mammelonata n. sp.
Pl. 46, figs. 2—6, pl. 47, figs. 1—4

Name: is given after arised calices which look like mamelons.

Holotypus: Sample M2882.

Locus typicus: Žljebine.

Age: Barremian — Lower Aptian.

Material: holotype, two paratypes, with seven thin sections.

Diagnosis: Cylindrical colony has thamnasterid corallites which calices are prominent mamelons on the surface. Peritheca is actinacidal. Dimensions: $c-c=2-4$ mm, $s=16-22$.

Description: Colony is massive, of cylindrical shape. The entire surface is sprinkled with corallites which interconnect thamnasteriidally. But calice rims are prominent like mamelons, and peritheca and the center of calice are depressed. Where the surface is weathered, only calices can be seen, and the colony has the appearance of the genus *Pseudocoenia* or *Holocoenia*. Calices are roundish. Septa reach almost to the center, where they thicken irregularly or they continue with protuberances into the spongy columella. Outwards (into peritheca?) continue septa and costae which are straight or sinuous, and join the septa of neighbouring corallites. Between them interlace synapticulae. Septa in addition have lateral dents and pennulae. Dissepiments are very thin. Microstructure is of sclerodermites and is poorly preserved.

Dimensions: d of corallites $=1.5-1.7$ mm, $c-c=2-4$ mm, $s=16-22$ (mostly 20—21).

Comparison: From the Upper Cretaceous species *T. lithodes* and *T. cladophora* (FELIX 1903) the new species is distinguished by smaller corallites and mamelonated corallites on the surface of the colony. Septa in peritheca are less perforated.

Specimens of the new species resemble externally several species of stylinids: *Pseudocoenia limbata* (GOLDFUSS) (RONIEWICZ 1966: pl. 3, figs. 1a, b, d), *Stephanastraea jurassica* RONIEWICZ (1976: pl. 1, fig. 1), *Holocoenia dendroidea* FROMENTEL (1862: pl. 4, figs. 3, 3a) which FROMENTEL even mentio-

ned as the only cylindrical *Holocoenia* until then. In thin sections our specimens show a different structure which is not stylinid.

Locality: Žljebine (M2881/1—2, M2882=holotype). Barremian — Lower Aptian.

Thamnaraea sp.
Pl. 46, fig. 1

Small rod-like colonies, up to 10 mm in diameter and up to 40 mm long, display on the surface corallites with the structure of the genus *Thamnaraea*. A more detailed determination is not possible due to the bad state of preservation. The genus is characteristic for Cretaceous beds.

Localities: Žljebine (M2910/1—2), Sopot (M2956/1—7). Barremian — Lower Aptian.

Subordo: Alcyonina MILNE-EDWARDS & HAIME 1860
Familia: Helioporidae MOSELEY 1876
Genus: *Polytremacis* d'ORBIGNY 1849

Polytremacis edwardsana (STOLICZKA 1873)
Pl. 48, figs. 1—8

1873 *Heliopora edwardsana*. — STOLICZKA; 53—54, pl. 11, fig. 11.

1936 *Heliopora edwardsana*. — HACKEMESSER; 76—77, pl. 6, fig. 11.

1964 *Polytremacis edwardsana*. — MORYCOWA; 55—56, pl. 12, figs. 1a—e.

A detailed description has been given by MORYCOWA (1964). Dimensions of our specimens are: $d=0.75$ mm, $c-c=1-2(4)$ mm, $s=15-16$.

Comparison: The corallites of Serbian specimens are the smallest of this species. They approach to the *Pseudopolytremacis spinoseptata* MORYCOWA 1971 which has smaller corallites (0.4—0.6 mm).

Localities: Rajčinica (M2938/1—12, M2939/1—2, M2940); Donja Dubica (M2918). Barremian — Lower Aptian.

Classis: Hydrozoa
Ordo: Stomatoporoidea NICHOLSON & MURIE 1878
Familia: Milleporidiidae YABE & SUGIYAMA 1935
Genus: *Milleporidium* STEINMANN 1903

Milleporidium variocellatum STEINER 1932
Pl. 49, figs. 5—6

1932 *Milleporidium variocellatum* nov. sp. — STEINER; 210—212, pl. 9, figs. 2—3.

1960 *Milleporidium variocellatum*. — SCHNORF; 719—720, pl. 1, figs. 1—2.

1966 *Milleporidium variocellatum*. — FLÜGEL & HÖTZL; 110—111, pl. 17, figs. 1—2.

Dimensions: Coenosteum $=110 \times 100 \times 60$ mm, vertical elements $=8/2$ mm, d of tubes 0.1—0.3 mm.

Comparison: This species approaches closely with its tubular reticulum in places the chaetetids.

Locality: Skuvija (M2800). ?Barremian — Lower Aptian.

Familia: Parastromatoporidae HUDSON 1959

Genus: *Dehornella* LECOMPTE 1952

Dehornella virgilioi (OSIMO 1911)

Pl. 50, figs. 1—3

1911 *Stromatopora Virgilioi* n. f. — OSIMO; 13, pl. 2, figs. 2a—c.

Description: Coenosteum is massive, roundish. A strong latilamination is observable due to alternation of belts with dense and scarce reticulum. Vertical elements are dense, sinuous, and interrupted. Horizontal elements are horizontal or inclined laminae and rare tabulae. Among elements occur irregular interspaces and astrorhizal tubes. Astrorhizae consist of several or single axial astrotubes aligned vertically; on certain levels they widen fan-like and horizontally into several branches. In cross section reticulum is generally vermiculate with pronounced astrorhizae in-between. Microstructure is clinogonal.

Dimensions: Coenosteum=60×50×50 mm, vertical elements=10—13/2 mm, latilaminar belts=8—10/10 mm.

Comparison: This species differs from *D. costai* (OSIMO 1911) in a larger number of astrorhizae.

Localities: Skuvija (M2808); Planica (M2824). Barremian — Lower Aptian.

Group: Chaetetida

Familia: Varioparietidae Schnorf-Steiner 1963

Genus: *Chaetetopsis* NEUMAYR 1890

Chaetetopsis favrei (DENINGER 1906)

Pl. 49, figs. 1—2

1976 *Chaetetopsis favrei*. — TURNŠEK & BUSER, 30, pl. 24, figs. 3—4. (here the older synonymy).

1979 *Chaetetopsis favrei*. — KAZMIERCZAK, 102—103, figs. 2—4.

Dimensions: 10 tubes on 1 mm², measured in transverse section.

Locality: Planinica (M2814, M2815/1—2, M2816, M2817, M2818/1—2).

Chaetetopsis krimholzi YAWORSKY 1947

Pl. 49, figs. 3—4

1947 *Chaetetopsis krimholzi* sp. nov. — YAWORSKY, 23, pl. 10, fig. 13; pl. 11, figs. 1—5.

1961 *Chaetetopsis krimholzi*. — BACHMAYER & FLÜGEL, 155—156, pl. 20, fig. 1; pl. 22, fig. 3.

1965 *Chaetetopsis krimholzi*. — FENNINGER & HÖTZL, 48, pl. 8, fig. 5.

1970 *Ptychochaetetes (Axiparietes) krimholzi*. — FISCHER, 46.

1973 *Chaetetopsis krimholzi*. — TURNŠEK & MASSE, 239, pl. 24, figs. 3—4.

1974 *Chaetetopsis krimholzi*. — TURNŠEK & BUSER, 106, pl. 16, figs. 1—2.

1976 *Chaetetopsis krimholzi*. — TURNŠEK & BUSER, 65, pl. 24, figs. 1—2.

This species is distinguished from *Ch. favrei* only by smaller and more dense tubes (25—29 tubes to 1 mm²).

YAWORSKY (1947: 23) described the species *Ch. krimholzi* from the Hauterivian of Crimea, and he mentioned Tithonian of Turkmenia probably by mistake, since this species appears in the same treatise in the fossil table according to age (p. 26) only among Lower Cretaceous species. Specimens of BACHMAYER and FLÜGEL (1961) from Tithonian of Štramberk and Ernstbrunn are much similar, however. FISCHER (1970: 46) displaced this species into the genus *PTYCHCHAETETES (Axiparietes)* which has more fragmented vertical elements. In oriented vertical sections of *Ch. krimholzi* long uninterrupted elements and tubes can be seen. Therefore the species *krimholzi* has again been attributed to the genus *Chaetetopsis*.

Locality: Planinica (M2819, M2820). Barremian — Lower Aptian.

STRATIGRAPHICAL AND PALEOECOLOGICAL COMPARISON

The richest finding-place in eastern Serbia is at Žljebine, which furnished 36 coral species. Temska with six smaller localities supplied 17 species of corals. From the localities Skuvija and Planinica 24 species of cnidarians have been determined. At Žljebine and Temska occur 10 identical species, while at Skuvija and Planinica only 3 species are present which occur in the other two localities (Fig. 5, 6, 7, 8).

According to the systematical composition of fauna, at Žljebine individuals of suborders Stylinina and Fungiina prevail, as well as the solitary corals of the suborder Faviina. Absent are the suborders Amphistraeina and Meandriina. In the Temska area the representation of coral genera is approximately the same. The fauna at Skuvija and Planinica is completely different. Stylinina do not contain the genera Eugyra and Cyathophora, which are at Žljebine the most frequent. Much less are represented faviins and fungiins, and even those present belong to different genera. Interesting are also hydrozoans and chaetetids, which occur only in this area (Fig. 9).

East Serbian cnidarian occurrences can be compared with the known localities of this fauna in different parts of the world. Localities containing the same species are: Catalonia in Spain, Lower Aptian (ANGELIS d'OSSAT 1905); various finding-places in France, Barremian and Bedoulian (FROMENTEL 1857, ALLOITEAU 1936, 1957, MASSE 1976); Switzerland, Hauterivian, Barremian and Aptian (KOBY 1898), Italy, ?Cenomanian (PREVER 1909); Grodziszczce in Carpathians of Poland, Barremian — Lower Aptian (MORYCOWA 1964); Rarau in Carpathians of Romania, Lower Aptian (VOLZ 1903, MORYCOWA 1971); Hungary, Lower Aptian (KOLOSVÁRY 1954), Bulgaria, Barremian — Aptian (TOULA 1880, 1889, ZLATARSKI 1968); Greece, ?Cenomanian (HACKEMESER 1936); Crimea and Caucas in Soviet Union, Hauterivian and Barremian (SOLOMKO 1888, BENDUKIDZE 1961, SIHARULIDZE 1970, KUZMIČEVA

Species	Localities in Eastern Serbia								Stratigraphical distribution						Geographical distribution
	Žiljebine	Temska					Skuvija	Planinica	U. Jurassic	Valanginian	Hauterivian	Barremian	Aptian	Albian, Cenomanian	
		Rajčinica	Sopotska mehana	Bunovo	Brdo Miro	Donja Dubica									
<i>Actinastraea pseudominima</i> major	•	•											—		R
<i>Enallhelia</i> sp.	•														
<i>Heliocoenia actinastrae</i> n. sp.	•	•				•									
<i>Heliocoenia carpathica</i>							•					—	—		PL, F
<i>Heliocoenia rozkowskiae</i>							•					—	—		PL
<i>Floria planinensis</i> n. gen. n. sp.							•								
<i>Stylina parvistella</i>	•	•					•					—	—		R, H, SU
<i>Stylina regularis</i>							•					—	—		R, PL, F, SI
<i>Stylosmilia alpina</i>							•					—	—		CH
<i>Pseudocoenia annae</i>	•											—	—		R, PL, H, Sr
<i>Pseudocoenia hexaphyllia</i>							•		—	—					F, PL, SI
<i>Pseudocoenia</i> cf. <i>suboconis</i>							•		—	—					F, PL, SI
<i>Pseudocoeniopsis jurassica</i>							•		—	—					R, SI
<i>Eugyra digitata</i>	•											—	—		CH, I, E, PL, R, Sr, BL
<i>Eugyra cotteai</i>	•											—	—		Ev, Az, Am, BL
<i>Eugyra neocomiensis</i>	•											—	—		F, CH, Sr
<i>Eugyra lanckoronensis</i>	•	•		•				•				—	—		R, PL, SI
<i>Eohydnochora picteti</i>				•								—	—		CH, I, F, SI, Sr, BL
<i>Cyathophora steinmanni</i>	•	•			•		•					—	—		PL, SI, Am
<i>Cyathophora pygmaea</i>		•	•	•	•	•						—	—		R, PL, SI, H
<i>Holocystis bukowinensis</i>	•											—	—		R, PL
<i>Latusastraea decipiens</i>	•	•										—	—		I, PL, SI, BL
<i>Pleurophyllia skuvienensis</i> n. sp.							•								
<i>Columnocoenia ksiazkiewiczzi bucovinensis</i>								•					—		R
<i>Placophyllia curvata</i>							•					—	—		SI
<i>Diplocoenia saltensis</i> major	•											—	—		R
<i>Clausastraea bolzei</i>							•					—	—		F, PL, SI
<i>Axosmilia bofilli</i>	•			•								—	—		E
<i>Axosmilia kobyi</i>	•											—	—		E, Sr
<i>Axosmilia villersensis</i>	•									—	—	—	—		E, CH, F
<i>Peplosmilia fromenteli</i>	•											—	—		E, SI
<i>Peplosmilia stutzi</i>	•										—	—	—		E, CH, Sr
<i>Procladocora</i> sp.	•											—	—		
<i>Smilotrochus tuberosus</i>	•	•	•											—	GB

<i>Meandroria pirotensis</i>			•		•										B, Sr
<i>Acanthogyra aptiana</i> n. sp.	•														
<i>Trochoidomeandra ovalis</i> n. sp.	•														
<i>Palaeopsammia ziljebiniensis</i> n. sp.	•														
<i>Ovalastraea polygonalis</i>	•	•													MDG
<i>Plesiofavia dubia</i>	•														F
<i>Thamnoseria carpathica</i>						•									R
<i>Latiastraea kaufmanni</i>	•	•				•									CH, Sr
<i>Gyrodendron serbica</i> n. sp.	•														
<i>Baryphyllia haime</i>	•														F, PL
<i>Meandrophyllia</i> cf. <i>lotharinga</i>		•			•										F, PL, CH
<i>Meandraraea duboisi</i>	•														SU
<i>Meandraraea meandroides</i>	•														SU, CH
<i>Truncoconus inclinatus</i> n. gen. n. sp.	•														
<i>Siderastraea</i> (<i>Siderofungia</i>) <i>irregularis</i>							•								SU, Am
<i>Thamnasteria cotteai</i>	•														SU, F
<i>Mesomorpha excavata</i>	•														F, PL
<i>Microsolena guttata</i>	•														CH, SI
<i>Fungiastraea</i> (<i>Fungiastraeopsis</i>) <i>subpolygonalis</i>							•								F, R
<i>Polyphylloseris convexa</i>	•														F, CH, R, SI
<i>Microsolenastraea balcanica</i> n. gen. n. sp.							•								
<i>Actinaraea</i> cf. <i>tenuis</i>								•							R
<i>Thamnaraea mammelonata</i> n. sp.	•														
<i>Thamnaraea</i> sp.	•		•												
<i>Polytremacis edwardsana</i>		•				•									GR, PL, IND
<i>Milleporidium variacellatum</i>							•								CH, E
<i>Dehornella virgillioi</i>							•								I
<i>Chaetetopsis favrei</i>							•								CH, F, SI
<i>Chaetetopsis krimholzi</i>							•								SU, F, A, SI, CS

Fig. 5. Tabelle, showing the distribution of determined Cnidarian species in eastern Serbia, and their stratigraphical and paleogeographical distribution in the world localities. Serbian localities are of Barremian — Lower Aptian age, at Skuvija only some fossils are redeposited from the older Upper Jurassic reefs. Abbreviations of the world localities: Am=America, B=Bolgia, CH=Switzerland, E=Spain, F=France, G=Greece, H=Hungary, I=Italy, IND=India, MDG=Madagascar, PL=Poland, R=Romania, SU=Soviet Union, and SI=Slovenia, Sr=Serbia (localities known so far).

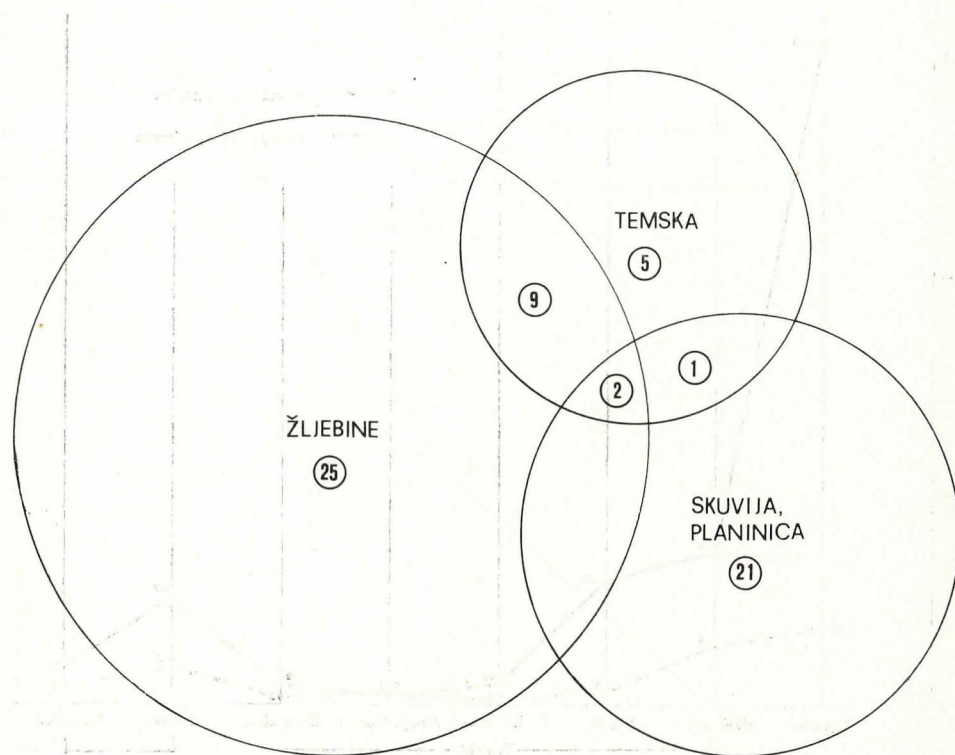


Fig. 8. Number of Cnidarian species in three examined regions in eastern Serbia. Only some of them interlace.

The cnidarian fauna from all localities is mostly Barremian — Lower Aptian. To this age the »Urgonian« beds of Eastern Serbia were attributed also by JANKIČEVIĆ (1978). A more detailed subdivision of these beds is not possible on the basis of the determined cnidarians. The locality of Skuvija contains among 17 determined species four Jurassic species, as well as three new species. This leads to the idea that at least a part of the fauna is redeposited.

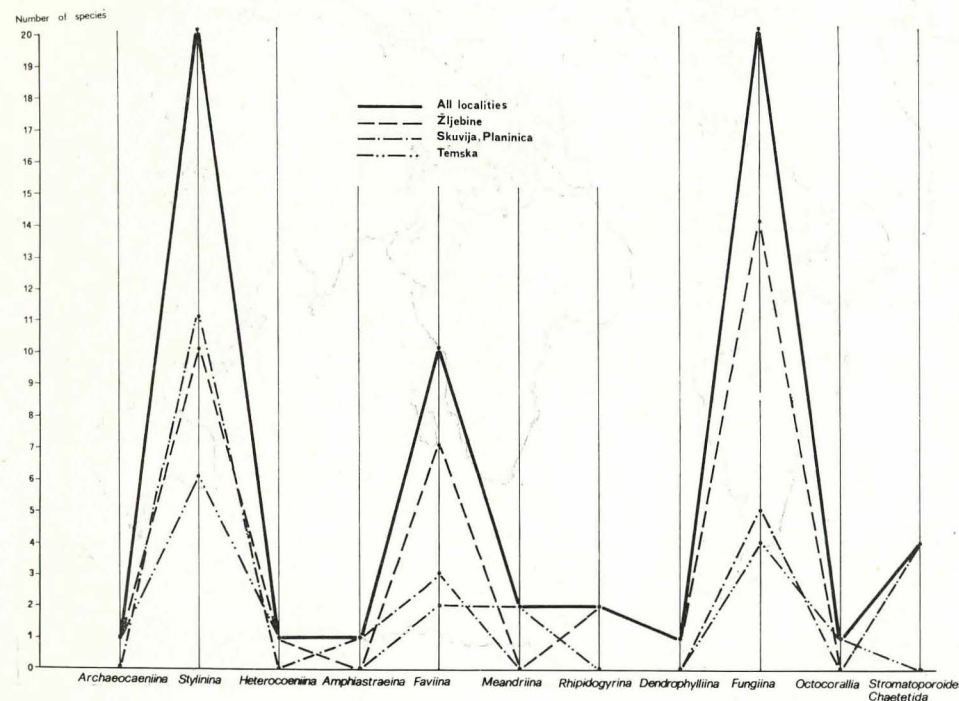


Fig. 9. Distribution of Cnidarian suborders (their number of species) in three examined regions of eastern Serbia.

The »Urgonian« facies has been studied in detail also from the paleoecological point of view by MASSE (1976) in Provence in France, from where the term originates. He found that Urgonian is a deposit of the littoral zone, of the inner and outer platform, and of the »prélittoral« zone. The cnidarian fauna occurs always in the outer part of the platform, and the inner platform is inhabited by rudists. In these beds he established four unconformities.

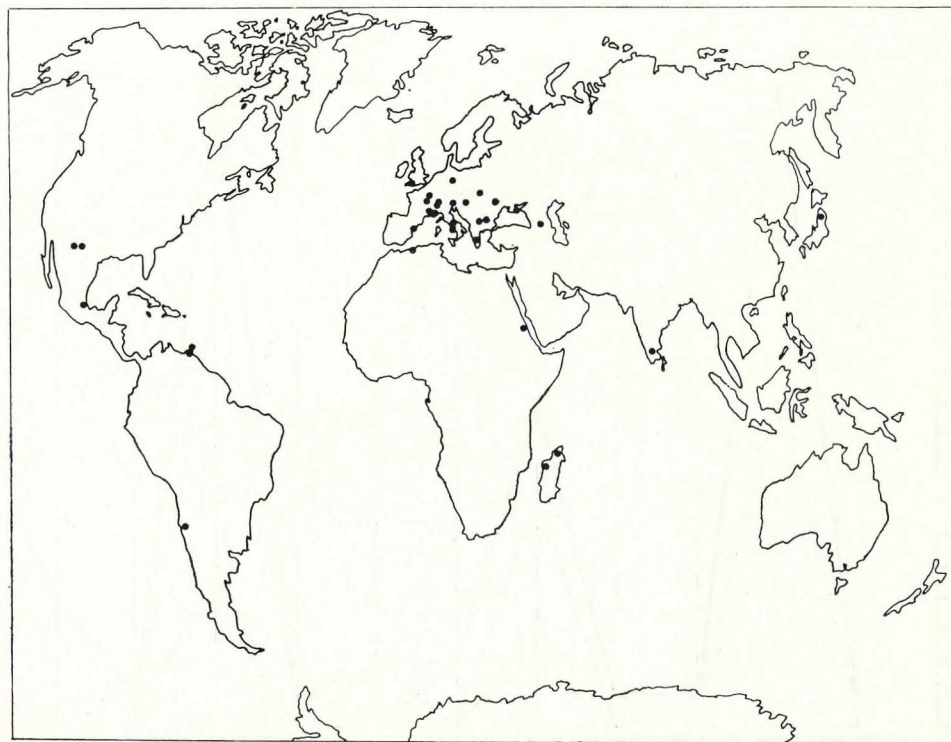


Fig. 10. Map of paleogeographical distribution of the Lower Cretaceous (>Urgonian<) corals.

In eastern Serbia a similar investigation has been performed by JANKIĆEVIĆ (1978) who found the close correspondance of the development in Serbia with development in France.

The extreme abundance of cnidarian fauna in eastern Serbia — corals are almost exclusively colonial massive and phaceloid — is an indication of the existence in this region, during Barremian and Lower Aptian, of an extended reef which grew, as elsewhere, in the external part of the shelf or platform.

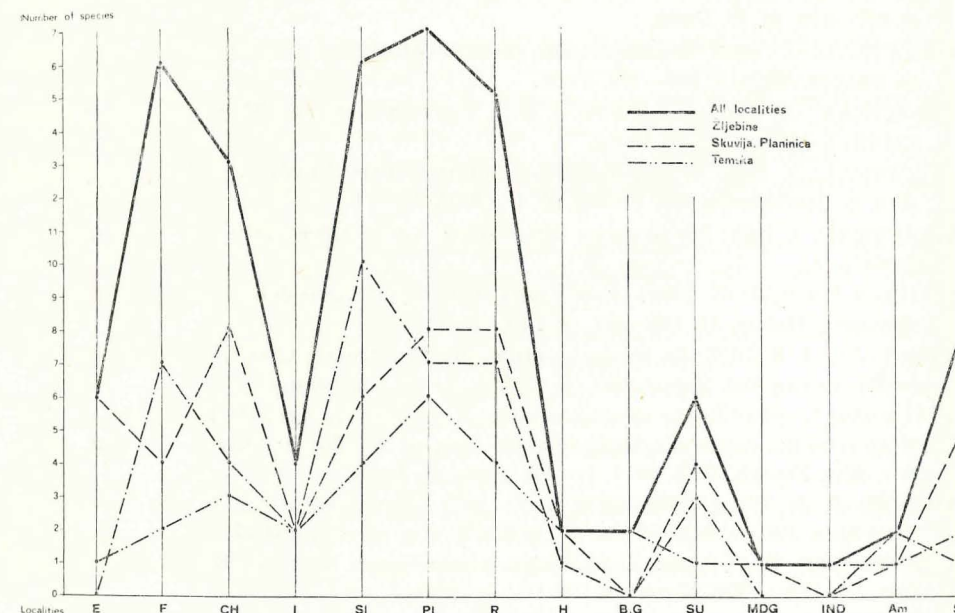


Fig. 11. Distribution of Cnidarian fauna (the number of the same species) in eastern Serbia and in the world localities.

The chronologically mixed fauna at Skuvija suggests the existence of stronger erosional processes which resulted in the redeposition of fauna. MORYCOWA (1964) even suggested that in the locality of Grodziszczce all reef fauna was eroded from the primary sites and redeposited into the deeper basin area. This could hold in view of the marly character of deposit and rounded shapes of specimens also for a part of localities in eastern Serbia.

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Povzetek

SPODNJEKREDNI KNIDARIJI IZ VZHODNE SRBIJE

Spodnjekredna koralna nahajališča v vzhodni Srbiji so bila znana že v prejšnjem stoletju. *TOULA* (1880, 1889) je opisal okoli 20 vrst s področja med Leskovcem in Pirotom.

Med vojnima sta *PETKOVIĆ* in *BOJIĆ* (1932) obdelala aptijske mehkužce in napovedala obdelavo bogatih najdišč koral, kar se žal ni nikoli uresničilo.

Po vojni sta se obdelave aptijskih koral istočasno lotili *V. KOCHANSKY-DEVIDÉ* in *O. MARKOVIĆ*. *KOCHANSKY-DEVIDÉ* (1951) je raziskala korale iz nahajališč Barovac (ob poti Miranovac—Kalna) in Periš (v Svrliškem področju). Opisala ali omenila je 16 vrst. *MARKOVIĆ* (1951) pa je opisala 22 vrst iz vasi Sukovo. Tudi ona je napovedala nadaljnje raziskave bogate zbirke z univerze, kar se prav tako ni uresničilo. Tri vrste iz vzhodne Srbije je opisala tudi *SUČIĆ* (1953). Pregled vseh dosedanjih raziskav o koralah in študijo o urgonskem faciesu v vzhodni Srbiji je izdelal *JANKIČEVIĆ* (1978).

V razpravi so obravnavane korale iz zbirke Prirodoslovnega muzeja v Beogradu. V njegovem geološko-paleontološkem delu je shranjena bogata zbirka koral in drugih knidarijev, ki sta jo že leta 1910 zbrala *P. PAVLOVIĆ*, tedanji direktor muzeja, in prof. *D. STOJICEVIĆ*; v zadnjih letih pa jo je dopolnjevala *M. MIHAJLOVIĆ-PAVLOVIĆ*, soavtorica razprave.

Favna je zbrana iz treh področij: 1. potok Žljebine, 2. okolica Temske, 3. Skuvija in Planinica.

Zbirka obsega čez 500 primerkov, od katerih je bilo narejenih 355 mikroskopskih zbruskov. Na ta način smo lahko preučili makroskopske in mikroskopske značilnosti favne, kar je omogočilo nekatere revizije v sistemu koral.

Določenih in opisanih je 59 vrst koral ter dve vrsti hidrozojev in dve vrsti hetid. Od tega je 40 vrst v Jugoslaviji prvič najdenih. Deset vrst, trije rodovi in ena družina so novi za paleontologijo in sedaj prvič opisani.

Obdelani knidariji potrjujejo barremijsko-spodnje aptijsko starost nahajališč. Le nekaj vrst je bilo doslej najdenih tudi v hauteriviju. V Skuviju pa so spodnje krednim vrstam primešane tudi zgornjejurske oblike, ki so bile verjetno presedimentirane.

ZAHVALE:

Fosile je delno prepariral *NIKOLA NEDELJKOVIĆ*, preparator iz Prirodoslovnega muzeja v Beogradu. Mikroskopske zbruske in grafično opremo razprave je izdelala *MILOJKA HUZJAN*, višja tehnična sodelavka SAZU. Vse fotografije je izdelala *CARMEN NAROBÉ*, fotografinja pri SAZU. Tekst je v angleščino prevedel dr. *SIMON PIRC*. Paleontološko obdelavo materiala je financirala Raziskovalna skupnost Slovenije in s tem omogočila medrepubliško znanstveno sodelovanje.

Avtorici se vsem najtopleje zahvaljujeva.

Obdelana zbirka knidarijev je shranjena v Prirodoslovnem muzeju v Beogradu pod inventarnimi številkami M2779 do M2956.

PLATES—TABLE

EXPLANATION OF PLATES

All the photos of thin sections are negatives. Thin sections are enlarged directly onto the paper.

PLATE 1

Actinastraea pseudominima major MORYCOWA 1971

Locality: Rajčinica, Barremian — Lower Aptian

- Fig. 1. The surface of the colony. Specimen M2926/2, $\times 0,9$.
 Fig. 2. Transverse section of the colony, showing cerioid corallites and large styliform columella. Thin section M2925/2b, $\times 3,5$.
 Fig. 3. Longitudinal section of corallites. Note ornamentation of septa and vesicular dissepiments. Thin section M2925/2a, $\times 3,5$.
 Fig. 4. Detail from fig. 2, $\times 7$.
 Fig. 5. Detail from fig. 3, $\times 7$.

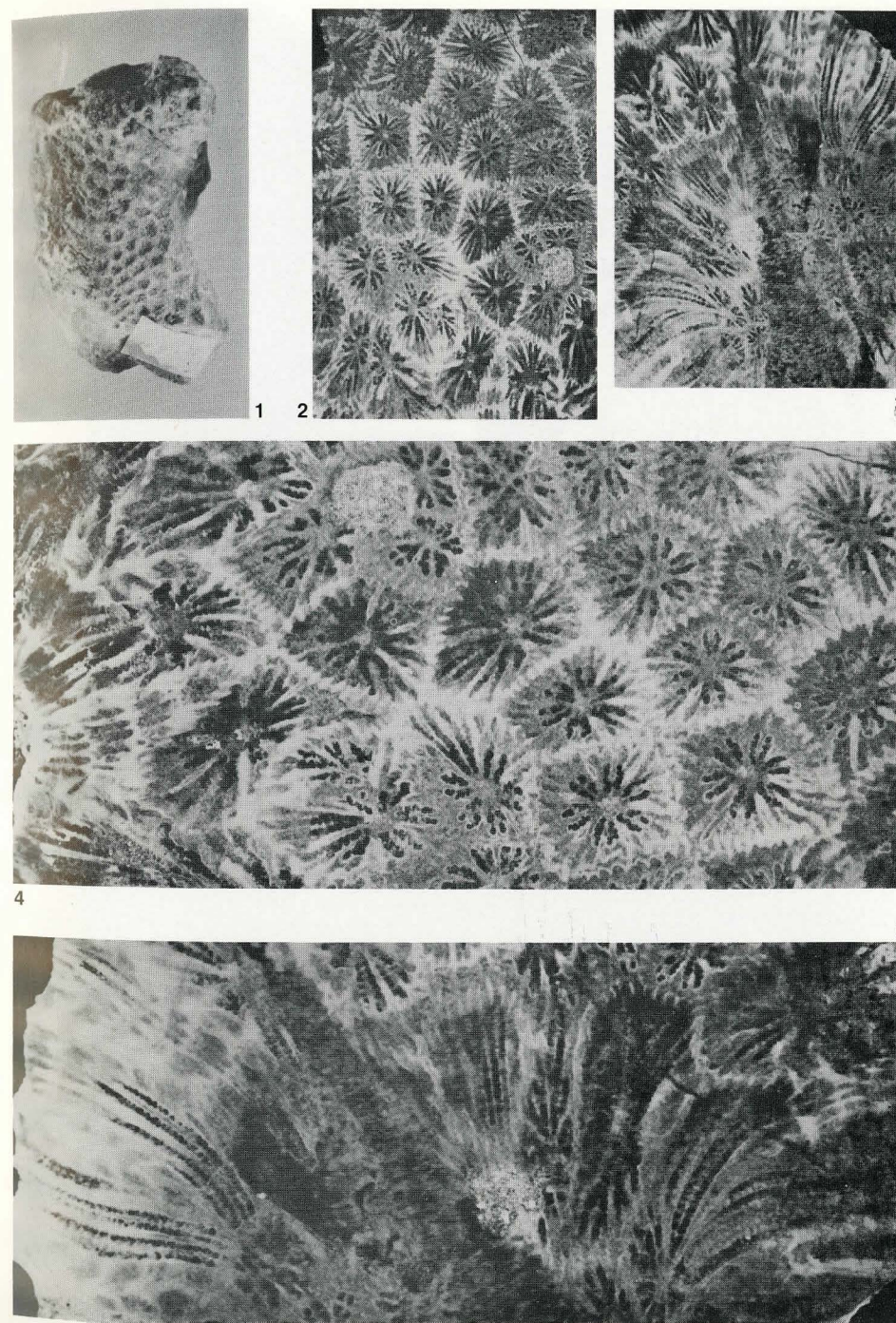


PLATE 2

Heliocoenia actinastrae n. sp.

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of nodular colony.
Paratype M2834/4, $\times 0,9$.
- Fig. 2. Radial section of cylindrical colony (two branches) showing longitudinal corallites, arranged radially. Thin section of paratype M2835/2, $\times 3,5$.
- Fig. 3. Transverse section of corallites with costate peritheca inbetween. Thin section of holotype M2826 a, $\times 3,5$.
- Fig. 4. Longitudinal section of colony showing radially arranged vertical corallites. Thin section of holotype M2836b, $\times 3,5$.

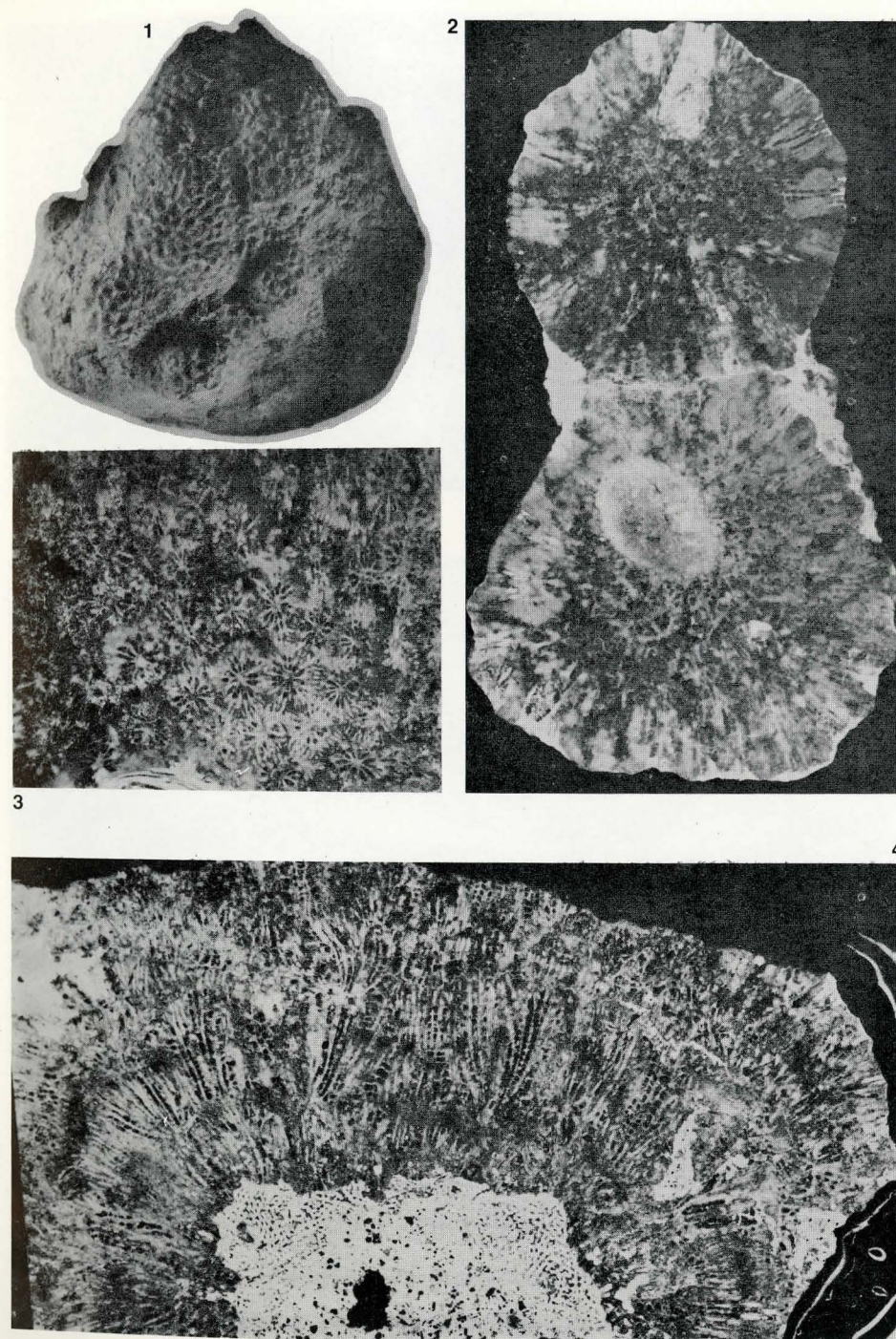


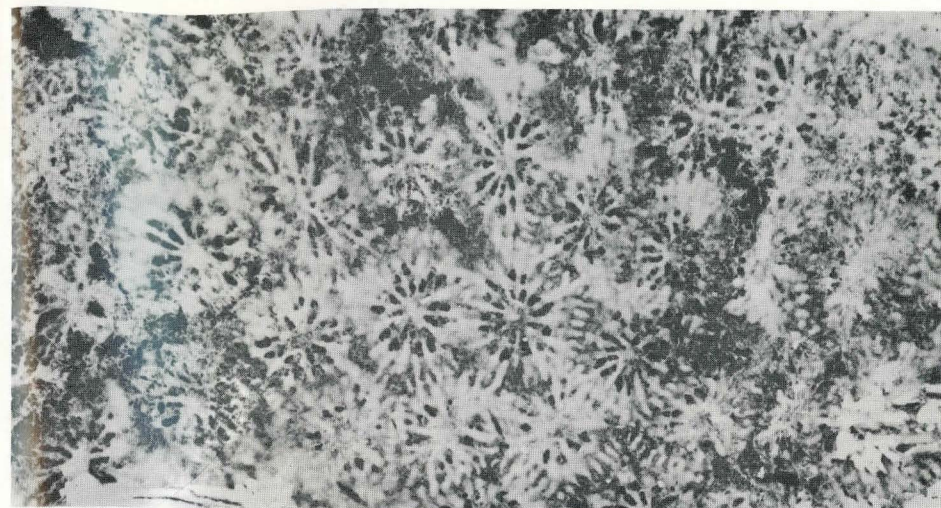
PLATE 3

Heliocoenia actinastrae n. sp.

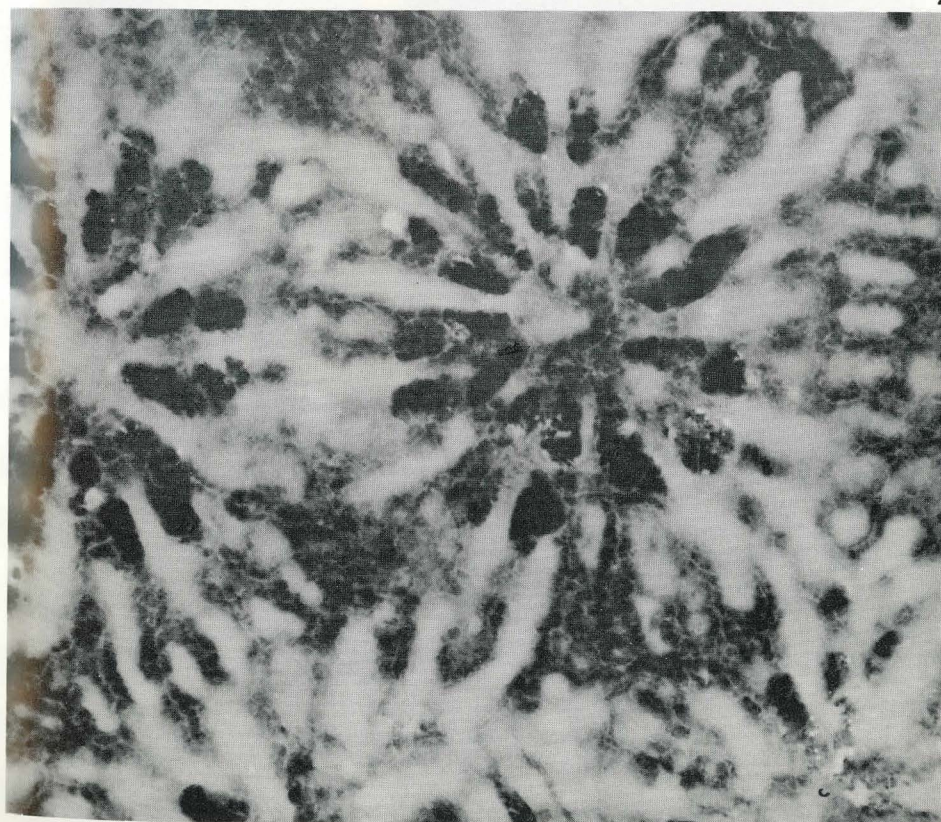
Locality: Žljebine, Barremian — Lower Aptian

Fig. 1. Transverse section of corallites. Costate peritheca between them can be seen.
Thin section of the holotype M2836 a, $\times 7$.

Fig. 2. Detail from fig. 1. Microstructure is not preserved. $\times 35$.



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PLATE 4

Heliocoenia carpathica MORYCOWA 1964

Locality: Planinica, Barremian — Lower Aptian

- Fig. 1. Transverse section of the colony showing corallites and costate peritheca.
Detail from fig. 2. Thin section M2822 a, $\times 7$.
Fig. 2. Transverse section of corallites. Thin section M2822 a, $\times 3,5$.
Fig. 3. Longitudinal section of corallites.
Thin section M2822 b, $\times 3,5$.

Heliocoenia rozkowskiae MORYCOWA 1964

Locality: Skuvija, Barremian — Lower Aptian

- Fig. 4. Detail from fig. 6., $\times 7$.
Fig. 5. The surface of the colony from above and from side. Specimen M2990/1, $\times 0,9$.
Fig. 6. Transverse section of corallites with peritheca. Thin section M2789 b, $\times 3,5$.
Fig. 7. Longitudinal section of corallites and costate peritheca.
Thin section M2789 a, $\times 3,5$.

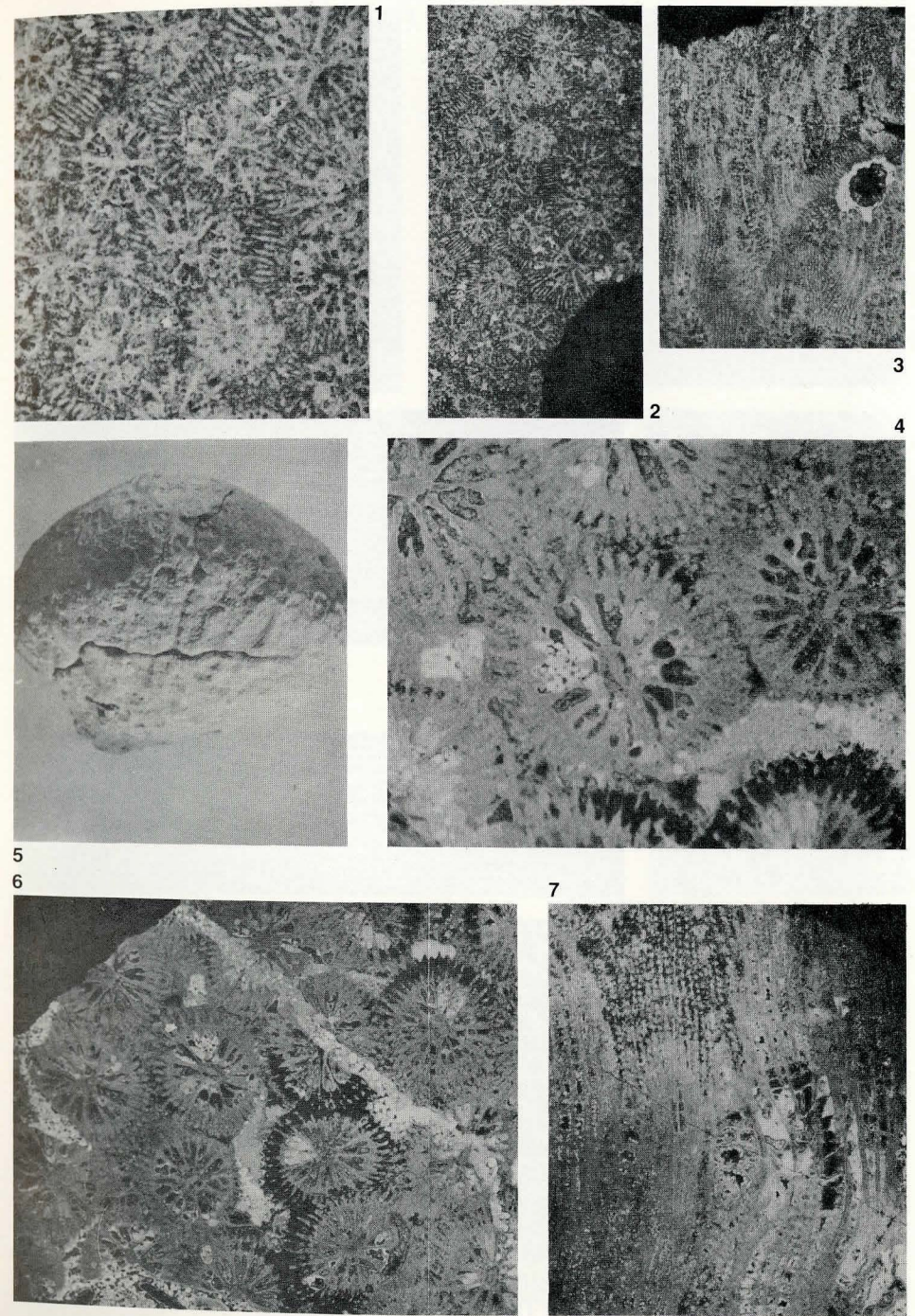


PLATE 5

Floria planinensis n. gen. n. sp.

Locality: Skuvija, Berremian — Lower Aptian

- Fig. 1. The surface of the colony. Specimen M2782, $\times 0,9$.
 Fig. 2. Longitudinal section of corallites. Thin section of holotype M2784c, $\times 3,5$.
 Fig. 3. Transverse section of colony showing corallites which look like blossoms. They are cerioid, plocoid and phaceloid. Thin section of holotype M2784a, $\times 3,5$.
 Fig. 4. An another transverse section of holotype. Thin section M2784b, $\times 3,5$.
 Fig. 5. Transverse and partly longitudinal section of corallites. *Latusastraeid* division can be seen. Thin section M2781a, $\times 3,5$.
 Fig. 6. An another transverse and partly longitudinal section of corallites which are arranged in form of blossoms. Thin section M2781b, $\times 3,5$.

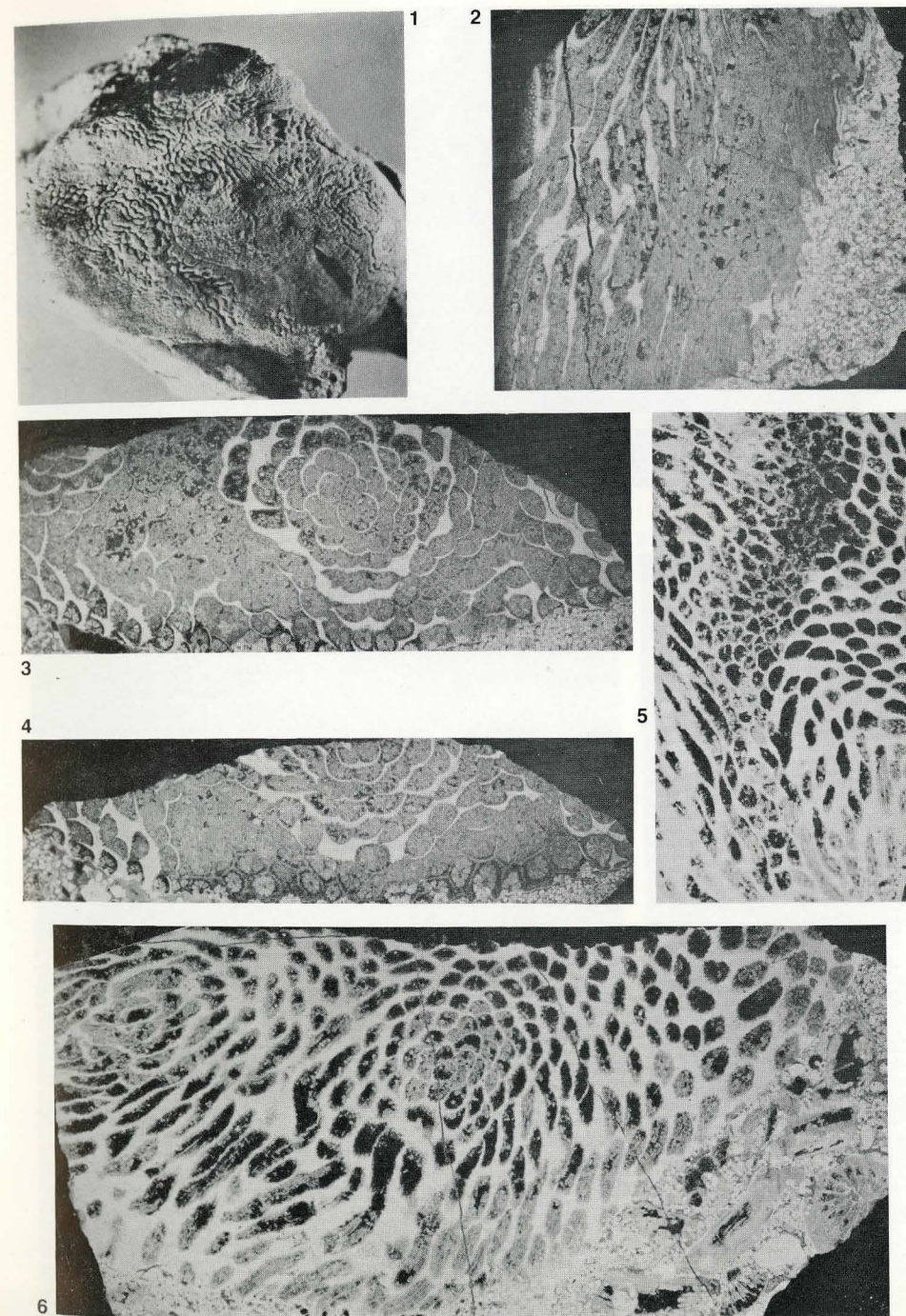
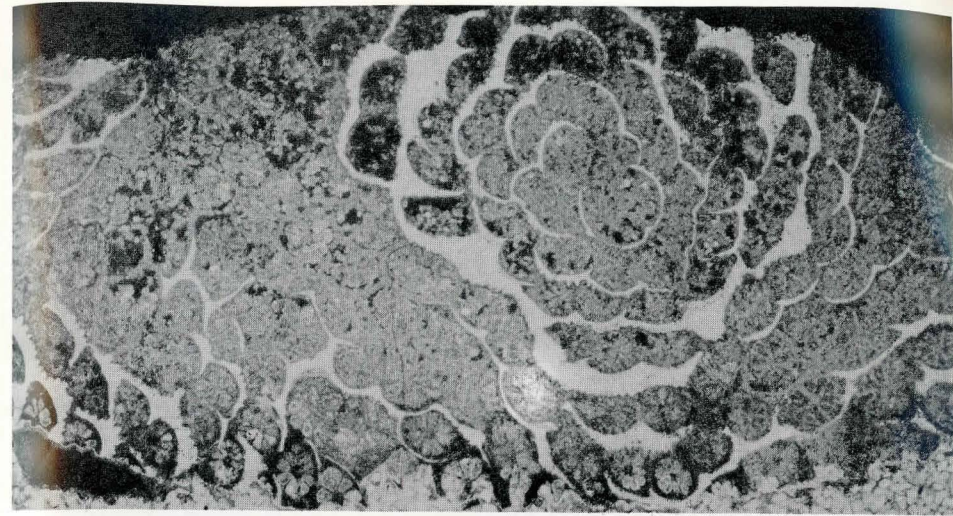


PLATE 6

Floria planinensis n. gen. n. sp.

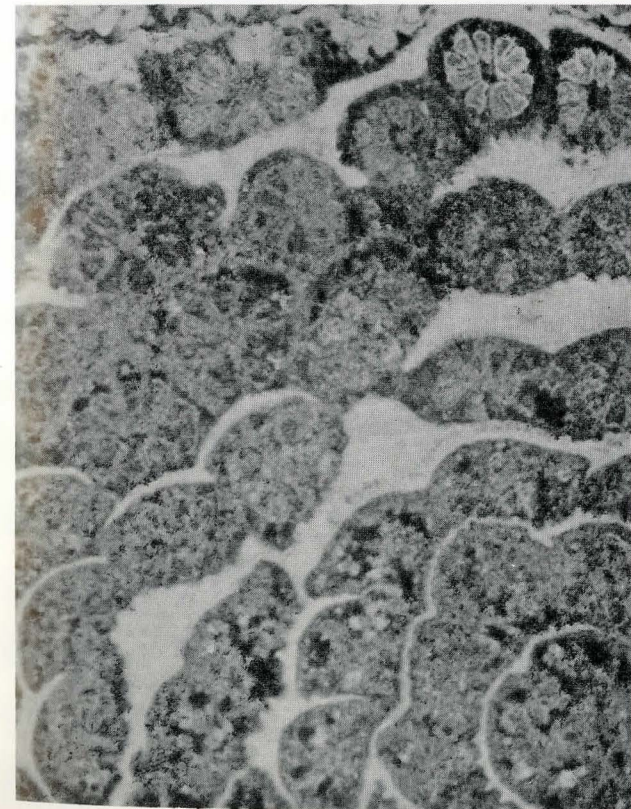
Locality: Skuvija, Berremian — Lower Aptian

- Fig. 1. Transverse section of corallites which are connected cerioidally, plocoidally and phaceloidally. Thin section of holotype M2784a, $\times 7$.
 Fig. 2. Detail from fig. 1., $\times 17,5$.
 Fig. 3. Longitudinal section of corallites.
 Thin section of holotype M2784c, $\times 7$.



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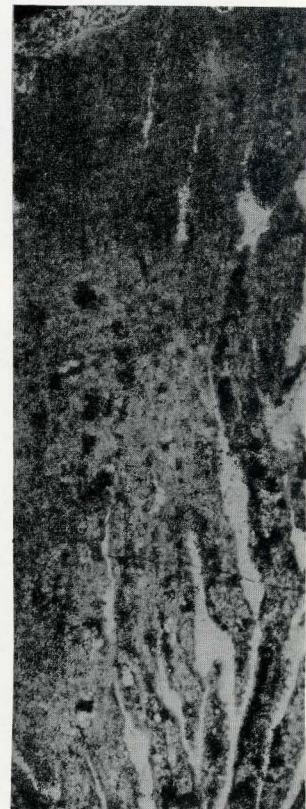


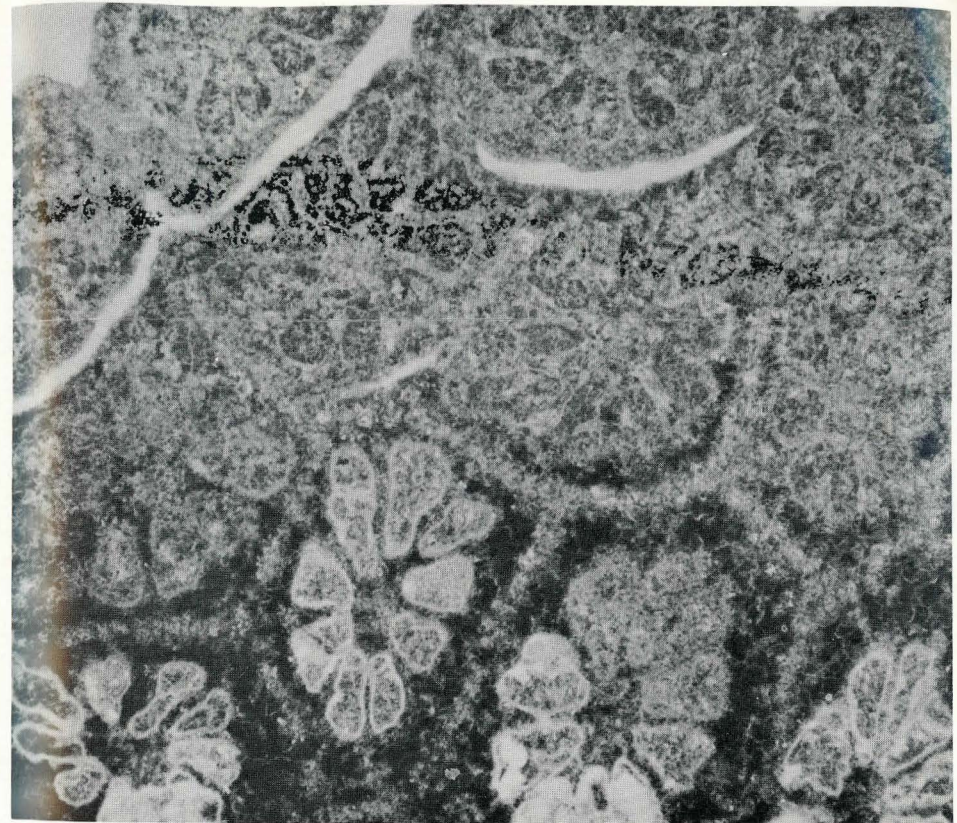
PLATE 7

Floria planinensis n. gen. n. sp.

Locality: Skuvija, Berremian — Lower Aptian

Fig. 1. Detail from transverse thin section of holotype. (Pl. 5, fig. 4), $\times 35$.

Fig. 2. Detail from longitudinal thin section of holotype (Pl. 5, fig. 2), $\times 35$.



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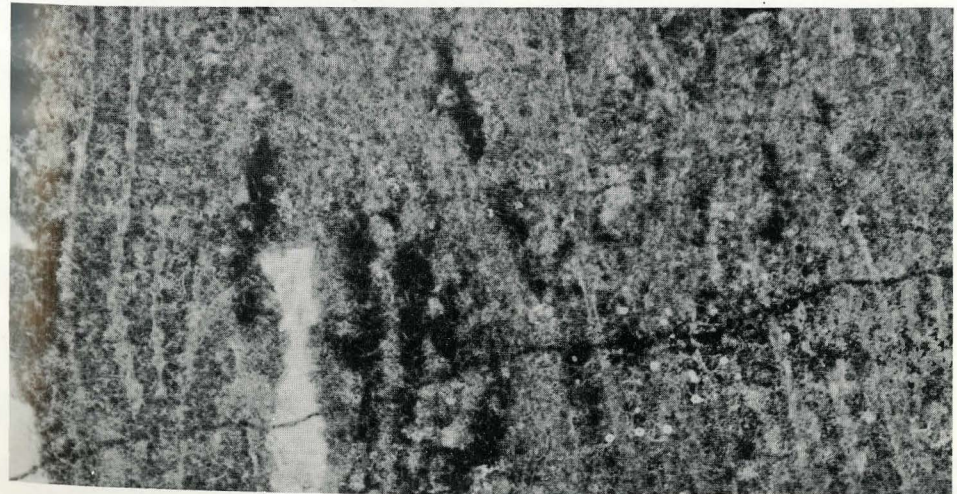


PLATE 8

Stylina parvistella VOLZ 1903

Locality: Skuvija, Barremian — Lower Aptian

Fig. 1. Transverse section of corallites with the peritheca inbetween. Thin section M2804a, $\times 7$.

Fig. 2. Longitudinal section of the same colony as on fig. 1. Thin section M2804c, $\times 7$.

Fig. 3. An another longitudinal section of the same colony showing axial parts of corallites. Thin section M2804b, $\times 7$.

Stylina regularis FROMENTEL 1867

Locality: Skuvija, Barremian — Lower Aptian

Fig. 4. Transverse section of corallites with peritheca. Thin section M2805a, $\times 7$.

Fig. 5. Longitudinal section of corallites. Thin section M2805b, $\times 7$.



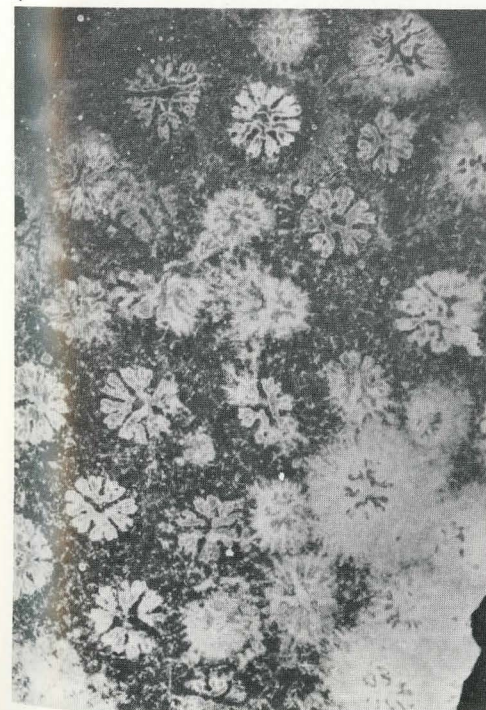
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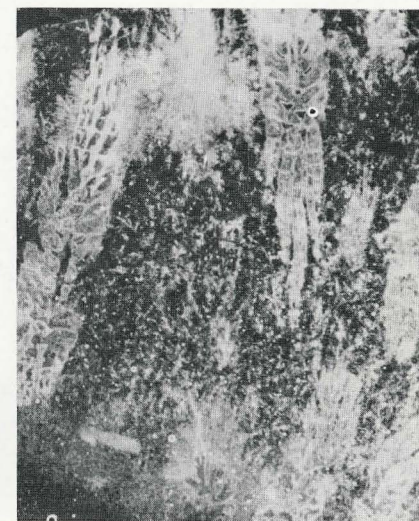
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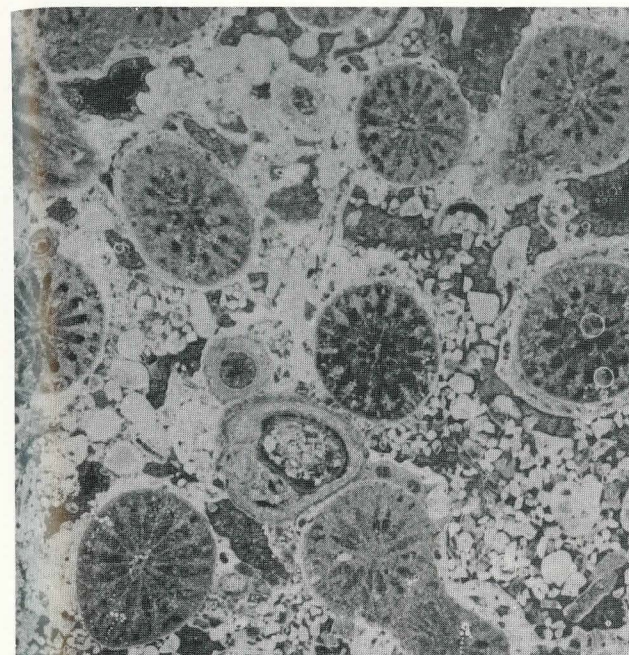
PLATE 9

Stylosmilia alpina Koby 1897

Locality: Skuvija, Barremian — Lower Aptian

Fig. 1. Detail from fig. 3., $\times 7$.Fig. 2. Longitudinal section of corallite which buds laterally. Thin section M 2809 a, $\times 3,5$.Fig. 3. Transverse section of corallites which are due to lateral budding arranged in series. Thin section M 2809 b, $\times 3,5$.*Pseudocoeniopsis jurassica* (TURNŠEK 1972)

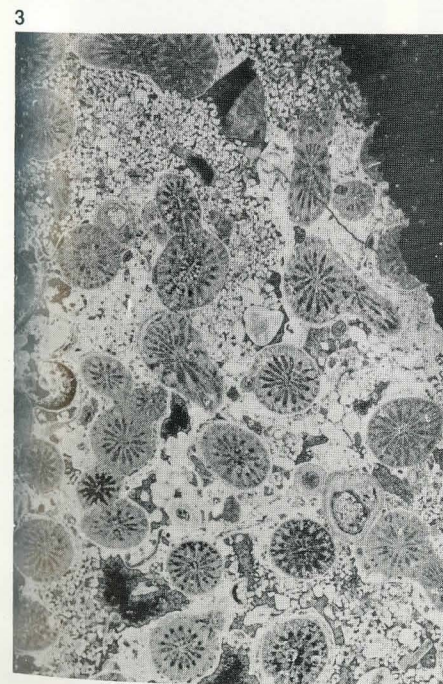
Locality: Skuvija, Barremian — Lower Aptian (redeposited)

Fig. 4. Transverse section of corallites with decamer system of septa and peritheca. Thin section M 2799 a, $\times 3,5$.

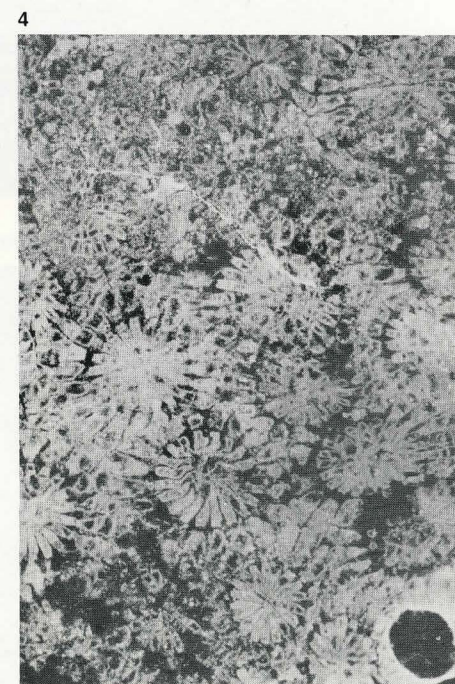
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PLATE 10

Pseudocoenia cf. suboconis d'ORBIGNY 1850

Locality: Skuvija, Barremian — Lower Aptian, redeposited

Fig. 1. Transverse section of corallites with octomeral system of septa. Thin section M2797b, $\times 3,5$.

Fig. 2. Longitudinal section of the same colony. Thin section M2797c, $\times 3,5$.

Pseudocoenia hexaphyllia (d'ORBIGNY 1850)

Locality: Skuvija, Barremian — Lower Aptian, redeposited

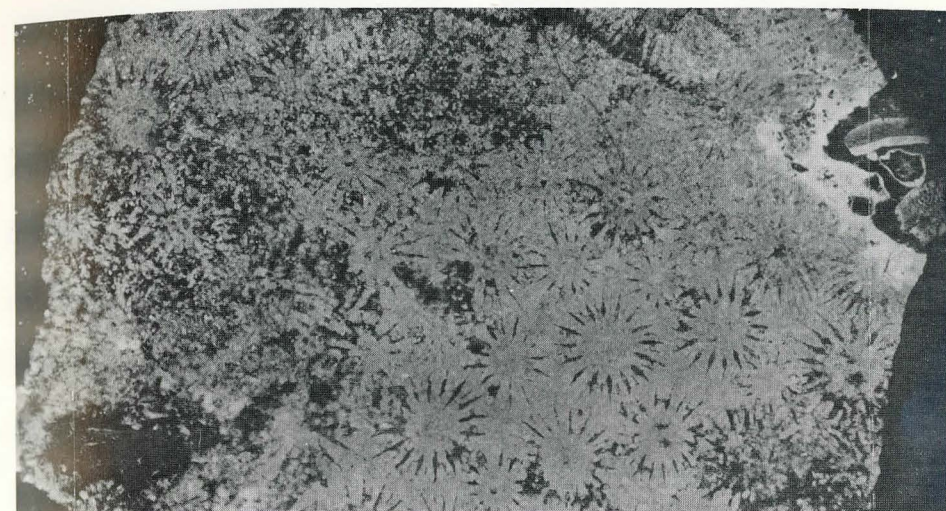
Fig. 3. The surface of the colony. In calices there are septa in hexameral system. Specimen M2796, $\times 0,9$.

Fig. 4. Detail from fig. 3., $\times 3,5$.

Pseudocoenia annae (VOLZ 1903)

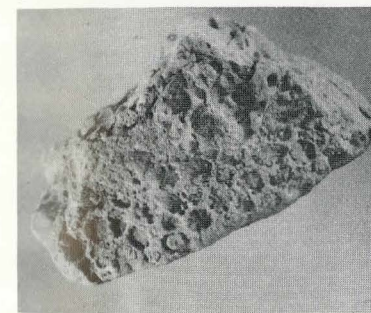
Locality: Žljebine, Barremian — Lower Aptian

Fig. 5. The surface of the colony with small calices showing hexameral system of septa. Specimen M2870, $\times 0,9$.



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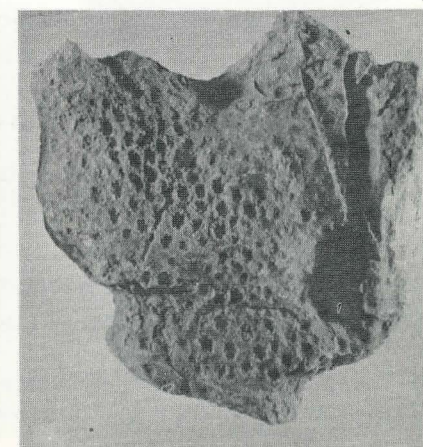


PLATE 11

Eugyra digitata KOPY 1896

Locality: Žljebine, Barremian — Lower Aptian

Fig. 1. Transverse section of corallites which are in series. Septa of both cycles are equally large. Thin section M 2844 a, $\times 3,5$.

Fig. 2. Longitudinal section of the same colony.
Thin section M 2844 b, $\times 3,5$.

Eugyra cotteau FROMENTEL 1857

Locality: Žljebine, Barremian — Lower Aptian

Fig. 3. The surface of the colony showing series of corallites between wide collines.
Specimen M 2853/2, $\times 0,9$.

Fig. 4. Transverse section of the colony. Septa of the first cycle are very thick and long, those of the second cycle are short. Thin section M 2852 a, $\times 3,5$.

Eugyra neocomiensis FROMENTEL 1857

Locality: Žljebine, Barremian — Lower Aptian

Fig. 5. The surface of the colony. Specimen M 2851, $\times 0,9$.

Fig. 6. Transverse section of the same colony. Septa of the second cycle are very short. Thin section M 2851 a, $\times 3,5$.

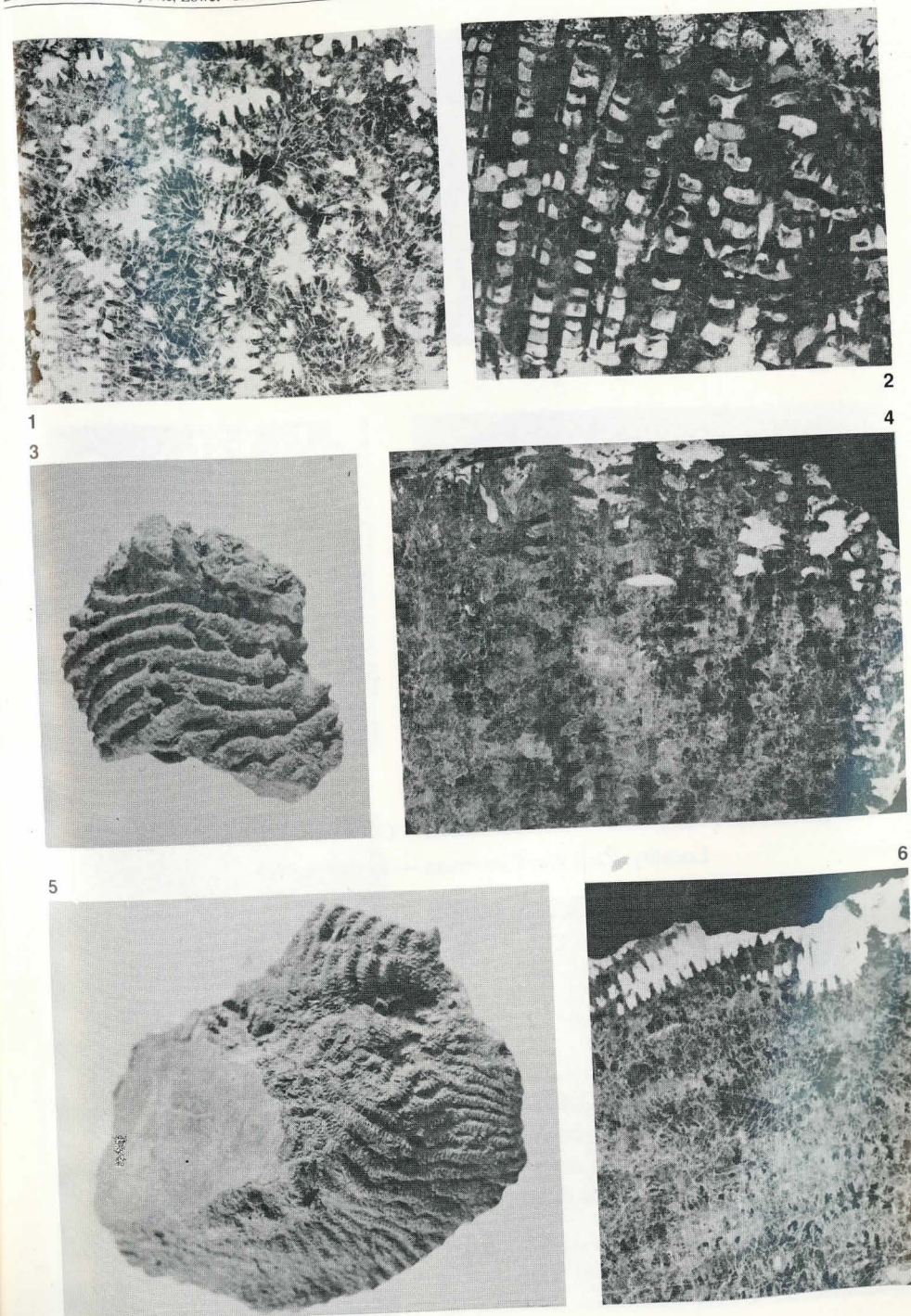


PLATE 12

Eugyra lanckoronensis (MORYCOWA 1964)

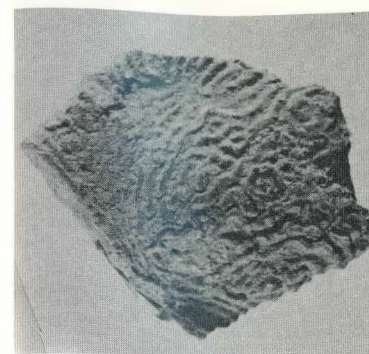
Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of the upper median part of the colony. Specimen M2847/4, $\times 0,9$.
 Fig. 2. Longitudinal section of the colony.
 Thin section M2848b, $\times 3,5$.
 Fig. 3. Transverse section of the same colony. Septa of the first and second cycles are equal.
 Thin section M2848a, $\times 3,5$.

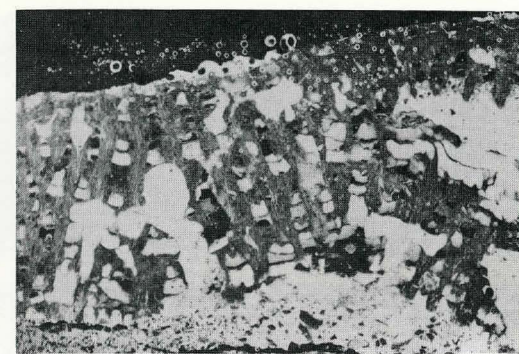
Eohydnophora picteti (KOBY 1897)

Locality: Sopot, Barremian — Lower Aptian

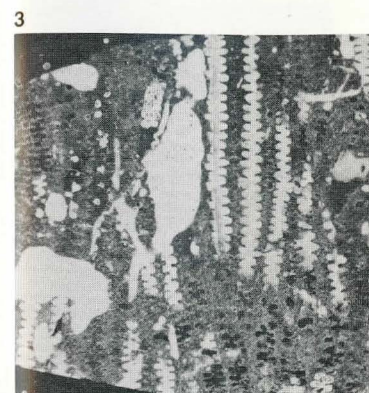
- Fig. 4. The surface of large nodular colony. Corallites from side and from above can be seen. Specimen M2813, $\times 0,9$.
 Fig. 5. Transverse section of colony showing short collines. Thin section M2812b, $\times 3,5$.
 Fig. 6. Partly longitudinal and partly oblique section of corallites.
 Thin section M2812c, $\times 3,5$.



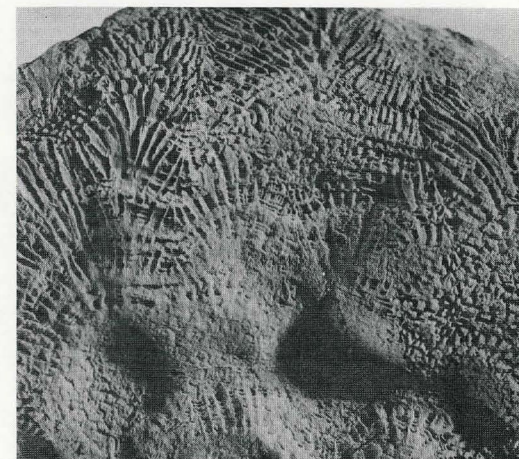
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PLATE 13

Cyathophora pygmaea VOLZ 1903

Locality: Sopot, Barremian — Lower Aptian

Fig. 1. Longitudinal section of corallites with tabulae. Thin section M 2949/3 d, $\times 3,5$.Fig. 2. Transverse section of corallites showing very short septa.
Thin section M 2949/3 b, $\times 3,5$.*Cyathophora steinmanni* FRITZCHE 1924

Locality: Žljebine, Barremian — Lower Aptian

Fig. 3. Transverse section of large corallites with rudimentary septa.
Thin section M 2880 a, $\times 3,5$.Fig. 4. Longitudinal section of the same colony. Thin section M 2880 b, $\times 3,5$.*Holocystis bukowinensis* VOLZ 1903

Locality: Žljebine, Barremian — Lower Aptian

Fig. 5. Transverse section of corallites with tetrameral system of septa and costate peritheca. Thin section M 2838 b, $\times 3,5$.Fig. 6. Detail from fig. 5, $\times 7$.*Latusastraea decipiens* (PREVER 1909)

Locality: Rajčinica, Barremian — Lower Aptian

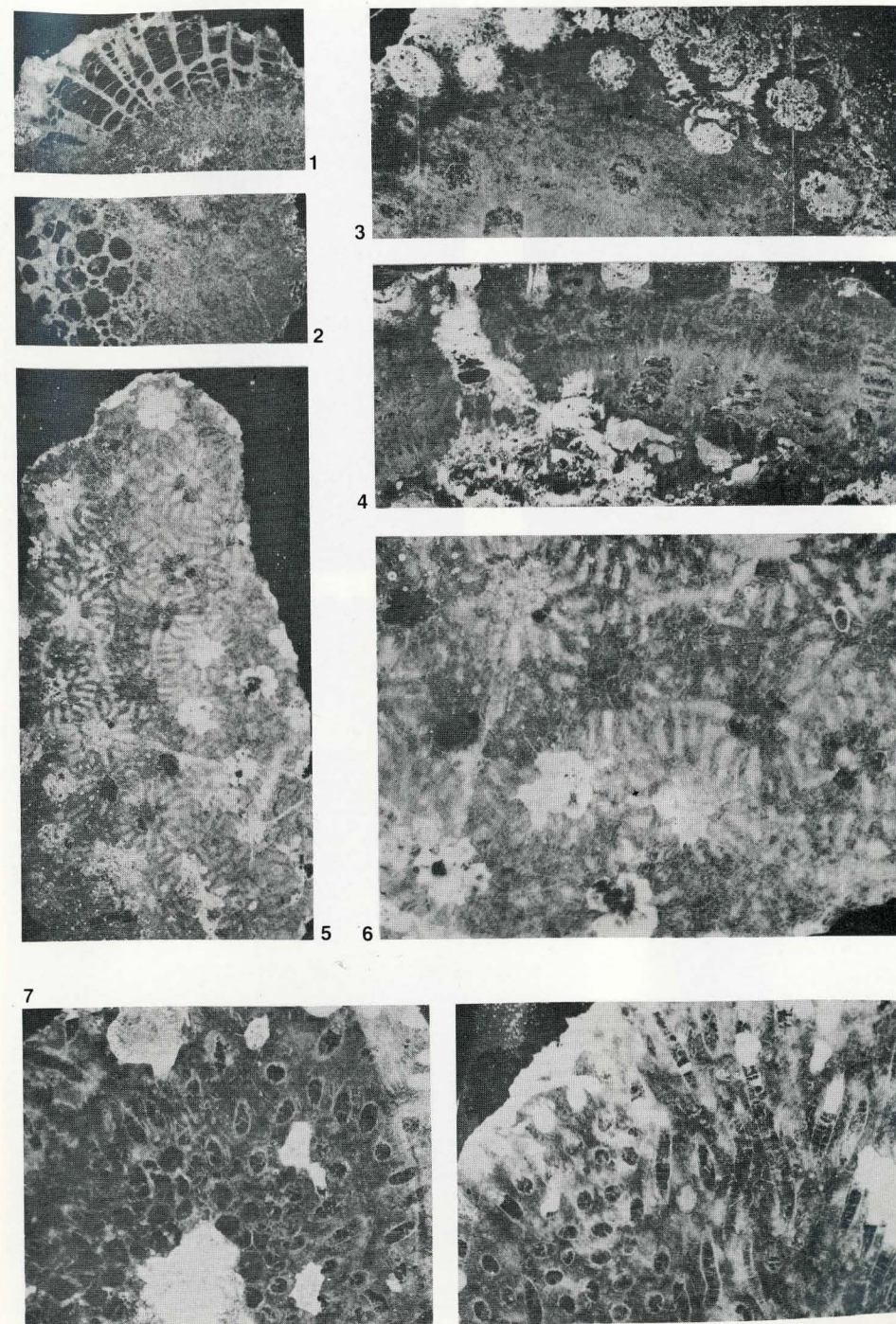
Fig. 7. Transverse section of colony. Some corallites are semicircular with main septum.
Thin section M 2927/2 b, $\times 3,5$.Fig. 8. The same thin section showing longitudinal corallites, $\times 3,5$.

PLATE 14

Pleurophyllia skuviensis n. sp.

Locality: Skuvija, Barremian — Lower Aptian

- Fig. 1. The surface of phaceloid colony. Holotype M 2795, $\times 0,9$.
 Fig. 2. Transverse section of holotype. Thin section M 2795 a, $\times 3,5$.
 Fig. 3. Detail from fig. 2. In some corallites main septum is well developed. $\times 7$.
 Fig. 4. Longitudinal section of one corallite. Holotype — thin section M 2795 b, $\times 7$.

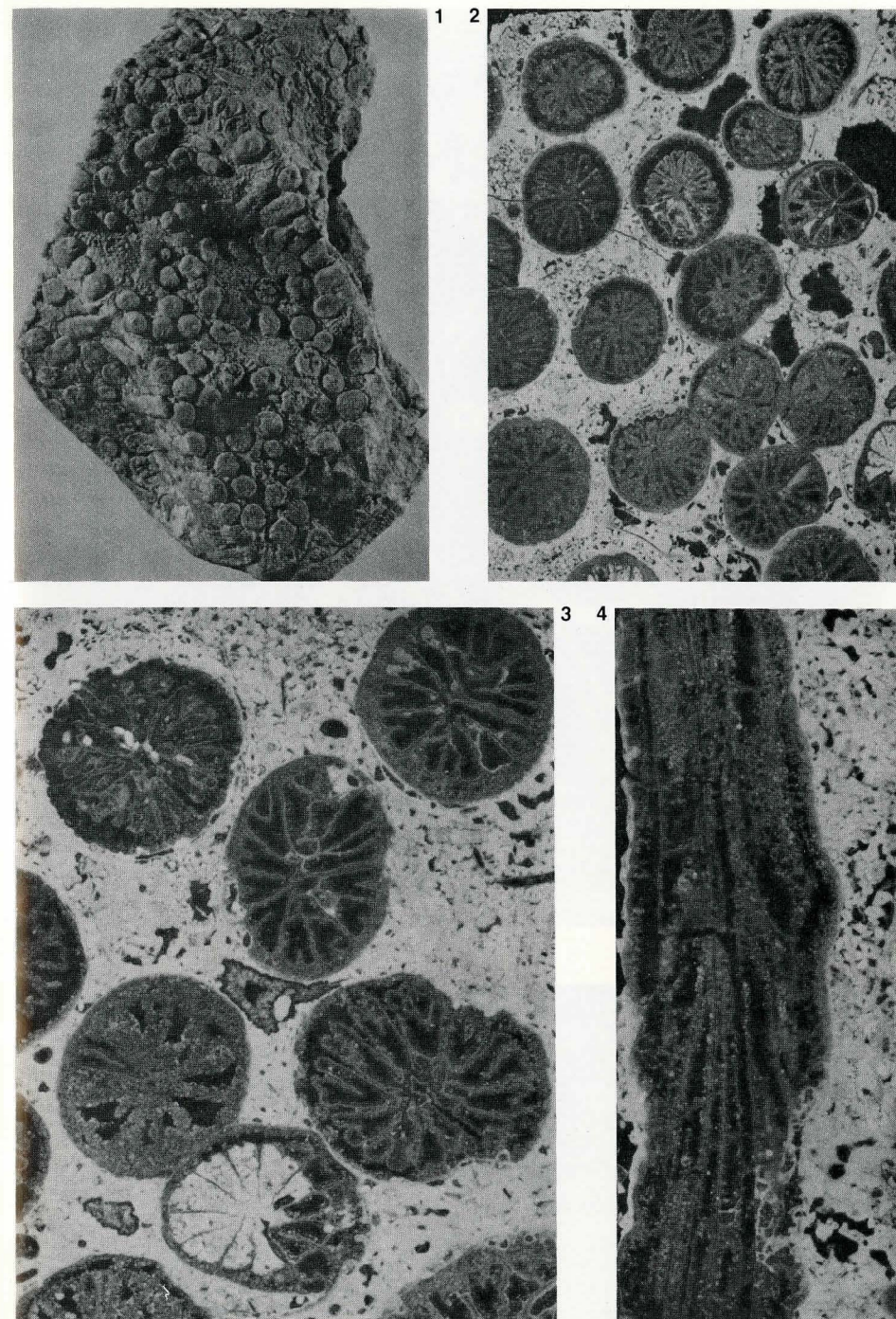


PLATE 15

Pleurophyllia skuviensis n. sp.

Locality: Skuvija, Barremian — Lower Aptian

- Fig. 1. Transverse section of one corallite (detail from Pl. 14, fig. 3). Microstructure is of single trabeculae, strongly recrystallized. Holotype — thin section M 2795 a, $\times 35$.
- Fig. 2. Longitudinal section of part of corallite. Holotype — thin section M 2795 b, $\times 35$.



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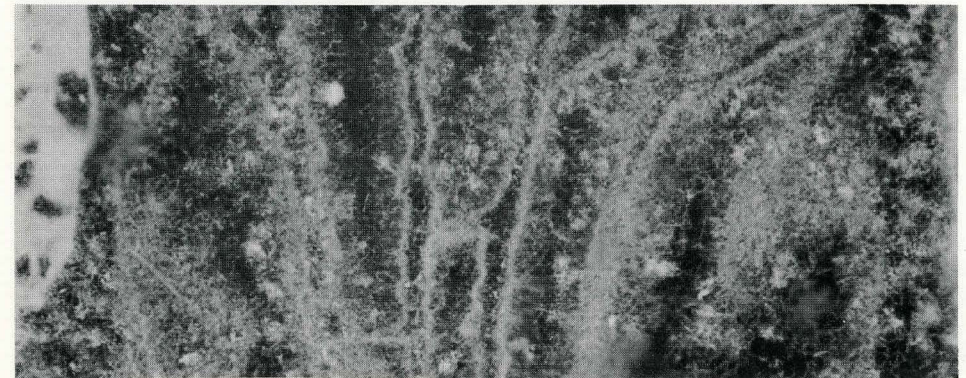


PLATE 16

Columnocoenia ksiazkiewiczi bucovinensis MORYCOWA 1971

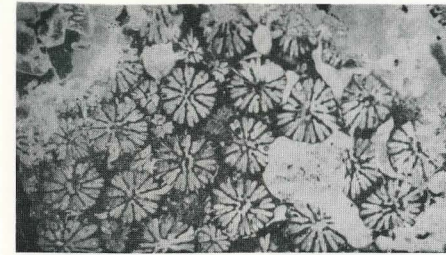
Locality: Planinica, Barremian — Lower Aptian

Fig. 1. Transverse section of corallites showing extracalicular budding with some young corallites. Thin section M2821a, $\times 3,5$.
 Fig. 2. The same as fig. 1, $\times 7$.

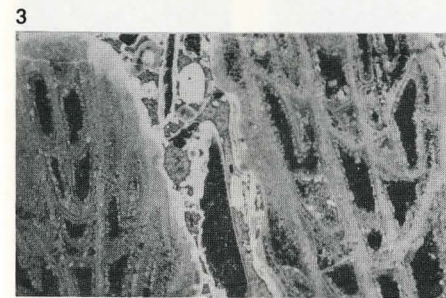
Placophyllia curvata TURNŠEK 1974

Locality: Skuvija, Barremian — Lower Aptian

Fig. 3. Longitudinal section of two corallites. Thin section M2807b, $\times 3,5$.
 Fig. 4. Longitudinal section of one corallite showing lamellar microstructure. Thin section M2807c, $\times 3,5$.
 Fig. 5. Transverse section of corallites. Thin section M2807a, $\times 3,5$.



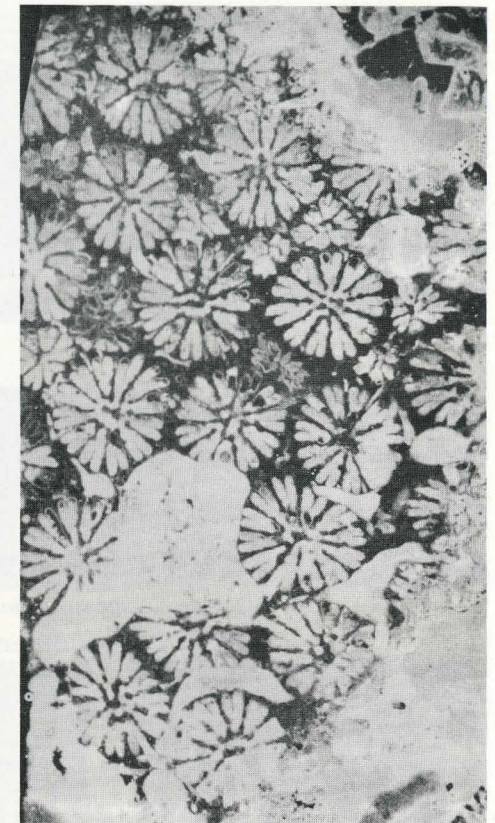
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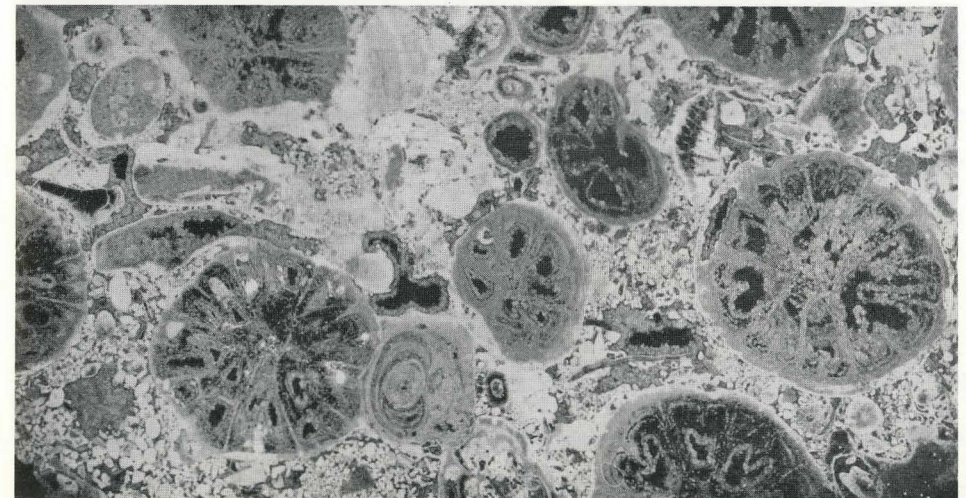


PLATE 17

Diplocoenia saltensis major MORYCOWA 1971

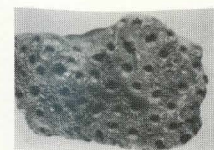
Locality: Žljebine, Barremian — Lower Aptian

Fig. 1. The surface of the cerioid colony. Calices are deep. Specimen M2899, $\times 0,9$.Fig. 2. The same as on fig. 1., $\times 3,5$.Fig. 3. Transverse section of corallites. Septa are joined with large columella. Thin section M2899a, $\times 3,5$.Fig. 4. Detail from fig. 3., $\times 7$.*Clausastraea bolzei* ALLOITEAU 1960

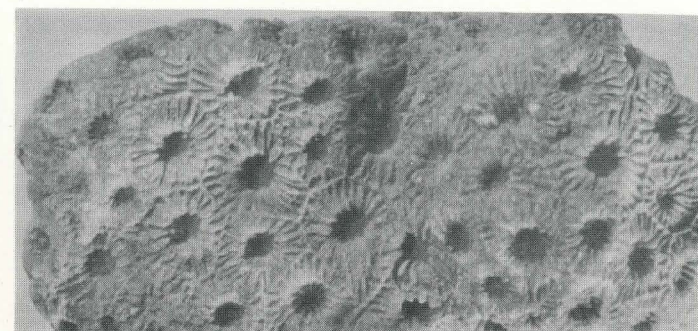
Locality: Skuvija, Barremian — Lower Aptian

Fig. 5. Transverse section of corallites showing confluent septa. Thin section M2803b, $\times 3,5$.Fig. 6. Longitudinal and partly oblique section of colony. Dissepiments are more frequent in periphery. Thin section M2803a, $\times 3,5$.*Procladocora* sp.

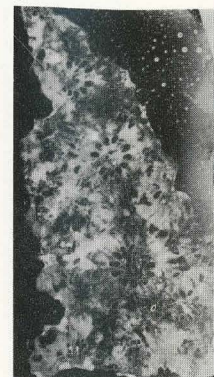
Locality: Žljebine, Barremian — Lower Aptian

Fig. 7. Fragment of dendroid colony showing one corallite which buds. The surface is ribbed. Specimen M2908/31, $\times 0,9$.Fig. 8. Fragment of one corallite which buds under an acute angle. Specimen M2908/21, $\times 0,9$.Fig. 9. Fragment of dendroid colony. Specimen M2908/40, $\times 0,9$.

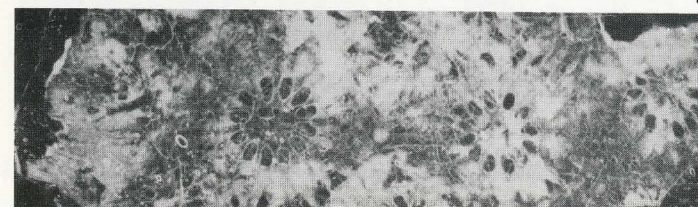
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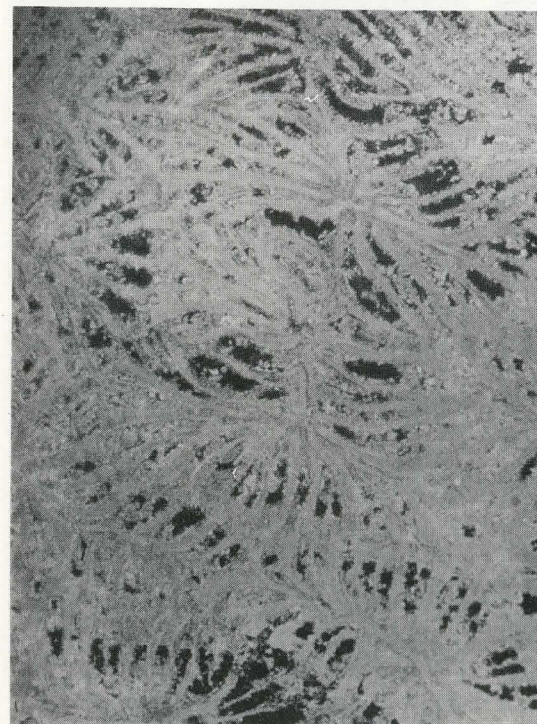


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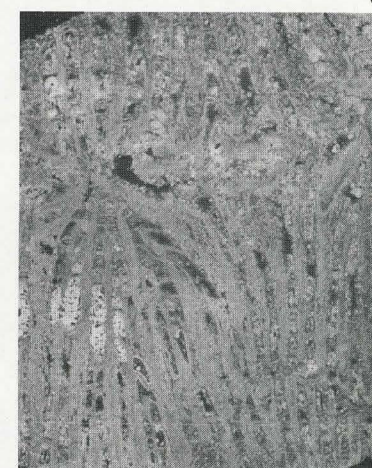


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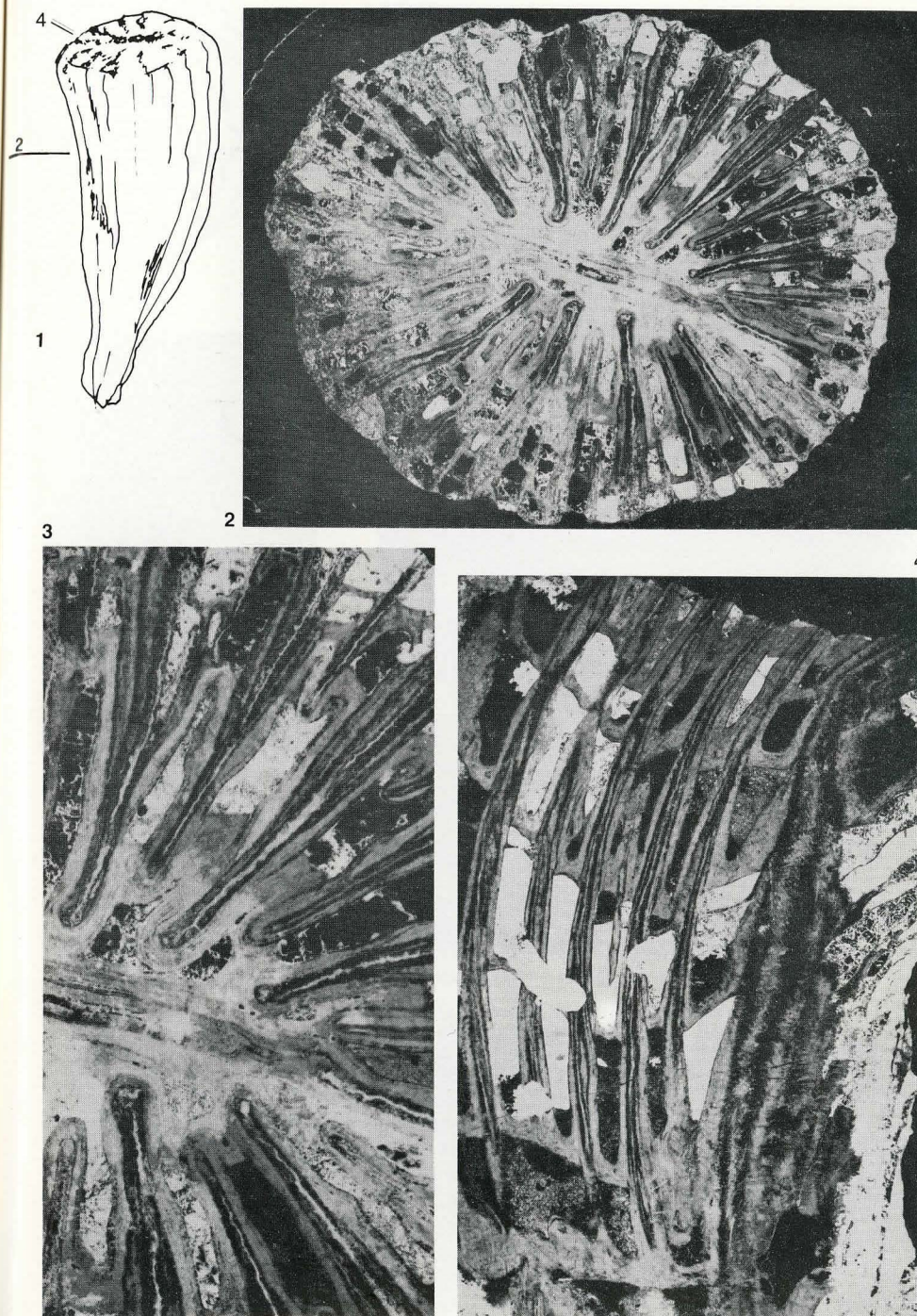


PLATE 18

Axosmilia bofilli ANGELIS d'OSSAT 1905

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Schematic drawn of corallum showing position of thin sections. After specimen M2885, $\times$ ca 1.
- Fig. 2. Transverse section of corallum in its middle part. Lateral sides of septa are smooth, endotheca is in peripheral part. Thin section M2885 a, $\times$ 3,5.
- Fig. 3. Detail from fig. 2. Trabeculae in more rows can be seen (lamellar microstructure), $\times$ 7.
- Fig. 4. Longitudinal section of corallum in its upper peripheral part. Thin section M2885 c, $\times$ 3,5.

PLATE 19

Axosmilia kobyi (ANGELIS d'OSAAT 1905)

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Schematic drawn of corallum showing position of thin sections. After specimen M2891, $\times$ ca 1.
- Fig. 2. Transverse section of corallum in its upper part. Columella is free and thin. The wall is uncomplete paratheca. Thin section M2891a, $\times$ 3,5.
- Fig. 3. Transverse section of corallum in its middle part. Columella is thicker and joined with septum. Lateral side of septa is smooth. Thin section M2891b, $\times$ 3,5.
- Fig. 4. Longitudinal section of corallum in its lower part. Thin section M2891c, $\times$ 3,5.
- Fig. 5. The surface of the corallum from side. The base is sharp. Specimen M2892/2, $\times$ 0,9.
- Fig. 6. The surface of some other corallum. Specimen M2892/1, $\times$ 0,9.
- Fig. 7. Transverse section of corallum in its upper part. Thin section M2893/1a, $\times$ 3,5.

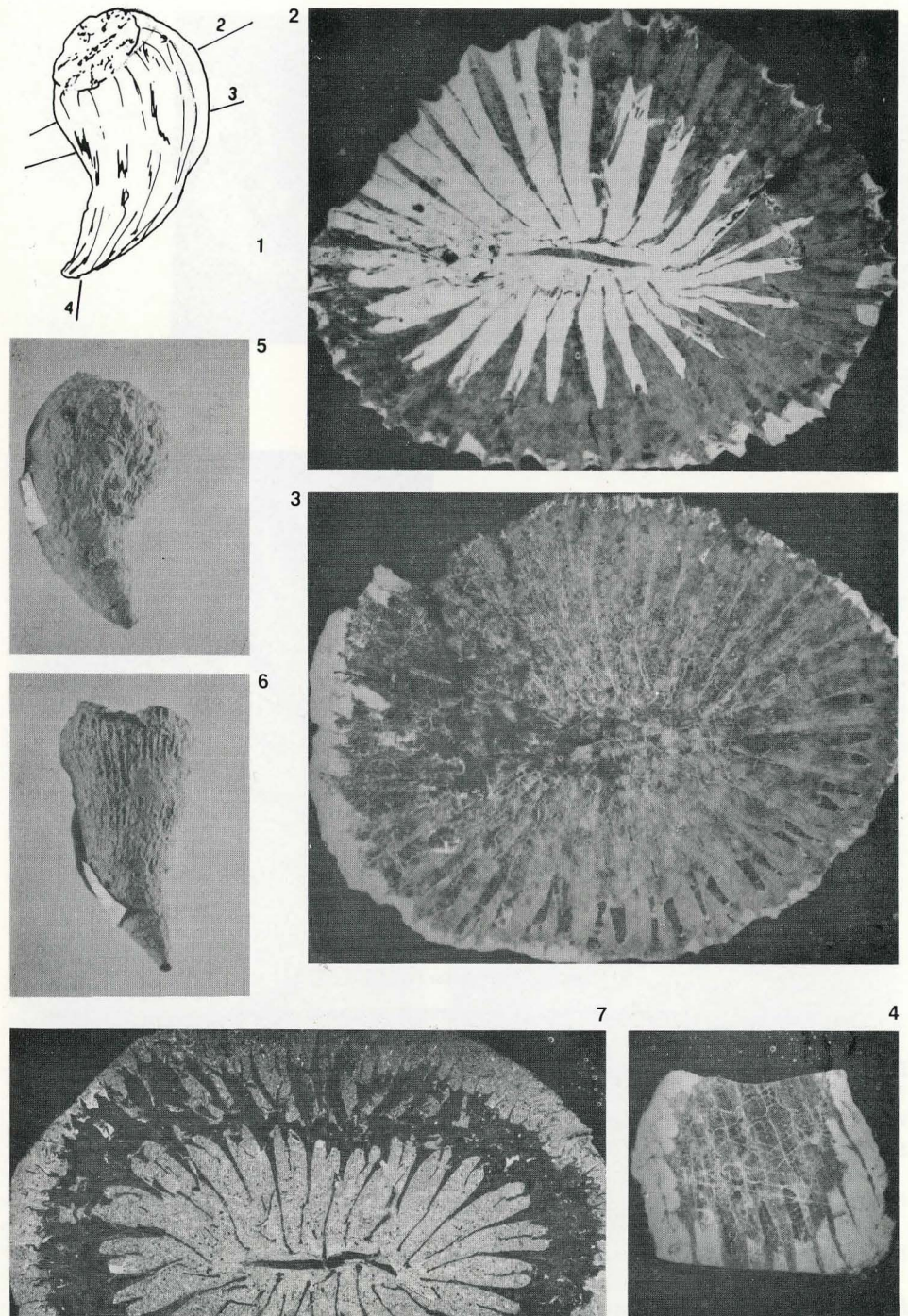


PLATE 20

Axosmilia villersensis (KOBY 1898)

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Schematic drawn of corallum with the position of thin sections. After specimen M2888/2, $\times$ ca 1.
- Fig. 2. Longitudinal section of corallum in its lower part. Thin section M2888/2d, $\times$ 3,5.
- Fig. 3. Transverse section of corallum in its upper part. Columella is thin and free. Thin section M2888/2a, $\times$ 3,5.
- Fig. 4. Transverse section of corallum in its middle part. Columella is thicker and joined with two opposite septa. Thin section M2888/2b, $\times$ 3,5.
- Fig. 5. Transverse section of corallum in its lower part. Columella is thick and joined with almost all septa. Thin section M2888/2c, $\times$ 3,5.
- Fig. 6. Detail from fig. 3. Smooth septa with »lamellar« microstructure, $\times$ 7.

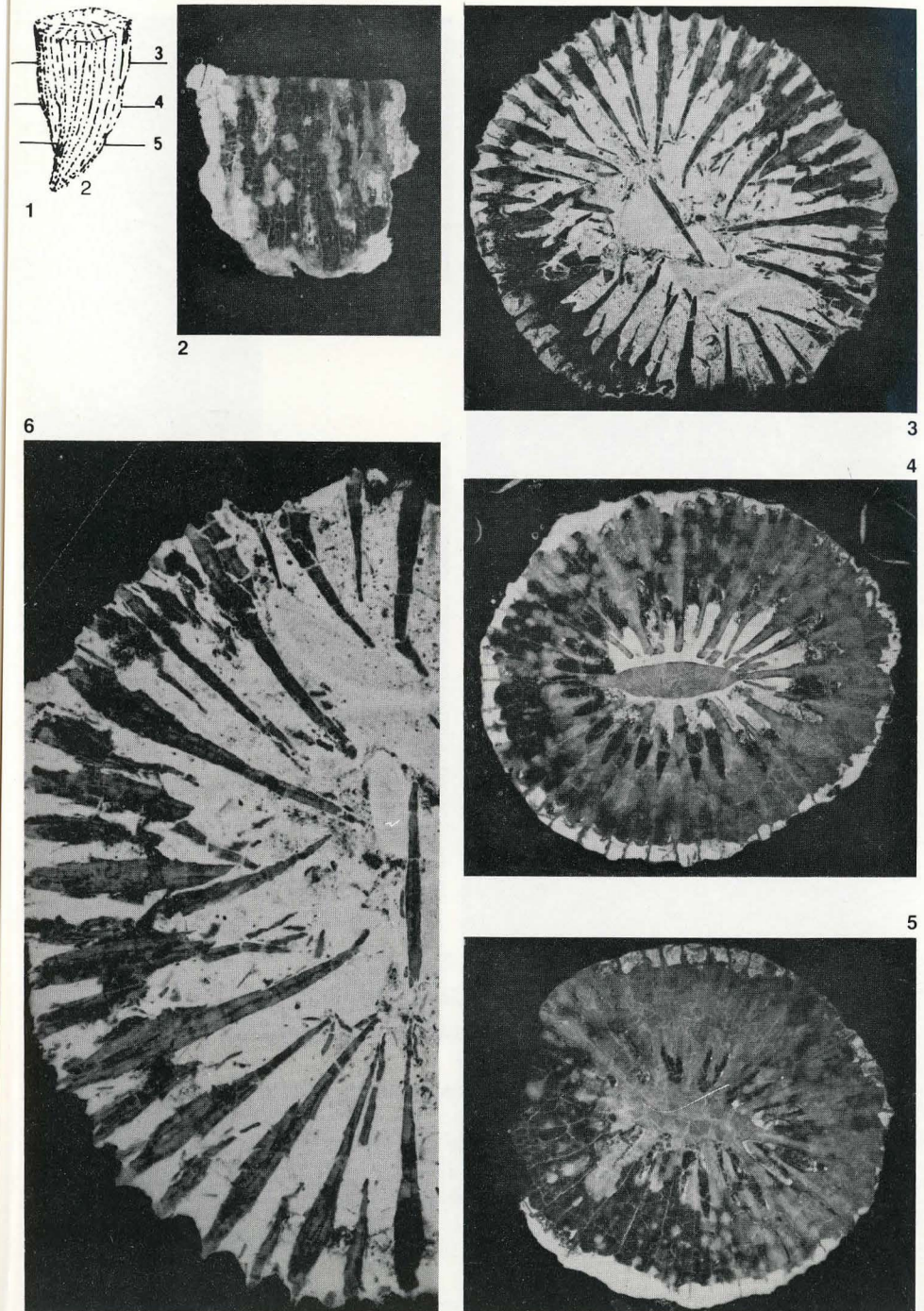


PLATE 21

Peplosmilia fromenteli ANGELIS d'OSSAT 1905

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1.-2. The surface of two cylindrical corallums, from side. Base is wide. Specimens M2865/6, and M2865/7, $\times 0,9$.
- Fig. 3. Transverse section of corallum in its upper part. Lateral side of septa is dentate, endotheca is rich. Thin section M2866/1 a, $\times 3,5$.
- Fig. 4. Transverse section of corallum in its middle part. Columella is thin and broken. Thin section M2866/1 d, $\times 3,5$.
- Fig. 5. Longitudinal section of corallum. Lateral side of septa is dentate, endotheca is rich. Thin section M2866/1 b, $\times 3,5$.
- Fig. 6. Detail from fig. 3, showing axial part of corallum, $\times 7$.

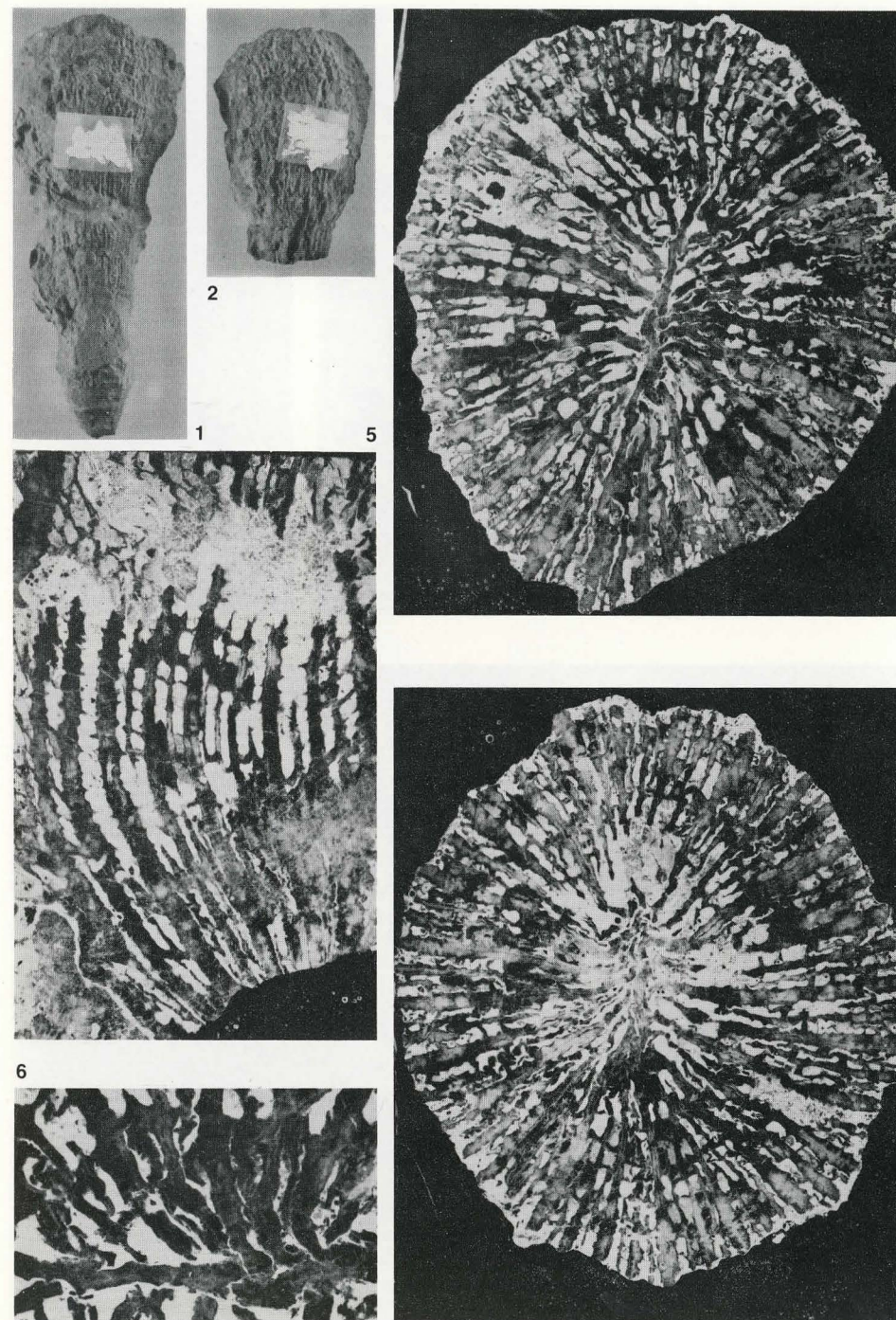
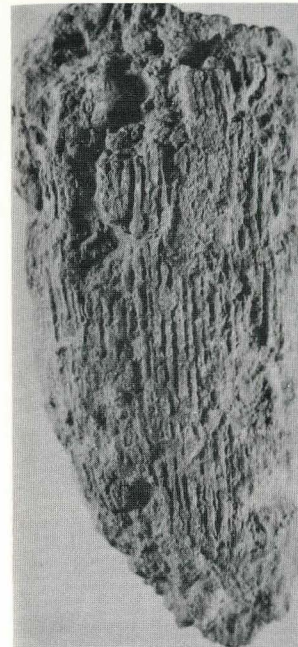
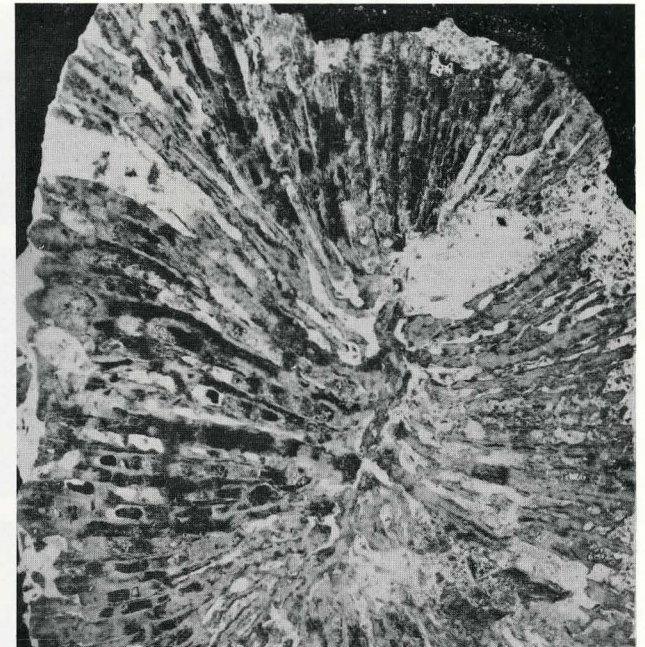


PLATE 22

Peplosmilia stutzi (KOBY 1896)

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of the cylindrical corallum, from side. Specimen M2859, $\times 0,9$.
 Fig. 2. Transverse section of corallum in its middle part. Columella is lamellar, septa are dentate. Thin section M2861/2b, $\times 3,5$.
 Fig. 3. Transverse section of corallum in its upper part. Columella is thin, lamellar. Thin section M2861/2a, $\times 3,5$.

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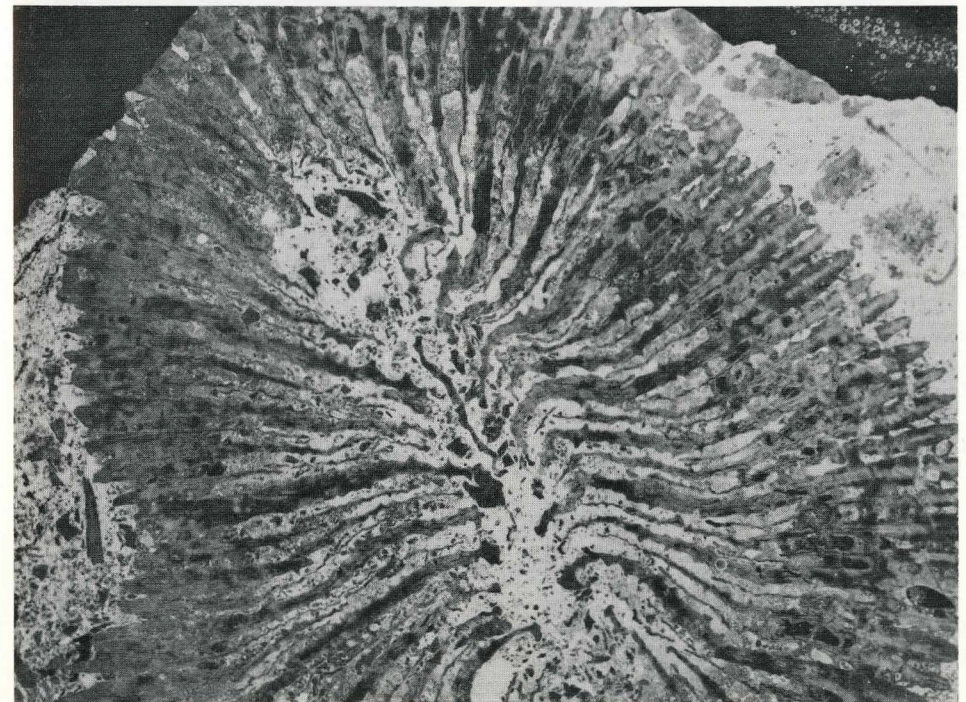


PLATE 23

Smilotrochus tuberosus (MILNE-EDWARDS & HAIME 1850)

Locality: Sopot, Barremian — Lower Aptian

- Fig. 1. The surface of the trochoid corallum. Base is sharp, the surface is thinly ribbed. Specimen M2953/2 is showing positions of thin sections, $\times 0,9$.
- Fig. 2. Transverse section of corallum in its upper part. There is no columella. Thin section M2953/2a, $\times 3,5$.
- Fig. 3. Transverse section of corallum in its middle part. Axial parts of septa are recrystallized, columella is absent. Thin section M2953/2b, $\times 3,5$.
- Fig. 4. Transverse section of corallum in its lower part. Thin section M2953/2c, $\times 3,5$.
- Fig. 5. Transverse section of corallum in its lowermost part. Thin section M2953/2d, $\times 3,5$.
- Fig. 6. Longitudinal section of corallum in its lower peripheral part, showing thin rare dissepiments. Thin section M2953/2e, $\times 3,5$.
- Fig. 7. The surface of the corallum. Specimen M2952/2, $\times 0,9$.

Meandroria pirotensis (Toula 1884)

Locality: Sopot, Barremian — Lower Aptian

- Fig. 8. The surface of the colony with the meandroid series. Specimen M2947/1, $\times 0,9$.
- Fig. 9. Transverse section of corallite series with lamellar columella. Thin section M2947/1a, $\times 7$.

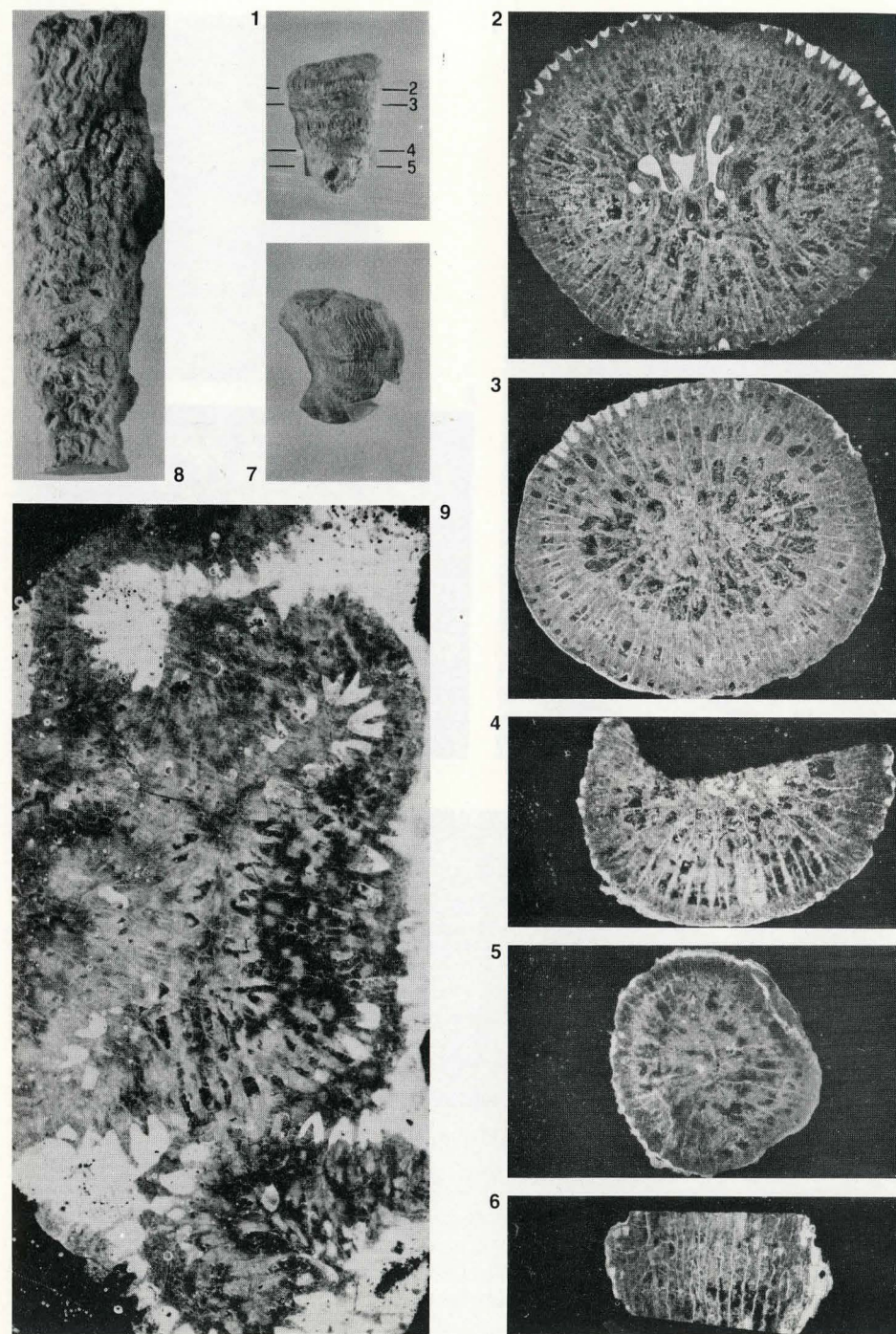


PLATE 24

Acanthogyra aptiana n. sp.

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Upper surface of semicircular cerioid colony. Specimen M2869 — holotype, $\times 0,9$.
 Fig. 2. Transverse section of »muther corallites« which along septa of the first cycle divide into more younger corallites. Thin section of holotype M2869 a, $\times 3,5$.
 Fig. 3. Longitudinal section of colony. Thin section of holotype M2869 c, $\times 3,5$.
 Fig. 4. Detail from fig. 2. Microstructure is of simple trabeculae in septa and in septotheca, as well, $\times 7$.

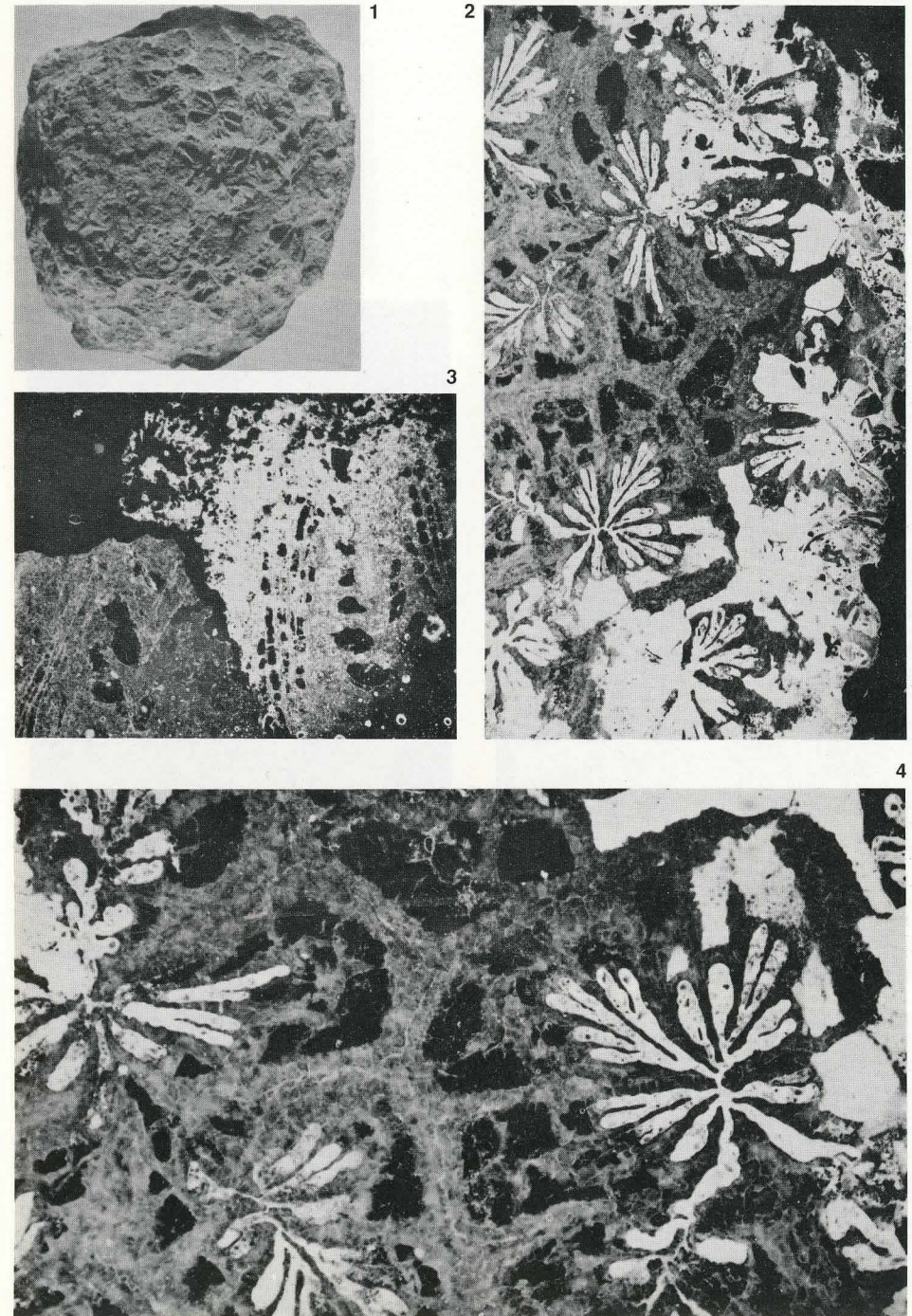


PLATE 25

Trochoidomeandra ovalis n. sp.

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Ribbed surface of the flabelate corallum, from side. Specimen M2902/1, $\times 0,9$.
 Fig. 2. Transverse section of corallum in its upper part. It shows more cycles of septa with long lateral dents or protuberances. Thin section of holotype M2903 e, $\times 3,5$.
 Fig. 3. Transverse section of corallum in its lower part. Thin section of holotype M2903 a, $\times 3,5$.
 Fig. 4. Longitudinal, somewhat oblique, section of corallum. Thin section of holotype M2903 b, $\times 3,5$.
 Fig. 5. Longitudinal section of corallum, showing laterall dents and thin dissepiments. Thin section of holotype M2903 f, $\times 3,5$.

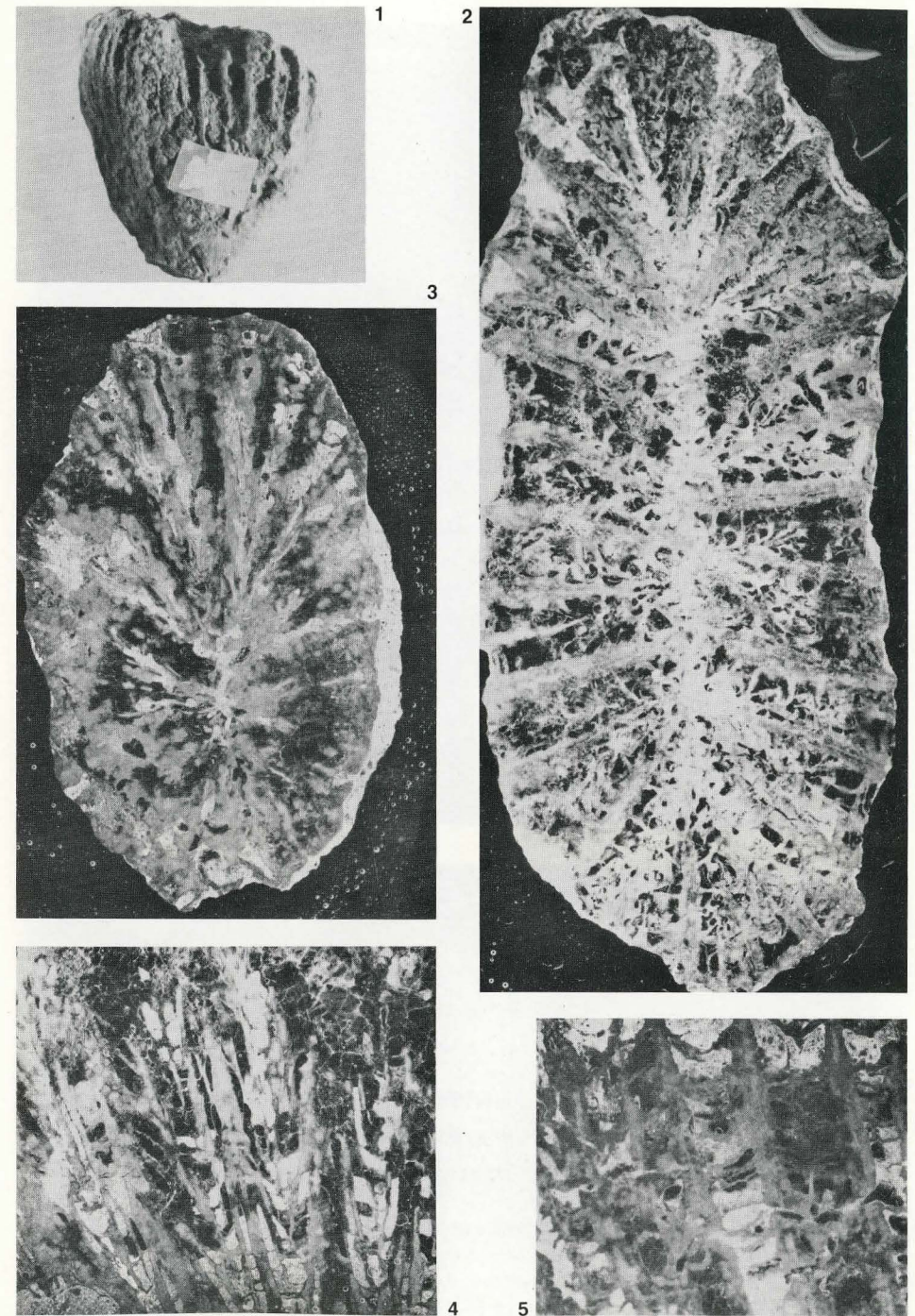


PLATE 26

Trochoidomeandra ovalis n. sp.

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Transverse section of corallum. Septa of several cycles can be distinguished. (Detail from Pl. 25, fig. 2). Thin section of holotype M2903b, $\times 7$.
- Fig. 2. Detail from longitudinal section of corallum. Microstructure is locally of simple trabeculae. Thin section of holotype M2903b, $\times 35$.



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PLATE 27

Palaeopsammia žljebinensis n. sp.

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Ceratoid corallum with fine ribbed surface. Specimen M2905/4, $\times 0,9$.
 Fig. 2. Another ceratoid corallum. Specimen M2906, $\times 0,9$.
 Fig. 3. Transverse section of corallum in its upper part. Thin section of holotype M2907b, $\times 3,5$.
 Fig. 4. Transverse section of corallum in its lower part. Thin section of holotype M2907d, $\times 3,5$.
 Fig. 5. Longitudinal axial section of corallum showing vesicular dissepiments. Thin section of holotype M2907a, $\times 3,5$.
 Fig. 6. The same as on fig. 3. Septa are anostomosing, dentate, wall is synapticulothecate, columella massive, parietal. $\times 7$.
 Fig. 7. Longitudinal peripheral section of corallum. Thin section of holotype M2907c, $\times 3,5$.
 Fig. 8. Detail from fig. 7. Microstructure is of simple trabeculae. Some synapticulae can be observed, $\times 35$.

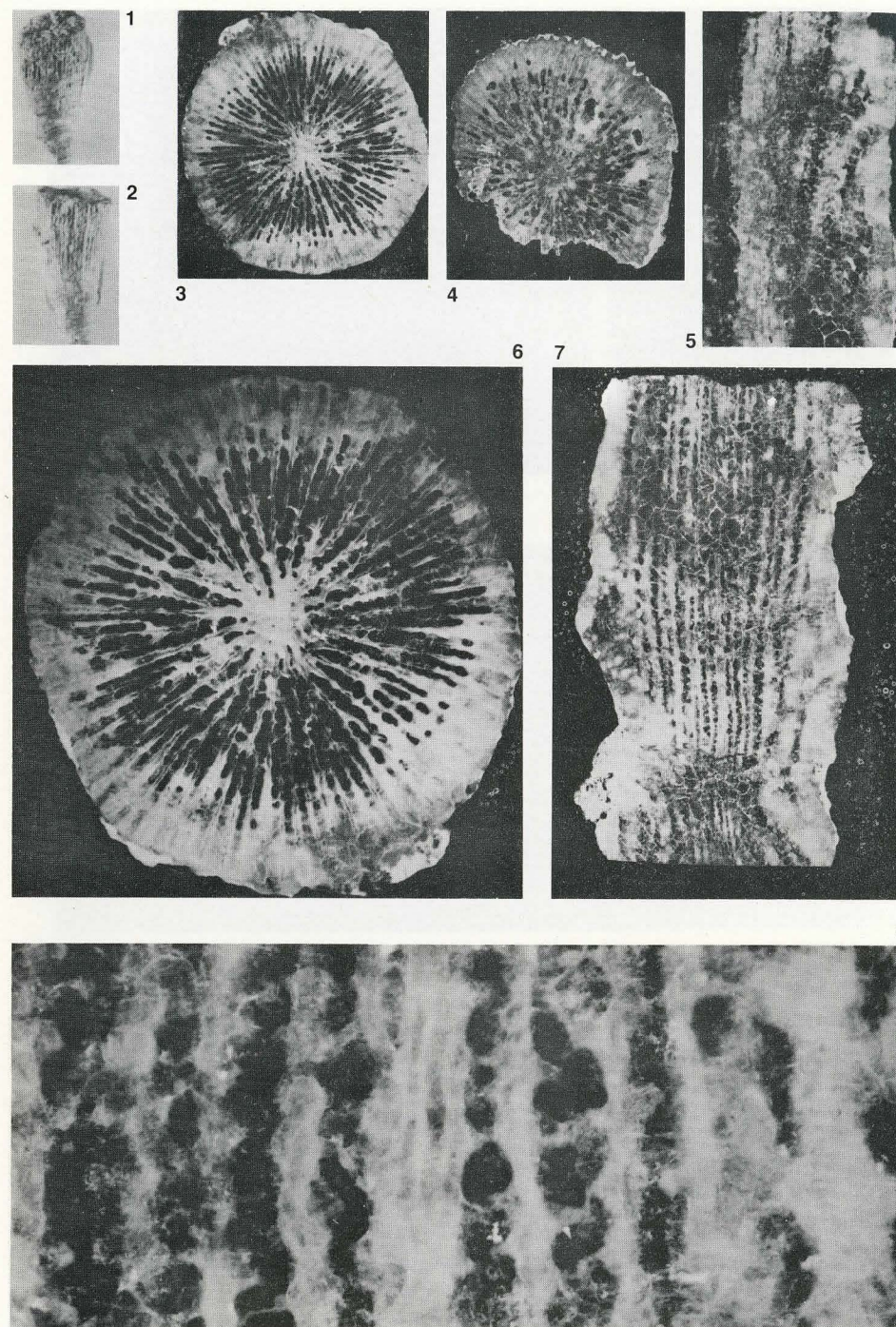


PLATE 28

Ovalastraea polygonalis ALLOITEAU 1958

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Transverse section of plocoid corallites. Inner wall is synapticuloseptotheca.
Thin section M2876/1a, $\times 3,5$.
- Fig. 2. Detail from fig. 1., $\times 7$.
- Fig. 3. Longitudinal section of colony. Endotheca is of vesicular dissepiments and synapticulae. Thin section M2876/1b, $\times 3,5$.
- Fig. 4. The colony from side. The surface is single; the individual corallites can not be distinguished. Specimen M2876/1, $\times 0,9$.
- Fig. 5. Detail from fig. 1. Microstructure is of large sclerodermites, $\times 35$.

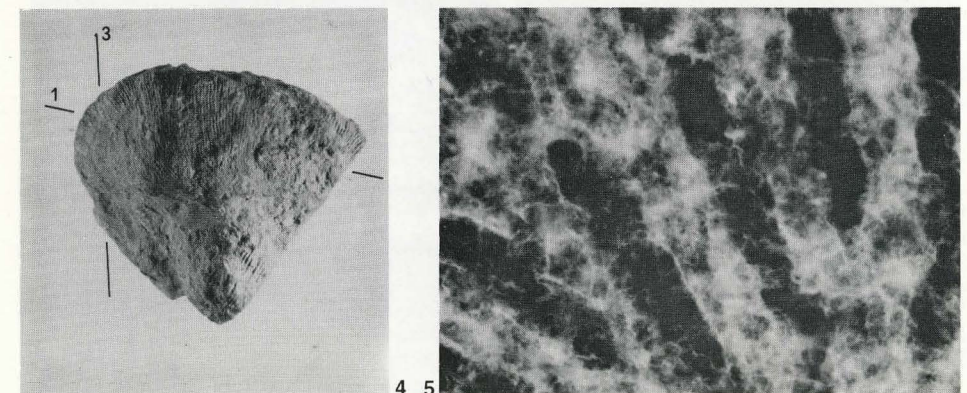
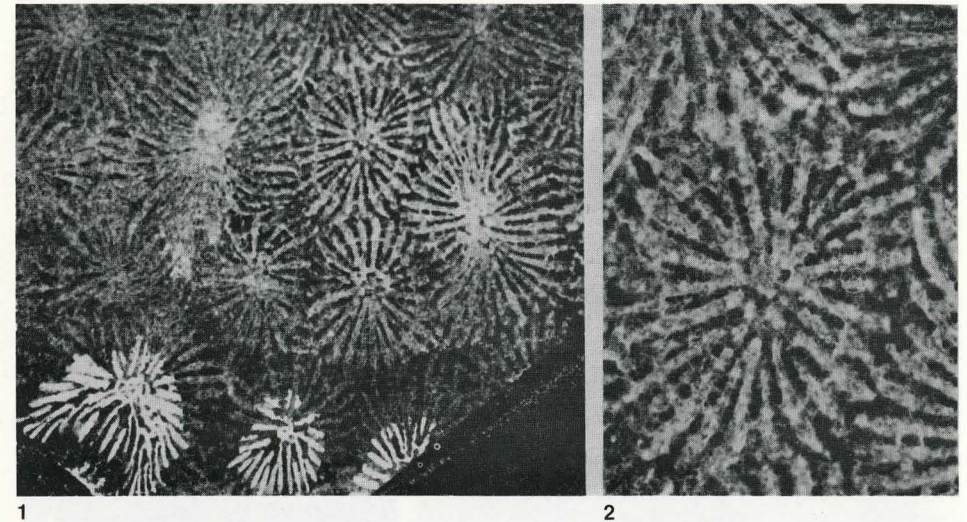
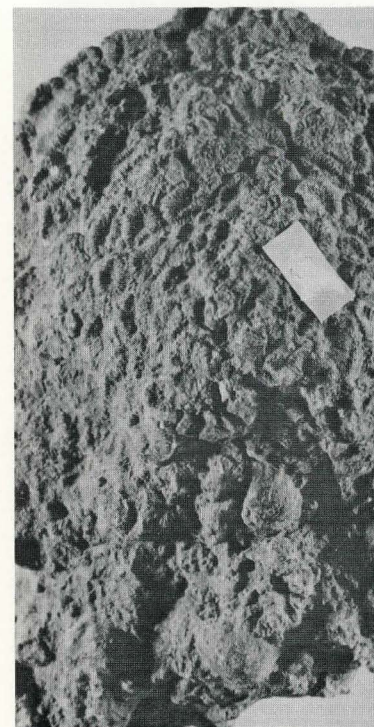


PLATE 29

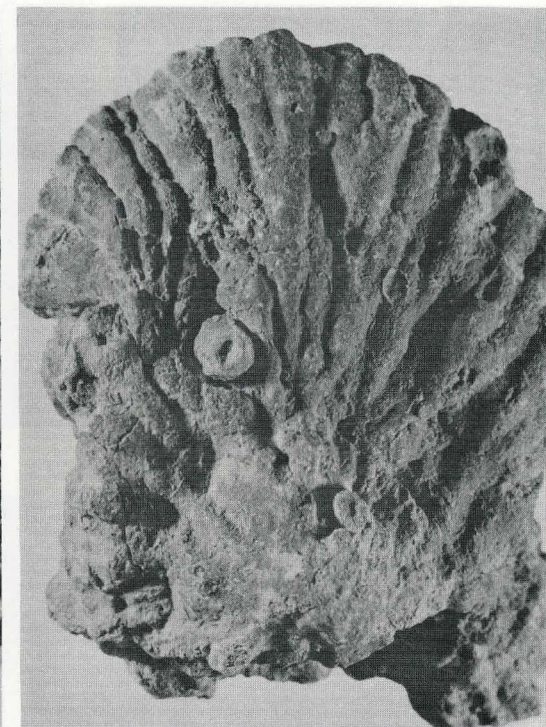
Plesiofavia dubia (FROMENTEL 1857)

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of the colony from above with plocoid calices.
Specimen M2832/1, $\times 0,9$.
- Fig. 2. The surface of the same colony from side. Individual corallites can be distinguished.
Specimen M2832/1, $\times 0,9$.
- Fig. 3. Transverse section of corallites. Septa have pores only in their axial parts. The wall is incomplete synapticulotheca or paratheca. Thin section M2833b, $\times 3,5$.
- Fig. 4. Longitudinal section of corallites. Structure of septa and endotheca are the same as in previous species i.e. in *Ovalastraea polygonalis*. Thin section M2833a, $\times 3,5$.

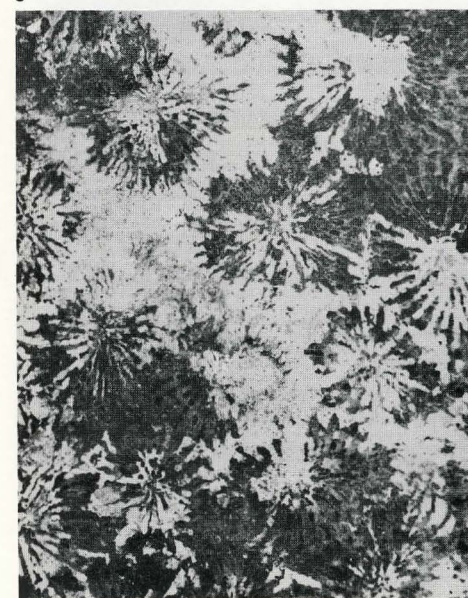


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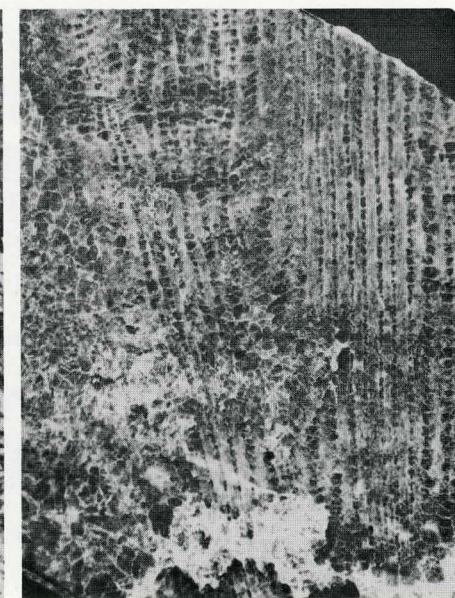
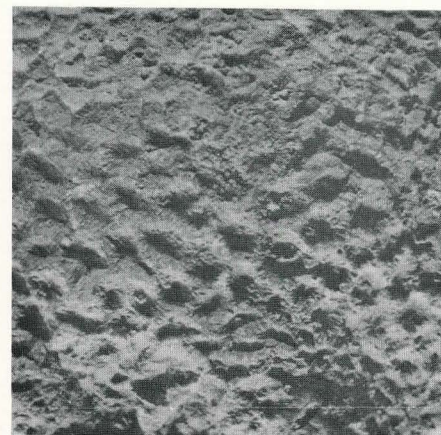


PLATE 30

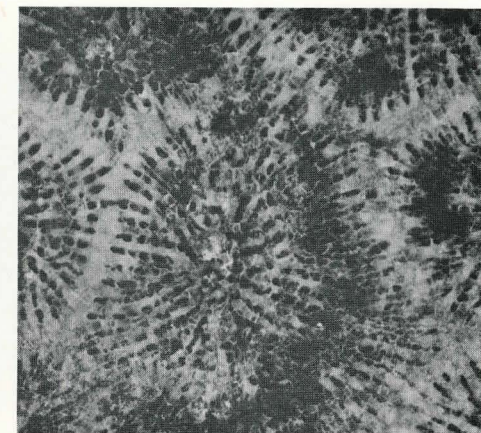
Latiastrea kaufmanni (Koby 1897)

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of the colony with polygonal and prolonged corallites.
Specimen M2854/2, $\times 0,9$.
- Fig. 2. Detail from fig. 3. with one corallite. Septa are strongly dentate, columella is parietal.
Thin section M2856a, $\times 7$.
- Fig. 3. Transverse section of colony. Corallites are mainly monocentric, some of them little prolonged. The wall is complete synaptuloseptotheca.
Thin section M2856a, $\times 3,5$.
- Fig. 4. Longitudinal section of corallites. Endotheca is of vesicular dissepiments and synapticulae. Thin section M2856b, $\times 3,5$.
- Fig. 5. Detail from fig. 4, $\times 7$.

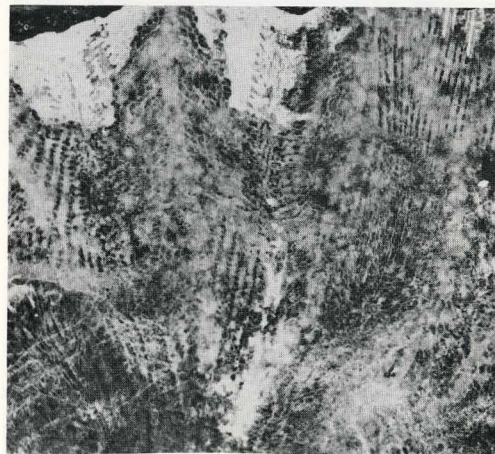
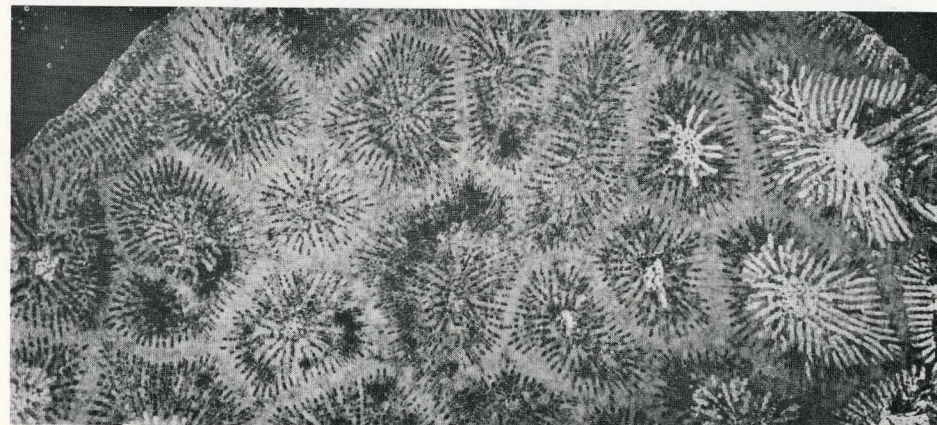


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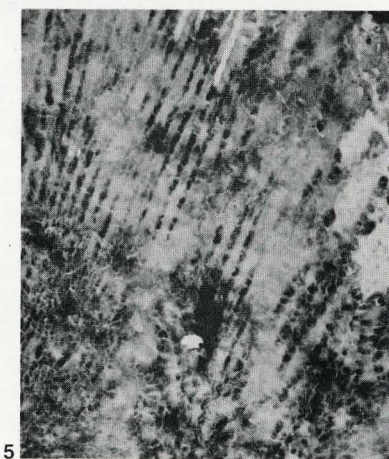


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PLATE 31

Latiastrea kaufmanni (KOBY 1897)

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Longitudinal section of colony. Thin section M2855c, $\times 3,5$.
 Fig. 2. Transverse section of colony. The wall is partly incomplete, septa more confluent as in specimen shown on Pl. 30, fig. 2, 3. Thin section M2855b, $\times 3,5$.
 Fig. 3. Detail from fig. 1. Septa are dentate, vesicular dissepiments and synapticulae occur, $\times 7$.

Thamnoseris carpathica MORYCOWA 1971

Locality: Skuvija, Barremian — Lower Aptian

- Fig. 4. Detail from fig. 5., $\times 7$.
 Fig. 5. Transverse section of corallites. They are round to polygonal. The wall is incomplete synapticuloseptotheca. Between some corallites there is no wall. Thin section M2806a, $\times 3,5$.

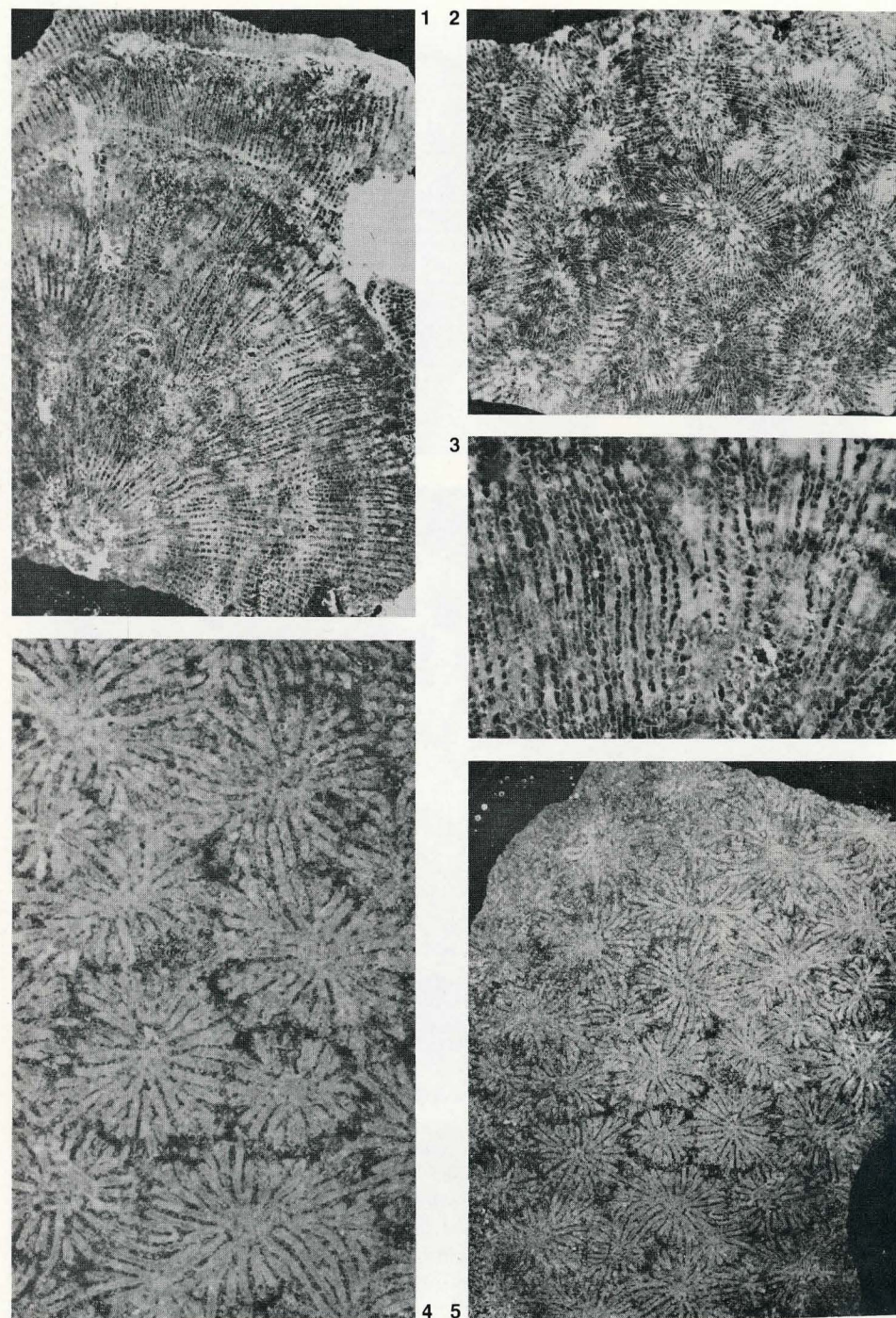


PLATE 32

Gyrodendron serbica n. sp.

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of the colony from side, where it is ribbed, with free corallites. Specimen — holotype M2873, $\times 0,9$.
- Fig. 2. The colony from above. Corallites grow irregularly in more directions. Holotype M2873, $\times 0,9$.
- Fig. 3. Transverse section of colony. Between centres there are the septa of valleys. Thin section of holotype M2873b, $\times 3,5$.
- Fig. 4. Longitudinal section of one corallite. Endotheca is of vesicular dissepiments and synapticalae. Thin section of holotype M2873c, $\times 3,5$.
- Fig. 5. Transverse section of one series of corallites. Septa are dentate. They reach the centres where there is no columella. Septa of valleys. Thin section M2875/1, $\times 3,5$.

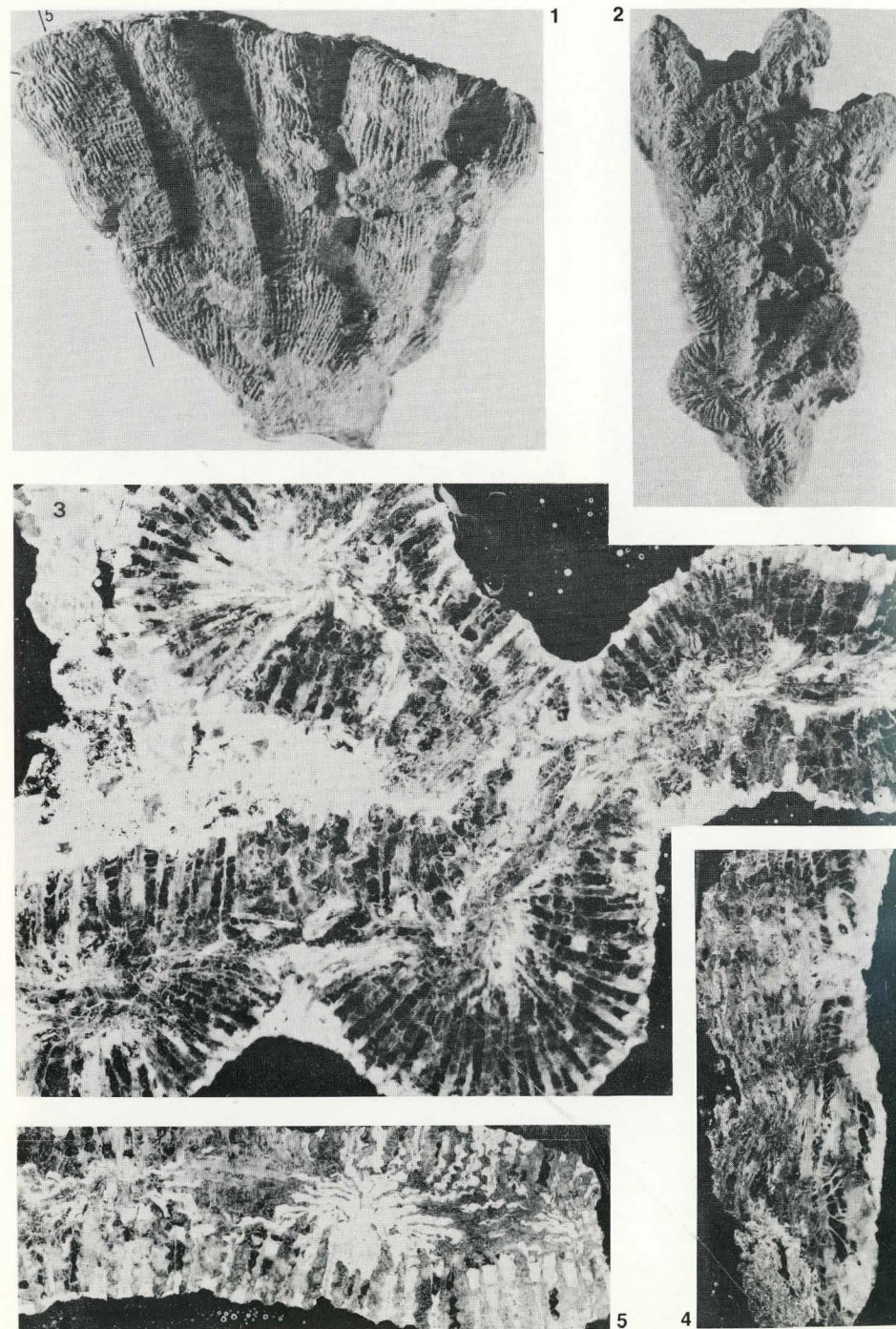


PLATE 33

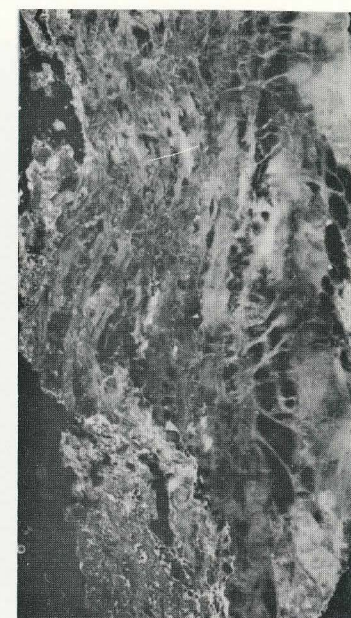
Gyrodendron serbica n. sp.

Locality: Žljebine, Barremian — Lower Aptian

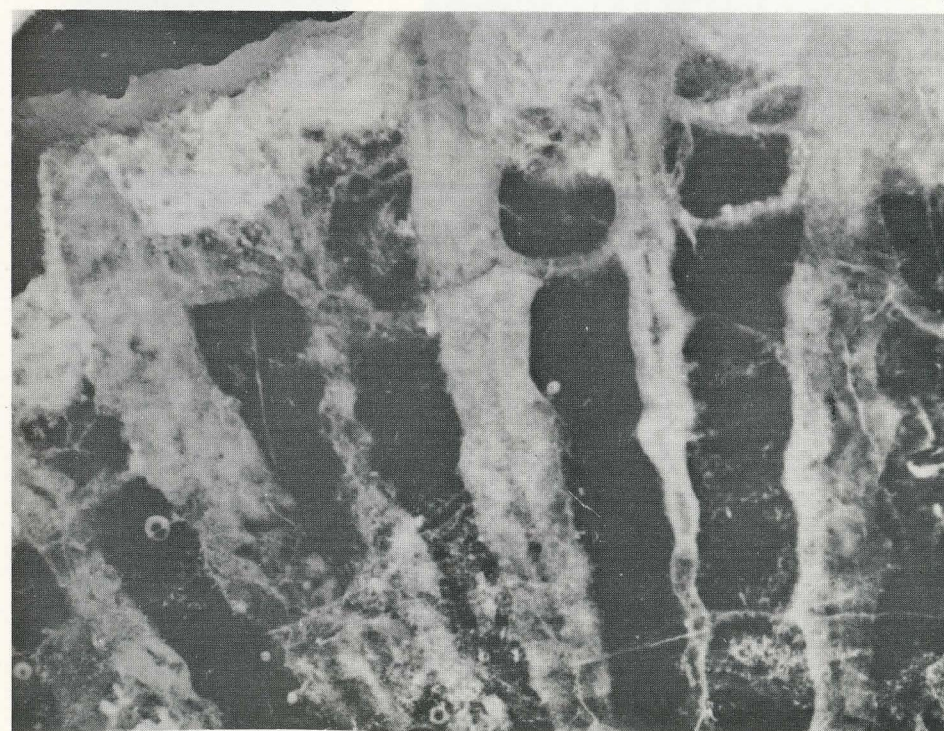
- Fig. 1. Transverse section of one corallite. Septa reach to the centre. Thin section of holotype M2873b, $\times 7$.
- Fig. 2. Longitudinal section of one corallite. Septa are dentate. Endotheca is of vesicular dissepiments and synapticalae. Thin section of holotype M2873c, $\times 7$.
- Fig. 3. Detail from the transverse section of corallite. Microstructure is of simple trabeculae which are thickened at lateral dents. Thin section of holotype M2873b, $\times 35$.



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PLATE 34

Baryphyllia haimeii FROMENTEL 1857

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of the colony with plocoid corallites. Specimen M2895, $\times 1,3$.
 Fig. 2. The surface of the same colony from another side, $\times 3,9$.
 Fig. 3. Transverse section of corallites with subconfluent septa and large spongy compact columella. Thin section M 2895 a, $\times 3,5$.
 Fig. 4. The same as on fig. 3, enlarged $\times 7$.

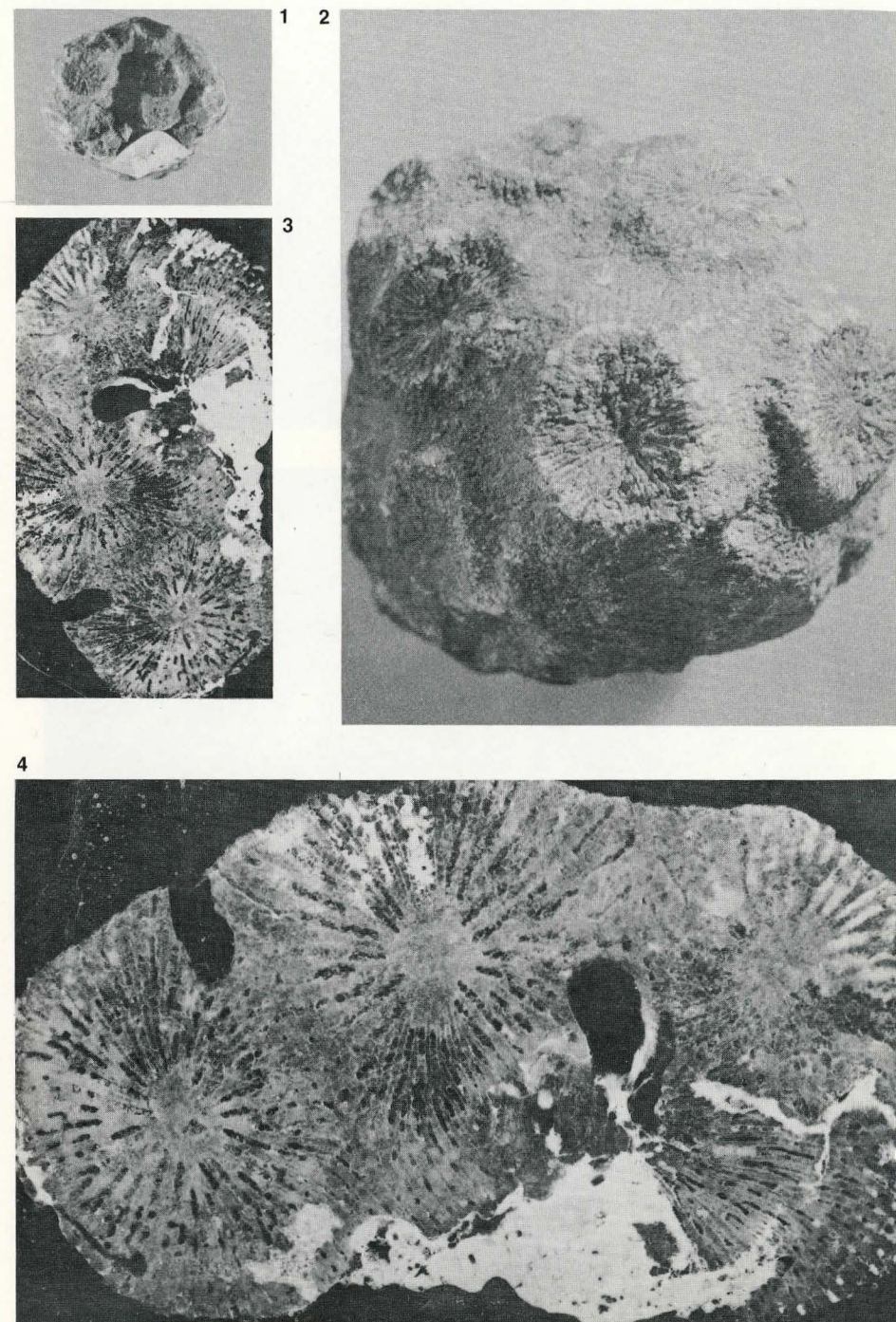


PLATE 35

Meandrophyllia cf. *lotharinga* (MICHELIN 1843)

Locality: brdo Miro, Barremian — Lower Aptian

Fig. 1. Transverse section of colony. Corallites are partly monocentric partly in series. Columella is large, spongy. Septa are subconfluent, no wall, except of some synapticulae. Thin section M2915 c, $\times 3,5$.

Meandraraea meandroides KOBY 1898

Locality: Žljebine, Barremian — Lower Aptian

Fig. 2. Transverse section of funnel-shaped colony showing corallites in subconcentric series, the first corallite being out of centre. Between series there are collines in which confluent septa occur. There is no wall. Thin section M2830 a, $\times 3,5$.

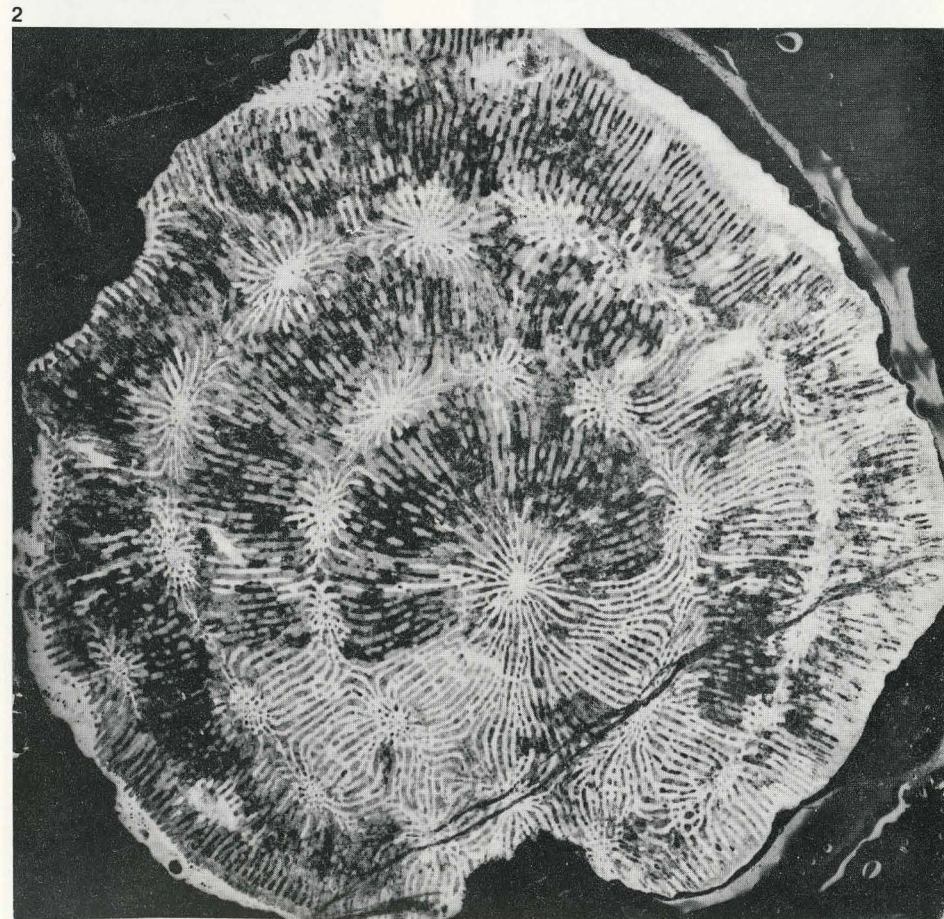


PLATE 36

Meandraraea duboisi (KARAKAŠ 1907)

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of funnel-shaped colony from above. Subconcentric series and collines can be seen. Specimen M2829/6, $\times 0,9$.
- Fig. 2. Longitudinal section of colony. Lateral side of septa is strongly dentate. Thin section M2828/1 a, $\times 3,5$.
- Fig. 3. Detail from fig. 2, $\times 7$.
- Fig. 4. Transverse section of colony with corallites in series and confluent septa in collines. Thin section M2828/1 b, $\times 3,5$.

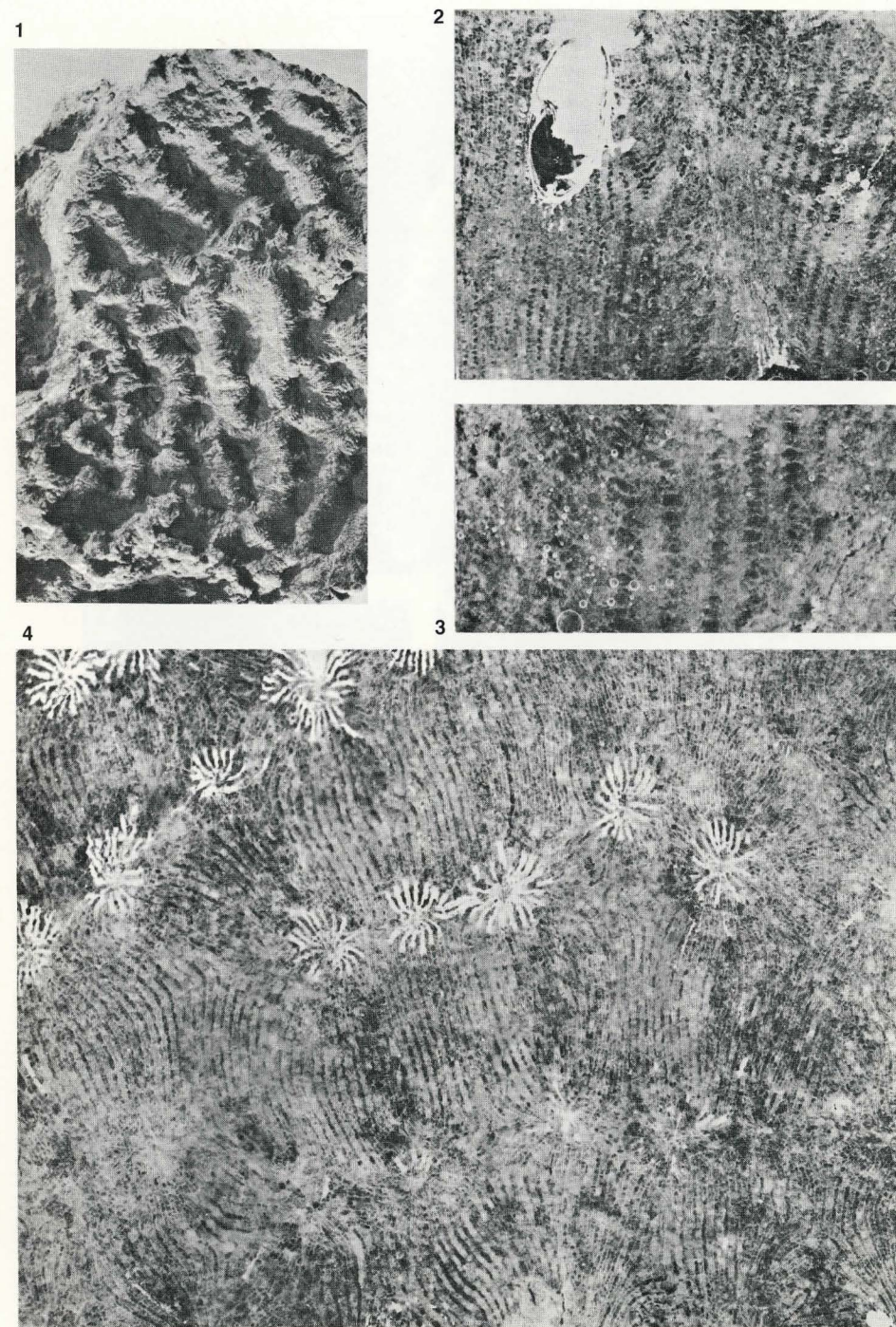


PLATE 37

Truncoconus inclinatus n. gen. n. sp.

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Upper surface of corallum with roundish calice. Specimen M2898/1, $\times 0,9$.
 Fig. 2. Schematic drawn of corallum with signed levels of thin sections.
 After holotype M2897, $\times$ ca 1.
 Fig. 3. Transverse section of corallum in its upper part. Septa have rare pores. There is no columella, fossula is filled up with the septa of the first and second cycles. Thin section of holotype M2897b, $\times 3,5$.
 Fig. 4. Transverse section of corallum in its lower part. Septa are compact, endotheca is frequent. Thin section of holotype M2897c, $\times 3,5$.
 Fig. 5. Longitudinal section of corallum in its lower axial part. Tabulate and long dissepiments are visible. Thin section of holotype M2897e, $\times 3,5$.
 Fig. 6. Longitudinal section of corallum in its lower peripheral part. Thin section of holotype M2897d, $\times 3,5$.

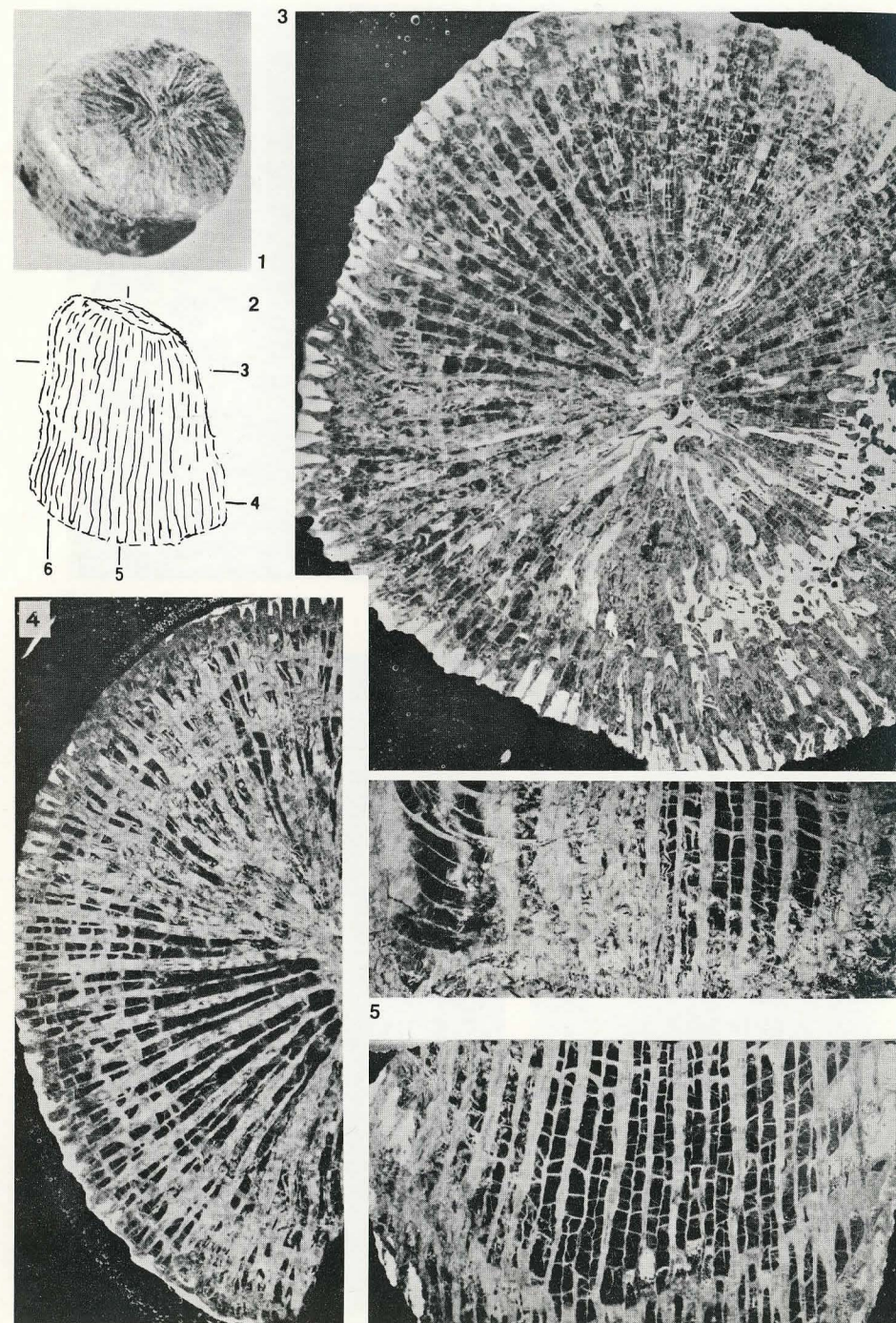


PLATE 38

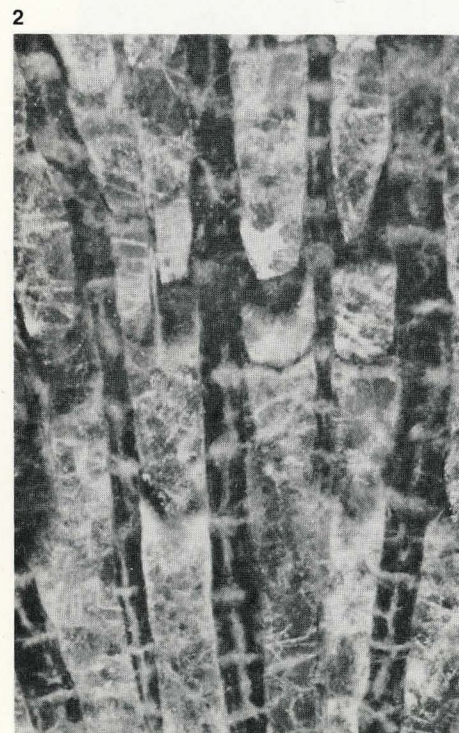
Truncoconus inclinatus n. gen. n. sp.

Locality: Žljebine, Barremian — Lower Aptian

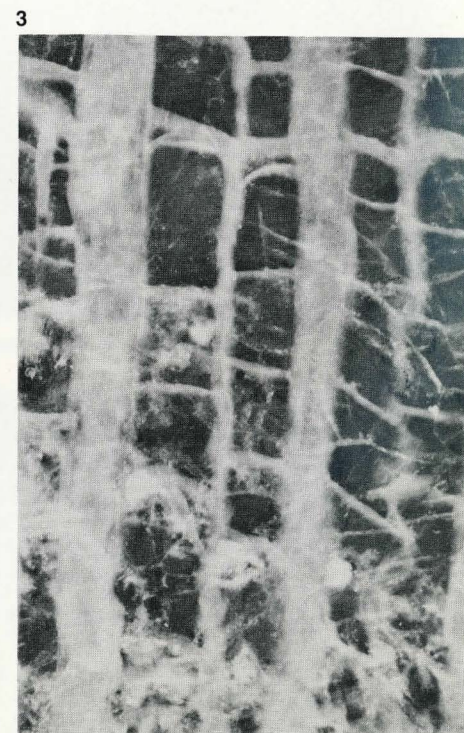
- Fig. 1. Part of the transverse section of corallum in its upper part. (Detail from Pl. 37, fig. 3).
Thin section of holotype M2897b, $\times 7$.
- Fig. 2. Detail from fig. 1. Microstructure is of simple trabeculae with thickenings, $\times 17,5$.
- Fig. 3. Detail from the longitudinal section of corallum. (on Pl. 37, fig. 5). In this section microstructure can not be seen. Note difference in thickness of septa.
Thin section of holotype M2897e, $\times 17,5$.



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PLATE 39

Thamnasteria cotteaui FROMENTEL 1857

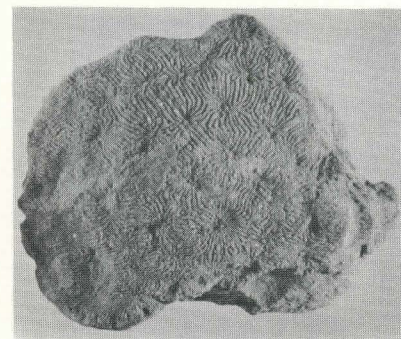
Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of the colony. Corallites tend to concentric arrangement. Columella is large, styliform. Specimen M2871, $\times 0,9$.
- Fig. 2. Transverse section of colony. Septa are very thick, columella sometimes looks to be perforated. Thin section M2872b, $\times 3,5$.

Siderastraea (Siderofungia) irregularis FELIX 1891

Locality: Skuvija, Barremian — Lower Aptian

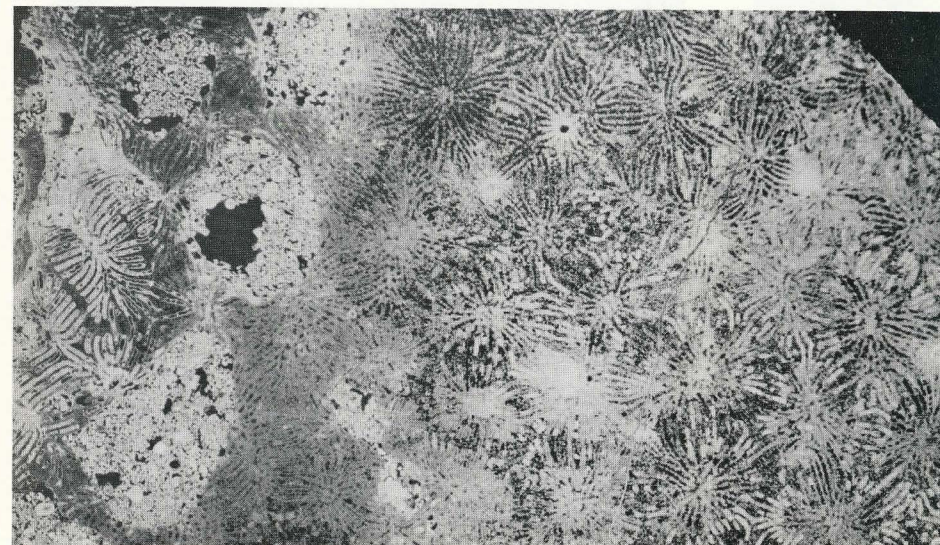
- Fig. 3. Transverse section of corallites. Septa are mainly confluent. Columella is spongy. Thin section M2788b, $\times 3,5$.
- Fig. 4. Longitudinal section of corallites. Endotheca is rich. Thin section M2788a, $\times 3,5$.



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PLATE 40

Mesomorpha excavata (d' ORBIGNY 1850)

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Radial section of the cylindrical colony. In the middle we can see transverse section of corallites, in the periphery the longitudinal. Thin section M2900a, $\times 3,5$.
- Fig. 2. Vertical section of cylindrical colony, showing transverse section of corallites in the lower part, and longitudinal section in the upper part. Corallites grow radially upwards and outwards. Thin section M2900d, $\times 3,5$.
- Fig. 3. Transverse section of corallites in tangential section of colony. M2900b, $\times 3,5$.
- Fig. 4. Detail from fig. 3. Septa of the first cycle reach to the centre of the corallites. Younger septa are in the periphery and in peritheca where they are joined by synapticulae, $\times 7$.
- Fig. 5. Detail from fig. 1, $\times 7$.

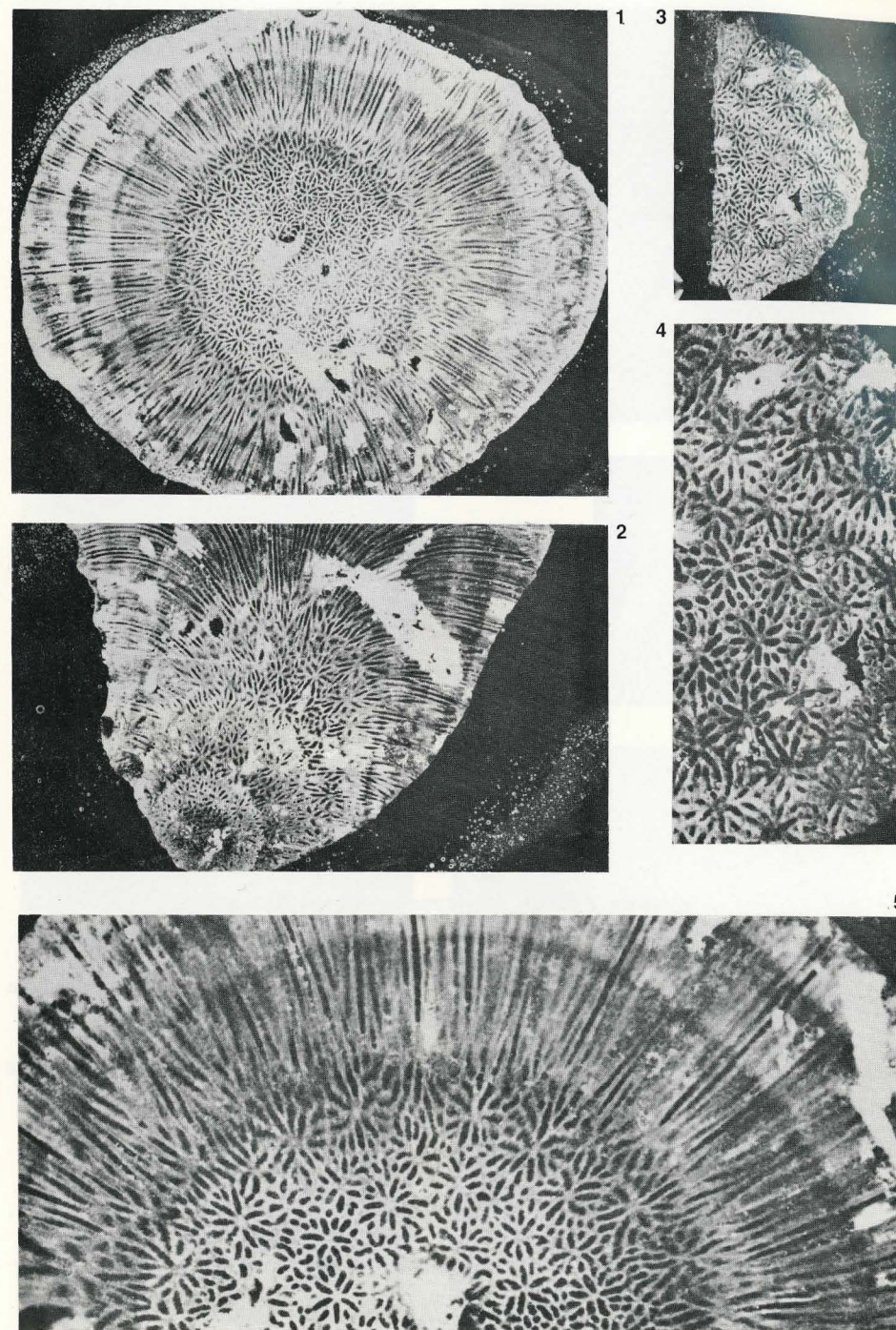


PLATE 41

Microsolena guttata Koby 1889

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. The surface of the massive colony. Specimen M2840/1, $\times 0,9$.
 Fig. 2. Detail from the surface of the colony. Dense confluent septa are similar to those of the genus *Synastraea*. But in thin sections (figs. 3, 4, 5) septa are strongly perforated. The same specimen as fig. 1., $\times ca\ 3,5$.
 Fig. 3. Transverse section of corallites. Here the strong uniform perforation of septa can be seen. Thin section M2840/1 a, $\times 3,5$.
 Fig. 4. Longitudinal section of the colony. Thin section M2840/1 b, $\times 3,5$.
 Fig. 5. Detail from fig. 3., $\times 7$.

Fungiastraea (Fungiastraeopsis) subpolygonalis Morycowa 1971

Locality: Skuvija, Barremian — Lower Aptian

- Fig. 6. Transverse section of corallites. Thin section M2801 a, $\times 3,5$.

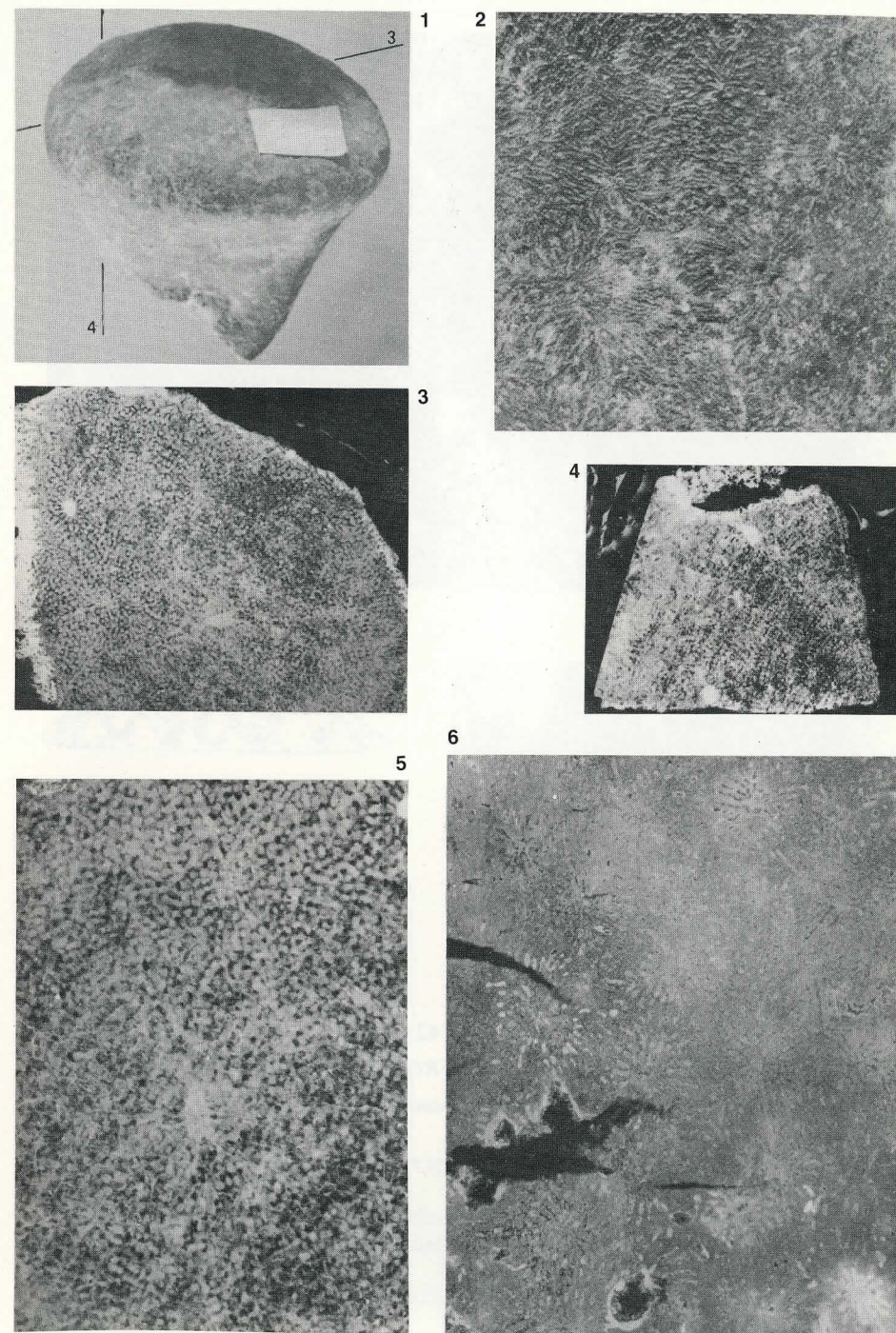
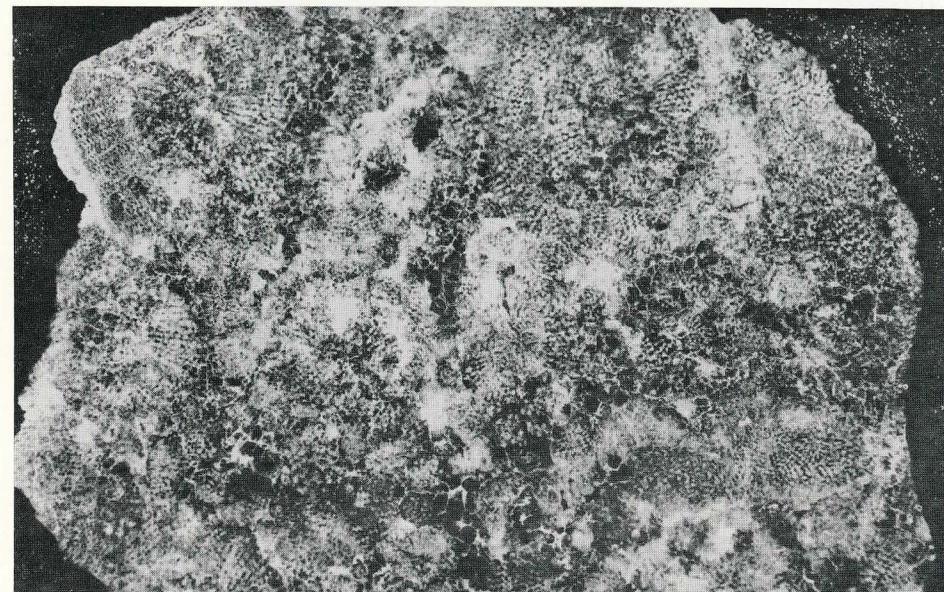


PLATE 42

Polyphylloseris convexa FROMENTEL 1857

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 1. Transverse section of colony showing large round corallites with subconfluent septa.
Thin section M2883/1 a, $\times 3,5$.
- Fig. 2. Detail from fig. 1. Lateral dents and pennulae can be seen, $\times 7$.
- Fig. 3. Schematic drawn of the colony from side. Hemisphaerical shape with mamelons on the surface. After specimen M2883/1, $\times$ ca 1.
- Fig. 4. The surface of the colony from above. Calices are arised like mamelons.
Specimen M2826/1, $\times 0,9$.

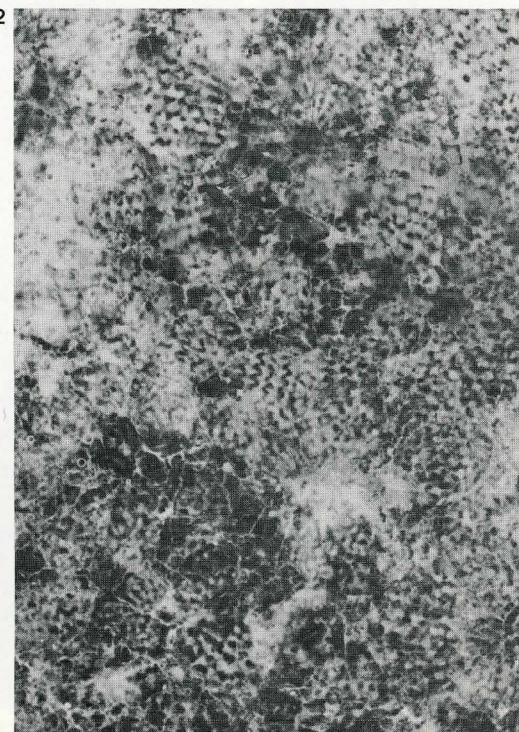


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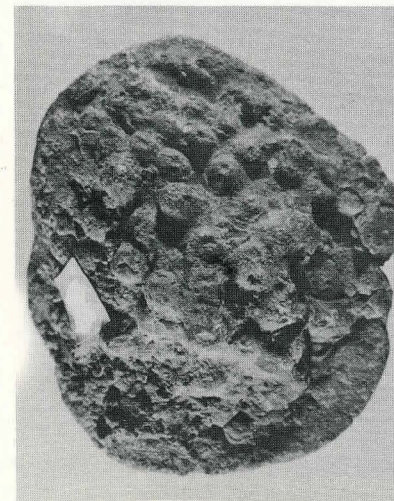
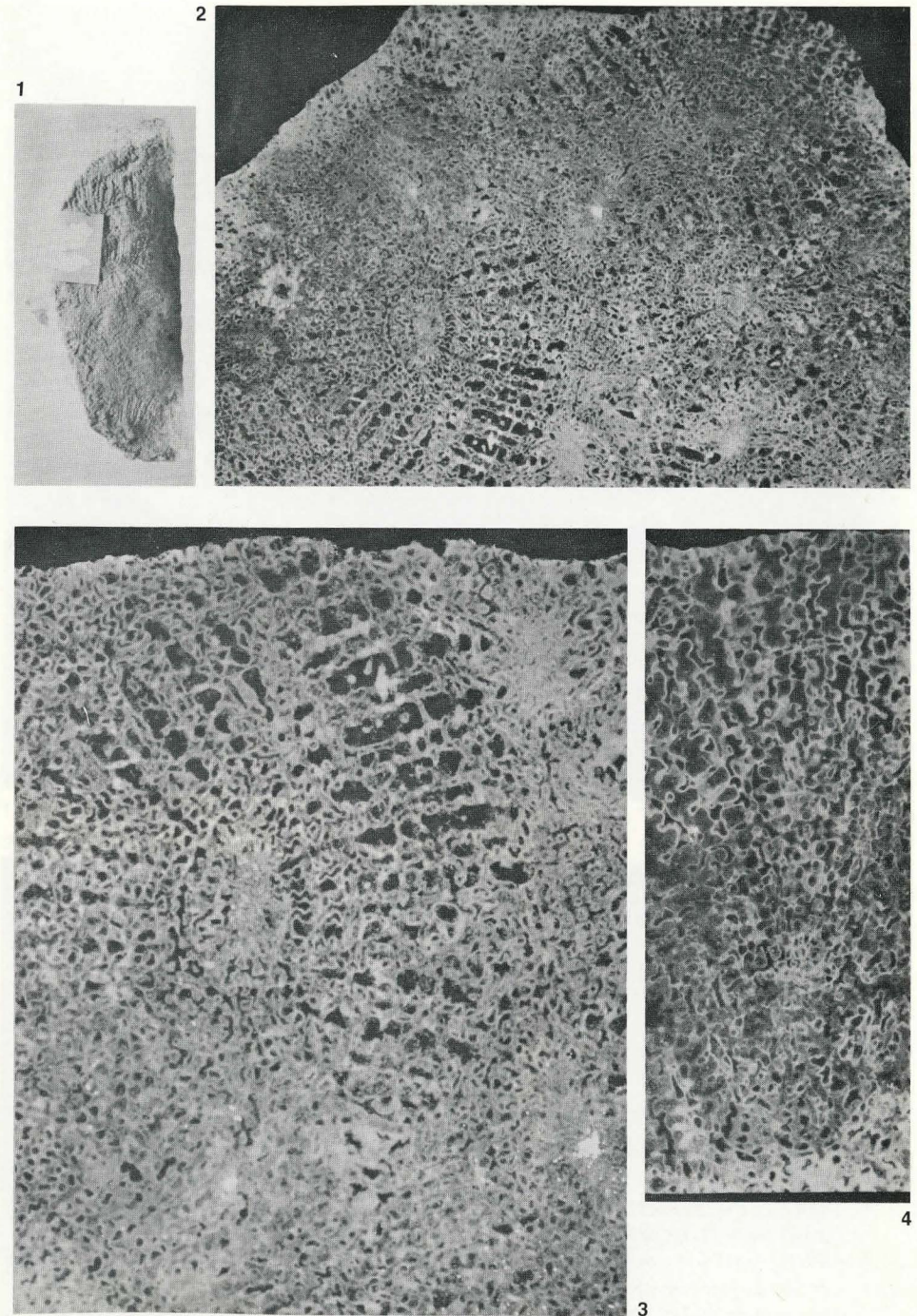


PLATE 43

Microsolenastraea balcanica n. gen. n. sp.

Locality: Skuvija, Barremian — Lower Aptian



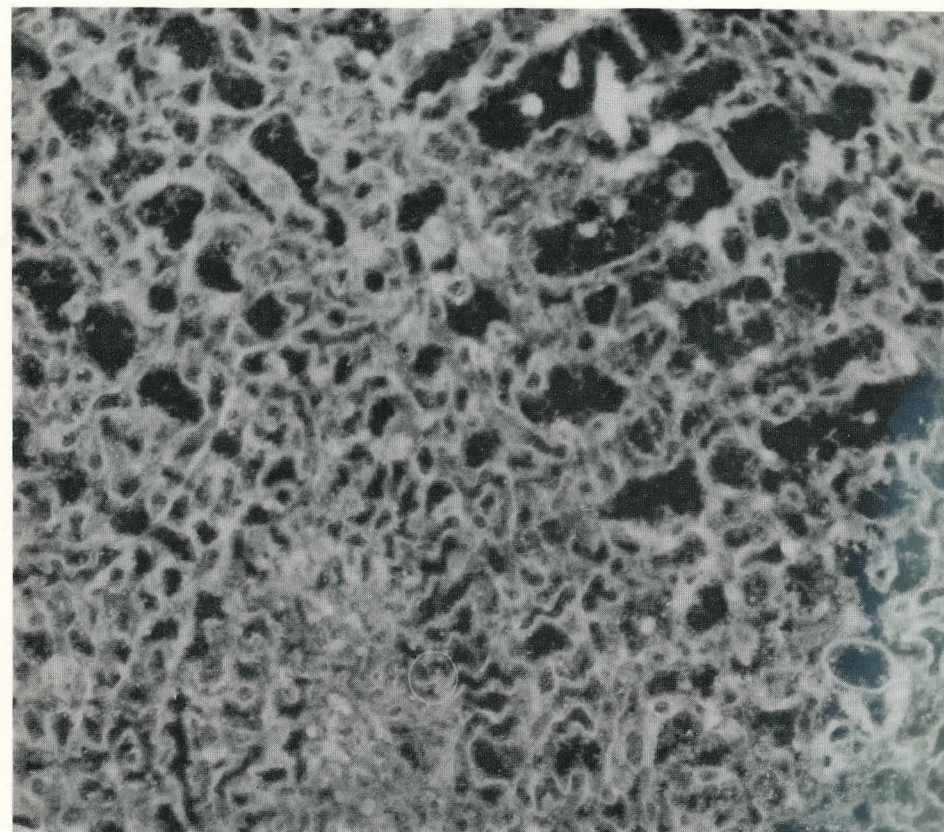
- Fig. 1. The surface of the colony from above. Specimen M2792 — holotype, $\times 0,9$.
 Fig. 2. Transverse section of the colony. Corallites are unequally large, septa are confluent, double, perforated, with lateral dents and pennulae. Columella is dense, spongy. Thin section of the holotype M2792 a, $\times 3,5$.
 Fig. 3. Detail from fig. 2., $\times 7$.
 Fig. 4. Longitudinal section of the colony. Septa look like empty laminae, because of recrystallization of trabeculae and sclerodermites. Locally we can see synapticulae and vesicular or blistered dissepiments. Thin section of holotype M2792 b, $\times 7$.

PLATE 44

Microsolenastraea balcanica n. gen. n. sp.

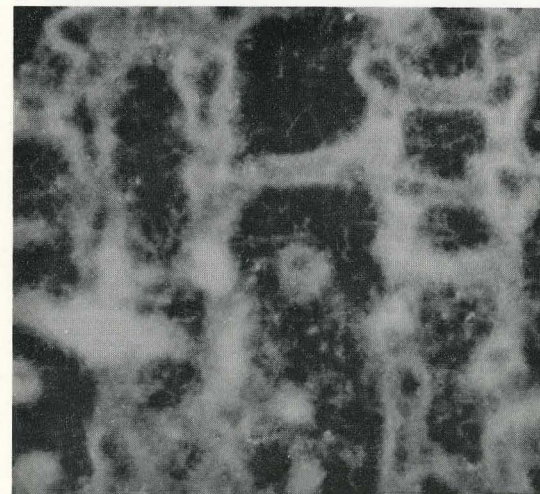
Locality: Skuvija, Barremian — Lower Aptian

- Fig. 1. Transverse section of part of the corallite. Septa are double, columella spongy, dense.
 (detail from Pl. 43, figs. 2, 3). Thin section of holotype M2792a, $\times 17,5$.
 Fig. 2. Detail from fig. 1., $\times 35$.
 Fig. 3. Transverse section of another colony. Here locally sclerodermites are well preserved.
 Thin section M2791b, $\times 3,5$.



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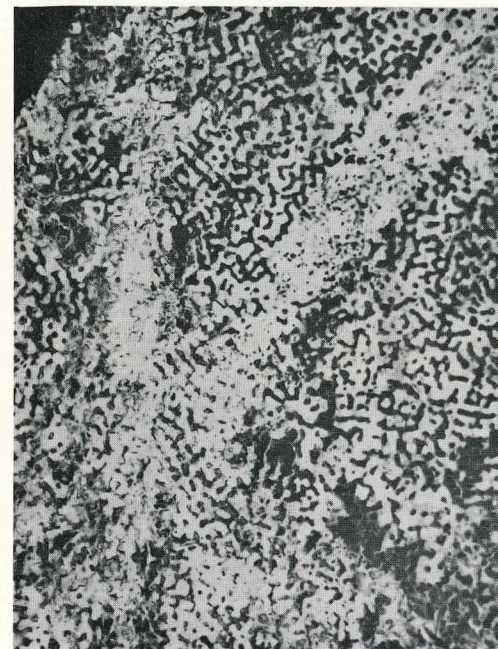


PLATE 45

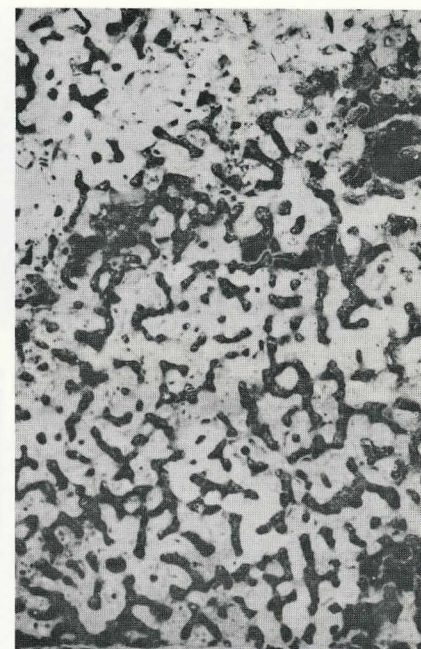
Actinaraea cf. *tenuis* MORYCOWA 1971

Locality: Planinica, Barremian — Lower Aptian

- Fig. 1. Transverse section of colony. Feeble expressed corallites are in large vermiculate peritheca. This structure is similar to that of Spongiomorphaidea.
Thin section M2823 a, $\times 3,5$.
- Fig. 2. Longitudinal section of colony. Septa are connected with synapticulae.
Thin section M2823 b, $\times 3,5$.
- Fig. 3. Detail from fig. 1., $\times 7$.
- Fig. 4. Detail from fig. 2., $\times 7$.

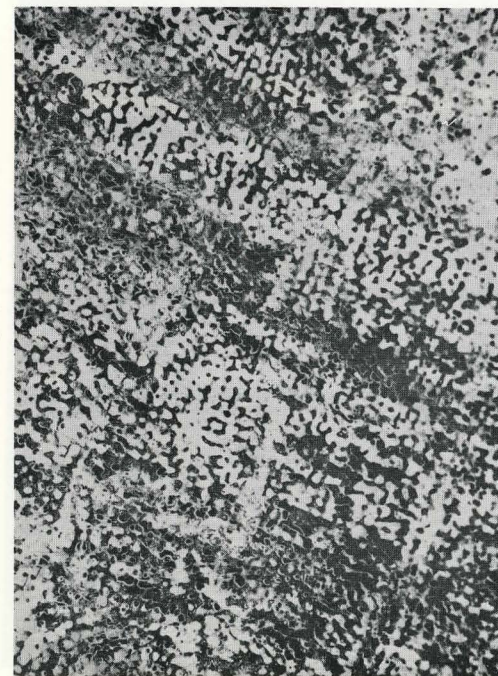


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PLATE 46

Thamnaraea sp.

Locality: Sopot, Barremian — Lower Aptian

Fig. 1. Small massive colony of cylindrical shape. Corallites are arranged irregularly on the surface. Specimen M2956/1, $\times 0,9$.

Thamnaraea mammelonata n. sp.

Locality: Žljebine, Barremian — Lower Aptian

- Fig. 2. The surface of the cylindrical colony. Corallites are prominent mamelons. Specimen M2882 — holotype, $\times 0,9$.
- Fig. 3. Tangential section of colony showing transverse sections of corallites. Thin section of holotype M2882 d, $\times 3,5$.
- Fig. 4. Longitudinal section of colony showing fan-shaped growth of corallites. Thin section of holotype M2882 f, $\times 3,5$.
- Fig. 5. Transverse section of corallites close to the surface of the colony. Something winding septa reach near the centre. In peritheca they are subconfluent. Thin section of holotype M2882 a, $\times 3,5$.
- Fig. 6. Transverse section of cylindrical colony showing radial growth of corallites. Septa have pennulae. Thin section of holotype M2882 e, $\times 3,5$.

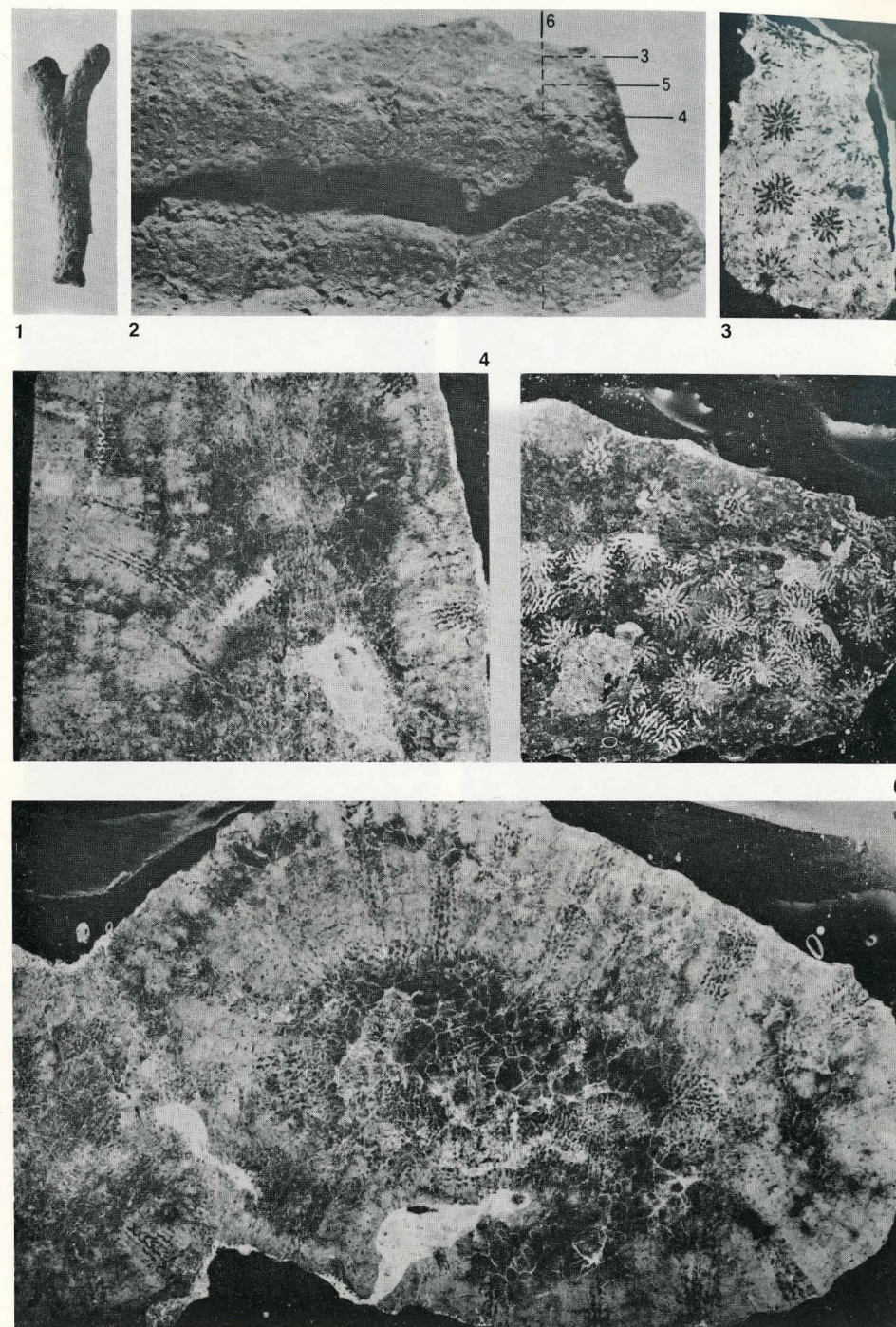
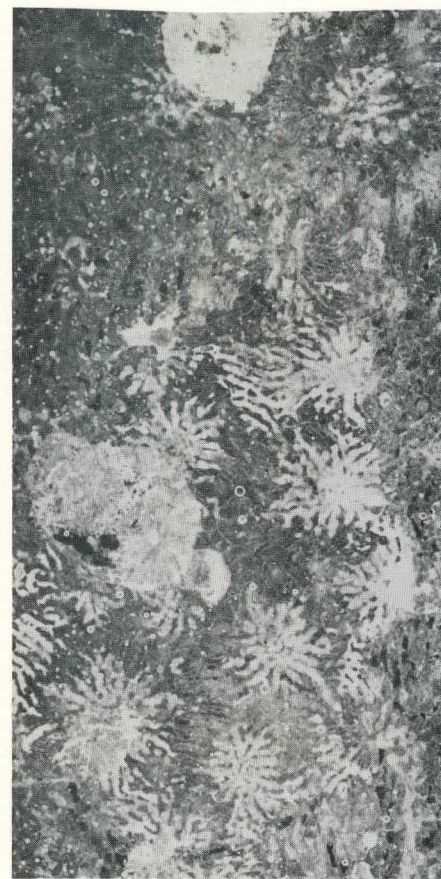


PLATE 47

Thamnaraea mammelonata n. sp.

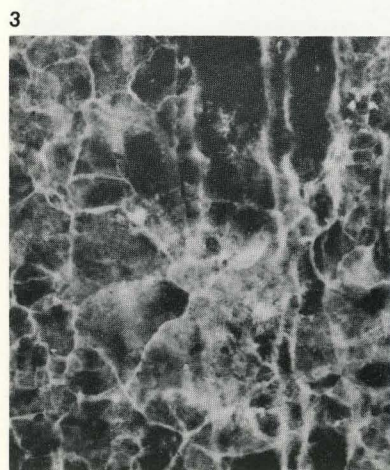
Locality: Žljebine, Barremian — Lower Aptian



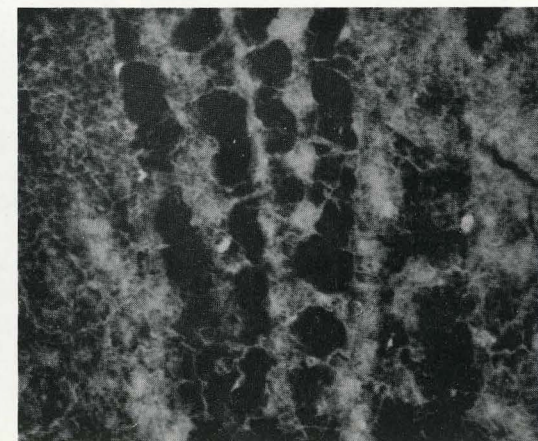
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- Fig. 1. Transverse section of corallites. In perithea septa are confluent and joined with synapticulae. Thin section of holotype M2882e (detail from Pl. 46, fig. 5), $\times 7$.
 Fig. 2. Transverse section of corallites. Thin section made of the same specimen, however, the preservation of septa is completely different as on fig. 1. This section is from deeper part of colony. Thin section of holotype M2882c, $\times 7$.
 Fig. 3. Detail from fig. 1. Microstructure of septa is poorly preserved. The whole middle part of septum is empty; probably it is recrystallized simple trabecula, $\times 35$.
 Fig. 4. Part of longitudinal section of corallite. Septa are thickened at lateral dents. Thin section of holotype M2882e (detail from Pl. 46, fig. 4), $\times 35$.

PLATE 48

Polytremacis edwardsana (STOLICZKA 1873)

Locality: Rajčinica, Donja Dubica, Barremian — Lower Aptian

- Fig. 1. The surface of the colony. Specimen M2918, $\times 0,9$.
 Fig. 2. The surface of another colony. Specimen M2938/11, $\times 0,9$.
 Fig. 3. Transverse section of corallites. Thin section M2939/1b, $\times 3,5$.
 Fig. 4. Tangential section of colony showing transverse section of corallites.
 Thin section M2939/1a, $\times 3,5$.
 Fig. 5. Tangential section of colony showing transverse corallites.
 Thin section M2940b, $\times 3,5$.
 Fig. 6. Transverse section of cylindrical colony showing radial growth of corallites.
 Note tabulae. Thin section M2940a, $\times 3,5$.
 Fig. 7. Detail from fig. 5. Septa in corallites are very short or only indicated, peritheca
 consists of small tubes and tabulae, $\times 7$.
 Fig. 8. Detail from fig. 6., $\times 7$.

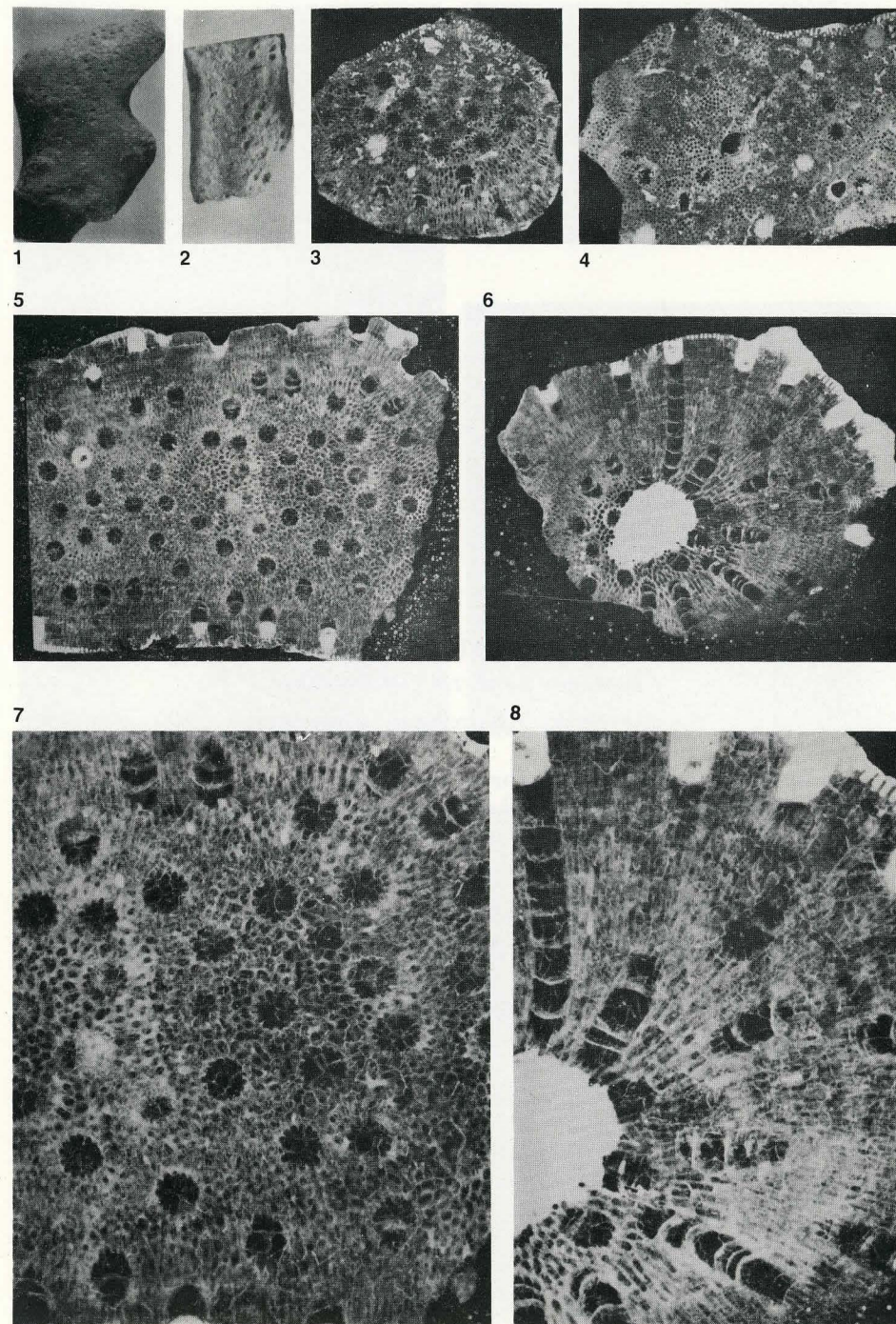


PLATE 49

Chaetetopsis favrei (DENINGER 1906)

Locality: Planinica, Barremian — Lower Aptian

- Fig. 1. Longitudinal section of colony. Thin section M2818/1a, $\times 3,5$.
 Fig. 2. Transverse section of colony. On 1 mm^2 come about 10 tubes.
 Thin section M2818/1b, $\times 3,5$.

Chaetetopsis krimholzi YAWORSKY 1947

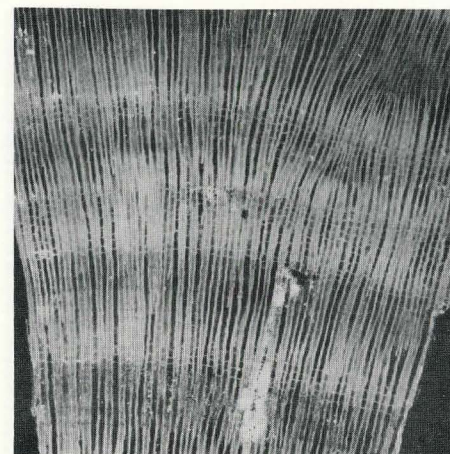
Locality: Planinica, Barremian — Lower Aptian

- Fig. 3. Longitudinal section of colony. Thin section M2819a, $\times 3,5$.
 Fig. 4. Transverse section of colony. On 1 mm^2 come about 28 tubes. Thin section M2819b, $\times 3,5$.

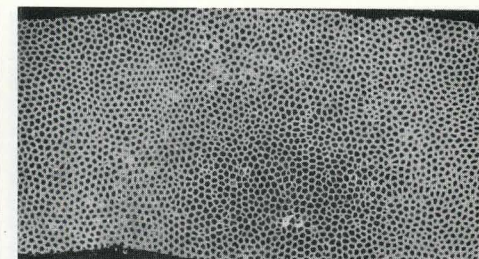
Milleporidium variocellatum STEINER 1932

Locality: Skuvija, Barremian — Lower Aptian

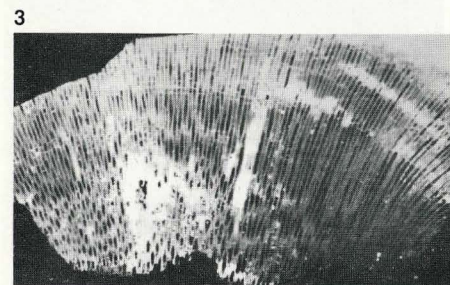
- Fig. 5. Transverse section of coenosteum, showing tubular and vermiculate reticulum.
 Thin section M2800b, $\times 3,5$.
 Fig. 6. Longitudinal section of coenosteum. Note latilamination.
 Thin section M2800a, $\times 3,5$.



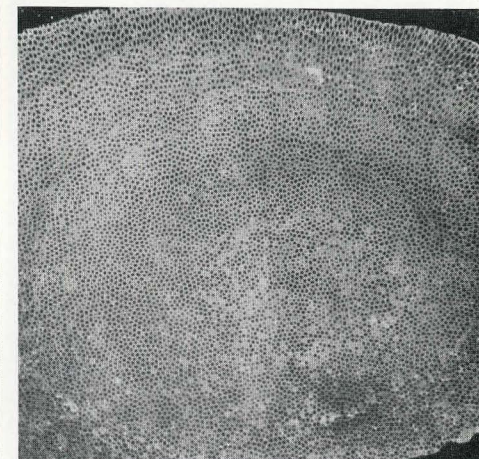
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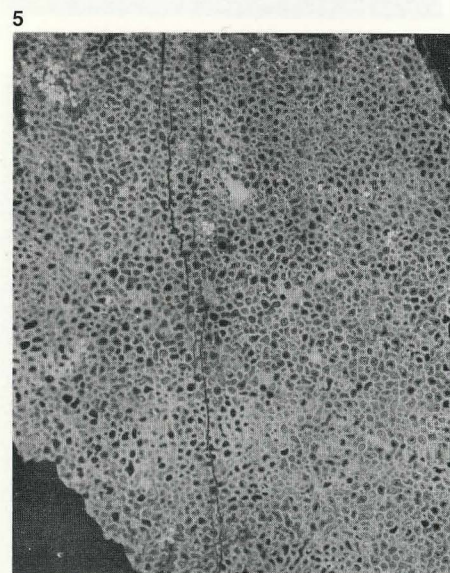
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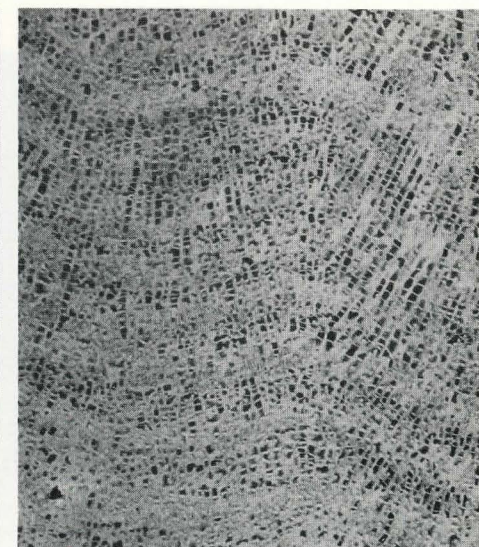
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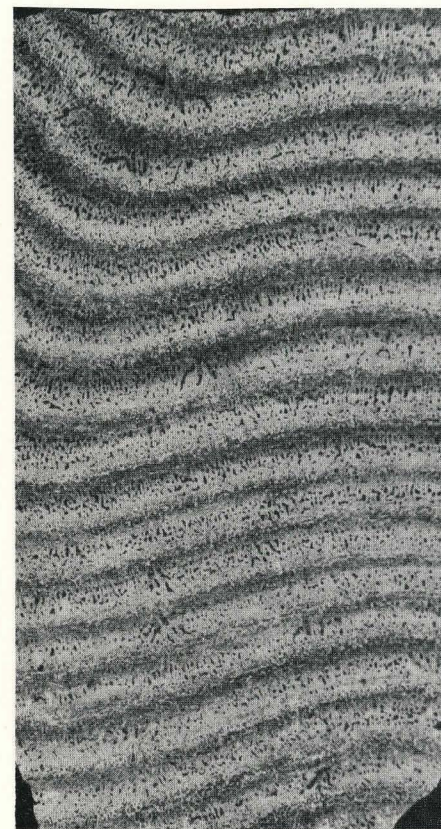
6

PLATE 50

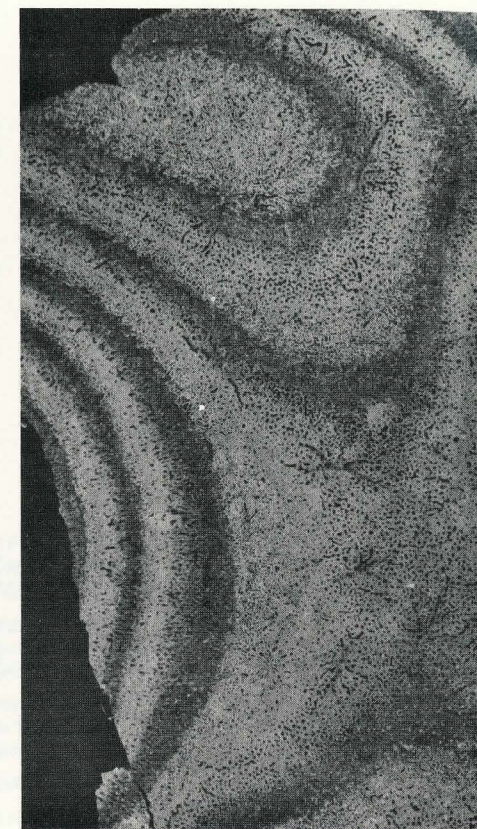
Dehornella virgilioi (OSIMO 1911)

Locality: Planinica, Barremian — Lower Aptian

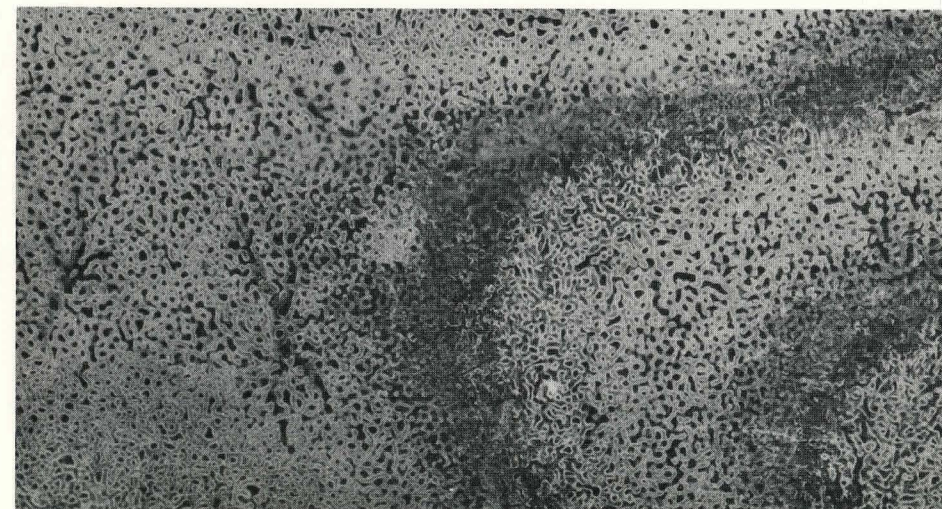
- Fig. 1. Longitudinal section of coenosteum showing belts or latilaminae with denser and sparser reticulum. Thin section M2824 b, $\times 3,5$.
- Fig. 2. Transverse section of coenosteum showing vermiculate reticulum with astrorhizae arranged in both belts. Thin section M2824 a, $\times 3,5$.
- Fig. 3. Detail from fig. 2., $\times 7$.



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