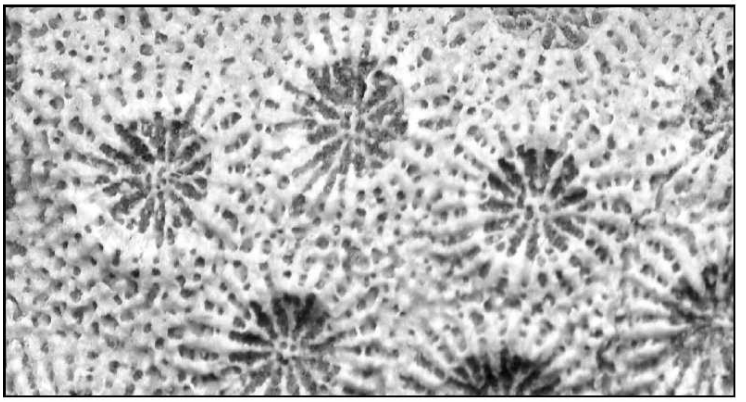
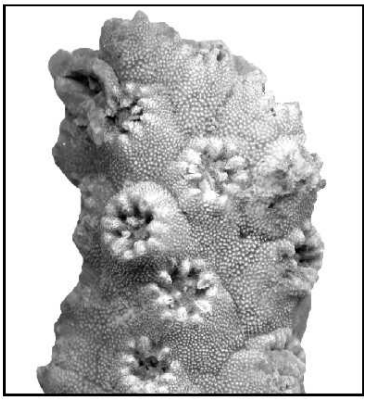
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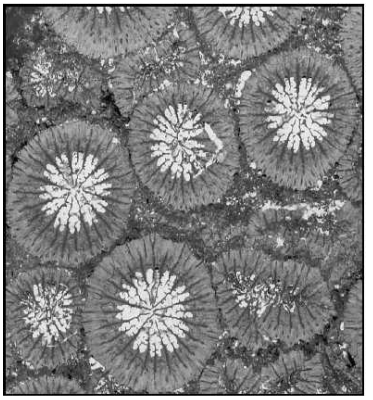
Corals from Rußbach and Gosau (Coniacian-Santonian; Austria)

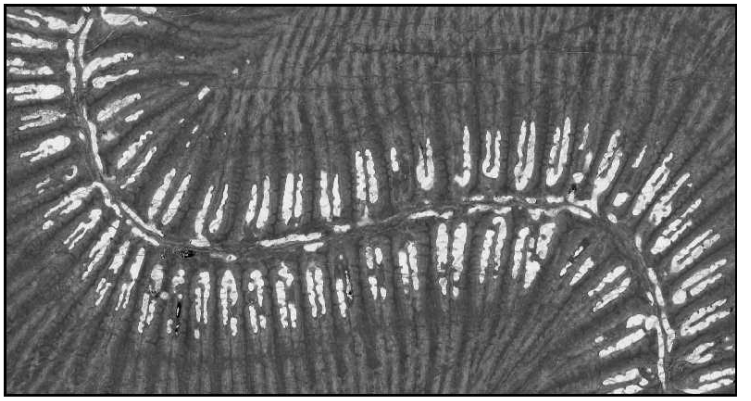
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Corals from Rußbach and Gosau (Coniacian-Santonian; Austria)

English abridged version

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Dresden 2019

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Title
Top – Outcrop area Randobach near Pass Gschütt.
Mid left – *Paractinacis uliae* (width 10mm).
Mid right – *Pachyheterocoenia* (width 15mm).
Bottom left – ?*Carantophyllum* (width 10mm). Thin section.
Bottom right – *Pachygyra* (width 20mm). Thin section.

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Preface

The corals of the so-called »Gosaukreide« form the most species-rich and best-preserved Mesozoic coral association of all. For almost 200 years, the coral fauna has been investigated, with 330 species having been reported, and several comprehensive monographs being published. Why do we need another treatise about this coral fauna? On the one hand, the former works are obsolete, difficult to read, or simply insufficiently illustrated. On the other hand, there are no works that may assist with naming the corals. The German book edition concentrates the available data with the aim of helping with the taxonomic classification of fossil corals.

In order to register the coral fauna as completely as possible, extensive re-collection of material was carried out. During 40 field campaigns, approximately three thousand specimens were collected. In addition, several thousand specimens in collections were examined. Approximately 800 thin sections were prepared for this compilation.

We had to limit to a lithostratigraphic level and a certain area: the Streiteck, Grabenbach and Hochmoos formations in the valleys of Rußbach and Gosau. These areas provided – compared to stratigraphically older (e.g. Turonian of St. Gilgen) or younger (e.g. the Campanian of the Neue Welt area in Niederösterreich) areas – more and much better preserved material.

Acknowledgements. Access to collection material was provided by the following institutions and individuals: Naturhistorisches Museum Wien (Alexander LUKENEDER, Thomas NICHTERL); National History Museum, Collections of the Hebrew University (Rivka RABINOVICH); Geologische Bundesanstalt Wien (Irene ZORN); Universität Leipzig (Arnold MÜLLER, Frank BACH); Bayerische Staatssammlungen für Geologie und Paläontologie München (Winfried WERNER, Martin NOSE, Mike REICH); Geologisches Institut der Universität Tübingen (Ingmar WERNEBURG, Madeleine BÖHME); Goldfussmuseum Bonn (Georg HEUMANN, Sandra KAISER); Fossilienmuseum Rußbach (Fritz SEEWALD).

The comparison with tye material of other regions was supported by the Muséum National d'Histoire Naturelle in Paris (Didier MERLE, Jean Michel PACAUD) and the Museo Geológico del Seminario in Barcelona (Sebastián CALZADA).

Hagen SAHM (Dresden) loaned us a grinding machine. The preparation of thin sections was realised by the Universidad Autónoma de México, Instituto de Geología, Estación Regional del Noroeste (Aimée ORCÍ) and the laboratory of the Paläontologisches Institut der Universität Erlangen-Nürnberg (Birgit LEIPNER-MATA). Gero MOOSLEITNER (Salzburg) assisted the work with advice and sample material. Numerous students have prepared material and measured coral dimensions (Carolina HERNÁNDEZ, Mónica OLGUIN, Lucy PUEBLA, Alejandro SAMANIEGO, Fran ZAYAS). Winfried WERNER (München) was so kind to revise the text of the German edition. Michael WAGREICH (Wien) provided much information about the geology of the study area and revised the chapter on the geology and stratigraphy. English text correction by Proof-Reading-Service.com. We thank all of you very much.

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1 Introduction

Historical aspects. The first corals from the Cretaceous of the area around Rußbach and Gosau were described by GOLDFUSS (1826), followed by SOWERBY (1832). Some species were established by MILNE EDWARDS & HAIME and MILNE EDWARDS (1857), and by QUENSTEDT (1880). Four comprehensive monographs have been published to date: August Emanuel REUSS (1854, 144 species), Johannes FELIX (1903, 193 species), Paul Leo OPPENHEIM (1930, 322 species) und Marcel BEAUVAIS (1982, 296 species). When comparing these monographs, it is clear that the classification system, the methods and the way of illustrating the fossils has changed over time. Whereas REUSS (1854) shows mainly drawings of complete unsectioned specimens (even if very detailed), FELIX (1903) presented some thin sections, or drawings of them, to better illustrate the coral morphology. OPPENHEIM (1930) is – regarding the illustrations – a setback, since he again shows mainly complete unsectioned specimens. The increasing importance of the nomenclature rules in zoology and palaeontology had a strong influence on the monograph by BEAUVAIS (1982). BEAUVAIS studied the material of his successors and established a relationship with his own material (but he did not see the FELIX material in the collection of Leipzig). BEAUVAIS illustrated many type specimens, without showing morphological details, and without showing images of thin sections. For all four monographs, it is difficult to understand which criteria were applied to distinguish between genera and species. In all of them, a critical and comprehensible species concept can hardly be seen. None of them apply statistical methods, as is usual for the time being, with the exception of BEAUVAIS (1982). In all monographs, the coral skeleton was only marginally examined by the application of transversal and longitudinal thin sections. Besides the four mentioned monographs, various publications on Gosau corals exist, either with a local or taxonomic focus, which are not mentioned here. Worth mentioning is MOOSLEITNER (2004), even if the fossil plates show only a small excerpt of the fauna. A critical review of the literature is difficult. On the one hand, the location of relevant type material is incompletely known (most problematic are the collections SOWERBY, REUSS and BEAUVAIS). On the other hand, available type material should be examined through – at least – polished sections to obtain information about the fine skeletal structure and morphometric values. The latter is often not possible.

Limitations of the present work. The present compilation is limited to the Coniacian and Santonian of the Streiteck, Grabenbach and Hochmoos formations (Gosau Group) in the areas around the villages Rußbach and Gosau. Material from localities outside this area are not included here. On the one hand, these localities are stratigraphically older or younger, and therefore present a different taxonomic inventory. On the other hand, most of these localities are not as easily accessible as the included area. Collecting new material would have been difficult, and rich collection material was not available. As already mentioned, the collection of new material was essential, first, to have sufficient specimens available for destructive examination, and second, to be able to give a better estimate of the relative abundance of genera and species. Own collections were completed with material from the collection of Johannes FELIX in Leipzig (with alone 12,600 specimens from the Austrian Cretaceous) and from the Vienna Natural History Museum.

The compilation does not constitute a classical revision because we did not compare the results of all former works to our data. On the other hand we applied different methods. Although numerous images of natural coral surfaces are shown in the German book edition, the taxonomy is based on thin sections, which are also illustrated. In addition, the systematic recording of morphometric data is new for the corals of the Gosau area. We have included all material of the collections that we had access to, but species for which type material was not

available, or for which type material could not be assigned to a genus, were not entered into the database. In appendix III (Species and Types) of the book edition, these species – if not included in the systematic part – are commented upon. The illustrations in the literature mostly do not allow the genus to be confirmed, and morphometric data that would assist in the determination of the species are generally not available. The synonymy lists of the species are not critical. A comparison with material outside of the study area is difficult because taxonomic revisions that apply modern methods (thin sections, morphometric data) are not available for most areas. Type material of coral species of the French and Spanish Upper Cretaceous was – as far as available – examined and compared the to present fauna.

In the inventory of the coral fauna of the Rußbach and Gosau area, we tried to achieve completeness. The continuous collection activities between 2008 and 2017 showed that the number of genera and species increases with the number of collected specimens. Therefore, one can be sure to be able to find more new taxa.

English abridged work. For the shorter version in the English language, we selected chapters that we consider essential for understanding the sample area and the taxonomic classification of the coral material. Some chapters were just translated, some reduced in extent, and others (such as the description of the methods or the discussion on the taxonomic composition of the fauna) were not included. The most voluminous part of the German book edition – the taxonomy – is here reduced to the description of the morphology of superfamilies, families and genera, and includes those tables that may assist in understanding the differences between families, genera, and species.

2 Geology and stratigraphy

The study area lies in the limit between the two Austrian federal states of Salzburg and Oberösterreich, in two valleys separated by a pass – Pass Gschütt. West of the pass lies the village Rußbach am Pass Gschütt, and to the east is village Gosau (Fig. 1). The fossil bearing beds crop out along slopes and creeks, which often form deeply incised valleys.

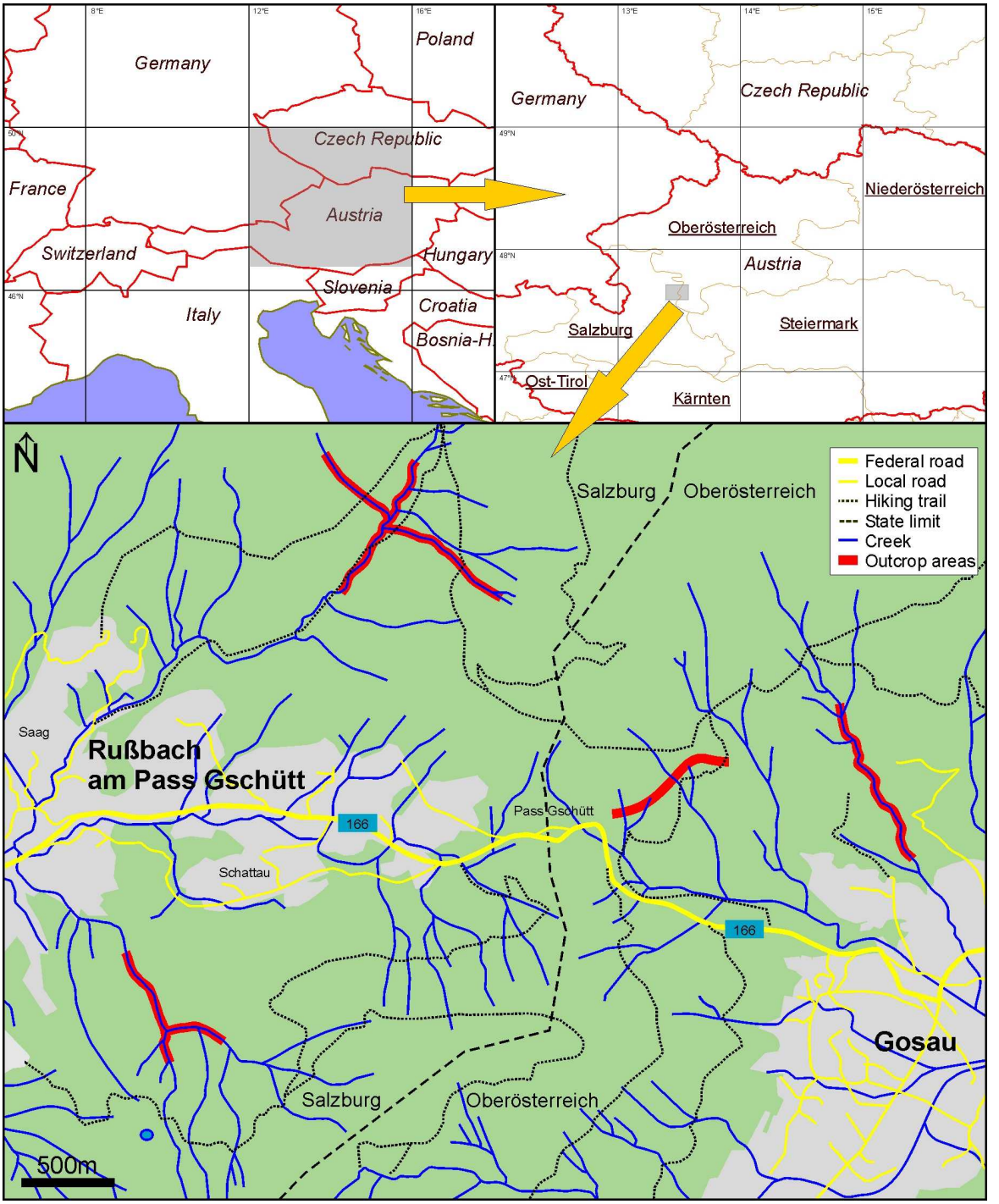


Fig. 1. *Study area*. The marked outcrop area refers to areas where the fossil-rich layers crop out in creeks, trenches or on slopes. Sample points are not shown.

The formation of the Upper Cretaceous to Paleocene sediments of the Gosau Group is closely connected to the formation of the Alp Mountain Range that started in the mid Jurassic, and includes the closure of the Neotethys and the opening of the Atlantic Ocean in connection to the Penninic Ocean. In the Austrian phase in the mid Cretaceous, the rocks sedimented during the Mesozoic were folded and the Northern Calcareous Alps were formed. During the Turonian, the Gosau Group started with a transgression resulting in rocks that lies discordantly over Triassic sediments. In the study area, the succession starts with basal conglomerats of the Kreuzgraben Fm; upwards follow marls, sandstones and conglomerates of the Streiteck Fm; arcillous marls with thin sandstone beds of the Grabenbach Fm; and an intercalation of marls, conglomerates, sandstones and limestones of the Hochmoos Fm. In the study area, the section terminates with marls and sandstones of the Bibereck Fm (Fig. 2). Fossil corals are mainly found in the Streideck, the Hochmoos, and in a much lower concentration in the Grabenbach fms (for more details see WAGREICH et al. 2017 and SUMMESBERGER et al. 2017). The literature lists approximately 60 localities (LÖSER et al. 2005, MOOSLEITNER 2004, ZORN 2016). The material collected for the present work comes mainly from the Pass Gschütt area, the Zimmergraben, and the Randobach. Collections provided material from the Neffgraben and Edlbachgraben.

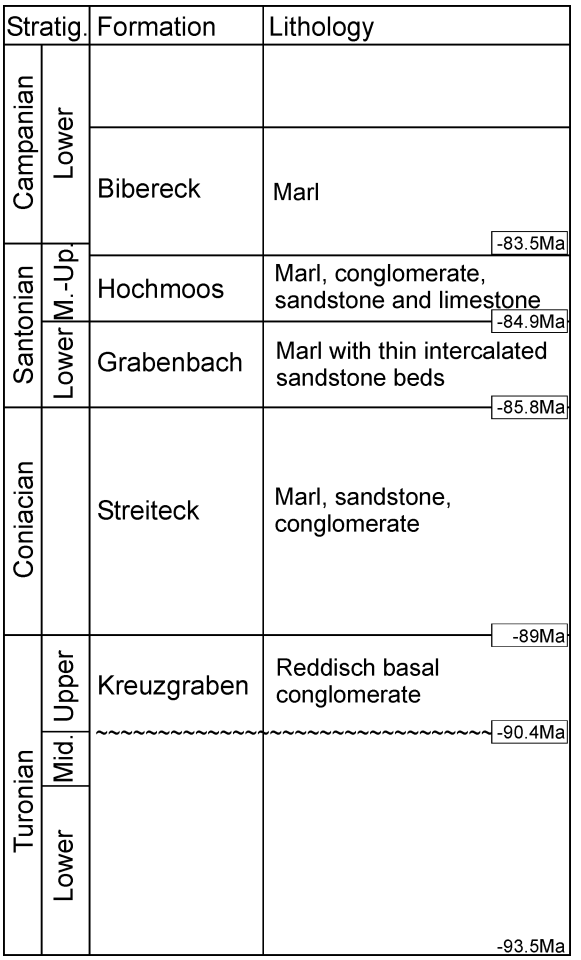


Fig. 2. *Stratigraphy*. Chronostratigraphy, lithostratigraphy, and lithology of the formally established formations in the area of Rußbach and Gosau, after SUMMESBERGER et al. (2017) and WAGREICH et al. (2017).

3 Coral morphology

Corals form a skeleton made of calcium carbonate that is conserved as fossil. The skeleton protect the living animal. Whereas the living animal has a simple morphology, the skeleton has a complex structure and the only key to the taxonomy of the fossil coral. Corals appear as colonies or solitary individual. In a colony, the individuals are connected to each other by their soft tissue, and may form large structures. The skeletal morphology of a solitary coral and a colony is identical within the same coral family.

Here, a short introduction to the morphology of the coral skeleton is given. Without knowledge about the morphology, a taxonomic classification is impossible.

3.1 Skeletal elements and organisation

Skeletal elements. The solitary coral or the individual in a colony (corallum) represents the same morphological structure. The single individual has the form of a tube, or cylinder called corallite. The size of the corallite may be very small (less than one millimetre), and up to a few centimetres. The corallite is laterally limited by the wall (an older synonym is theca), and aborally by the endotheca, which consists of plate like tabulae and/or predominantly vesicular dissepiments. Vertical blades called septa (singular: septum; also radial element) reach from the wall into the cavity. The external parts of the septa are called costae (singular costa, but not used). In the centre of the corallite a central structure may exist (pali and/or columella). The outer space between the walls of the corallites in a colony is called the coenosteum (Figs. 3, 4). Not all elements necessarily exist. By far, the most important structure for the higher taxonomic classification is the morphology of the septa. The existence or non-existence of a columella may be decisive for the separation of families. The relationship of the individuals in the colony, the existence of a wall between them, or the existence of a coenosteum, defines the organisation of the colony, which is decisive for the genus.

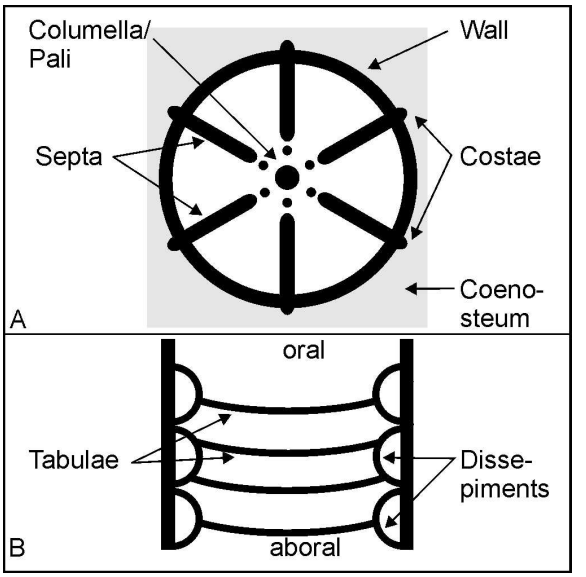


Fig. 3. *General morphology*. **A**, transversal view; **B**, longitudinal view.

Solitary coral. The simplest form is the solitary coral that consists of only one individual. Solitary corals are generally larger than the individuals in a colony. Depending on the size of their basal face, the apical angle and the rate of increase of the diameter with the height, different growth types are distinguished (Fig. 5).

Colonial coral. The organisation type of the coral colony is a crucial character for the determination of the genus. The classification of the various organisation types depends much on the presence or absence of the wall, the coenosteum, and the confluence of the septa (Fig. 6). Phaceloid corals (Fig. 7H) are often called pseudocolonies because the individuals are – from a certain stage on – no longer connected by living tissue. Phaceloid means that each corallite grows freely, i.e. it has its own wall; the coenosteum is absent. Phaceloid is not synonymous with dendroid or ramose. Ramose characterises a coral with a cerioid, plocoid, even thamnasterioid or meandroid corallite organisation, but its growth form is more or less like a thick stem (for instance *Paractinacis*) or branching (*Actinastrea gorjanovici*). The term dendroid is used by some authors for phaceloid corals with a wider angle of branch divergence that produces more bushy colonies (*Pleurocora*) whereas the term phace-

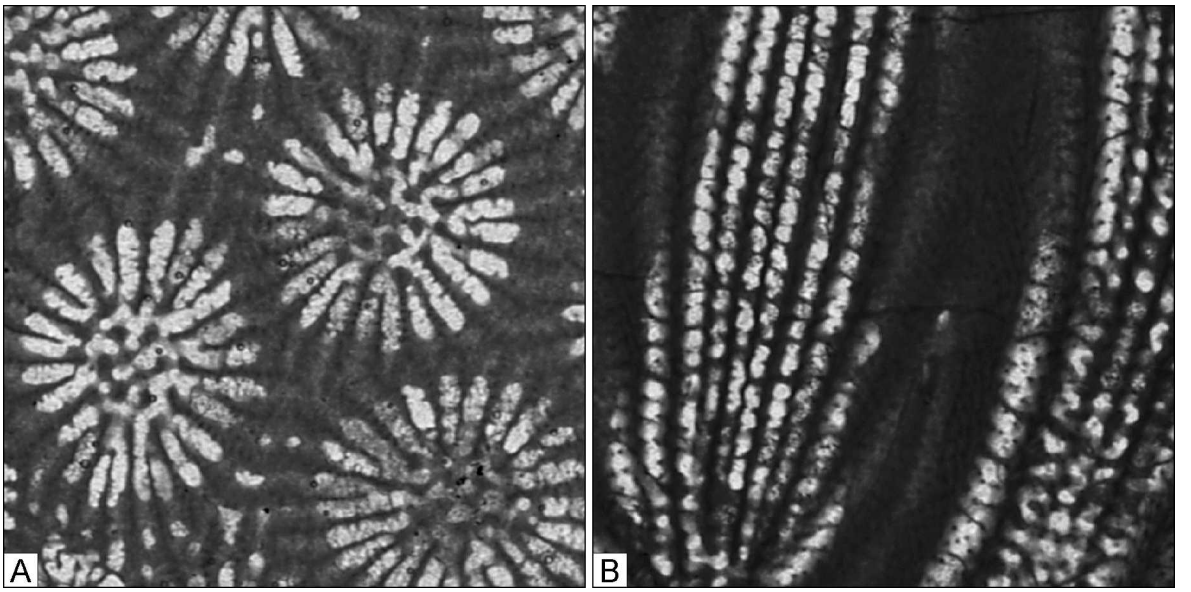


Fig. 4. *Structural elements in reality*. The different skeletal elements in a colonial coral (*Columastrea*). Skeletal material dark. Left the transversal, right the longitudinal section, both in the same scale, from the same specimen. In the transversal section, septa, costae, pali, the columella and the wall are visible. In the longitudinal section, septa, the wall and thin endothecal elements are visible.

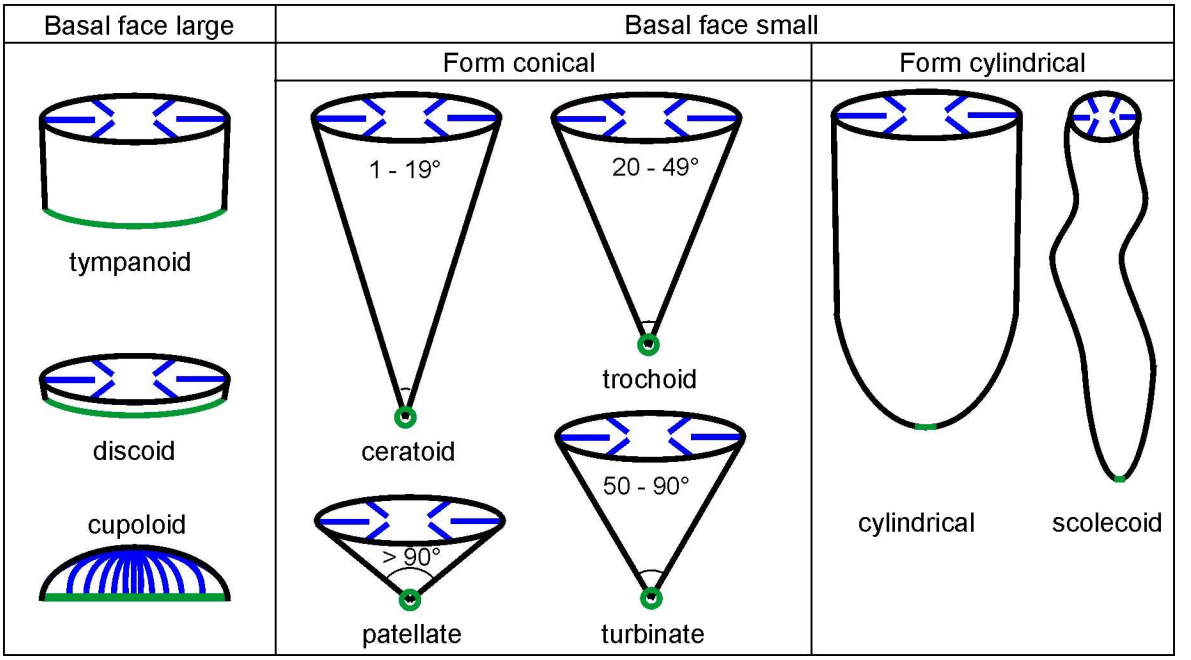


Fig. 5. *Growth types in solitary corals*. Conical forms with angle of the growth. Attachment area or basal face in green.

loid was partly restricted to corals with a low angle of divergence resulting in denser colonies of collateral growing corallites (*Procladocora*). In reptoid or creeping colonies (Fig. 7I), all corallites are attached to a firm substrate and connected by stolons. There is no coenosteum, no costae, but a wall is present. In plocoid (Fig. 7AB) corals, the individuals are well-separated and have a wall between them; in cerioid corals (not in the study area), there is no coenosteum and neighbouring individuals share a wall. In astreoid (Fig. 7D), thamnasterioid (Fig. 7C), and dimorphastreoid (Fig. 7E) corals, the wall is absent. In astreoid corals, the costae are non-

confluent, whereas in the other two forms the costae are confluent. In dimorphastreoid corals, the calices are arranged in rows, often in circles around a central corallite. In meandroid (Fig. 7F) colonies, corallites are arranged in rows as well, but there is a wall, at least dividing the rows, but often not between the corallites within one row. In one row (or valley), several corallites may exist side by side (polyserial) or as only a single row of corallites (monoserial). Depending on the morphology of the wall, the crests separating the valleys can be sharp (tectiform, roof-shaped) or rounded ('tholiforme' is the French term). Within the rows, the centres of the individual corallites must not necessarily be marked. The individuals can be distinct or indistinct. A special form is the flabelloid coral: it is a meandroid coral with only one row. If in a coral with a flabelloid outline the individuals are indistinct, it is impossible to know whether the row was inhabited by a single or numerous individuals. The term flabelloid is only correct if the coral is a colony made of various individuals. Another special form, which originated from meandroid corals, are hydnophoroid forms (Fig. 7G) where the wall becomes fragmented, forming isolated crests. Here, the calicular centres are often not clearly distinguished. The centres are arranged around the elevated crests. These crests can be punctual (conical) or enlarged (polygonal).

<table>
<tr><td rowspan="5">Wall present</td><td rowspan="3">Individuals well separated</td><td colspan="2">Coenosteum present</td><td>Plocoid</td></tr>
<tr><td rowspan="2">Coenosteum absent</td><td>Individuals share a wall</td><td>Cerioid</td></tr>
<tr><td>Individuals do share a wall</td><td>Phaceloid/Reptoid</td></tr>
<tr><td rowspan="2">Individuals in rows</td><td colspan="2">One row, Coenosteum absent</td><td>Flabeloid</td></tr>
<tr><td colspan="2">Many rows, Coenosteum present</td><td>Meandroid</td></tr>
<tr><td rowspan="3">Wall absent</td><td rowspan="2">Septa confluent</td><td colspan="2">Individuals in rows</td><td>Dimorphasterioid</td></tr>
<tr><td colspan="2">Individuals not in rows</td><td>Thamnasterioid</td></tr>
<tr><td colspan="3">Septa non-confluent</td><td>Astreoid</td></tr>
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Fig. 6. *Relationship of colonial organisation types.*

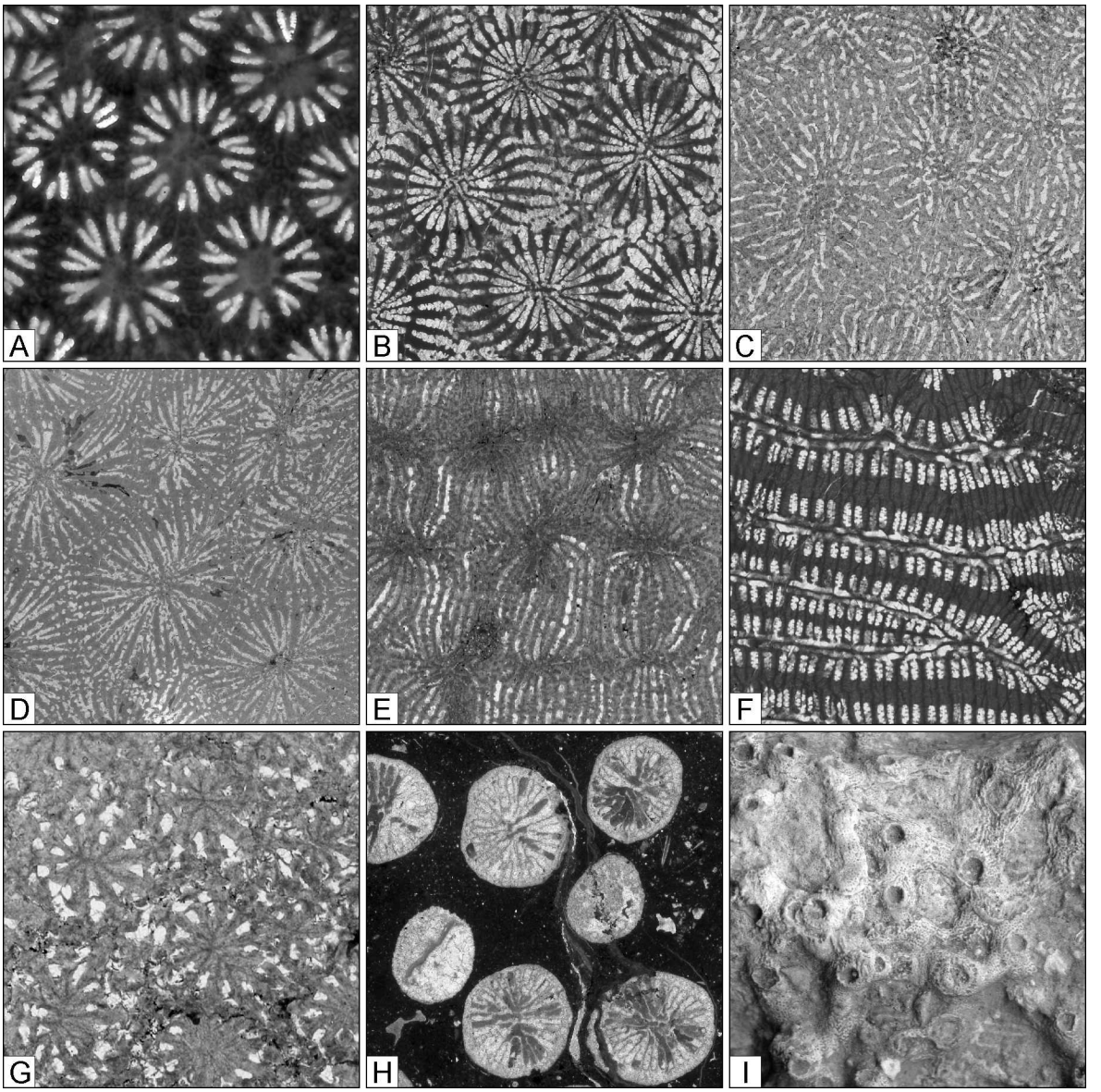


Fig. 7. *Organisation types*. **A**, **B**, plocoid (*Actinastrea*, *Hydnophoropsis*); **C**, thamnasterioid (*Synastrea*); **D**, astreoid (*Pseudofavia*); **E**, dimorphasterioid (*Palaeosiderofungia*); **F**, meandroid (*Cycloria*); **G**, hydnophoroid (*Hydnophoraraea*); **H**, phaceloid (*Procladocora*); **I**, reptoid (*Epiphaxum*).

3.2 Septa

The septa, or radial elements, are the most important parts of the skeleton for the classification. Their microstructure, perforation, and ornamentation defines the superfamily of a coral. The septa represent an outer, microarchitectural shape, e.g. the shape of the septum, the ornamentation, and the perforation, and an inner, microstructural shape. The two aspects generally coincide because the outer shape is an expression of microstructural characteristics.

Microstructure. The septal blades are generally made of smaller elements called trabeculae. In thin sections, the trabeculae appear in a circular or rhomboid shape – if they are visible. There are cases where these trabeculae are not visible or too small to be visible. Here, three types of trabeculae are distinguished, (1) small or invisible trabeculae, (2) medium-sized trabeculae, that are visible but they do not shape the septal blade, (3) large trabeculae that shape the septum (Fig. 8A-C). Here, we are not talking about absolute values. The size of the trabeculae

has to be seen in relation to the thickness of septa. So, the thickness of the septum may be small, but the size of the trabeculae may be relatively large (as for instance in *Ahrdorffia*). The size of the trabeculae may or may not influence the ornamentation of the septal upper margin; larger trabeculae do not imply that they are visible as granulae or thorns at the upper septal margins. The microstructure is not necessarily constant within one specimen. For instance, in the family Phyllosmiliidae the trabeculae are small in the septal blade, but medium-sized in the costae (Fig. 8D-F). The septal upper margins are smooth, whereas the costae vary in their ornamentation and can even be coarsely granulated (as in *Phyllosmilia*).

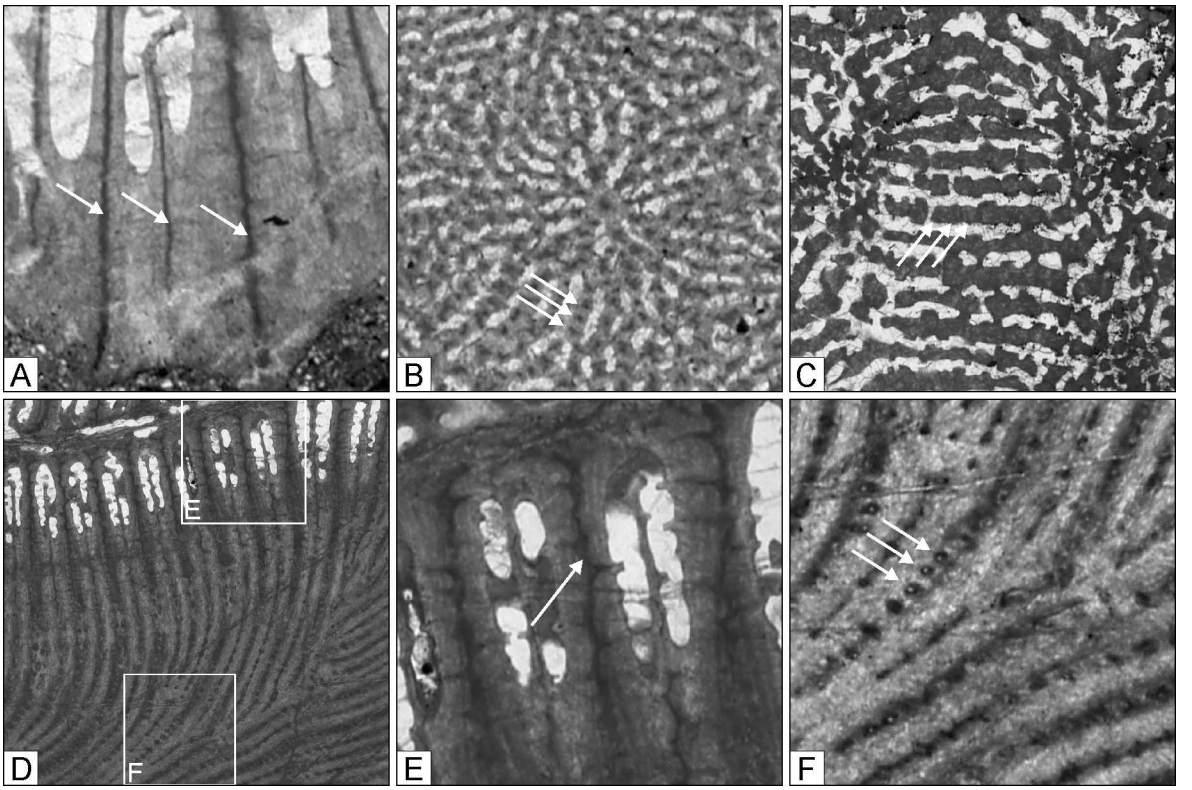


Fig. 8. *Microstructures*. **A**, small trabeculae (*Aulosmilia*); **B**, medium-sized trabeculae (*Ahrdorffia*); **C**, large trabeculae (*Synastrea*); **D**, small trabeculae in septa and medium-sized trabeculae in the costae (*Pachygyra*); **E**, detail of septa; **F**, detail of costae. Skeleton dark.

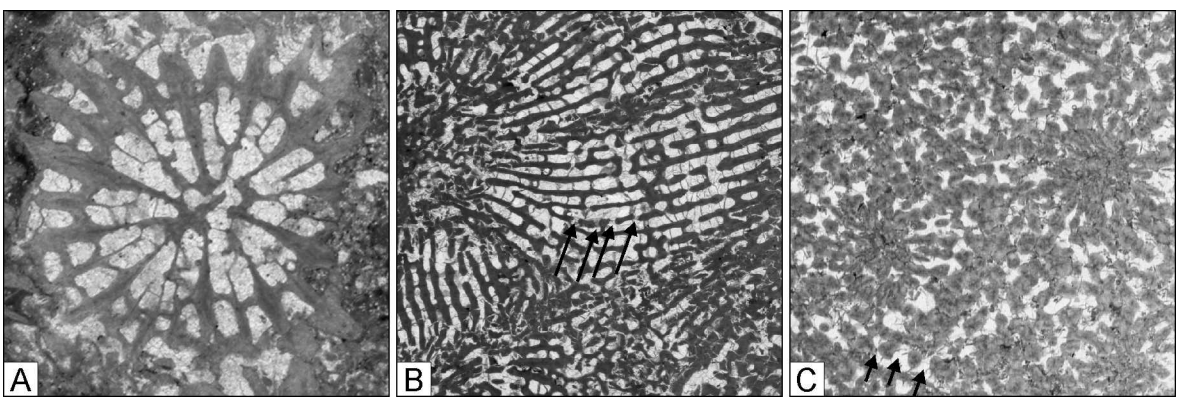


Fig. 9. *Perforation*. **A**, compact septa (*Pachyphyllia*); **B**, septa with few irregular perforations (*Astraraea*); **C**, septa strongly perforated, the septa can hardly be traced (*Gosaviaraea*). Skeleton dark.

Perforation. The radial elements may be compact or may have pores (Fig. 9). The characteristic is relatively stable within one superfamily, with few rare exceptions. The grade of perforation varies: from a few occasional pores to a completely perforated septal blade. Not all septa in a corallite have necessarily the same number of pores; older septa can be more compact than younger septa (Felixaraeoidea; Fig. 3). Pores only occur in corals with large or medium-sized trabeculae. When the trabeculae are small or invisible, pores are absent. When pores are present, synapticulae are also present.

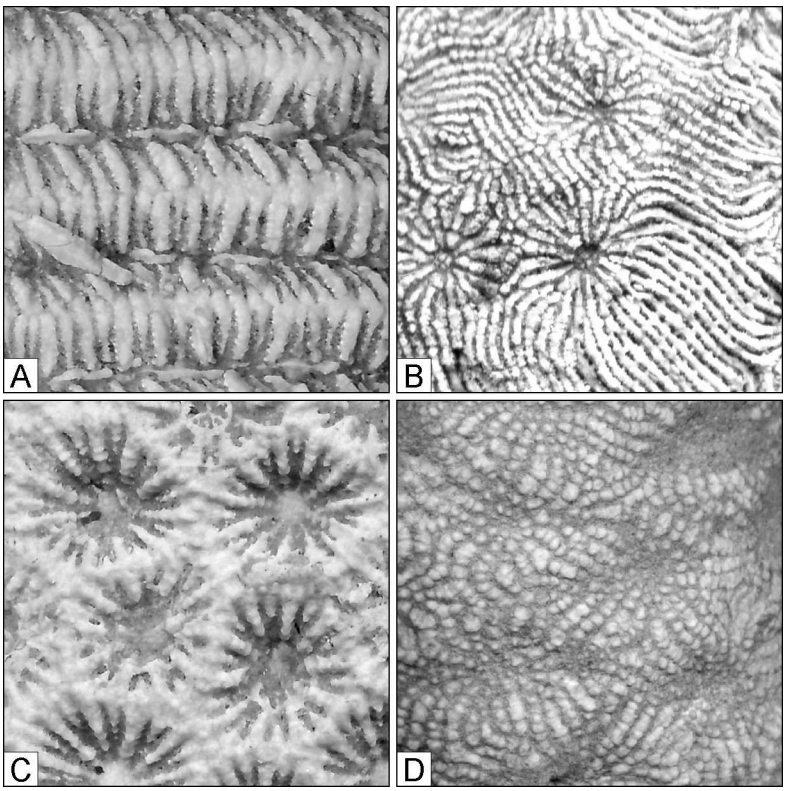


Fig. 10. *Ornamentation of the upper margin*. **A** smooth (*Cycloria*); **B** finely ornamented (*Palaeosiderofungia*); **C-D** coarsely ornamented (*Actinastrea* and *Synastrea*).

Ornamentation. The septal ornamentation often reflects the microstructure of the septum, but not always. Ornamentation can be observed in the unsectioned corallum, in relatively thick sections (100 µm) and thin sections. Generally, all septal margins – inner, upper and outer – and the septal lateral faces are considered. The type of ornamentation is rather constant within a superfamily. The upper margin (or distal margin; Fig. 10) can only be observed on a cleaned coral surface, not in thin sections or polished sections. Because the surface of the septa are the first parts that become altered after the death of the animal, they rarely present an original preservation. The upper margin reflects in general terms the size of trabeculae: small trabeculae result in a smooth upper margin (Fig. 10A), medium and large sized trabeculae in a corresponding coarser ornamentation (Fig. 10B-D). The inner margin can be observed in unsectioned specimens, in transversal and in longitudinal sections. It can be smooth (Fig. 11A), with poorly (Fig. 11B) or well (Fig. 11C) marked pali. The inner margin can be slightly swollen (Fig. 11D), T-shaped (Fig. 11E), or with apophyses and/or branching septa (Fig. 11F). Pali are skeletal elements that origin from the septal inner margins and are more or less well separated from the septa. In the historical literature, the formation of pali was explained as relicts of exosepta that were ontogenetically substituted by endosepta. In contrary, paliform lobes or pseudopali should be extensions originating from the inner septal margin with their own divergent system. Later observations show that in no case pali were formed through the substitution of exosepta by endosepta. It is possible that there is such a substitution, but this substitution does not result in pali. So, there is no difference between pali and paliform lobes or

pseudopali. Pali can be found in various rows or orders (crowns), mainly in solitary corals of the Caryophyllioidea, but also in other superfamilies. The lateral faces (Fig. 12) can be observed in the unsectioned specimen, a thick or thin section. Well-oriented longitudinal thin sections may provide information about the arrangement of the ornamentation on the septal blade. The ornamentation can be absent (Fig. 12A), less (Fig. 12B) or well (Fig. 12C), or very strong (Fig. 12D) developed. The members of the families Lasmogyridae and Phyllosmiliidae are externally very similar, but differ in the size of the trabeculae, what results also in a different ornamentation of the lateral septal face (Fig. 13). A special morphological development are so-called pennulae. Pennulae are transverse, balkon-like extensions around a trabecula and are formed rhythmically with a regular vertical distance. In two neighbouring septa, their level alternates, as they alternate in one septum (Fig. 14). Pennulae only occur in members of the superfamily Cyclolitoidea. They are best visible in a longitudinal section.

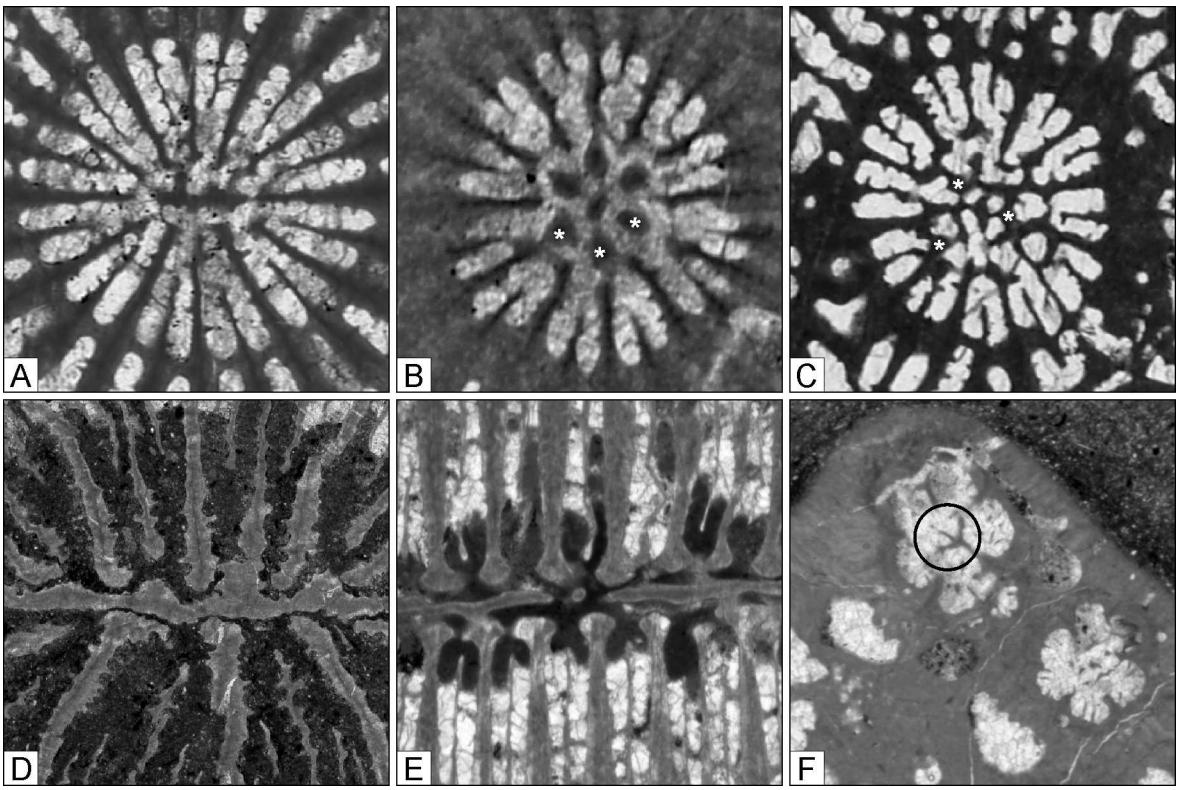


Fig. 11. *Ornamentation of the inner margin*. **A**, smooth (*Hydnophoropsis*); **B**, with well marked pali (*Columastrea*); **C**, with less well marked pali (*Brachyphyllia*); **D**, swollen (*Dasmiopsis*); **E**, T-shaped (*Phyllosmilia*); **F**, branching (*Crinopora*).

Costae. The costa (plural costae) is the external part of the septal blade. The external costa and internal septum are divided along the most external divergence axis. The costae of one individual show a certain relationship to the costae of another individual. The costae can be non-confluent (they do not touch each other; Fig. 15A), sub-confluent (they may touch each other in places; Fig. 15B), or confluent (they regularly touch each other; Fig. 15C). The state of confluence may vary within one colony or not. The costae may – as the septa – present pali (costal pali). This is restricted to a few genera, but can be easily observed. These costal pali should not be confused with isolated trabeculae that can be found in some genera in the coenosteum.

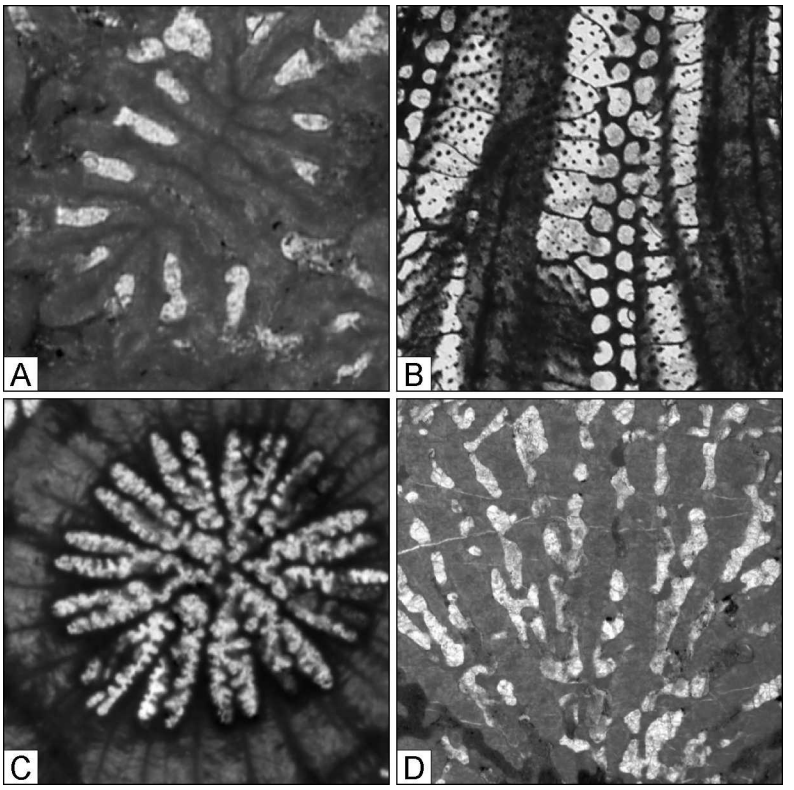


Fig. 12. *Ornamentation of the lateral face*. **A**, smooth (*Hydnophoraraea*); **B**, with fine thorns (here a longitudinal section; *Cycloria*); **C**, strong thorns (*Agathelia*); **D**; coarse ornamentation (*Pseudofavia*).

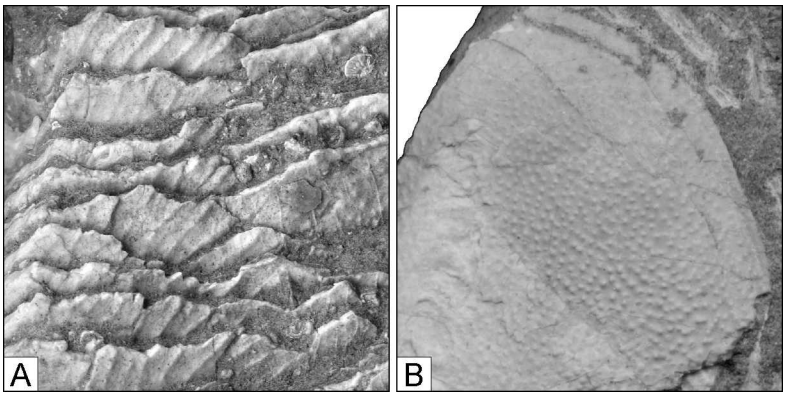


Fig. 13. *Comparison of lateral faces*. **A**, lateral septal face with vertical ridges in the Lasmogyridae (*Lasmogyra*); **B**, finely granulated in the Phyllosmiliidae (*Aulosmilia*). Both images at the same scale.

Interconnection. Interconnection generally means that the septa of younger generations are connected to septa of older generations, or that septa of the first generations are connected to each other on the centre in the corallite (Fig. 16). The first mode is far more common. The way in which younger septa are connected to older septa varies. Connections can be rare, occasional, or following a regular plan. The pattern of connections can follow a certain symmetry or not.

Synapticulae. Synapticulae are rods or bars that connect the opposing faces of adjacent septa (Fig. 17). For the untrained observer, synapticulae are sometimes difficult to distinguish from endothecal elements. Endothecal elements (tabulae, large dissepiments) are generally continuous and cross several septa whereas synapticulae are more irregularly distributed and punctual. Endothecal elements are generally (but not always) thinner than synapticulae.

Symmetry and generations. Wherever septa occur, they are in a certain geometric arrangement, generally called septal symmetry. Septa do not develop at the same time but in cycles. Septa of different cycles can be distinguished from each other by the means of length and/or thickness, or not. The cycles can be irregularly developed (Fig. 18A), or very regular, that allow to define symmetry axes. If only one axis can be find, the symmetry is bilateral (Abb. 18B). Here,

one main septum may be larger or thicker and the define the axis (Fig. 18C). Is it possible to define various (3, 4, 5) axes, the symmetry is radial (Fig. 18C-E). According to the basic numbers (6, 8, 10) the symmetry is called hexameral, octomeral, and decameral. More rarely occur a trimeral, tetrameral or pentameral symmetry (basic numbers 3, 4, 5). The symmetry type is generally constant within one family.

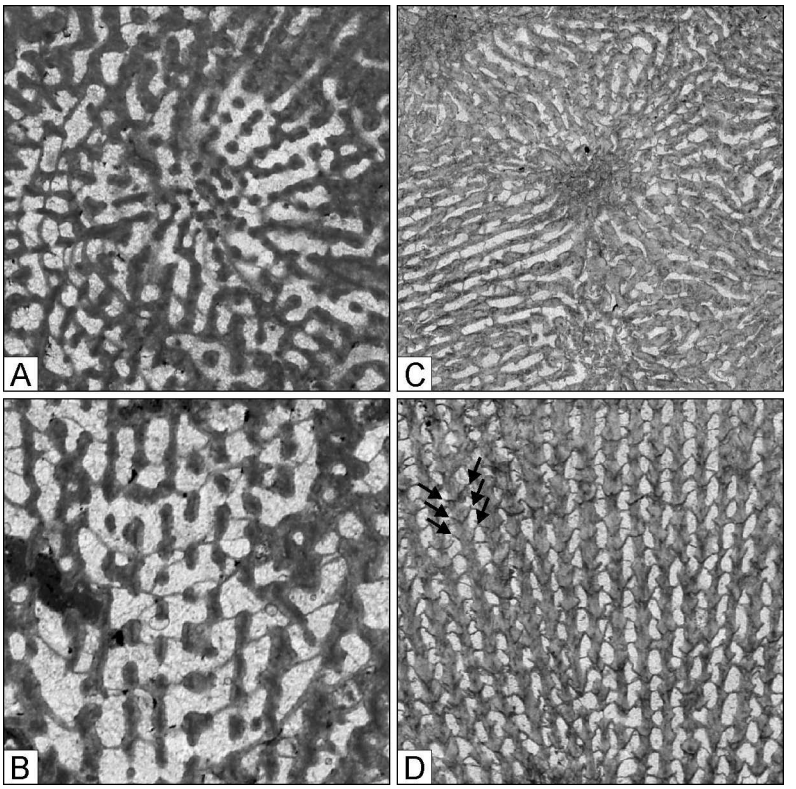


Fig. 14. *Pennulae*. **A-B**, a form without pennulae (*Astraraea*); **C-D** a form with pennulae (*Synastrea*). Above transversal, below longitudinal section.

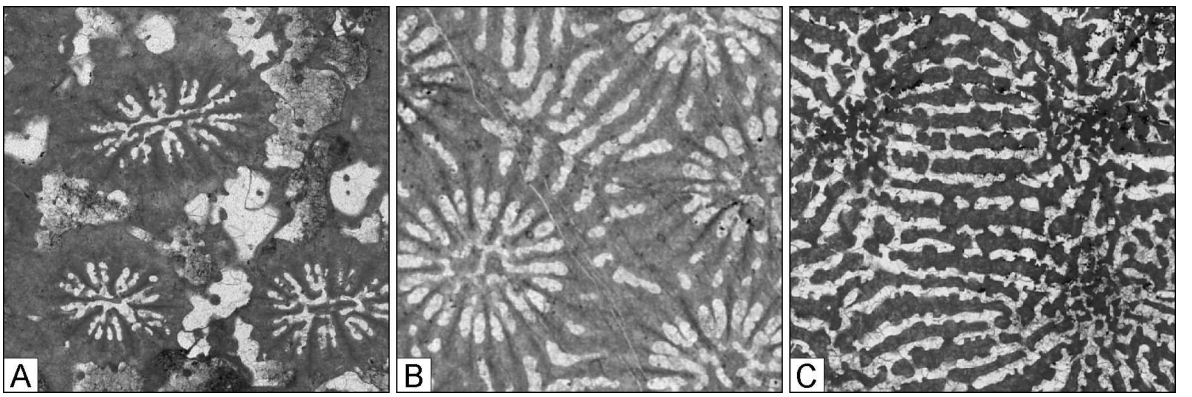


Fig. 15. *Confluence of the costae*. **A**, non-confluent (*Neofocoenia*); **B**, sub-confluent (*Proplesiastraea*); **C**, confluent (*Leptophyllastrea*).

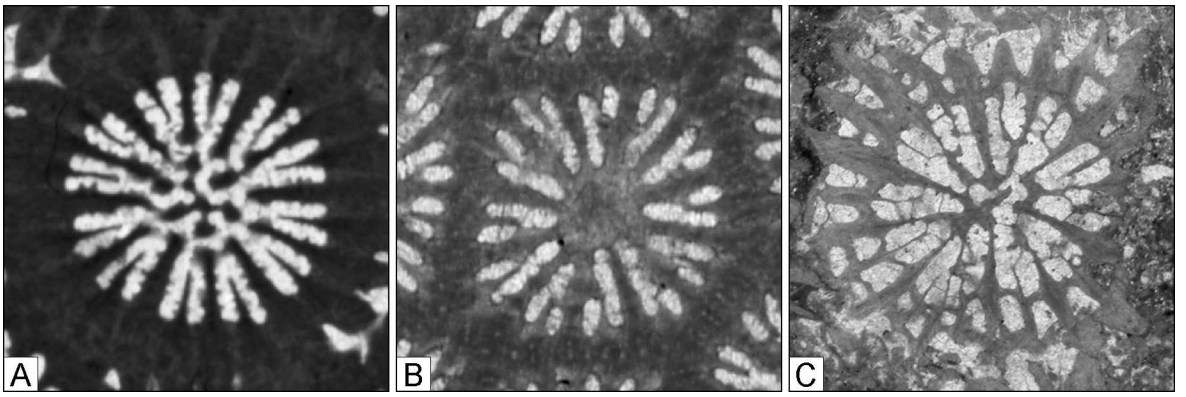


Fig. 16. *Interconnections*. **A**, without (*Columastrea*); **B**, regularly connected (*Actinastrea*); **C**, irregularly connected (*Pachyphyllia*).

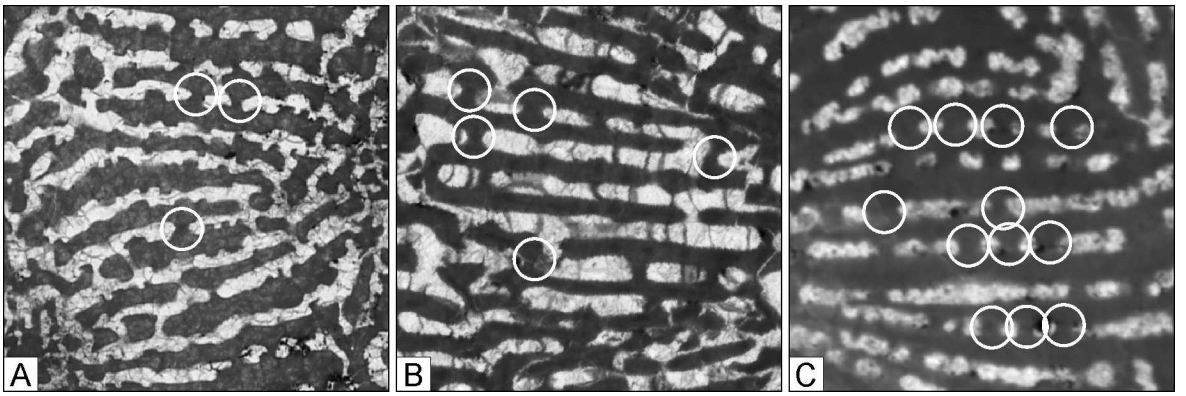


Fig. 17. *Synapticulae*. **A**, rather rare (*Synastrea*); **B**, more abundant (*Actinaraea*); **C**, abundant (*Eosiderastrea*).

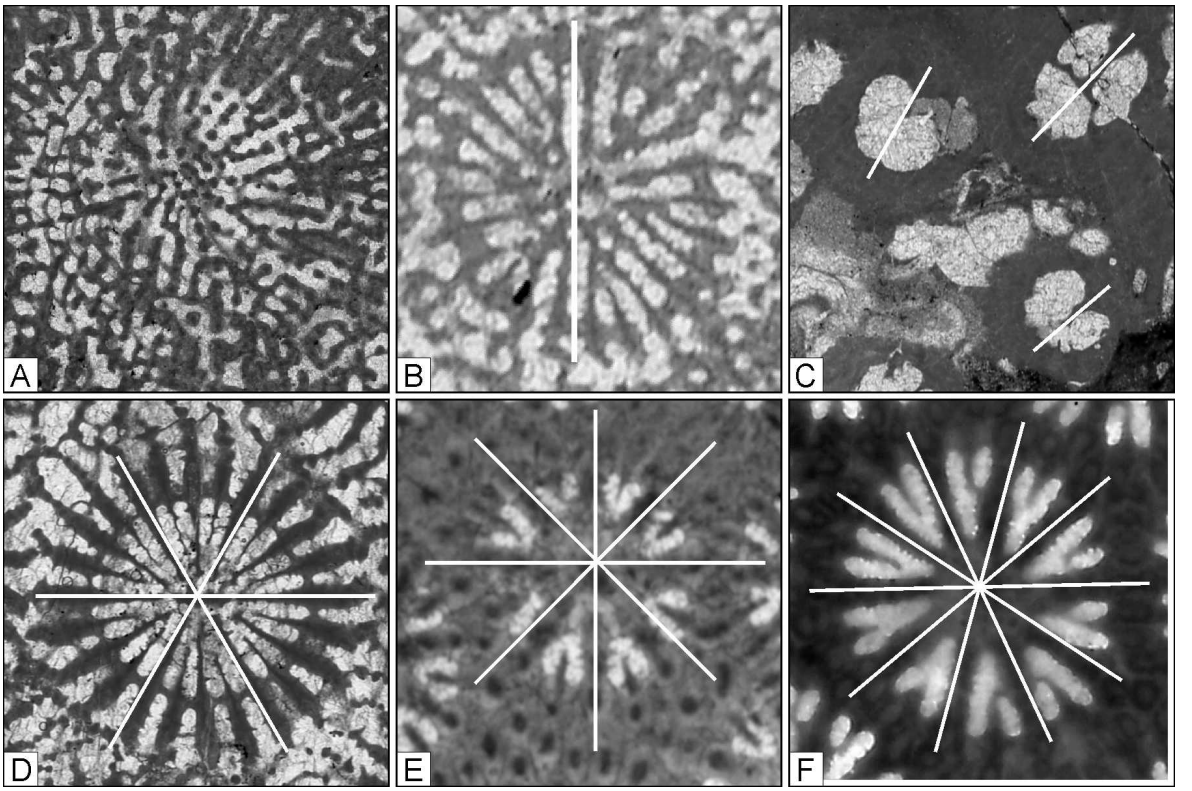


Fig. 18. *Septal symmetry*. **A**, no septal symmetry (*Astraraea*); **B**, bilateral symmetry (*Actinacis*); **C**, bilateral symmetry with main septum (*Crinopora*); **D**, radial hexameral symmetry with three symmetry axes (*Hydnophoropsis*); **E**, octomeral symmetry with four axes (*Actinastrea*); **F**, decameral symmetry with five axes (*Actinastrea*).

3.3 Columella

The columella is a centrally located element in the corallite. Within one genus, the existence and form of the columella is generally constant. There is a difference between an essential columella (Fig. 19A-D) and a parietal columella (Fig. 19F-H): whereas an essential columella is easily recognisable as a solid element, a parietal columella is less well-defined because the columella can be pretended by pali or the inner margins of perforate septa.

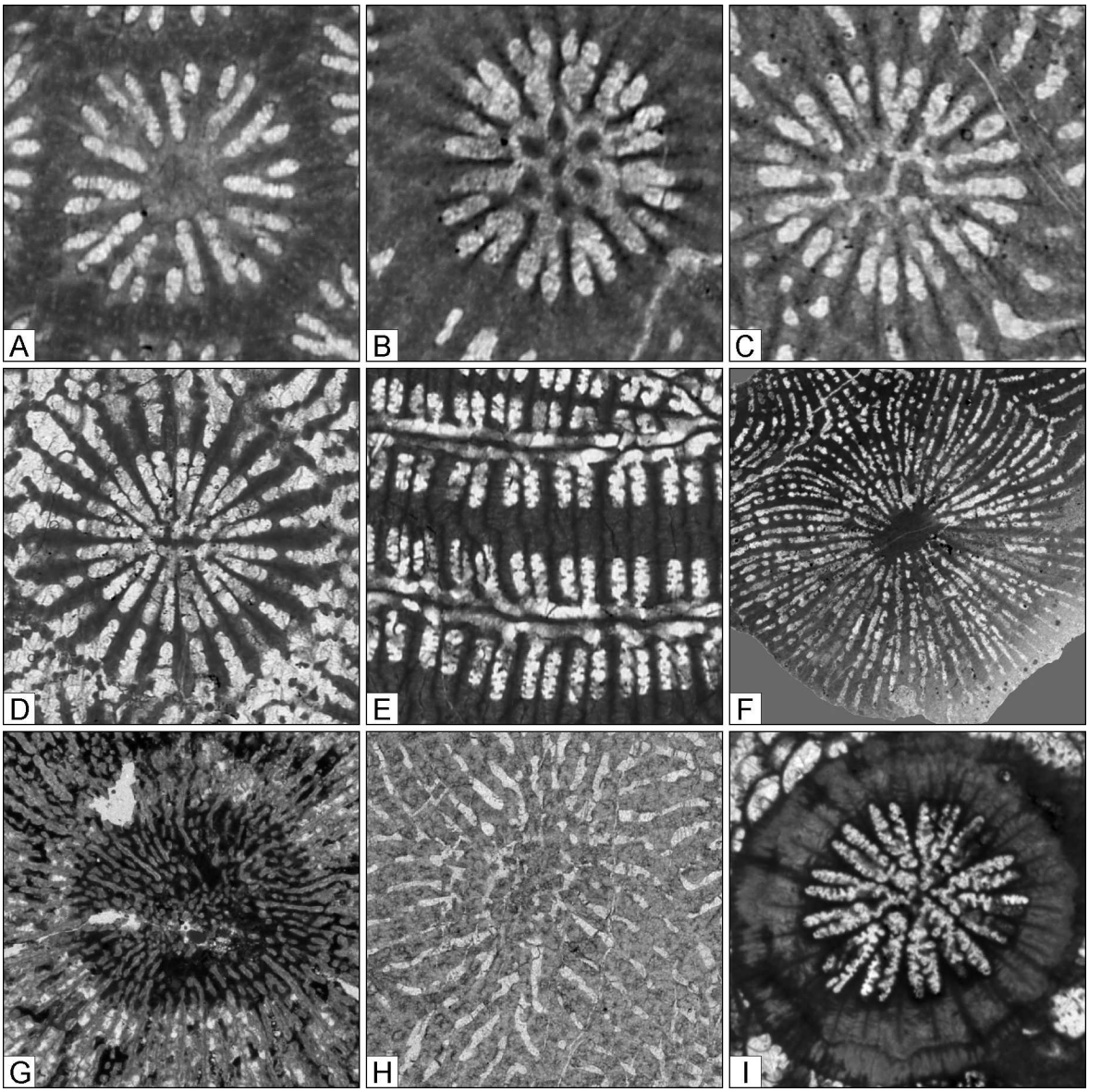


Fig. 19. *Columella*. **A**, large styliform columella, that is connected to the septa (*Actinastrea*); **B**, small styliform columella, that is not connected to septa (*Columastrea*); **C**, styliform columella, consisting of two elements (*Proplesiastrea*); **D**, lamellar columella (*Hydnophoropsis*); **E**, lamellar columella (*Cycloria*); **F**, columella formed by septal fusion (*Eosiderastrea*); **G**, parietal columella, made of numerous small elements (*Gyroseris*); **H**, parietal columella or the inner margins of perforate septa (*Synastrea*); **I**, the existence of a columella is pretended by the ornamentation of the septa, but does not exist (*Agathelia*).

3.4 Endotheca

The endotheca encompasses mainly horizontal or subhorizontal elements that limit the corallite in its aboral direction. Two different endothecal elements are distinguished: transversal plate-like tabulae and vesicular dissepiments. The dissepiments can be also found outside the wall (as exotheca). Tabulae are more plate like whereas dissepiments are small and locally limited (Fig. 20). The endotheca can only be observed in a longitudinal section. The type of endotheca is rather constant within one superfamily and may help in the classification.

In few families, dissepiments form a so-called marginarium, that generally consists of centrally located tabulae and lateral dissepiments. In some genera, the septa are peripheri-

cally not connected to the wall, but only to the marginarium. Obviously, they developed when the marginal dissepimental zone already existed. These septa are called lonsdaleoid septa (Fig. 20D).

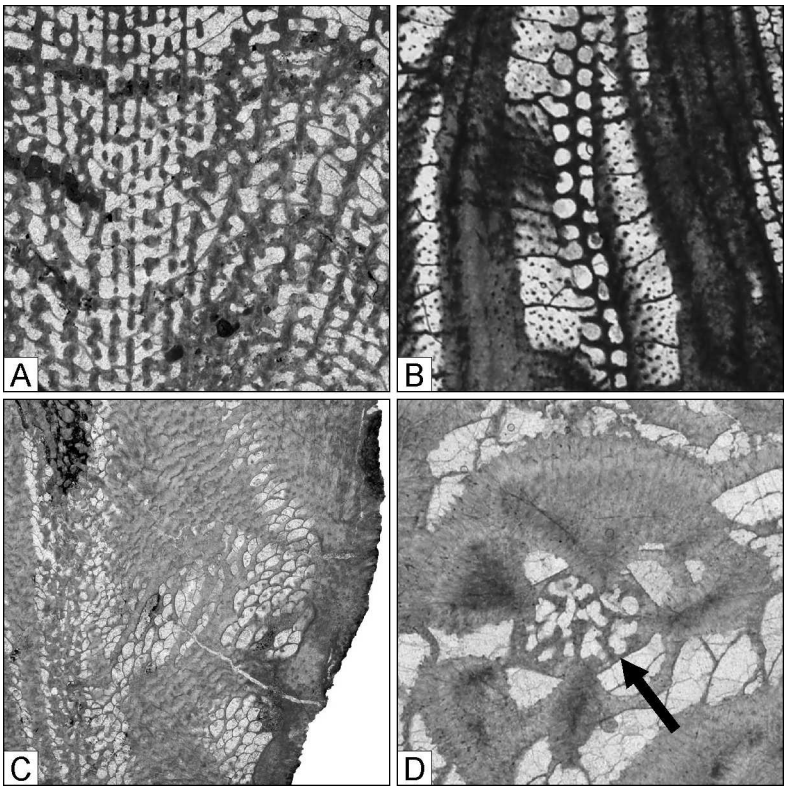


Fig. 20. *Endotheca*. **A**, tabulae (*Astraraea*); **B**, tabulae (*Cycloria*); **C**, dissepiments (*Leptophyllia*); **D**, marginarium (*Pachyheterocoenia*), the arrow points to the marginarium.

3.5 Wall, epitheca, coenosteum

The wall is the outer or lateral limit of the corallite. Presence or absence defines the organisation form of the coral. There are no »mural« elements; the wall is always made by other elements as explained above. The wall can be absent (Fig. 21A). It can be compact or subcompact. Most commonly, it is made by septa (septothecal wall; Fig. 21B), dissepiments (parathecal wall; Fig. 21C), or synapticulae (synapticulothecal wall; Fig. 21D). A trabecular wall is made by trabeculae that grow in a direction transverse to the corallite growth direction (Fig. 21E). A relatively rare and not fully understood formation is the lamellar wall (Fig. 21F). The type of formation is relatively constant within one superfamily. Living tissue that is outside the corallite/coral colony may form a very thin skeletal layer that lies above the wall. Because the layer is thin, it is rarely preserved. In solitary corals it is called epitheca and in colonial corals holotheca.

The coenosteum denominates the space between walls of neighbouring corallites in plocoid, astreoid and some meandroid corals. The coenosteum can be made by isolated trabeculae, costae, costal pali, or dissepiments (Fig. 22). Very often, the coenosteum is a combination of various elements. At the surface of the coenosteum, the costae are visible – often with ornamentation – or fine thorns or granules. In thamnasterioid colonies, small crest-like elevations can be rarely observed in the coenosteum.

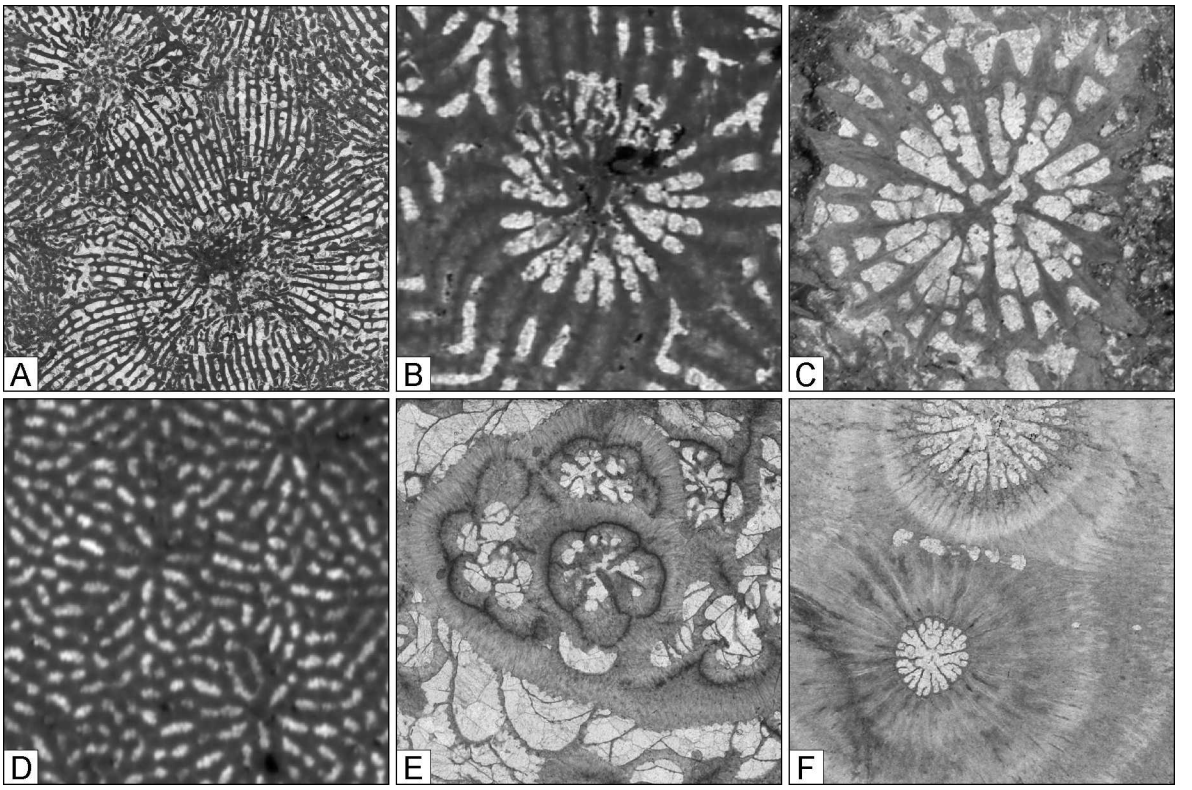


Fig. 21. *Constitution of the wall*. **A**, without wall (*Astraraea*); **B**, septothecal (*Hydnophoropsis*); **C**, parathecal (*Pachyphyllia*); **D**, synapticulothecal (*Ahrdorffia*); **E**, trabecular (*Heterocoenia*); **F**, lamellar (*Ogilviastrea*).

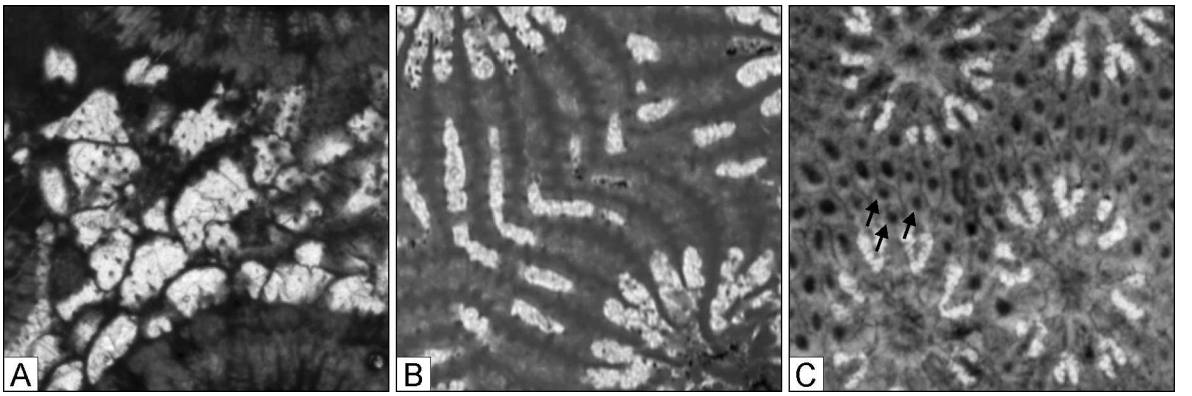


Fig. 22. *Coenosteum*. **A**; dissepiments and fine trabeculae (*Agathelia*); **B**, costae (*Hydnophoropsis*); **C**, thick trabeculae (*Actinastrea*).

3.6 Budding

Asexual multiplication, also known as budding, is the process that allows the formation of colonies. The organisation form of the colony and the type of budding are related to each other, or rather a certain type of budding leads automatically to a certain colony type. There are two main types of budding: within the corallite (intracalicinal) or outside the corallite (extracalicinal). The importance of the budding for the taxonomic classification is overestimated.

In extracalicinal budding, new corallites are formed outside the wall, mostly in the coenosteum, and are not related to an existing corallite. There are two types. In the parietal type, new corallites are formed marginally, but outside of the corallite (Fig. 23A). This type mainly

occurs in phaceloid corals. In the intercalicinal type, new corallites are formed in the coenosteum (Fig. 23B) and are therefore restricted to plocoid and thamnasterioid corals.

The intracalicinal budding is far more common and shows more variable patterns. In intracalicinal budding, new corallites are formed by the division of existing corallites within the wall (if a wall exists). An existing corallite is divided into two new corallites (distomodeal; Fig. 23C) or into various new corallites (axial; Fig. 23D). In meandroid and thamnasterioid/dimorphasterioid colonies, a new corallite is formed between two existing corallites. Polystomodeal budding always leads to a linear arrangement of corallites. This type of budding is called incomplete when individuals cannot be distinguished (Fig. 23G), creating a meandroid colony. It is complete when individuals can be distinguished (Fig. 23EF), leading to a thamnasterioid or dimorphastreoid colony. A special form is the budding in the wall (marginal; Fig. 23H).

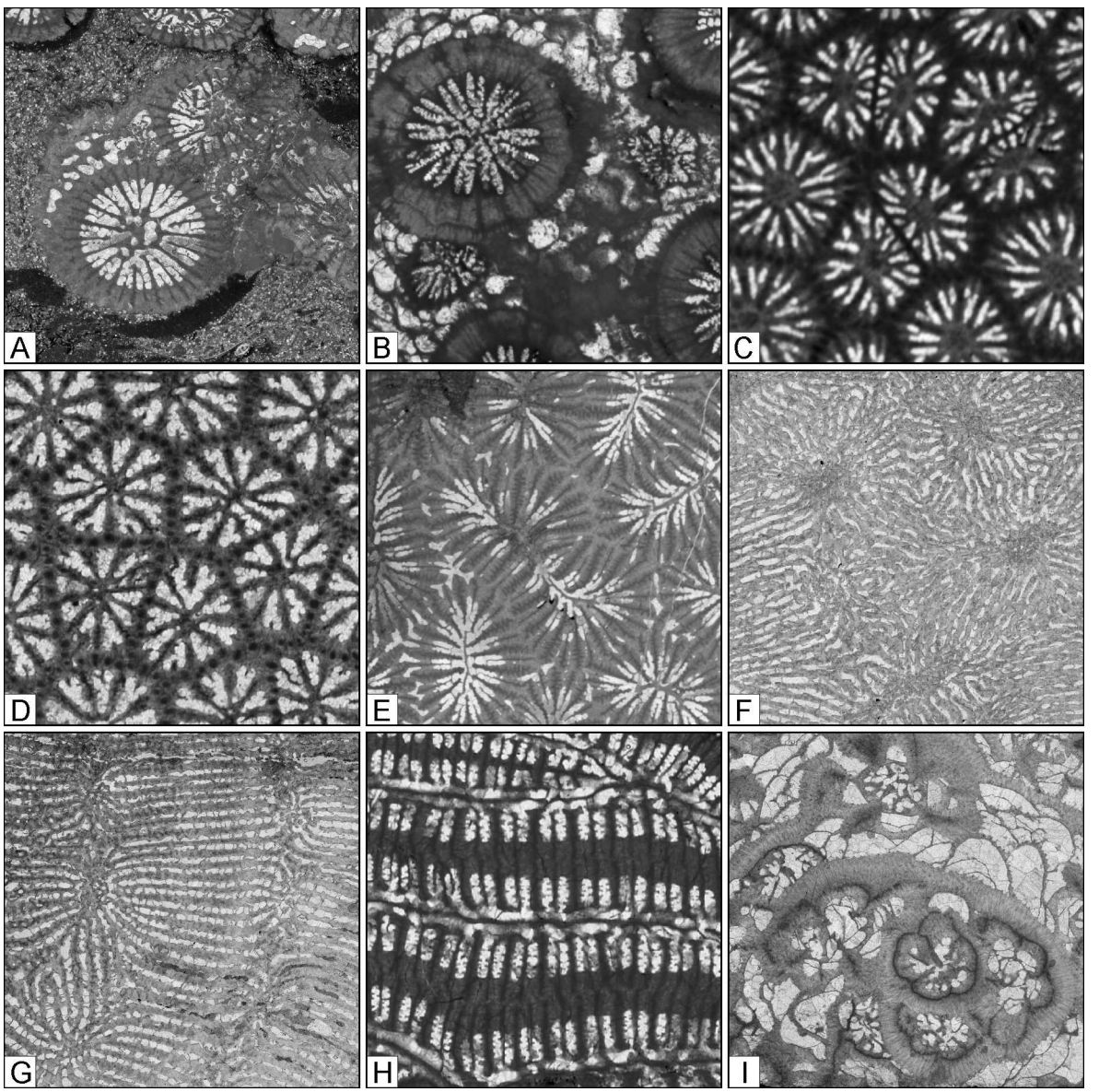


Fig. 23. *Budding*. **A**, extracalicinal, parietal (*Procladocora*); **B**, extracalicinal(*Agathelia*); **C**, intracalicinal, distomedal (*Stelidioseris*); **D**, intracalicinal, axial (*Actinastrea*); **E**, intracalicinal (*Orbignygyra*); **F**, intracalicinal, polystomedal, complete (*Synastrea*); **G**, likewise (*?Leptophyllastraea*); **H**, intracalicinal, polystomedal, incomplete (*Cycloria*); **I**, intracalicinal, marginal (*Pachyheterocoenia*).

5 Taxonomy

Corals is the informal name for members of the class Anthozoa that form a skeleton. In the Cretaceous, one distinguishes the order Scleractinia (stony corals; subclass Hexacorallia) that form a skeleton made of calcium carbonate, and the subclass Octocorallia with members that mainly form a skeleton made of an organic substance (Gorgonin) that is rarely conserved in the fossil record. Very few genera of the Octocorallia form a skeleton made of calcium carbonate. Apart from these, many octocorals have microscopic scleres embedded in their soft body, which were described from the study area (MOOSLEITNER 1990). The major part of corals in the Gosau area are represented by the order Scleractinia.

5.1 Classification

Scleractinia. Since 1943, the order Scleractinia is subdivided into suborders (14 in the Cretaceous). Not all of them are well defined or limited. Earlier ideas that the suborders may form monophyletic groups were later discarded. Here, the classification follows the schema proposed in LÖSER (2016), which applies superfamilies in place of suborders. Of the 28 Scleractinia superfamilies that were separated for the Cretaceous, 16 are found in the study area. The morphologic characteristics of these superfamilies and their families are described in the systematic part. A table (Fig. 24) leads directly to the family. To be able to distinguish the superfamilies and families that have septal perforations, it is necessary to prepare a longitudinal section (Fig. 25) or to study the unsectioned specimen (see chapter 3.2, Fig. 13). For the classification of all other superfamilies, a longitudinal section may help, but is not necessary. The distinction between superfamilies, families and genera is based on qualitative characteristics. For this reason, the determination of genus – moreover for such well-preserved material – is rather easy.

Octocorallia. The Octocorallia in the Gosau area are restricted to two families, members of which have a skeleton made of calcium carbonate: the Helioporidae, which are very similar to the Scleractinia, and the Aulopsammiidae, which form creeping or bushy colonies. The microscopic scleres are not included here.

Trabeculae large	Synapticulae present	Septal lateral face with pennulae	Septa subcompact	Without symmetry, cyclolitid forms	Cyclolitidae
				Without symmetry, all other forms	Synastraeidae
				Septal symmetry bilateral	Negoporitidae
			Septa regularly perforated		Gosaviaraea group
		Septal lateral face without pennulae			Felixaraeidae
	Synapticulae absent				Lasmogyridae
Trabeculae medium-sized	Synapticulae present	Septa almost compact	Coenosteum w. costae or absent	Symmetry irregular, structures small	Thamnasteriidae
				Symmetry ± regular, structures larger	Siderastraeidae
			Coenosteum with trabeculae		Actinacididae
		Septa perforated			Astraraeidae
	Synapticulae absent	Phaceloid			Cladocoridae
		Plocoid	Coenosteum narrow	With trabeculae, rarely short confl. costae	Actinastraeidae
				With costae	Columastraeidae
			Coenosteum extended, with costae		Placocoeniidae
Trabeculae small	First septal generation thicker				Phyllosmiliidae
	First septal generation normal	Wall trabecular	Septal symmetry bilateral		Carolastraeidae
			Septal symmetry radial	Main septum absent	Agatheliidae
				Main septum present	Heterocoeniidae
		Wall lamellar			Madreporidae
		Wall epithecal or absent			Plesiosmilia group
		Wall para- or septothecal	Hydnophorid		Eugyridae
			Phaceloid		Haimesastraeidae
			Solitary		Caryophylliidae

Fig. 24. *Determination of the family*.

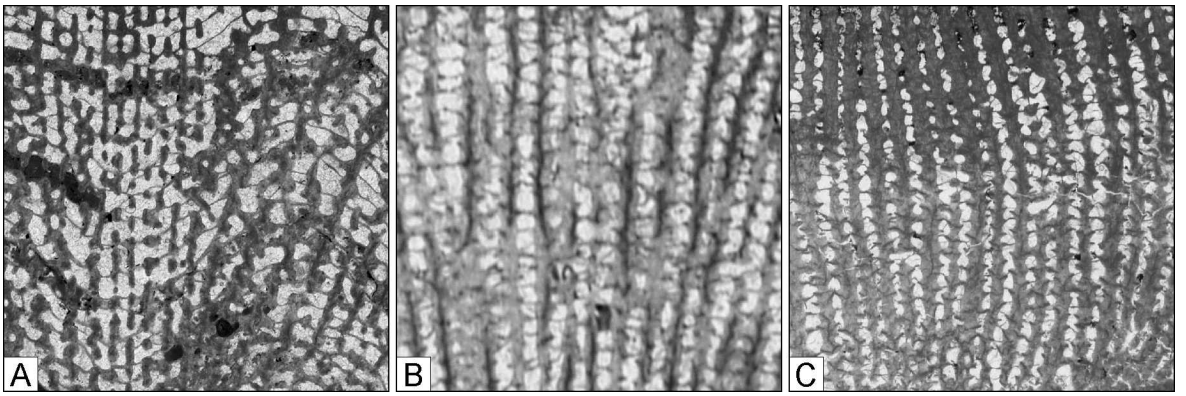


Fig. 25. *Pennular vs. non-pennular corals*. **A**, many pores, smooth septal lateral face, no pennulae (*Astraraea*); **B**, no pores, strong ornamentation of the septal face, no pennulae (*Ahrdorffia*); **C**, some pores and pennulae (*Synastrea*). True pennulae alternate from septum to septum, so they are interlaced.

5.2 Species concept and determination

The determination of the species is more difficult, because it is more subjective. The biological species is a population of individuals that is able to produce fertile offspring. Because of the effort to prove this, the determination of extant organisms is based on morphology. This includes easily recognisable outer characteristics, such as form, sculpture, and colour, or characteristics that are connected to the function of the organisms, such as the reproductive organs. Moreover, the biology allows the examination of genetic information and compares species to each other. In the palaeontology, the definition of species is based on the morphology of the fossil remains only.

In fossil corals, species are separated using quantitative characteristics, such as the corallite dimensions, septal symmetry and septal number. There are no rules as to what constitutes a species; it is not defined to what extent the size of the corallites of two specimens must differ to belong to a different species.

In order to solve this problem for fossil corals, systematic measurements and counts are applied in colonies to examine the variability of the different quantitative characteristics. For instance, in a plocoid colony, the smaller and larger calicular diameter, and the distance of corallite centres are measured, and the number of septa is counted. With about 30 measurements per colony for each characteristic, it becomes clear which characteristics show the lowest variation. Therefore, the distance of corallites mostly shows high variation, whereas the diameter has lower variation. The number of septa may be constant or vary to a certain degree.

For the comparison of specimens (species), characteristics that show the lowest variance will be selected. For the comparison of two specimens (or species), statistical procedures are available such as the KRUSKAL-WALLIS-Test. However, this test has some disadvantages. First, it needs a high number of values, and second, it is very sensitive to imprecisely measured values (mostly due to preservation). Moreover, only one characteristic can be compared at once.

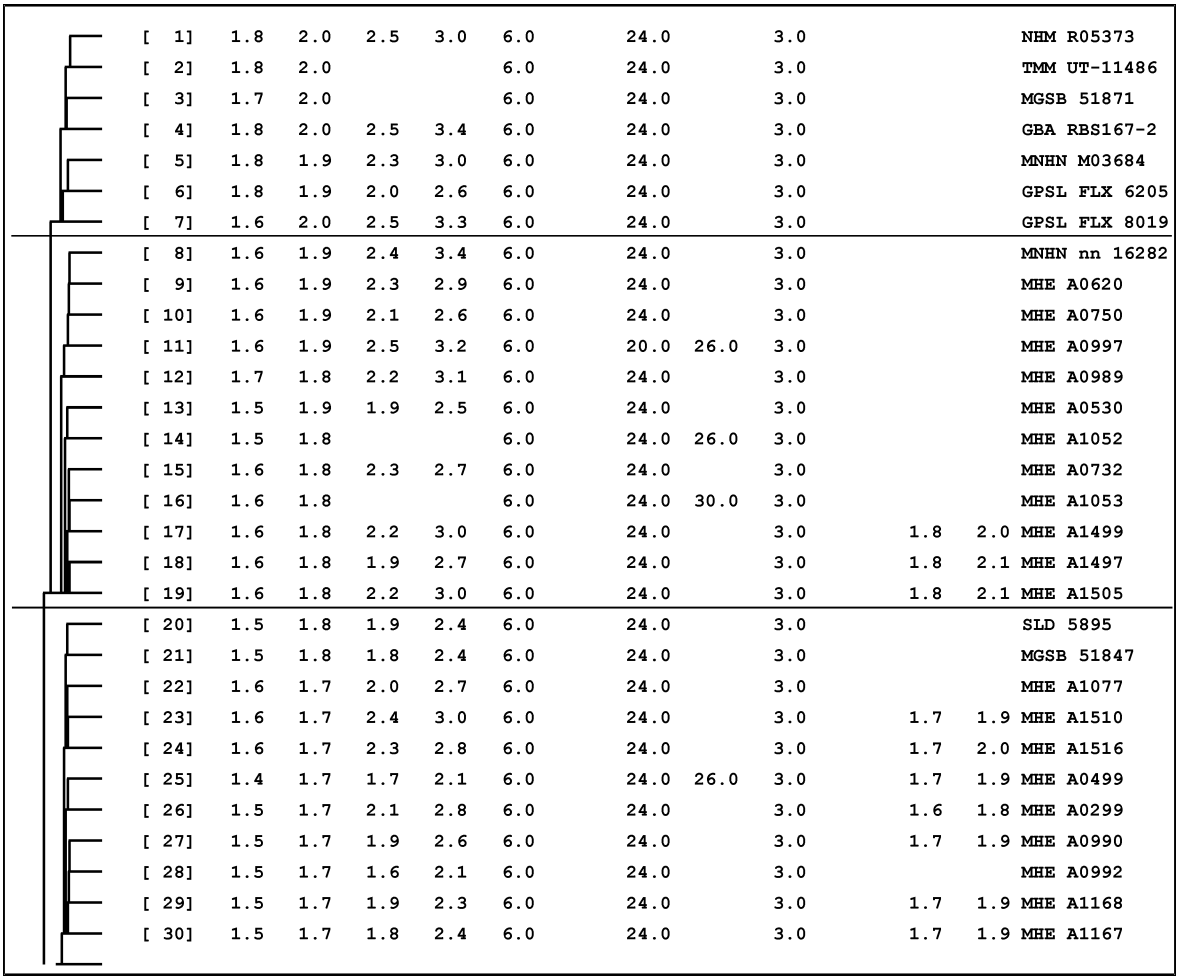
Here, we have applied a comparably simpler cluster analysis in order to separate the specimens of one genus into species (Fig. 26). The advantage is that more than one characteristic can be included at the same time. In such an analysis, all specimens of one genus are compared to each other, which results in groups of specimens. These groups are more or less well separated. If a group contains of a type specimen, the group may obtain a name, otherwise the group remains in open nomenclature.

The decision about how large the groups may be (how many specimens they contain) is very subjective. Here, the limits of the groups depend on the variance of the measured or counted values within one colony. For instance, the genus *Heliopora* has low values, where the small corallite diameter and the number of pseudo-

septa do not vary greatly. That makes the separation of groups easier. On the contrary, all thamnasterioid genera, such as *Synastrea* or *Astraraea*, present a high variability in the values, which makes the separation more difficult and the resulting groups larger.

The values in the tables provided with the genera, which should help with the separation of species, are the average minimum and maximum values. For a confident determination of a specimen, it is therefore necessary to take as many values as possible. This is easier on specimens that have a polished surface.

The separation of specimens into species groups is one problem, while the assignation of a name to a group is another. For the comparison with formally established species, it was necessary to have access to the type material. This was somewhat difficult because not all collections were completely available; for two of them (SOWERBY, M. BEAUVAIS), the current location is unknown. For all (330) species that were originally described from the study area, the type material – as far as available – was observed. For species without type material, we tried to obtain information from the literature. Type material and/or literature data of Upper Cretaceous coral species that were originally not described from the study area, were also included. This concerns material outside of Austria as well.



[1]	1.8	2.0	2.5	3.0	6.0	24.0		3.0			NHM R05373
[2]	1.8	2.0			6.0	24.0		3.0			TMM UT-11486
[3]	1.7	2.0			6.0	24.0		3.0			MGSB 51871
[4]	1.8	2.0	2.5	3.4	6.0	24.0		3.0			GBA RBS167-2
[5]	1.8	1.9	2.3	3.0	6.0	24.0		3.0			MNHN M03684
[6]	1.8	1.9	2.0	2.6	6.0	24.0		3.0			GPSL FLX 6205
[7]	1.6	2.0	2.5	3.3	6.0	24.0		3.0			GPSL FLX 8019
[8]	1.6	1.9	2.4	3.4	6.0	24.0		3.0			MNHN nn 16282
[9]	1.6	1.9	2.3	2.9	6.0	24.0		3.0			MHE A0620
[10]	1.6	1.9	2.1	2.6	6.0	24.0		3.0			MHE A0750
[11]	1.6	1.9	2.5	3.2	6.0	20.0	26.0	3.0			MHE A0997
[12]	1.7	1.8	2.2	3.1	6.0	24.0		3.0			MHE A0989
[13]	1.5	1.9	1.9	2.5	6.0	24.0		3.0			MHE A0530
[14]	1.5	1.8			6.0	24.0	26.0	3.0			MHE A1052
[15]	1.6	1.8	2.3	2.7	6.0	24.0		3.0			MHE A0732
[16]	1.6	1.8			6.0	24.0	30.0	3.0			MHE A1053
[17]	1.6	1.8	2.2	3.0	6.0	24.0		3.0	1.8	2.0	MHE A1499
[18]	1.6	1.8	1.9	2.7	6.0	24.0		3.0	1.8	2.1	MHE A1497
[19]	1.6	1.8	2.2	3.0	6.0	24.0		3.0	1.8	2.1	MHE A1505
[20]	1.5	1.8	1.9	2.4	6.0	24.0		3.0			SLD 5895
[21]	1.5	1.8	1.8	2.4	6.0	24.0		3.0			MGSB 51847
[22]	1.6	1.7	2.0	2.7	6.0	24.0		3.0			MHE A1077
[23]	1.6	1.7	2.4	3.0	6.0	24.0		3.0	1.7	1.9	MHE A1510
[24]	1.6	1.7	2.3	2.8	6.0	24.0		3.0	1.7	2.0	MHE A1516
[25]	1.4	1.7	1.7	2.1	6.0	24.0	26.0	3.0	1.7	1.9	MHE A0499
[26]	1.5	1.7	2.1	2.8	6.0	24.0		3.0	1.6	1.8	MHE A0299
[27]	1.5	1.7	1.9	2.6	6.0	24.0		3.0	1.7	1.9	MHE A0990
[28]	1.5	1.7	1.6	2.1	6.0	24.0		3.0			MHE A0992
[29]	1.5	1.7	1.9	2.3	6.0	24.0		3.0	1.7	1.9	MHE A1168
[30]	1.5	1.7	1.8	2.4	6.0	24.0		3.0	1.7	1.9	MHE A1167

Fig. 26. *Cluster analysis*. Clusterdiagramm with the corresponding statistical values. Each line corresponds to one specimen. Horizontal lines separate species.

5.3 Systematic part

The description of the species follows the classification proposed in LÖSER (2016). The few Octocorallia follow after the order Scleractinia. Figure 27 gives a table with all genera and their taxonomic position.

Superfamily and family

For both, a description of the morphology is provided. In case a family gathers many genera, a key is given that may help with the separation of genera.

Genus

Type species. Name of the type species. Genera with a question mark have no type species.

Frequency. The frequency within the study area reaches from very rare to very abundant.

Distribution. Global stratigraphic range of the genus. For the abbreviations, compare to appendix II.

Species. In the case, the genus collects many species, a table with the principal measurements of the species is provided. The variation of the values corresponds to average values.

Species

The species are alphabetically arranged, not according to the order in the table. Taxa in open nomenclature (»sp.«) are given at last.

Synonymy. For species that could be assigned to an existing taxon, a synonymy list is provided. The list is not critical. Synonyms are not included.

Measurements. For one or two specimens, measurements are provided. The list starts with the collection acronym and specimen number (for the abbreviations see appendix I). It is indicated when the specimen is a type. The abbreviations in the table head are as follows: n, number of measurements; min-max, lowest and highest measured value; μ, arithmetic mean (average); s, standard deviation; cv, coefficient of variation; μ±s, first interval. The abbreviations of the measured or counted characteristics are explained in appendix I.

Determination. Most species were determined on the basis of a comparison with the type material (»Type material«), or, if this was not available, only with the literature (»Literature«). Comparison to the literature was difficult. Only Oppenheim and Beauvais gave a scale of the illustrations; in Reuss and Felix it can be assumed that the specimens are depicted in their original size, unless otherwise stated. Determinations based on the literature have a low certainty.

Frequency. Five categories are distinguished:

Type material – Only the type material is known.

Collection material – The species is only known from material found in collections. Own material was not available, probably because the species is rare or only known from localities that do not exist anymore, or that have not been visited.

Rare – We have found fewer than four specimens.

Normal – We have found between four and ten specimens.

Abundant – We have found more than ten specimens.

Order Scleractinia		
Superfamily	Family	Genus
Actinastraeoidea	Actinastraeidae	*Actinastrea*
		Columactinastraea
		Stelidioseris
Caryophyllioidea	Caryophylliidae	*Parasmilia*
Cladocoroidea	Cladocoridae	*Procladocora*
	Columastraeidae	*Brachyphyllia*
		Columastrea
		Neocoenia
		Proplesiastraea
Cyclolitoidea	Cyclolitidae	*Cyclolites*
	Gosaviaraea group	*Gosaviaraea*
	Negoporitidae	*Paractinacis*
	Synastraeidae	*Brachycoenia*
		Brachyseris
		Felixastraea
		Geroastrea
		Gyroseris
		Hydnophorastraea
		Hydnoseris
		Koilomorpha
		Leptophyllastraea
		?Leptophyllastraea
		Leptophyllia
		Loboseris
		Siderocoenia
		Synastrea
		Synhydnophora
		Valliculastraea
Eugyroidea	Eugyridae	*Hydnophoraraea*
Felixaraeoidea	Felixaraeidae	*Felixaraea*
		Litharaeopsis
		Pseudofavia
Haimesastraeoidae	Haimesastraeidae	*Diplothecocora*
Haplaraeoidea	Astraraeidae	*Astraraea*
		?Astraraea
		Astraraeatrochus
		Astraraeidae indet.
		Elephantaria
Heterocoenioidea	Agatheliidae	*Agathelia*
		?Agathelia
		?Carantophyllum
	Carolastraeidae	*Crinopora*
	Heterocoeniidae	*Heterocoenia*
		Pachyheterocoenia
		Somalites

Order Scleractinia		
Superfamily	Family	Genus
Madreporoidea	Madreporidae	*Haimesiphyllia*
		Madreporidae indet.
		Ogilviastraea
		Palaeohelia
Misistelloidea	Plesiosmilia group	*Montlivaltoides*
		Plesiosmilia
		Trochophyllia
Montastraeoidea	Placocoeniidae	*Phyllocoeniopsis*
Montlivaltioidea	Lasmogyridae	*Astrogyra*
		Glyphephyllia
		Lasmogyra
		?Lasmogyra
		Placosmilia
		?Placosmilia
Phyllosmilioidea	Phyllosmiliidae	*Aulosmilia*
		Barysmilia
		Cycloria
		Dasmiopsis
		Diploctenium
		Elasmophyllia
		Flabellosmilia
		Hydnophoropsis
		Nefocoenia
		Nefophyllia
		Orbignygyra
		Pachygyra
		Pachyphyllia
		Pachyphylliopsis
		Phragmosgyra
		Phyllosmilia
		Pleurocora
		Psilogyra
		Reussicoenia
		Strotogyra
Poritoidea	Actinacididae	*Actinacis*
Thamnasterioidea	Siderastraeidae	*Eosiderastrea*
		Palaeosiderofungia
	Thamnasteriidae	*Ahrdorffia*
Subclass Octocorallia		
Order	Family	Genus
Helioporacea	Aulopsammiidae	*Epiphaxum*
	Helioporidae	*Heliopora*
		Pseudopolytremacis

Fig. 27. *Taxonomic inventory*. List of the included genera, according to their systematic classification.

Order Scleractinia Bourne, 1900

Superfamily Actinastraeoidea ALLOITEAU, 1952

Description. Cerioid, phaceloid or plocoid colonies. Septa compact, mostly in a regular radial symmetry. Septa often connected to each other. Lateral faces with thorns, upper margin granulated. Microstructure of septa of medium-sized trabeculae. Lonsdaleoid septa present in one genus, main septa absent. Synapticulae absent. Pali in some genera present, columella in most genera. Endotheca varies, generally made of thin tabulae. Wall compact or subcompact, mainly septothecal. Marginarium in one genus. Coenosteum generally present, consists of isolated trabeculae or costae. Budding extracalicinal and intracalicinal.

Family Actinastraeidae ALLOITEAU, 1952

Without pali	Coenosteum with large trabeculae	*Actinastrea*
	Coenosteum with costae	*Stelidioseris*
With pali		*Columactinastraea*

Fig. 28. Classification of the family Actinastraeidae.

Actinastrea ORBIGNY, 1849

Type species. *Actinastrea goldfussi* ORBIGNY, 1850.

Description. Plocoid colony with narrow coenosteum that is made by large isolated trabeculae. Corallites circular or polygonal. Septa in a regular radial symmetry, rarely bilateral. Septa of the first and second generation can be connected to the columella, younger septa can be connected to older ones. Columella styliform and large. No pali.

Frequency. Very common.

Distribution. CEN-EOC.

Septal symmetry	Number of septa	Large corallite diameter	Species
6	24	2.1 - 2.2 mm	*A. pivetaui*
8	8 - 16	1.4 - 1.6 mm	*A. gorjanovici*
	16	0.8 - 1.0 mm	*A. depressa*
		1.0 - 1.2 mm	*A. multituberculata*
		1.2 - 1.4 mm	*A. arnaudi*
		1.8 mm	*A. ramosa*
		2.0 - 2.4 mm	*A. magnifica*
10	20	1.4 - 1.7 mm	*A. limbata*
		1.7 - 1.8 mm	*A. polygonata*
		1.9 - 2.0 mm	*A. regularis*
		2.0 - 2.2 mm	*A. subdecaphylla*
		2.3 - 2.4 mm	*A. sp. 1*
		2.5 - 2.6 mm	*A. sp. 2*
		2.8 mm	*A. rigausensis*
Septal symmetry bilateral	26-30	1.5 mm	*A. sp. 3*

Fig. 29. Species of the genus *Actinastrea*.

Actinastrea arnaudi ALLOITEAU, 1954

(Fig. 47 in the book edition)

1954 *Actinastrea Arnaudi* nov. sp. – ALLOITEAU, p. 58, pl. 1, fig. 9, pl. 8, fig. 7

Measurements.

(MHE A0596)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.00-1.45	1.18	0.09	8.0	1.08-1.27
clmax	30	1.12-1.58	1.33	0.12	9.3	1.20-1.45
ccd	20	1.28-2.01	1.58	0.25	15.9	1.33-1.84
s	16					

Determination. Type material.

Frequency. Abundant.

Actinastrea depressa ALLOITEAU, 1954

(Fig. 48 in the book edition)

1954 *Actinastrea depressa* nov. sp. – ALLOITEAU, p. 48, pl. 4, fig. 10, pl. 7, fig. 8

Measurements.

(MHE A0392)

	n	min-max	µ	s	cv	µ±s
clmin	25	0.66-1.05	0.90	0.11	12.4	0.79-1.01
clmax	25	0.81-1.17	0.99	0.09	10.0	0.89-1.09
ccd	55	1.04-1.89	1.42	0.20	14.5	1.22-1.63
s	16					

Determination. Type material.

Frequency. Normal.

Actinastrea gorjanovici (FELIX, 1925)

(Fig. 49 in the book edition)

1925 *Astrocoenia Gorjanovici* nov. sp. – FELIX, p. 13, text-fig. 2

Measurements.

(GPSL FLX 6176, syntype of *Astrocoenia gorjanovici* FELIX, 1925)

	n	min-max	µ	s	cv	µ±s
clmin	11	1.22-1.56	1.41	0.09	6.4	1.32-1.50
clmax	6	1.49-1.68	1.58	0.07	4.7	1.51-1.66
ccd	10	1.73-2.57	2.14	0.28	13.0	1.86-2.42
s	8-16					

Determination. Type material.

Frequency. Type material.

Actinastrea limbata ALLOITEAU, 1954

(Fig. 50 in the book edition)

1954 *Actinastrea limbata* nov. sp. – ALLOITEAU, p. 89, text-fig. 17, pl. 2, fig. 5, pl. 10, fig. 7

Measurements.

(MHE A0518)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.13-1.62	1.42	0.14	9.9	1.28-1.57
clmax	30	1.28-1.77	1.56	0.14	8.9	1.42-1.70
ccd	30	1.54-2.15	1.89	0.15	7.9	1.74-2.04
s	20					

Determination. Type material.

Frequency. Normal.

Actinastrea ? *magnifica* (REUSS, 1854)

(Fig. 51 in the book edition)

1854 *Astrocoenia magnifica* – REUSS, p. 94, pl. 8, fig. 1-3

Measurements.

(MHE A0425)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.64-2.23	1.93	0.15	8.1	1.77-2.09
clmax	20	2.13-2.71	2.44	0.18	7.5	2.25-2.62
ccd	30	1.85-2.71	2.31	0.24	10.4	2.06-2.55
s	16					

Determination. Type material.

Frequency. Rare.

Actinastrea multituberculata ALLOITEAU, 1954

(Fig. 52 in the book edition)

1954 *Actinastrea multituberculata* nov. sp. – ALLOITEAU, p. 69, pl. 1, fig. 8, pl. 9, fig. 4

Measurements.

(MHE A0388)

	n	min-max	µ	s	cv	µ±s
clmin	25	0.79-1.09	0.94	0.08	9.1	0.85-1.03
clmax	25	0.98-1.32	1.16	0.09	8.2	1.07-1.26
ccd	40	1.18-1.84	1.43	0.15	10.9	1.27-1.59
s	16					

Determination. Type material.

Frequency. Abundant.

Actinastrea piveteaui ALLOITEAU, 1954

(Fig. 53 in the book edition)

1954 *Actinastrea Piveteaui* nov. sp. – ALLOITEAU, p. 87, pl. 2, fig. 1, pl. 10, fig. 5

Measurements.

(MHE A078)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.33-1.95	1.68	0.16	9.9	1.51-1.85
clmax	30	1.63-2.57	2.12	0.21	10.0	1.90-2.33
ccd	20	1.70-2.59	2.15	0.27	12.9	1.87-2.43
s	24					

Determination. Type material.

Frequency. Rare.

Actinastrea polygonata ALLOITEAU, 1954

(Fig. 54 in the book edition)

1954 *Actinastrea polygonata* nov. sp. – ALLOITEAU, p. 43, pl. 4, fig. 11, pl. 7, fig. 5

Measurements.

(MHE A0606)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.31-1.74	1.53	0.09	6.5	1.43-1.63
clmax	30	1.59-2.03	1.78	0.12	6.8	1.66-1.90
ccd	20	1.51-2.34	1.95	0.20	10.2	1.75-2.16
s	20					

Determination. Type material.

Frequency. Normal.

Actinastrea ramosa (FROMENTEL, 1887)

(Fig. 55 in the book edition)

1887 *Enallastraea ramosa* – FROMENTEL, p. 610, pl. 142, fig. 1

Measurements.

(MHE A0390)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.21-1.90	1.53	0.17	11.2	1.36-1.71
clmax	20	1.36-2.00	1.74	0.17	10.2	1.56-1.91
ccd	25	1.49-2.70	2.13	0.38	18.0	1.74-2.51
s	16					

Determination. Type material.

Frequency. Rare.

Actinastrea regularis (FROMENTEL, 1887)

(Fig. 56 in the book edition)

1887 *Isastraea regularis* – FROMENTEL, pl. 191, fig. 4

Measurements.

(NHMW 2006z0409/0105)

	n	min-max	µ	s	cv	µ±s
clmin	25	1.51-1.90	1.69	0.10	6.3	1.58-1.80
clmax	25	1.75-2.24	1.95	0.13	7.1	1.81-2.09
ccd	25	1.93-2.55	2.19	0.17	7.8	2.02-2.37
s	20					

Determination. Type material.

Frequency. Abundant.

Actinastrea rigausensis BEAUVAIS, 1982

(Fig. 57 in the book edition)

1982 *Actinastraea rigausensis* nov. sp. – BEAUVAIS, (1), p. 12, pl. 1, fig. 1

Measurements.

(MHE A0387)

	n	min-max	µ	s	cv	µ±s
clmin	12	2.08-2.74	2.42	0.17	7.3	2.24-2.60
clmax	12	2.44-3.00	2.79	0.15	5.3	2.64-2.95
ccd	20	2.45-3.44	2.90	0.25	8.7	2.65-3.16
s	20					

Determination. Literature - BEAUVAIS (1982).

Frequency. Rare.

Actinastrea ? *subdecaphylla* (OPPENHEIM, 1930)

(Fig. 58 in the book edition)

1930 *Astrocoenia subdecaphylla* n. sp. – OPPENHEIM, p. 460, pl. 15, fig. 9

1982 *Actinastraea subdecaphylla* (Oppenheim) 1930 – BEAUVAIS, (1), p. 13, fig. 1, 2

Measurements.

(MHE A0386)

	n	min-max	µ	s	cv	µ±s
clmin	25	1.67-1.98	1.83	0.08	4.4	1.75-1.91
clmax	25	1.84-2.54	2.19	0.18	8.3	2.01-2.38
ccd	60	1.89-2.87	2.30	0.26	11.4	2.04-2.57
s	20					

Determination. Type material.

Frequency. Normal.

Actinastrea sp. 1

(Fig. 59 in the book edition)

Measurements.

(MHE A0306)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.60-2.27	1.92	0.20	10.5	1.71-2.12
clmax	20	2.24-2.55	2.37	0.08	3.4	2.29-2.45
ccd	35	1.86-3.01	2.41	0.31	13.1	2.10-2.73
s	20 (22)					

Frequency. Normal.

Actinastrea sp. 2

(Fig. 60 in the book edition)

Measurements.

(MHE A0398)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.80-2.53	2.09	0.20	9.5	1.89-2.30
clmax	30	2.14-2.88	2.52	0.22	8.7	2.30-2.74
ccd	30	1.82-3.24	2.41	0.31	12.9	2.10-2.73
s	20					

Frequency. Rare.

Actinastrea sp. 3

(Fig. 61 in the book edition)

Measurements.

(UPMC ohne Nummer)

	n	min-max	μ	s	cv	μ±s
clmin	30	1.02-1.59	1.32	0.14	10.6	1.18-1.46
clmax	30	1.24-1.77	1.53	0.14	9.1	1.39-1.68
ccd	30	1.61-1.88	1.74	0.08	4.9	1.65-1.83
s	15	26-30	27.86	1.92	6.8	26-30

Frequency. Collection material.

Columactinastraea ALLOITEAU, 1952

Type species. *Columactinastraea rennensis* ALLOITEAU, 1952.

Description. Plocoid colony with narrow coenosteum that is made by few isolated trabeculae. Corallites of a more irregular shape, circular or polygonal. Septa in a less regular radial symmetry, rarely bilateral. Younger septa can be connected to older ones. Columella styliform. Pali on the first septal cycle, often not well visible.

Frequency. Common.

Distribution. U.TUR-MAA.

Septal symmetry	Number of septa	Small corallite diameter	Large corallite diameter	Species
6	12	0.7 - 0.8 mm	1.0 mm	*C. hilli*
		0.9 - 1.0 mm	1.1 - 1.2 mm	*C. sp. 1*
8	16	0.9 - 1.1 mm	1.0 - 1.2 mm	*C. germaini*
		1.1 - 1.2 mm	1.3 - 1.4 mm	*C. formosa*
		1.2 - 1.3 mm	1.5 - 1.6 mm	*C. reticulata*
		1.4 - 1.7 mm	1.8 - 2.0 mm	*C. octophylla*
		1.8 - 2.0 mm	2.2 - 2.3 mm	*C. rennensis*
		2.1 - 2.4 mm	2.6- 2.7 mm	*C. sp. 2*

Fig. 30. Species of the genus *Columactinastraea*.

Columactinastraea formosa (GOLDFUSS, 1829)

(Fig. 64 in the book edition)

1829 *Astrea formosa* – GOLDFUSS, p. 111, pl. 38, fig. 9

1854 *Stephanocoenia formosa* – REUSS, p. 97, pl. 8, fig. 7-9

1903 *Stephanocoenia formosa* M. Edwards et J. Haime (Goldfuss sp.) – FELIX, p. 318, text-fig. 59

1982 *Columactinastraea formosa* (Goldfuss) 1826 – BEAUVAIS, (1), p. 26, fig. 5, pl. 1, fig. 6, 7

Measurements.

(IPB GF295, holotype of *Astrea formosa* GOLDFUSS, 1829)

	n	min-max	μ	s	cv	μ±s
clmin	20	0.96-1.37	1.17	0.09	7.8	1.08-1.26
clmax	20	1.08-1.71	1.38	0.17	12.5	1.20-1.55
ccd	20	1.20-2.14	1.67	0.23	14.0	1.44-1.91
s	16					

(MHE A0550)

	n	min-max	μ	s	cv	μ±s
clmin	30	0.97-1.42	1.16	0.11	9.7	1.05-1.28
clmax	30	1.15-1.58	1.38	0.11	8.2	1.27-1.49
ccd	20	1.38-1.91	1.60	0.17	11.0	1.42-1.78
s	16					

Determination. Type material.

Frequency. Normal.

Columactinastraea germaini (ALLOITEAU, 1941)

(Fig. 65 in the book edition)

1941 *Stephanocaenia Germaini* n.sp. – ALLOITEAU, p. 81, pl. 29, fig. 2-4

Measurements.

(MHE A0670)

	n	min-max	μ	s	cv	μ±s
clmin	30	0.63-1.04	0.89	0.08	9.8	0.80-0.98
clmax	30	0.78-1.31	1.04	0.12	11.8	0.92-1.17
ccd	30	1.09-1.61	1.37	0.15	11.1	1.22-1.52
s	16					

Determination. Type material.

Frequency. Abundant.

Columactinastraea hilli (WELLS, 1934)

(Fig. 66 in the book edition)

1934 *Centrastrea hilli*, new species – WELLS, p. 80, pl. 2, fig. 11, 12

Measurements.

(BSPG 2003 XX 7355)

	n	min-max	μ	s	cv	μ±s
clmin	30	0.68-1.01	0.85	0.09	11.6	0.75-0.95
clmax	30	0.84-1.15	1.00	0.08	8.4	0.91-1.08
ccd	30	0.80-1.30	1.00	0.13	13.9	0.86-1.14
s	15	12-16	13.1	1.30	9.9	12-14

Determination. Type material.

Frequency. Rare.

Columactinastraea octophylla (QUENSTEDT, 1880)

(Fig. 67 in the book edition)

1880 *Astraea reticulata octophylla* – QUENSTEDT, p. 891, pl. 178, fig. 11-14

Measurements.

(NHM R1726)

	n	min-max	μ	s	cv	μ±s
clmin	25	1.39-1.96	1.67	0.15	9.5	1.51-1.83
clmax	25	1.62-2.30	1.97	0.17	8.8	1.80-2.15
ccd	30	1.37-2.39	1.77	0.24	13.7	1.53-2.02
s	16					

Determination. Type material.

Frequency. Abundant.

Columactinastraea rennensis ALLOITEAU, 1952

(Fig. 68 in the book edition)

1952 *Columactinastraea rennensis* All. – ALLOITEAU, p. 603, pl. 7, fig. 4

Measurements.

(MHE A0506)

	n	min-max	μ	s	cv	μ±s
clmin	20	1.57-2.10	1.82	0.17	9.8	1.64-2.00
clmax	20	1.52-2.40	2.04	0.23	11.5	1.81-2.28
ccd	20	1.66-2.58	2.11	0.27	12.9	1.84-2.39
s	16					

Determination. Type material.

Frequency. Normal.

Columactinastraea reticulata (GOLDFUSS, 1829)

(Fig. 69 in the book edition)

1829 *Astrea reticulata* – GOLDFUSS, p. 111, pl. 38, fig. 10

Measurements.

(GBA 2003/023/0002/02)

	n	min-max	μ	s	cv	μ±s
clmin	20	1.07-1.52	1.30	0.15	11.5	1.15-1.45
clmax	20	1.31-1.89	1.59	0.14	9.1	1.44-1.73
ccd	20	1.06-1.93	1.49	0.24	16.1	1.25-1.73
s	16					

Determination. Type material.

Frequency. Abundant.

Columactinastraea sp. 1

(Fig. 70 in the book edition)

Measurements.

(MHE A1078)

	n	min-max	μ	s	cv	μ±s
clmin	40	0.93-1.16	1.04	0.06	5.8	0.98-1.10
clmax	40	1.06-1.40	1.21	0.08	7.2	1.12-1.30
ccd	40	1.08-1.47	1.28	0.10	8.0	1.17-1.38
s	30	10-16	12.73	1.22	9.6	12-14

Frequency. Rare.

Columactinastraea sp. 2

(Fig. 71 in the book edition)

Measurements.

(MHE A0364)

	n	min-max	μ	s	cv	μ±s
clmin	12	2.13-2.53	2.36	0.13	5.6	2.23-2.50
clmax	12	2.48-3.10	2.69	0.16	5.9	2.52-2.85
ccd	25	2.26-3.82	2.95	0.39	13.4	2.55-3.35
s	16					

Frequency. Rare.

Stelidioseris TOMES, 1893

Type species. *Stelidioseris gibbosa* TOMES, 1893.

Septal symmetry	Number of septa	Large corallite diameter	Species
6	24	1.6 - 1.8 mm	*St. melkarthi*
10	20	1.6 - 1.7 mm	*St. gibbosa*
		1.8 - 2.0 mm	*St. regularis*
		2.2 - 2.4 mm	*St. infundibulum*

Fig. 31. Species of the genus *Stelidioseris*.

Description. Plocoid colony with a very narrow coenosteum that is made by confluent costae. Corallites circular or polygonal. Septa in a regular radial symmetry. Septa of the first and second generation can be connected to the columella, younger septa can be connected to older ones. Septa of the second generation may be centrally swollen. Columella styliform and large. No pali.

Frequency. Very rare.

Distribution. BTH-CAM.

Stelidioseris gibbosa TOMES, 1893

(Fig. 74 in the book edition)

1893 *Stelidioseris gibbosa* – TOMES, p.577, pl. 20, fig. 1, 2, 4, 6

2012 *Stelidioseris gibbosa* Tomes, 1893 – LÖSER, p. 20, fig.1g-l

Measurements.

(MHE A1041)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.24-1.80	1.51	0.15	10.1	1.36-1.66
clmax	20	1.52-1.98	1.74	0.13	7.9	1.60-1.88
ccd	20	1.38-2.27	1.83	0.22	12.3	1.60-2.06
s	20	18-20	19.6	0.82	4.1	19-20

Determination. Type material.

Frequency. Rare.

Stelidioseris infundibulum (ALLOITEAU, 1954)

(Fig. 75 in the book edition)

1954 *Actinastrea infundibulum* nov. sp. – ALLOITEAU, p. 34, text-fig. 7, pl. 3, fig. 1, pl. 6, fig. 7

Measurements.

(NHMW 2016/0196/0001)

	n	min-max	µ	s	cv	µ±s
clmin	20	2.02-2.51	2.30	0.14	6.4	2.15-2.45
clmax	20	2.32-2.83	2.63	0.14	5.4	2.48-2.77
ccd	32	2.30-3.49	2.81	0.27	9.9	2.53-3.09
s	20	20-24	20.50	1.10	5.3	19-22

Determination. Type material.

Frequency. Rare.

Stelidioseris melkarthi (FELIX, 1909)

(Fig. 76 in the book edition)

1909 *Stephanocoenia Melkarthi* – FELIX, p. 174, pl. 7, fig. 9

Measurements.

(MHE A2182)

	n	min-max	µ	s	cv	µ±s
clmin	35	1.51-1.89	1.67	0.11	6.8	1.55-1.78
clmax	35	1.72-2.07	1.89	0.09	4.8	1.80-1.98
ccd	40	1.83-2.37	2.09	0.14	7.0	1.94-2.24
s	24					

Determination. Type material.

Frequency. Rare.

Stelidioseris regularis (FROMENTEL, 1857)

(Fig. 77 in the book edition)

1857 *Astrocoenia regularis* – FROMENTEL, p. 47, pl. 6, fig. 3, 4

Measurements.

(MHE A2183)

	n	min-max	µ	s	cv	µ±s
clmin	25	1.59-1.82	1.72	0.06	3.7	1.65-1.78
clmax	25	1.81-2.14	2.00	0.08	4.2	1.92-2.09
ccd	60	2.26-3.24	2.71	0.24	9.0	2.47-2.96
s	20					

Determination. Type material.

Frequency. Rare.

Superfamily Caryophyllioidea DANA, 1846

Description. Mainly solitary, few colonial (phaceloid) corals. Septa compact, regular thickness, mostly in a regular radial symmetry. Septal upper margins smooth, lateral faces with few small thorns or granulae. Lonsdaleoid septa and main septum absent. Microstructure of probably very small trabeculae that can be only traced by a dark line. Synapticulae absent. Pali and columella can be present. Endotheca varies, but generally poorly developed. Marginarium absent. Wall septothecal. Coenosteum absent.

Family Caryophylliidae DANA, 1846

Parasmilia MILNE EDWARDS & HAIME, 1848

Type species. *Madrepora centralis* MANTELL, 1822.

Description. Turbinate solitary coral with circular outline. A columella is present, but difficult to distinguish from the septa. No pali. The endotheca is poorly developed.

Frequency. Very rare.

Distribution. CEN-MAA.

Parasmilia amphitrites (FELIX, 1903)

(Fig. 78 in the book edition)

1903 *Ceratotrochus Amphitrites* nov. sp. – FELIX, p. 352, pl. 24, fig. 15

Measurements.

(MHE A0916)

cl 12×13 mm

c 14×15 mm

s 62

Determination. Type material.

Frequency. Rare.

Superfamily Cladocoroidea MILNE EDWARDS, 1857

Description. Solitary and (cerioid, phaceloid, plocoid) colonial corals. Septa compact. Septal in regular thickness. Septal symmetry radial, regular or sub-regular. Septa often connected to each other. Septal lateral faces with thorns and/or granulae, septal upper margin with fine granulations. Lonsdaleoid septa and main septum absent. Microstructure of medium-sized trabeculae. Synapticulae absent. Pali present in some genera. Columella present in most genera, styliform, lamellar, parietal or by septal fusion. Endotheca generally present. Marginarium absent. Wall present, septothecal or parathecal. Coenosteum present in plocoid genera. Budding extracalicinal (cerioid, plocoid) or intracalicinal (phaceloid).

Phaceloid	Cladocoridae
Plocoid	Columastraeidae

Fig. 32. Classification of the superfamily Cladocoroidea.

Family Cladocoridae MILNE EDWARDS, 1857

Description. Phaceloid colonies. Septal symmetry sub-regular radial. Pali present in some genera. Columella styliform, lamellar, or parietal.

Procladocora ALLOITEAU, 1952

Type species. *Calamophyllia gracilis* ORBIGNY, 1850.

Description. Phaceloid colony. Corallites with a small diameter (< 6 mm). Septa in a irregular radial symmetry; systems can be recognised. The number of septa increases with the corallite diameter. The septa of the first two cycles have pali. The columella is lamellar.

Frequency. Very rare.

Distribution. CEN-MAA.

Septal symmetry	Number of septa	Small corallite diameter	Species
6	24 - 28	2.5 - 3.3 mm	*P. gracilis*
	30 - 36	3.3 - 3.4 mm	*P. aff. exiguis*
	35 - 48	3.5 mm	*P. formosa*
9	35 - 37	4.6 - 4.9 mm	*P. sp.*

Fig. 33. Species of the genus *Procladocora*.

Procladocora aff. *exiguis* (FROMENTEL, 1870)

(Fig. 81 in the book edition)

Measurements.

(GPSL FLX 5955)

	n	min-max	μ	s	cv	μ±s
cmin	17	2.73-4.05	3.52	0.46	13.1	3.05-3.98
cmax	19	2.96-5.68	4.38	0.79	18.0	3.59-5.17
clmin	14	1.96-3.01	2.48	0.35	14.3	2.12-2.84
clmax	18	2.49-4.06	3.25	0.50	15.6	2.74-3.76
s	12	24-37	29.83	3.80	12.7	26-34

Determination. Type material.

Frequency. Collection material.

Procladocora formosa (REIG ORIOL, 1995)

(Fig. 82 in the book edition)

1995 *Oculina formosa* n. sp. – REIG ORIOL, p. 29, pl. 4, fig. 8

Measurements.

(BSPG 2003 XX 6896)

	n	min-max	μ	s	cv	μ±s
cmin	30	2.61-3.89	3.31	0.36	10.9	2.95-3.68
cmax	30	2.85-4.49	3.70	0.44	12.0	3.26-4.15
clmin	30	2.15-3.43	2.86	0.33	11.6	2.53-3.20
clmax	30	2.46-3.87	3.23	0.40	12.6	2.82-3.64
s	10	31-38	34.8	2.29	6.6	33-37

Determination. Type material.

Frequency. Rare.

Procladocora gracilis (ORBIGNY, 1850)

(Fig. 83 in the book edition)

1850 *Calamophyllia gracilis* – ORBIGNY, (2), p. 204

Measurements.

(NHMW 2006z0391/0015)

	n	min-max	μ	s	cv	μ±s
cmin	5	2.22-2.92	2.59	0.29	11.3	2.29-2.88
clmin	10	1.60-2.86	2.07	0.34	16.8	1.72-2.42
clmax	10	2.02-4.41	2.84	0.73	25.8	2.10-3.57
s	4	20-34	27.0	5.77	21.3	21-33

Determination. Type material.

Frequency. Collection material.

Procladocora sp.

(Fig. 84 in the book edition)

Measurements.

(MHE A1116)

	n	min-max	μ	s	cv	μ±s
cmin	11	3.66-6.16	4.86	0.82	16.8	4.04-5.68
cmax	11	4.63-8.23	5.97	1.12	18.7	4.85-7.09
clmin	13	2.37-3.95	3.19	0.49	15.5	2.69-3.69
clmax	13	3.04-5.50	4.13	0.69	16.8	3.44-4.83
s	11	30-38	34.36	2.54	7.3	32-37

Frequency. Rare.

Family Columastraeidae ALLOITEAU, 1952

Description. Plocoid colonies. Septal symmetry regular radial and generally hexameral. Pali present in some genera. Columella varies: styliform, styliform and double, lamellar, or absent. Coenosteum with costae.

Columella double		*Proplesiastraea*
Columella styliform or lamellar	Pali at the first cycle	*Columastrea*
	Vague pali at two septal cycles	*Neocoenia*
Columella and pali cannot be separated		*Brachyphyllia*

Fig. 34. Classification of the family Columastraeidae.

Septal symmetry	Septal cycles	Small corallite diameter	Species
6	3	1.8 - 2.0 mm	*B. sp. 1*
	4	2.4 - 2.6 mm	*B. sp. 2*
		2.9 - 3.2 mm	*B. dormitzeri*
		3.7 - 4.0 mm	*B. simonyi*
		4.0 - 4.3 mm	*B. tenuiseptata*
		4.8 - 5.2 mm	*B. corollaris*
10	3	2.4 - 2.5 mm	*B. sp. 3*
		2.8 - 3.3 mm	*B. sp. 4*
		3.7 - 3.8 mm	*B. sp. 5*

Fig. 35. Species of the genus *Brachyphyllia*.

Brachyphyllia REUSS, 1854

Type species. *Brachyphyllia dormitzeri* REUSS, 1854.

Description. The colonies of this genus are generally very small and have only few corallites. Septal symmetry subregular in six or ten systems. In the calicular centre is a group of small trabecular elements; pali and a possible columella cannot be distinguished. The first septal cycle is generally stronger than the other cycles.

Frequency. Rare.

Distribution. CON-MAA.

Brachyphyllia corollaris (REUSS, 1854)

(Fig. 88 in the book edition)

1854 *Astraea corollaris* – REUSS, p. 113, pl. 9, fig. 7, 8
1903 *Phyllocoenia corollaris* Frech (Reuss sp.) – FELIX, p. 287, text-fig. 46, pl. 25, fig. 5
1982 *Neocaeniopsis corollaris* (Reuss) 1854 – BEAUVAIS, (2), p. 107, pl. 36, fig. 4

Measurements.

(NHMW 1864/0040/1402, syntype of *Astrea corollaris* REUSS, 1854)

	n	min-max	µ	s	cv	µ±s
clmin	3	5.13-5.27	5.21	0.07	1.3	5.14-5.28
clmax	3	6.13-6.18	6.16	0.02	0.3	6.14-6.18
ccd	3	8.95-11.1	9.84	1.10	11.2	8.73-11.0
s	48					

Determination. Type material.

Frequency. Rare.

Brachyphyllia dormitzeri REUSS, 1854

(Fig. 89 in the book edition)

1854 *Brachyphyllia Dormitzeri* – REUSS, p. 103, pl. 13, fig. 4-6
1930 *Brachyphyllia dormitzeri* Reuss – OPPENHEIM, p. 341, pl. 35, fig. 2, 9
1982 *Brachyphyllia dormitzeri* Reuss 1854 – BEAUVAIS, (2), p. 224, pl. 43, fig. 7

Measurements.

(NHMW 1864/0040/1305, syntype of *Brachyphyllia dormitzeri* REUSS, 1854)

	n	min-max	µ	s	cv	µ±s
clmin	6	2.54-3.69	3.06	0.44	14.4	2.62-3.51
clmax	6	3.23-4.82	4.05	0.56	13.9	3.48-4.61
ccd	6	5.87-8.25	6.75	0.84	12.4	5.91-7.59
s	48					

(MHE A0266)

	n	min-max	µ	s	cv	µ±s
clmin	3	2.83-3.58	3.28	0.40	12.1	2.88-3.68
clmax	3	3.68-3.88	3.80	0.10	2.7	3.69-3.90
ccd	3	4.86-6.45	5.41	0.89	16.5	4.52-6.31
s	3	35-40	36.7	2.88	7.8	34-40

Determination. Type material.

Frequency. Normal.

Brachyphyllia salisburgensis (BEAUVAIS, 1982)

(Fig. 90 in the book edition)

1982 *Neocaeniopsis salisburgensis* nov. sp. – BEAUVAIS, (2), p. 110, pl. 37, fig. 5

Measurements.

(GPSL FLX 8103)

	n	min-max	µ	s	cv	µ±s
clmin	7	3.08-4.27	3.56	0.40	11.4	3.15-3.97
clmax	6	3.69-5.38	4.52	0.58	12.8	3.94-5.10
s	48					

Determination. Literature - BEAUVAIS (1982).

Frequency. Collection material.

Brachyphyllia simonyi (REUSS, 1854)

(Fig. 91 in the book edition)

1854 *Astraea Simonyi* – REUSS, p. 113, pl. 13, fig. 15, 16
1903 *Orbicella Simonyi* Felix (Reuss sp.) – FELIX, p. 256, text-fig. 28
1982 *Neocaeniopsis simonyi* (Reuss) 1854 – BEAUVAIS, (2), p. 106, fig. 88, pl. 35, fig. 4, pl. 36, fig. 3

Measurements.

(NHMW 1864/0040/1406)

	n	min-max	µ	s	cv	µ±s
clmin	6	3.21-3.97	3.64	0.29	8.0	3.34-3.93
clmax	6	3.76-4.72	4.22	0.39	9.4	3.82-4.62
ccd	4	4.56-5.97	5.50	0.65	11.8	4.85-6.15
s	5	36-40	38.0	1.58	4.1	36-40

Determination. Literature - REUSS (1854).

Frequency. Rare.

Brachyphyllia tenuiseptata (OPPENHEIM, 1930)

(Fig. 92 in the book edition)

1930 *Heliastrea tenuiseptata* n. sp. – OPPENHEIM, p. 324, pl. 9, fig. 7, pl. 17, fig. 9

Measurements.

(MHE A1233)

	n	min-max	µ	s	cv	µ±s
clmin	4	3.28-4.77	3.94	0.61	15.6	3.33-4.56
clmax	4	4.58-5.28	4.93	0.39	8.0	4.53-5.32
ccd	5	5.42-8.58	6.86	1.14	16.6	5.72-8.00
s	48					

Determination. Type material.

Frequency. Rare.

Brachyphyllia sp. 1

(Fig. 93 in the book edition)

Measurements.

(NHMW 2017/0121/0003)

	n	min-max	µ	s	cv	µ±s
clmin	8	1.86-2.21	2.05	0.10	5.1	1.94-2.16
clmax	8	2.87-3.18	3.07	0.12	4.1	2.94-3.20
ccd	8	3.12-4.27	3.71	0.31	8.5	3.40-4.03
s	29-31					

Frequency. Collection material.

Brachyphyllia sp. 2

(Fig. 94 in the book edition)

Measurements.

(NHMW 2006z0396/0004)

	n	min-max	µ	s	cv	µ±s
clmin	10	2.19-3.11	2.56	0.31	12.4	2.24-2.88
clmax	10	2.72-3.58	3.06	0.25	8.3	2.81-3.32
ccd	10	2.92-5.00	3.77	0.62	16.6	3.14-4.40
s	48					

Frequency. Rare.

Brachyphyllia sp. 3

(Fig. 95 in the book edition)

Measurements.

(NHMW 1848/0001/0122)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.92-3.16	2.50	0.33	13.5	2.16-2.83
clmax	20	2.89-3.80	3.22	0.27	8.4	2.95-3.49
ccd	20	2.79-5.30	4.29	0.70	16.3	3.59-4.99
s	40					

Frequency. Collection material.

Brachyphyllia sp. 4

(Fig. 96 in the book edition)

Measurements.

(MHE A0560)

	n	min-max	µ	s	cv	µ±s
clmin	7	3.04-3.62	3.33	0.20	6.2	3.12-3.54
clmax	7	3.77-4.32	3.97	0.18	4.6	3.78-4.16
s	40					

Frequency. Rare.

Brachyphyllia sp. 5

(Fig. 97 in the book edition)

Measurements.

(GPSL FLX 8365)

	n	min-max	µ	s	cv	µ±s
clmin	7	3.45-4.15	3.77	0.25	6.8	3.51-4.02
clmax	7	3.89-4.61	4.39	0.23	5.2	4.16-4.62
ccd	7	4.80-7.10	6.27	0.76	12.2	5.50-7.03
s	40					

Frequency. Collection material.

Columastrea ORBIGNY, 1849

Type species. *Astrea striata* GOLDFUSS, 1829.

Description. Plocoid colony with circular or elliptical corallites. Symmetry regular in six or rarely eleven systems. The first septal cycle bears pali; the columella is styliform.

Frequency. Common.

Distribution. U.ALB-MAA.

Septal symmetry	Small corallite diameter	Species
6	1.3 - 1.4 mm	*C. striata*
	1.5 - 1.7 mm	*C. nicolaui*
	1.7 - 1.9 mm	*C. vicaryi*
	1.9 - 2.1 mm	*C. cf. vicaryi*
11	1.6 - 1.8 mm	*C. sp.*

Fig. 36. Species of the genus *Columastrea*.

Columastrea nicolaui (REIG ORIOL, 1992)

(Fig. 100 in the book edition)

1992 *Plesiastreopsis nicolaui* n. sp. – REIG ORIOL, p. 18, pl. 3, fig. 6, 7

Measurements.

(MHE A0564)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.17-1.73	1.52	0.15	10.1	1.36-1.67
clmax	30	1.42-2.23	1.82	0.17	9.6	1.64-1.99
ccd	30	1.37-2.33	1.86	0.23	12.6	1.63-2.10
s	24					

Determination. Type material.

Frequency. Abundant.

Columastrea striata (GOLDFUSS, 1829)

(Fig. 101 in the book edition)

1829 *Astrea striata* – GOLDFUSS, p. 111, pl. 38, fig. 11

1854 *Columnastraea striata* – REUSS, p. 98, pl. 14, fig. 1, 2

1930 *Columnastrea striata* Goldfuss sp. – OPPENHEIM, p. 478, pl. 44, fig. 2

1982 *Columastrea striata* (Goldfuss) 1826 – BEAUVAIS, (1), p. 121

Measurements.

(MHE A0793)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.34-1.54	1.44	0.05	4.1	1.38-1.50
clmax	30	1.41-1.80	1.61	0.09	5.9	1.52-1.71
ccd	30	1.83-2.41	2.11	0.16	7.8	1.94-2.27
s	24					

Determination. Type material.

Frequency. Abundant.

Columastrea vicaryi (DUNCAN, 1879)

(Fig. 102 in the book edition)

1879 *Haldonia Vicaryi* – DUNCAN, p. 91, pl. 8, fig. 2, 3

Measurements.

(MHE A0620)

	n	min-max	µ	s	cv	µ±s
clmin	40	1.56-2.01	1.74	0.12	6.8	1.62-1.86
clmax	40	1.72-2.28	1.96	0.12	6.4	1.84-2.09
ccd	20	2.06-3.04	2.60	0.28	10.8	2.32-2.89
s	24					

Determination. Type material.

Frequency. Abundant.

Columastrea cf. *vicaryi* (DUNCAN, 1879)

(Fig. 103 in the book edition)

Measurements.

(MHE A0510)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.80-2.37	2.13	0.13	6.4	1.99-2.26
clmax	30	2.32-2.77	2.55	0.13	5.1	2.42-2.68
ccd	30	2.03-3.41	2.73	0.33	12.3	2.40-3.07
s	24					

Frequency. Rare.

Columastrea sp.

(Fig. 104 in the book edition)

Measurements.

(BSPG 2003 XX 6785)

	n	min-max	µ	s	cv	µ±s
clmin	25	1.46-1.91	1.70	0.11	6.8	1.58-1.81
clmax	25	1.76-2.35	1.98	0.15	7.7	1.83-2.14
ccd	65	2.15-3.45	2.65	0.33	12.5	2.32-2.98
s	20	20-24	22.1	1.37	6.2	21-23

Frequency. Rare.

Neocoenia HACKEMESSER, 1936

Type species. *Neocoenia renzi* HACKEMESSER, 1936.

Description. Plocoid colony with circular or elliptical corallites. Symmetry regular hexameral. The first two septal cycle bears pali; the columella is lamellar and small.

Frequency. Very rare.

Distribution. M.CEN-CAM.

Septal symmetry	Septal cycles	Small corallite diameter	Species
6	3	1.5 - 1.8 mm	*N. renzi*
		2.4 - 2.6 mm	*N. exsculpta*

Fig. 37. Species of the genus *Neocoenia*.

Neocoenia exsculpta (REUSS, 1854)

(Fig. 107 in the book edition)

1854 *Astraea exsculpta* – REUSS, p. 114
1903 *Phyllocoenia exsculpta* Felix (Reuss sp.) – FELIX, p. 291, pl. 25, fig. 1, text-fig. 47
1930 *Heliastraea exsculpta* Reuss sp. – OPPENHEIM, p. 324, pl. 42, fig. 13

Measurements.

(NHMW 1864/0040/1408, syntype of *Astrea exsculpta* REUSS, 1854)

	n	min-max	µ	s	cv	µ±s
clmin	16	2.14-2.77	2.47	0.20	8.4	2.26-2.68
clmax	16	2.36-3.55	2.80	0.35	12.7	2.45-3.16
ccd	16	2.49-5.10	3.57	0.64	18.1	2.92-4.22
s	24					

Determination. Type material.

Frequency. Collection material.

Neocoenia renzi HACKEMESSER, 1936

(Fig. 108 in the book edition)

1936 *Neocoenia renzi* n. g. n. sp. – HACKEMESSER, p. 24, pl. 3, fig. 4-6

Measurements.

(MHE A1647)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.36-1.75	1.56	0.12	7.9	1.43-1.68
clmax	30	1.57-2.07	1.78	0.11	6.5	1.66-1.90
ccd	30	1.82-2.60	2.18	0.21	9.9	1.96-2.40
s	24					

Determination. Type material.

Frequency. Normal.

Proplesiastraea OPPENHEIM, 1930

Type species. *Nefocoenia edelbachensis* OPPENHEIM, 1930.

Description. Plocoid colony with circular or elliptical corallites. Symmetry regular hexameral. The first septal cycle bears pali; the columella consists of two blades.

Frequency. Very rare.

Distribution. CON-SAN.

Small corallite diameter	Species
1.3 - 1.4 mm	*P. rivkae*
1.5 mm	*P. sp.*
1.8 mm	*P. edelbachensis*

Fig. 38. Species of the genus *Proplesiastraea*.

Proplesiastraea edelbachensis (OPPENHEIM, 1930)

(Fig. 111 in the book edition)

1930 *Nefocoenia edelbachensis* n. sp. – OPPENHEIM, p. 426, pl. 13, fig. 4, pl. 19, fig. 5

Measurements.

(HUJI 25037#1, lectotype of *Nefocoenia edelbachensis* OPPENHEIM, 1930)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.59-2.39	2.07	0.17	8.5	1.89-2.24
clmax	20	2.07-2.60	2.36	0.13	5.7	2.22-2.49
ccd	20	2.35-3.25	2.82	0.29	10.3	2.53-3.11
s	24					

Determination. Type material.

Frequency. Rare.

Proplesiastraea rivkae LÖSER & HEINRICH, 2018

(Fig. 112 in the book edition)

2018 *Proplesiastraea rivkae* spec. nov. – LÖSER & HEINRICH, p. 129, fig. 3

Measurements.

(BSPG 2018 II 1000, holotype of *Proplesiastraea rivkae* LÖSER & HEINRICH, 2018)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.14-1.68	1.35	0.14	10.7	1.21-1.50
clmax	30	1.21-2.19	1.67	0.25	15.4	1.41-1.93
ccd	30	1.33-2.48	1.84	0.25	13.7	1.59-2.09
s	24					

Determination. Type material.

Frequency. Normal.

Proplesiastraea sp.

(Fig. 113 in the book edition)

Measurements.

(MHE A0789)

	n	min-max	μ	s	cv	μ±s
clmin	35	1.34-1.68	1.50	0.09	6.4	1.41-1.60
clmax	35	1.59-1.95	1.77	0.09	5.1	1.68-1.86
ccd	35	1.87-2.76	2.29	0.23	10.3	2.05-2.53
s	24					

Frequency. Rare.

Superfamily Cyclolitoidea MILNE EDWARDS & HAIME, 1849

Description. Solitary and colonial corals. Septa with regular perforations, with perforations only in certain parts of the septa, or almost compact. Septa generally thick, without notable symmetry (except Negoporitidae). Septa often connected to each other. Septal lateral faces with pennulae and thorns. Septal distal margin with large granulae. Lonsdaleoid septa and main septum absent. Microstructure of large trabeculae. Synapticulae present. Pali in some genera probably present but difficult to distinguish from the perforated inner margins of the septa. Columella poorly defined. Endotheca present or absent. When present, mostly thin tabulae. Marginarium absent. Wall poorly defined. Coenosteum varies depending on the organisation type. Budding varies.

Septal blades at the inner margin perforated	Septal symmetry regular		Negoporitidae
	Septal symmetry irregular	Solitary, cyclolitid	Cyclolitidae
		Coral with other structure	Synastraeidae
Septa with numerous perforations			Gosaviaraea group

Fig. 39. Classification of the superfamily Cyclolitoidea.

Family Cyclolitidae MILNE EDWARDS & HAIME, 1849

Description. Solitary and (thamnasterioid) colonial corals. Septa almost compact with few perforations. Most genera represent solitary cyclolitid corals, only one genus forms small circular colonies.

Cyclolites LAMARCK, 1801

Type species. *Cyclolites elliptica* LAMARCK, 1816.

Description. Cupolate solitary coral with a circular or elliptical outline. The lower face is formed by the wall, the upper face by the septa that run from the margin to the slit-like calicular pit. Septa of different generations may differ in thickness and/or grade of perforations, or appear all equal.

Frequency. Very common.

Distribution. U.TUR-MAA.

Generations of septa	Density of septa (10 mm)	Species
Clearly visible	20 - 40	*sp. 1*
	40 - 60	*sp. 2*
Not clearly visible	20 - 40	*sp. 3*
	40 - 60	*sp. 4*

Fig. 40. Species of the genus *Cyclolites*.

Cyclolites sp. 1

(Fig. 115 in the book edition)

Frequency. Abundant.

Cyclolites sp. 2

(Fig. 116 in the book edition)

Frequency. Abundant.

Cyclolites sp. 3

(Fig. 117 in the book edition)

Frequency. Abundant.

Cyclolites sp. 4

(Fig. 118 in the book edition)

Frequency. Abundant.

Group of the genus *Gosaviaraea*

Description. Only thamnasterioid forms known. The septa are highly perforated, they are thick and left little space between them.

Gosaviaraea OPPENHEIM, 1930

Type species. *Gosaviaraea camerina* OPPENHEIM, 1930.

Description. Thamnasterioid colony. The corallites may be arranged in rows. Corallites in rows count with less septa.

Frequency. Very rare.

Distribution. U.TUR-LUT.

Distance of corallites	Number of septa	Species
3.1 - 3.8 mm	27 - 34	*G. sp. 1*
4.7 - 5.3 mm	22 - 34	*G. aimeae*
5.4 - 7.5 mm	47 - 59	*G. camerina*
5.9 - 6.2 mm	32 - 46	*G. sp. 2*
7.3 mm	33	*G. sp. 3*

Fig. 41. Species of the genus *Gosaviaraea*.

Gosaviaraea aimeae LÖSER & HEINRICH, 2018

(Fig. 121 in the book edition)

2018 *Gosaviaraea aimeae* spec. nov. – LÖSER & HEINRICH, p. 136, fig. 7

Measurements.

(2018 II 1033, holotype of *Gosaviaraea aimeae* LÖSER & HEINRICH, 2018)

	n	min-max	µ	s	cv	µ±s
cdw	15	2.93-5.51	4.28	0.76	17.9	3.51-5.05
crd	5	4.21-5.11	4.67	0.34	7.3	4.33-5.02
ccd	25	4.14-6.26	4.90	0.59	12.0	4.31-5.49
s	10	26-34	29.5	2.27	7.7	27-32

(GPSL FLX 942, paratype of *Gosaviaraea aimeae* LÖSER & HEINRICH, 2018)

	n	min-max	µ	s	cv	µ±s
ccd	15	3.70-5.46	4.69	0.46	9.9	4.23-5.16
s	6	29-38	33.7	3.14	9.3	31-37

Determination. Type material.

Frequency. Collection material.

Gosaviaraea camerina OPPENHEIM, 1930

(Fig. 122 in the book edition)

1930 *Gosaviaraea* n. g. *camerina* n. sp. – OPPENHEIM, p. 58, pl. 8, fig. 3, pl. 29, fig. 6, 9, pl. 30, fig. 3

1982 *Kobya camerina* (Oppenheim) 1930 – BEAUVAIS, (2), p. 41, pl. 25, fig. 5

Measurements.

(MHE A0829)

	n	min-max	µ	s	cv	µ±s
ccd	10	5.65-8.15	7.10	0.77	10.9	6.32-7.87
s	8	48-69	57.5	8.60	14.9	49-66

Determination. Type material.

Frequency. Rare.

Gosaviaraea sp. 1

(Fig. 123 in the book edition)

Measurements.

(NHMW 2017/0121/0001)

	n	min-max	µ	s	cv	µ±s
crd	3	2.86-3.66	3.33	0.41	12.5	2.91-3.74
cdw	5	2.87-4.29	3.72	0.53	14.4	3.18-4.25
ccd	5	2.95-4.12	3.57	0.45	12.6	3.12-4.03
s	33-34					

Frequency. Rare.

Gosaviaraea sp. 2

(Fig. 124 in the book edition)

Measurements.

(MHE A1061)

	n	min-max	µ	s	cv	µ±s
ccd	10	4.73-6.69	5.86	0.68	11.6	5.18-6.54
s	5	43-49	45.60	2.70	5.9	43-48

Frequency. Rare.

Gosaviaraea sp. 3

(Fig. 125 in the book edition)

Measurements.

(MHE A1138)

	n	min-max	μ	s	cv	μ±s
ccd	15	4.84-7.29	6.13	0.84	13.7	5.29-6.98
s	10	25-40	33.10	5.08	15.3	28-38

Frequency. Rare.

Family Negoporitidae ELIÁŠOVÁ, 1995

Description. Colonial (plocoid) corals. Septa with perforations. Septal symmetry bilateral. Septa connected to each other. Pali and columella present. Endotheca with tabulae. Wall incomplete, synapticulothecate. Coenosteum extended, with isolated trabeculae. Budding extracalicinal.

Paractinacis LÖSER & HEINRICH, 2018

Type species. *Paractinacis uliae* LÖSER & HEINRICH, 2018.

Description. Astreoid colony with strong, at the inner margin slightly perforated septa, that stand in a bilateral symmetry. The septal lateral faces are ornamented with pennulae. The columella is small and styliform. The wall is synapticulothecate, in places septothecal, subcompact. Endothek with tabulae.

Frequency. Rare.

Distribution. CEN-SAN.

Larger outer corallite diameter	Species
2.6 - 3.2 mm	*P. sp.*
3.0 - 3.8 mm	*P. uliae*
3.4 - 4.8 mm	*P. ? elegans*

Fig. 42. Species of the genus *Paractinacis*.

Paractinacis ? *elegans* (REUSS, 1854)

(Fig. 128 in the book edition)

1854 *Actinacis elegans* – REUSS, p. 128, pl. 24, fig. 16-18

1930 *Actinacis elegans* Reuss – OPPENHEIM, p. 18, pl. 1, fig. 1, 2, pl. 10, fig. 1

1982 *Actinacis elegans* Reuss 1854 – BEAUVAIS, (2), p. 270, fig. 106, 111, pl. 48, fig. 4

Measurements.

(MHE A0587)

	n	min-max	μ	s	cv	μ±s
clmin	10	1.96-3.09	2.43	0.35	14.6	2.07-2.79
clmax	10	2.09-3.32	2.67	0.40	15.0	2.26-3.07
cmin	15	2.57-3.87	3.09	0.35	11.3	2.74-3.44
cmax	10	3.17-4.10	3.73	0.31	8.3	3.42-4.05
ccd	15	2.93-5.74	4.38	0.79	18.1	3.58-5.17
s	8	22-29	25.1	2.03	8.0	23-27

Determination. Literature - REUSS (1854).

Frequency. Abundant.

Paractinacis uliae LÖSER & HEINRICH, 2018

(Fig. 129 in the book edition)

2018 *Paractinacis uliae* spec. nov. – LÖSER & HEINRICH, p. 131, fig. 4

Measurements.

(BSPG 2018 II 2000, holotype of *Paractinacis uliae* LÖSER & HEINRICH, 2018)

	n	min-max	μ	s	cv	μ±s
clmin	30	1.14-1.89	1.51	0.19	12.8	1.31-1.70
clmax	30	1.30-2.07	1.63	0.22	13.6	1.41-1.85
cmin	30	2.92-3.66	3.33	0.22	6.7	3.10-3.55
cmax	30	2.95-3.86	3.52	0.21	6.0	3.31-3.74
ccd	25	2.74-4.47	3.60	0.39	10.8	3.21-4.00
s	20	21-25	23.5	1.05	4.4	22-25

Determination. Type material.

Frequency. Abundant.

Paractinacis sp.

(Fig. 130 in the book edition)

Measurements.

(MHE A0589)

	n	min-max	μ	s	cv	μ±s
clmin	7	1.32-1.87	1.55	0.21	13.9	1.33-1.77
clmax	7	1.65-1.99	1.81	0.13	7.2	1.68-1.94
cmin	7	2.20-2.78	2.48	0.20	8.1	2.27-2.68
cmax	7	2.63-3.38	2.94	0.29	9.9	2.64-3.23
ccd	9	3.12-6.25	4.68	0.96	20.6	3.71-5.65
s	20-24					

(MHE A1950)

	n	min-max	μ	s	cv	μ±s
clmin	20	1.21-1.57	1.39	0.10	7.4	1.28-1.49
clmax	20	1.53-1.90	1.68	0.10	6.3	1.57-1.78
cmin	25	1.93-2.59	2.31	0.20	8.8	2.11-2.52
cmax	25	2.52-3.27	2.86	0.22	7.8	2.64-3.09
ccd	25	2.36-3.48	2.91	0.33	11.4	2.57-3.24
s	20-24					

Frequency. Normal.

Family Synastraeidae ALLOITEAU, 1952

Description. Solitary and (astreoid, meandroid, thamnasterioid) colonial corals. Septa almost compact with few perforations at the inner margins. Interseptal space smaller than septal thickness.

Astreoid					*Brachycoenia*
Cerioid					*Valliculastraea*
Solitary	Form turbinate oder trochoid				*Leptophyllia*
	Patellate				*Gyroseris*
Hydnophorid					*Synhydnophora*
Meandroid	Coenosteum absent	Calicular rows short			*Brachyseris*
		Calicular rows long	Wall present		*Hydnoseris*
			Wall absent		*Koilomorpha*
	Coenosteum present				*Felixastrea*
Plocoid					*Loboseris*
Thamnasterioid	Septa alternate in thickness				*Geroastrea*
	Septa do not alternate in thickness	Corallites in rows	Structures large, corallites with large distances	Crests absent	*Leptophyllastraea*
				Crests present	*Hydnophorastraea*
			Structures small, corallites closely arranged		*Siderocoenia*
		Corallites not in rows			*Synastrea*

Fig. 43. Classification of the family Synastraeidae.

Brachycoenia BEAUVAIS, 1982

Type species. *Adelastrea leptophylla* REUSS, 1854.

Description. Thamnasterioid colony, where – in contrary to *Synastrea* – the corallites are clearly marked and slightly elevated. The septa are bent outside the corallite; so it is possible to measure the corallite diameter.

Frequency. Occasional.

Distribution. U.APT-SAN.

Small corallite diameter	Large corallite diameter	Number of septa	Species
3.3 mm	3.5 mm	60	*B. cf. leptophylla Felix*
3.9 - 4.1 mm	4.3 - 6.0 mm	24 - 26	*B. minor*
4.4 - 6.6 mm	5.7 - 7.6 mm	43 - 58	*B. leptophylla Reuss*
4.8 - 6.2 mm	5.6 - 7.0 mm	29 - 36	*B. viai*
5.7 - 7.2 mm	6.8 - 7.9 mm	47 - 62	*B. sp. 1*
6.9 - 8.1 mm	7.8 - 9.3 mm	32 - 42	*B. aff. composita*
7.2 mm	8.5 mm	18	*B. raristella*
7.5 - 7.8 mm	8.2 - 8.8 mm	26 - 30	*B. montuosa*
8.2 - 9.0 mm	8.9 - 11.0 mm	27 - 37	*B. composita*
8.4 - 9.5 mm	10.6 - 11.3 mm	48 - 50	*B. sp. 2*

Fig. 44. Species of the genus *Brachycoenia*.

Brachycoenia composita (SOWERBY, 1832)

(Fig. 134 in the book edition)

1832 *Cyathophyllum compositum* – SOWERBY, p. 417, pl. 37, fig. 3

1854 *Thamnastraea composita* – REUSS, p. 117, pl. 20, fig. 1-4

1930 *Synastraea composita* Sowerby sp. – OPPENHEIM, p. 152, pl. 28, fig. 7-9, pl. 33, fig. 10

1982 *Dimorphastraea composita* (Sowerby) 1835 – BEAUVAIS, (2), p. 81, fig. 82, pl. 29, fig. 4, pl. 66, fig. 4

Measurements.

(MHE A1153)

	n	min-max	μ	s	cv	μ±s
cmin	15	7.58-10.5	9.28	0.94	10.1	8.34-10.2
cmax	15	8.11-12.4	10.7	1.22	11.4	9.46-11.9
ccd	45	6.52-12.3	10.2	1.39	13.7	8.75-11.5
s	25	26-42	32.8	4.42	13.4	28-37

Determination. Type material.

Frequency. Normal.

Brachycoenia aff. *composita* (SOWERBY, 1832)

(Fig. 135 in the book edition)

Measurements.

(MHE A0635)

	n	min-max	μ	s	cv	μ±s
cmin	6	6.77-8.80	8.12	0.74	9.1	7.37-8.86
cmax	6	8.23-9.71	9.05	0.47	5.2	8.57-9.53
ccd	10	8.60-15.1	10.9	2.15	19.7	8.74-13.0
s	5	35-45	38.8	4.14	10.6	35-43

Frequency. Normal.

Brachycoenia leptophylla (REUSS, 1854)

(Fig. 136 in the book edition)

1854 *Adelastraea leptophylla* – REUSS, p. 115, pl. 12, fig. 3, 4

1930 *Synastraea leptophylla* Reuss sp. – OPPENHEIM, p. 171, pl. 34, fig. 1

1982 *Brachycoenia leptophylla* (Reuss) 1854 – BEAUVAIS, (2), p. 48, pl. 26, fig. 7, pl. 27, fig. 1

Measurements.

(MHE A1813)

	n	min-max	μ	s	cv	μ±s
cmin	10	5.19-7.04	6.25	0.59	9.4	5.66-6.84
cmax	10	6.02-7.51	6.77	0.57	8.5	6.19-7.34
ccd	35	4.49-9.15	6.79	1.17	17.2	5.62-7.96
s	8	45-75	57.8	11.8	20.4	46-70

Determination. Type material.

Frequency. Rare.

Brachycoenia cf. *leptophylla* (FELIX, 1903)

(Fig. 137 in the book edition)

Measurements.

(MHE A1222)

	n	min-max	μ	s	cv	μ±s
cmin	20	3.70-5.76	4.53	0.66	14.6	3.86-5.19
cmax	20	3.67-6.17	4.96	0.70	14.1	4.25-5.66
ccd	30	3.77-7.44	5.29	1.02	19.3	4.27-6.31
s	15	45-63	54.8	5.47	9.9	49-60

Frequency. Rare.

Brachycoenia minor (FELIX, 1903)

(Fig. 138 in the book edition)

1903 *Dimorphastraea sulcosa* Reuss var. nov. *minor* – FELIX, p. 212, pl. 19, fig. 10

Measurements.

(MHE A1784)

	n	min-max	μ	s	cv	μ±s
cmin	10	3.31-4.82	4.17	0.52	12.5	3.65-4.69
cmax	10	3.78-6.24	5.00	0.83	16.6	4.17-5.84
ccd	10	4.11-7.35	5.67	1.06	18.7	4.60-6.74
s	10	20-30	24.5	3.20	13.0	21-28

Determination. Literature - FELIX (1903).

Frequency. Rare.

Brachycoenia montuosa (FELIX, 1903)

(Fig. 139 in the book edition)

1903 *Thamnastraea montuosa* nov. sp. – FELIX, p. 204, pl. 17, fig. 8

1982 *Valliculastraea montuosa* (Felix) 1903 – BEAUVAIS, (2), p. 130, pl. 39, fig. 3, pl. 61, fig. 1

Measurements.

(MHE A1914)

	n	min-max	μ	s	cv	μ±s
cmin	10	6.28-10.1	8.15	1.18	14.5	6.96-9.33
cmax	10	6.82-11.7	9.27	1.73	18.6	7.54-11.0
ccd	10	6.83-11.1	8.50	1.34	15.7	7.16-9.84
s	5	22-29	26.0	2.54	9.8	23-29

Determination. Type material.

Frequency. Rare.

Brachycoenia raristella (REUSS, 1854)

(Fig. 140 in the book edition)

1854 *Cyathoseris raristella* – REUSS, p. 127, pl. 20, fig. 9

1982 *Astraeofungia raristella* (Reuss) 1854 – BEAUVAIS, (2), p. 66, pl. 28, fig. 2

Measurements.

(GBA 1854/007/0118, holotype of *Cyathoseris raristella* REUSS, 1854)

	n	min-max	μ	s	cv	μ±s
cmin	10	5.91-8.86	7.25	0.94	12.9	6.31-8.19
cmax	10	7.35-9.38	8.40	0.62	7.4	7.77-9.02
ccd	10	6.66-12.0	9.44	1.51	16.0	7.92-11.0
s	10	16-20	18.3	1.15	6.3	17-19

Determination. Type material.

Frequency. Type material.

Brachycoenia viai (REIG ORIOL, 1992)

(Fig. 141 in the book edition)

1992 *Astraraea viai* n. sp. – REIG ORIOL, p. 15, pl.3, fig.9

Measurements.

(MHE A0496)

	n	min-max	μ	s	cv	μ±s
cmin	10	4.24-5.36	4.79	0.40	8.5	4.38-5.20
cmax	10	4.88-6.27	5.57	0.41	7.4	5.16-5.99
ccd	25	4.59-7.08	6.02	0.72	12.1	5.29-6.74
s	10	26-42	30.8	4.80	15.5	26-36

Determination. Type material.

Frequency. Normal.

Brachycoenia sp. 1

(Fig. 142 in the book edition)

Measurements.

(MHE A1765)

	n	min-max	μ	s	cv	μ±s
cmin	10	5.61-7.62	6.44	0.71	11.0	5.73-7.16
cmax	10	7.02-8.46	7.36	0.52	7.0	6.84-7.88
ccd	10	5.55-8.24	7.01	0.92	13.1	6.09-7.94
s	8	44-66	54.5	7.17	13.1	47-62

Frequency. Rare.

Brachycoenia sp. 2

(Fig. 143 in the book edition)

Measurements.

(MHE A1425)

	n	min-max	μ	s	cv	μ±s
cmin	5	8.29-10.1	9.47	0.75	7.9	8.72-10.2
cmax	5	10.3-12.8	11.3	1.01	8.9	10.3-12.3
ccd	10	8.36-12.4	9.74	1.26	12.9	8.47-11.0
s	10	33-56	44.0	8.53	19.4	35-53

Frequency. Rare.

Brachyseris ALLOITEAU, 1946

Type species. *Latomeandra morchella* REUSS, 1854.

Description. Astreoid-meandroid colony, where single corallites as well as short corallite rows of two or three corallites are present. The rows are separated by higher, at the surface rounded boundaries, whereas the single corallites within the rows are separated by lower boundaries. The corallite rows or group of corallites are not aligned. A wall is not visisble in sections.

Frequency. Rare.

Distribution. U.TUR-SAN.

Width of rows	Number of septa	Species
2.4 - 2.6 mm	26 - 38	*B. sp. 1*
3.4 - 3.7 mm	55 - 60	*B. tenerrima*
3.5 - 4.0 mm	36 - 45	*B. morchella*
4.0 - 4.9 mm	37 - 55	*B. texta*
4.5 - 4.7 mm	68 - 70	*B. sp. 2*
5.7 - 7.0 mm	54 - 60	*B. astraeoides*

Fig. 45. Species of the genus *Brachyseris*.

Brachyseris astraeoides (REUSS, 1854)

(Fig. 146 in the book edition)

1854 *Latomaeandra astraeoides* – REUSS, p. 106, pl. 21, fig. 7, 8

1982 *Brachyseris astraeoides* (Reuss) 1854 – BEAUVAIS, (2), p. 239, pl. 45, fig. 1

Measurements.

(MHE A0645)

	n	min-max	µ	s	cv	µ±s
crw	10	4.75-6.61	5.70	0.73	12.8	4.97-6.43
crd	7	6.23-8.04	7.18	0.59	8.3	6.58-7.78
s	5	49-58	52.6	3.78	7.1	49-56

Determination. Type material.

Frequency. Rare.

Brachyseris morchella (REUSS, 1854)

(Fig. 147 in the book edition)

1854 *Latomaeandra morchella* – REUSS, p. 107, pl. 21, fig. 9, 10

1903 *Latimaeandraraea morchella* Felix (Reuss sp.) – FELIX, p. 217

1930 *Maeandraraea morchella* Reuss sp. – OPPENHEIM, p. 203

1982 *Brachyseris morchella* (Reuss) 1854 – BEAUVAIS, (2), p. 236, fig. 99, pl. 44, fig. 3, pl. 68, fig. 4

Measurements.

(MHE A0415)

	n	min-max	µ	s	cv	µ±s
crw	15	3.09-4.10	3.67	0.28	7.8	3.38-3.95
crd	20	3.26-4.88	4.14	0.48	11.7	3.65-4.63
s	10	33-46	39.2	4.44	11.3	35-44

Determination. Type material.

Frequency. Normal.

Brachyseris tenerrima (OPPENHEIM, 1930)

(Fig. 148 in the book edition)

1930 *Maeandraraea tenerrima* n. sp. – OPPENHEIM, p. 211, pl. 46, fig. 7, pl. 48, fig. 1

1982 *Brachyseris tenerrima* (Oppenheim) 1930 – BEAUVAIS, (2), p. 240

Measurements.

(A0422)

	n	min-max	µ	s	cv	µ±s
cmin	10	3.29-4.08	3.73	0.21	5.8	3.51-3.95
cmax	10	4.65-6.82	5.38	0.64	12.0	4.73-6.02
ccd	15	3.26-4.78	4.14	0.48	11.6	3.66-4.63
s	5	42-61	53.4	7.82	14.6	46-61

Determination. Type material.

Frequency. Rare.

Brachyseris texta (OPPENHEIM, 1930)

(Fig. 149 in the book edition)

1930 *Maeandraraea texta* n. sp. – OPPENHEIM, p. 212, pl. 16, fig. 5

1982 *Valliculastraea texta* (Oppenheim) 1930 – BEAUVAIS, (2), p. 132, pl. 39, fig. 4

Measurements.

(MHE A1336)

	n	min-max	µ	s	cv	µ±s
crw	10	3.85-5.19	4.65	0.46	9.9	4.19-5.12
crd	8	3.83-5.26	4.88	0.48	10.0	4.39-5.37
s	8	32-46	39.9	4.64	11.6	35-45

Determination. Type material.

Frequency. Rare.

Brachyseris sp. 1

(Fig. 150 in the book edition)

Measurements.

(MHE A1798)

	n	min-max	µ	s	cv	µ±s
crw	10	2.11-2.84	2.44	0.24	9.9	2.19-2.68
crd	10	2.04-3.03	2.56	0.35	13.6	2.20-2.91
s	4	41-46	43.5	2.38	5.4	41-46

Frequency. Rare.

Brachyseris sp. 2

(Fig. 151 in the book edition)

Measurements.

(GPSL FLX 399)

	n	min-max	μ	s	cv	μ±s
crw	10	3.90-5.14	4.46	0.40	8.9	4.06-4.86
ccd	10	5.47-7.87	6.22	0.77	12.4	5.44-7.00
s	ca. 70					

Frequency. Rare.

Brachyseris ? sp.

(Fig. 152 in the book edition)

Measurements.

(MHE A1729)

	n	min-max	μ	s	cv	μ±s
crw	7	6.50-8.01	7.17	0.51	7.1	6.66-7.69
s	6	48-53	50.3	1.75	3.4	49-52

Frequency. Normal.

Felixastraea OPPENHEIM, 1930

Type species. *Cyathoseris zitteli* FELIX, 1903.

Description. Meandroid colony with broad coenosteum. The corallite rows are short. The genus shows the tendency to form flabeloid outgrowths from a massive colony; in this case the coenosteum stays below and several fans are separately elevated.

Frequency. Very rare.

Distribution. CON-SAN.

Felixastraea haidingeri (REUSS, 1854)

(Fig. 154 in the book edition)

1854 *Cyathoseris Haidingeri* – REUSS, p. 126, pl. 20, fig. 7, 8

1982 *Comophylliopsis haidingeri* (Reuss) 1854 – BEAUVAIS, (2), p. 240, pl. 45, fig. 2

Measurements.

(NHMW 1864/0040/1432#1, lectotype of *Cyathoseris haidingeri* REUSS, 1854)

	n	min-max	μ	s	cv	μ±s
crd	5	4.42-6.24	5.71	0.73	12.8	4.97-6.44
cdw	6	3.81-6.12	4.88	0.90	18.4	3.98-5.79
s	5	38-46	42.0	3.08	7.3	39-45

Determination. Type material.

Frequency. Type material.

Felixastraea zitteli (FELIX, 1903)

(Fig. 155 in the book edition)

1903 *Cyathoseris Zitteli* nov. sp. – FELIX, p. 227, pl. 22, fig. 2

1930 *Felixastraea zitteli* Felix sp. – OPPENHEIM, p. 243, pl. 38, fig. 9, pl. 43, fig. 10

1982 *Felixastraea zitteli* (Felix) 1903 – BEAUVAIS, (2), p. 50, pl. 27, fig. 2

Measurements.

(GPSL FLX 8046)

crd	8.2-12 mm
cdw	4.2-4.6 mm
s	21-42

(BSPG 1895 X B 501, syntype of *Cyathoseris zitteli* FELIX, 1903)

	n	min-max	μ	s	cv	μ±s
crw	5	3.98-5.54	4.51	0.64	14.2	3.87-5.15
crd	9.1-10.5 mm					
cdw	8	4.61-7.96	6.15	1.11	18.0	5.04-7.26
s	4	35-42	38.3	2.87	7.5	35-41

Determination. Type material.

Frequency. Collection material.

Distance of rows	Number of septa	Species
3.6 mm	20	*G. parvistella*
5.5 mm	17	*G. haueri*
6.1 - 6.5 mm	18	*G. alexi*
6.3 - 7.6 mm	24 - 28	*G. audiensis*

Fig. 46. Species of the genus *Geroastrea*.

Geroastrea LÖSER & HEINRICH, 2018

Type species. *Geroastrea alexi* LÖSER & HEINRICH, 2018.

Description. Thamnasterioid colony with corallites arranged in rows. The septal symmetry is irregular, but thick and thin septa alternate very regularly. Only thin septa have rare perforations. Septal lateral faces bear pennulae. Columella lamellar. Without wall. Endotheca with dissepiments and tabulae.

Frequency. Very rare.

Distribution. U.APT-SAN.

Geroastrea alexi LÖSER & HEINRICH, 2018

(Fig. 158 in the book edition)

2018 *Geroastrea alexi* spec. nov. – LÖSER & HEINRICH, p. 134, fig. 5

Measurements.

(GPSL FLX 8097, holotype of *Geroastrea alexi* LÖSER & HEINRICH, 2018)

	n	min-max	µ	s	cv	µ±s
crd	10	4.85-6.98	6.12	0.76	12.5	5.35-6.88
cdw	20	3.12-7.86	5.21	1.43	27.5	3.78-6.65
s	20	15-21	18.0	1.94	10.8	16-20

Determination. Type material.

Frequency. Collection material.

Geroastrea audiensis (REIG ORIOL, 1992)

(Fig. 159 in the book edition)

1992 *Dimorphastrea audiensis* n. sp. – REIG ORIOL, p. 41, pl. 9, fig. 3

Measurements.

(GPSL FLX 118)

	n	min-max	µ	s	cv	µ±s
crd	10	5.09-7.24	6.34	0.76	12.1	5.57-7.11
cdw	10	4.13-5.33	4.77	0.46	9.6	4.31-5.23
s	10	17-30	23.5	4.14	17.6	19-28

Determination. Type material.

Frequency. Collection material.

Geroastrea haueri (REUSS, 1854)

(Fig. 160 in the book edition)

1854 *Dimorphastraea Haueri* – REUSS, p. 116, pl. 19, fig. 11

1930 *Dimorphastraea haueri* Reuss – OPPENHEIM, p. 184, pl. 9, fig. 2, pl. 46, fig. 12

1982 *Dimorphastraea haueri* Reuss 1854 – BEAUVAIS, (2), p. 88, fig. 83, pl. 30, fig. 3, pl. 17, fig. 1

Measurements.

(NHMW 1864/0040/1386, syntype of *Dimorphastrea haueri* REUSS, 1854)

	n	min-max	µ	s	cv	µ±s
crd	5	4.13-5.65	4.98	0.57	11.5	4.40-5.55
cdw	12	3.23-5.53	4.17	0.74	17.7	3.43-4.91
s	15	14-24	17.3	3.10	17.9	14-20

(GPSL FLX 8095)

	n	min-max	µ	s	cv	µ±s
crd	5	4.25-6.55	5.38	1.01	18.7	4.37-6.39
cdw	6	2.53-4.98	3.80	0.94	24.9	2.85-4.75
s	5	18-24	20.8	2.68	12.9	18-23

Determination. Type material.

Frequency. Collection material.

Geroastrea parvistella (OPPENHEIM, 1930)

(Fig. 161 in the book edition)

1930 *Dimorphastraea parvistella* n. sp. – OPPENHEIM, p. 194, pl. 46, fig. 2

Measurements.

(HUJI 24578, holotype of *Dimorphastrea parvistella* OPPENHEIM, 1930)

	n	min-max	µ	s	cv	µ±s
crd	6	2.73-4.04	3.37	0.49	14.7	2.87-3.86
cdw	8	1.74-3.41	2.55	0.56	22.1	1.98-3.12
s	5	17-22	19.2	2.58	13.4	17-22

Determination. Type material.

Frequency. Type material.

Gyroseris REUSS, 1854

Type species. *Gyroseris patellaris* REUSS, 1854.

Description. The solitary coral has the form of a spinner, with a circular outline.

Frequency. Very rare.

Distribution. U.TUR-SAN.

Gyroseris patellaris REUSS, 1854

(Fig. 162 in the book edition)

1854 *Gyroseris patellaris* – REUSS, p. 126, pl. 7, fig. 12-15

1903 *Gyroseris patellaris* Reuss – FELIX, p. 226

1930 *Gyroseris patellaris* Reuss – OPPENHEIM, p. 253, pl. 39, fig. 5

1982 *Gyroseris patellaris* Reuss 1854 – BEAUVAIS, (1), p. 38, pl. 3, fig. 5

Measurements.

(NHMW 1864/0040/1431, syntype of *Gyroseris patellaris* REUSS, 1854)

c 28×28 mm
s 140
sd 7/5 mm

(GPSL FLX 8062)

c 24×25 mm
s 175
sd 11/5 mm

Determination. Type material.

Frequency. Collection material.

Hydnophorastraea BEAUVAIS, 1982

Type species. *Thamnasteria carinata* FELIX, 1903.

Description. The genus is similar to *Leptophyllastraea*. It forms flat leaf-like colonies that bears small hydophoroid crests at the lateral margins.

Frequency. Very rare.

Distribution. CON-SAN.

Hydnophorastraea carinata (FELIX, 1903)

(Fig. 163 in the book edition)

1903 *Thamnastraea carinata* nov. sp. – FELIX, p. 210, pl. 23, fig. 1-3

1982 *Hydnophorastraea carinata* (Felix) 1903 – BEAUVAIS, (2), p. 135, fig. 91, pl. 39, fig. 5, pl. 40, fig. 1

Measurements.

(BSPG 2003 XX 4729)

	n	min-max	µ	s	cv	µ±s
crd	5	4.78-6.28	5.46	0.55	10.2	4.90-6.02
cdw	6	2.54-5.75	4.27	1.28	29.9	2.99-5.55
s	6	20-27	23.2	2.48	10.7	21-26

Determination. Type material.

Frequency. Rare.

Hydnoseris BEAUVAIS, 1982

Type species. *Meandrina agaricites* GOLDFUSS, 1829.

Description. Meandroid colony with straight and parallel corallite rows. Single corallites within the rows are in places visible. The coenosteum is absent. A wall exists, therefore the roof-like separations of rows are well visible.

Frequency. Very rare.

Distribution. CON-SAN.

Width of rows	Density of septa (5 mm)	Species
1.8 - 2.0 mm	16 - 28	*H. agaricites*
2.5 - 2.6 mm	22 - 25	*H. sp.*
3.9 - 4.1 mm	13 - 18	*H. hydnophylloides*

Fig. 47. Species of the genus *Hydnoseris*.

Hydnoseris agaricites (GOLDFUSS, 1829)

(Fig. 166 in the book edition)

1829 *Maeandrina agaricites* – GOLDFUSS, p. 109, pl. 38, fig. 2

1903 *Latimaeandraraea agaricites* Felix (Goldfuss sp.) – FELIX, p. 220

1930 *Maeandraraea agaricites* Goldfuss sp. – OPPENHEIM, p. 206

1982 *Hydnoseris agaricites* (Goldfuss) 1826 – BEAUVAIS, (2), p. 256, fig. 104, pl. 45, fig. 4, pl. 66, fig. 2

Measurements.

(GPSL FLX 8052)

	n	min-max	µ	s	cv	µ±s
crw	15	1.51-2.15	1.81	0.19	10.9	1.61-2.01
crd	10	1.73-2.60	2.13	0.30	14.4	1.82-2.44
s	10	18-25	21.7	2.0	9.2	20-24
sd	25/5 mm					

Determination. Type material.

Frequency. Rare.

Hydnoseris hydnophylloides (OPPENHEIM, 1930)

(Fig. 167 in the book edition)

1930 *Hydnophoraraea hydnophylloides* n. sp. – OPPENHEIM, p. 235, pl. 19, fig. 2, pl. 44, fig. 8

1982 *Hydnoseris hydnophylloides* (Oppenheim) 1930 – BEAUVAIS, (2), p. 258, pl. 46, fig. 4

Measurements.

(GPSL FLX 414)

	n	min-max	µ	s	cv	µ±s
crw	9	3.34-5.16	4.06	0.63	15.5	3.43-4.69
crd	5	3.84-6.42	5.06	0.92	18.1	4.14-5.99
sd	16/5 mm					

Determination. Type material.

Frequency. Rare.

Hydnoseris sp.

(Fig. 168 in the book edition)

Measurements.

(MHE A1559)

	n	min-max	µ	s	cv	µ±s
crw	25	1.87-2.98	2.38	0.27	11.5	2.11-2.66
crd	25	1.97-3.51	2.70	0.43	15.9	2.27-3.14
s	5	14-19	16.8	2.16	12.9	15-19
sd	24-26/5 mm					

Frequency. Normal.

Koilomorpha ALLOITEAU, 1952

Type species. *Meandrina arausiaca* MICHELIN, 1841.

Description. Meandroid colony with subregular rows. Corallites can be distinguished, but are often not well marked. The rows are separated by rounded boundaries; the wall between them is not well developed.

Frequency. Rare.

Distribution. CON-CAM.

Distance of rows	Number of septa	Species
2.6 - 3.8 mm	19 - 24	*K. sampelayoi*
3.6 - 5.0 mm	25 - 40	*K. douvillei*
4.2 - 5.0 mm	20 - 24	*K. concentrica*
5.4 - 6.1 mm	27 - 30	*K. besairiei*
5.5 - 6.6 mm	20 - 22	*K. dumortieri*
6.1 mm	15	*K. sp. 1*
8.2 - 8.5 mm	35 - 40	*K. asperrima*
9 mm	19 - 25	*K. sp. 2*

Fig. 48. Species of the genus *Koilomorpha*.

Koilomorpha asperrima (REUSS, 1854)

(Fig. 171 in the book edition)

1854 *Latomaeandra asperrima* – REUSS, p. 108, pl. 18, fig. 3, 4

1930 *Maeandraraea asperrima* Reuss sp. – OPPENHEIM, p. 209, pl. 46, fig. 3

1982 *Koilomorpha asperrima* (Reuss) 1854 – BEAUVAIS, (2), p. 97, pl. 34, fig. 3, pl. 35, fig. 1

Measurements.

(MHE A1818)

crd 7.5-9.0 mm

	n	min-max	μ	s	cv	μ±s
s	6	30-49	39.8	6.11	15.3	34-46

Determination. Type material.

Frequency. Rare.

Koilomorpha besairiei (ALLOITEAU, 1958)

(Fig. 172 in the book edition)

1958 *Dimorphomeandra Besairiei* nov. sp. – ALLOITEAU, p. 166, pl. 10, fig. 7, pl. 19, fig. 3, pl. 32, fig. 2, pl. 33, fig. 4

Measurements.

(MHE A1812)

	n	min-max	μ	s	cv	μ±s
crd	10	4.90-7.51	6.15	0.86	14.0	5.28-7.01
s	5	23-34	29.6	4.09	13.8	26-34

Determination. Type material.

Frequency. Normal.

Koilomorpha concentrica (REUSS, 1854)

(Fig. 173 in the book edition)

1854 *Latomaeandra concentrica* – REUSS, p. 107, pl. 17, fig. 1

1982 *Summigaraea concentrica* (Reuss) 1854 – BEAUVAIS, (2), p. 44, fig. 76, pl. 35, fig.3, pl. 36, fig. 1

Measurements.

(MHE A1022)

	n	min-max	μ	s	cv	μ±s
crd	5	3.94-5.42	4.71	0.68	14.4	4.03-5.39
s	4	18-23	21.0	2.16	10.2	19-23

Determination. Type material.

Frequency. Normal.

Koilomorpha douvillei (FELIX, 1903)

(Fig. 174 in the book edition)

1903 *Latimaeandraraea Douvilléi* nov. sp. – FELIX, p. 222, pl. 20, fig. 18

1930 *Maeandraraea douvilléi* Felix sp. – OPPENHEIM, p. 207, pl. 38, fig. 10

1982 *Vallimeandra douvillei* (Felix) 1903 – BEAUVAIS, (2), p. 53, fig. 77, pl. 27, fig. 3, pl. 66, fig. 3

Measurements.

(GBA 2003/023/0029/03)

	n	min-max	μ	s	cv	μ±s
crd	8	2.91-4.27	3.73	0.53	14.4	3.19-4.27
cdw	7	2.15-5.46	4.01	1.17	29.2	2.83-5.18
s	8	26-37	32.0	4.03	12.6	28-36

Determination. Type material.

Frequency. Rare.

Koilomorpha dumortieri (FROMENTEL, 1873)

(Fig. 175 in the book edition)

1873 *Latimaeandra Dumortieri* – FROMENTEL, p. 451, pl. 102, fig. 1

Measurements.

(MHE A1934)

	n	min-max	μ	s	cv	μ±s
crd	10	5.54-8.25	6.56	0.97	14.9	5.58-7.54
s	5	19-28	22.8	3.83	16.8	19-27

Determination. Type material.

Frequency. Rare.

Koilomorpha sampelayoi (BATALLER, 1936)

(Fig. 176 in the book edition)

1936 *Latimaeandraraea Sampelayoi* Bataller – BATALLER, p. 42, pl. 1, fig. 14, 15

Measurements.

(GPSL FLX 441)

	n	min-max	µ	s	cv	µ±s
crd	10	3.04-4.55	3.76	0.41	11.1	3.34-4.18
s	5	17-23	20.6	2.19	10.6	18-23

Determination. Type material.

Frequency. Rare.

Koilomorpha sp. 1

(Fig. 177 in the book edition)

Measurements.

(NHMW 2003z0028/0005)

	n	min-max	µ	s	cv	µ±s
crd	10	4.68-6.41	5.43	0.56	10.4	4.86-6.00
s	10	12-20	15.5	2.54	16.4	13-18

Frequency. Collection material.

Koilomorpha sp. 2

(Fig. 178 in the book edition)

Measurements.

(MHE A0260)

	n	min-max	µ	s	cv	µ±s
crd	3	7.19-11.1	9.02	1.93	21.4	7.08-11.0
cdw	7	2.16-3.87	2.92	0.57	19.7	2.34-3.50
s	6	19-27	21.8	2.92	13.4	19-25

Frequency. Rare.

Leptophyllastraea OPPENHEIM, 1930

Type species. *Leptophyllastraea irregularis* OPPENHEIM, 1930.

Description. Thamnasterioid colony with corallites arranged in concentric rows. The colony surface is plane, the corallite centres may be slightly depressed.

Frequency. Rare.

Distribution. CON-MAA.

Distance of rows	Number of septa	Species
2.7 - 3.5 mm	27 - 32	*L. weissenbachalmensis*
3.3 - 5.2 mm	32 - 39	*L. cretacea*
4.5 - 6.0 mm	21 - 29	*L. micraxona*
4.8 - 5.7 mm	41 - 45	*L. haidingeri*
6.0 - 7.0 mm	27 - 33	*L. irregularis*
7.4 - 8.1 mm	20 - 23	*L. conica*
7.7 - 8.9 mm	34 - 42	*L. cyathosericites*
	47 - 60	*L. sp.*

Fig. 49. Species of the genus *Leptophyllastraea*.

Leptophyllastraea conica OPPENHEIM, 1930

(Fig. 181 in the book edition)

1930 *Leptophyllastraea conica* n. sp. – OPPENHEIM, p. 149, pl. 20, fig. 1, 2

Measurements.

(GPSL FLX 8082)

	n	min-max	µ	s	cv	µ±s
crd	8	5.54-9.38	7.40	1.29	17.4	6.11-8.70
cdw	5	3.58-5.85	4.89	0.86	17.6	4.02-5.75
s	6	24-40	32.7	6.53	19.9	26-39

Determination. Type material.

Frequency. Collection material.

Leptophyllastraea cretacea (FELIX, 1903)

(Fig. 182 in the book edition)

1903 *Protoseris cretacea* nov. sp. – FELIX, p. 228, pl. 20, fig. 11-13

Measurements.

(MHE A0663)

	n	min-max	µ	s	cv	µ±s
crd	6	3.18-4.14	3.63	0.33	9.2	3.30-3.97
cdw	17	2.99-5.02	4.11	0.69	16.7	3.42-4.80
s	15	25-40	31.5	4.91	15.6	27-36

Determination. Type material.

Frequency. Normal.

Leptophyllastraea cyathosericites (OPPENHEIM, 1930)

(Fig. 183 in the book edition)

1930 *Maeandraraea cyathosericites* n. sp. – OPPENHEIM, p. 213, pl. 38, fig. 5

Measurements.

(MHE A1592)

	n	min-max	μ	s	cv	μ±s
crd	5	6.76-8.63	7.75	0.70	9.1	7.04-8.46
cdw	6	4.54-6.55	5.55	0.87	15.7	4.68-6.43
s	8	27-39	32.0	3.89	12.1	28-36

Determination. Type material.

Frequency. Rare.

Leptophyllastraea irregularis OPPENHEIM, 1930

(Fig. 184 in the book edition)

1930 *Leptophyllastraea irregularis* midi – OPPENHEIM, p. 140, pl. 45, fig. 1

Measurements.

(HUJI 24405, syntype of *Leptophyllastraea irregularis* OPPENHEIM, 1930)

crd	6.5-7.5 mm
s	30-32

Determination. Type material.

Frequency. Collection material.

Leptophyllastraea micraxona (MICHELIN, 1841)

(Fig. 185 in the book edition)

1841 *Astrea micraxona* – MICHELIN, p. 20, pl. 4, fig. 11

Measurements.

(MHE A0520)

	n	min-max	μ	s	cv	μ±s
crd	15	4.78-6.26	5.38	0.43	8.0	4.95-5.81
cdw	25	3.22-7.05	4.55	1.03	22.7	3.52-5.58
s	15	24-35	29.1	3.32	11.4	26-32

Determination. Type material.

Frequency. Normal.

Leptophyllastraea weissenbachalmensis (BARON-SZABO, 1999)

(Fig. 186 in the book edition)

1999 *Corbariastraea weissenbachalmensis* n. sp. – BARON-SZABO, p. 462, pl. 8, fig. 3, 4

Measurements.

(GPSL FLX 480)

	n	min-max	μ	s	cv	μ±s
crd	10	2.97-4.46	3.68	0.46	12.6	3.22-4.15
cdw	15	2.04-3.30	2.68	0.40	14.9	2.28-3.08
s	10	26-37	30.8	4.41	14.3	26-35

Determination. Type material.

Frequency. Rare.

Leptophyllastraea sp.

(Fig. 187 in the book edition)

Measurements.

(MHE A1832)

	n	min-max	μ	s	cv	μ±s
crd	10	7.16-9.47	8.00	0.70	8.7	7.30-8.70
cdw	15	5.75-8.84	7.50	0.91	12.2	6.58-8.42
s	18	42-68	52.1	7.67	14.7	44-60

Frequency. Rare.

?Leptophyllastraea OPPENHEIM, 1930

Description. The genus distinguishes from *Leptophyllastraea* by septa that appear combed, running only from row to row, not connecting corallite centres within the same row. The corallite centres are small, the number of septa is always low.

Frequency. Very rare.

Distribution. CON-MAA.

Distance of rows	Number of septa	Species
4.6 - 6.6 mm	24 - 30	*?L. flexuosa*
6.4 - 7.4 mm	16 - 21	*?L. glomerata*
8.1 - 10 mm	20 - 23	*?L. cf. glomerata*

Fig. 50. Species of the genus *?Leptophyllastraea*.

?Leptophyllastraea flexuosa (GOLDFUSS, 1826)

(Fig. 190 in the book edition)

1826 *Astraea flexuosa* – GOLDFUSS, p. 67, pl. 12, fig. 10 a, b

Measurements.

(GBA 2003/023/0027/02)

	n	min-max	µ	s	cv	µ±s
crd	5	4.13-5.19	4.73	0.47	10.0	4.25-5.20
cdw	7	2.93-4.56	3.51	0.61	17.3	2.90-4.13
s	6	24-28	26.0	1.67	6.4	24-28

Determination. Type material.

Frequency. Rare.

?Leptophyllastraea glomerata (REUSS, 1854)

(Fig. 191 in the book edition)

1854 *Dimorphastraea glomerata* – REUSS, p. 116, pl. 19, fig. 12

1903 *Dimorphastraea glomerata* Reuss – FELIX, p. 213

1930 *Dimorphastraea glomerata* Reuss – OPPENHEIM, p. 188, pl. 36, fig. 11

1982 *Dimorphastraea glomerata* Reuss 1854 – BEAUVAIS, (2), p. 85, pl. 31, fig. 1

Measurements.

(GPSL FLX 8096)

	n	min-max	µ	s	cv	µ±s
crd	3	6.19-6.59	6.40	0.20	3.1	6.20-6.61
cdw	12	3.51-6.18	4.60	0.91	19.9	3.68-5.52
s	10	15-24	18.3	3.02	16.5	15-21

Determination. Literature - REUSS (1854).

Frequency. Rare.

?Leptophyllastraea cf. *glomerata* (REUSS, 1854)

(Fig. 192 in the book edition)

Measurements.

(MHE A1062)

	n	min-max	µ	s	cv	µ±s
crd	8	6.50-11.0	8.92	1.58	17.7	7.33-10.5
cdw	14	2.57-8.60	4.89	1.62	33.2	3.26-6.52
s	12	17-29	22.7	4.96	21.8	18-28

Frequency. Rare.

Leptophyllia REUSS, 1854

Type species. *Leptophyllia clavata* REUSS, 1854.

Description. Turbinate or trochoid solitary coral with circular, elliptical or irregular outline. The septa are numerous, thick, slightly perforated at the inner margin and rarely connected to each other. The endotheca is well developed.

Frequency. Rare.

Distribution. CON-MAA.

Corallite diameter	Number of septa	Species
10 - 15 mm	77 - 85	*L. sp. 1*
15 - 20 mm	100 - 120	*L. sp. 2*
21 - 35 mm	120 - 180	*L. clavata*
	250 - 300	*L. reussi*
36 - 45 mm	150 - 180	*L. trochiformis*
	200 - 240	*L. varusensis*
48 - 58 mm	360 - 380	*L. irregularis*
51 mm	200	*L. conclavina*

Fig. 51. Species of the genus *Leptophyllia*.

Leptophyllia clavata REUSS, 1854

(Fig. 196 in the book edition)

1854 *Leptophyllia clavata* – REUSS, p. 101, pl. 6, fig. 3-6

Measurements.

(GPSL FLX 8039)

c	22×32 mm
s	160

Determination. Type material.

Frequency. Normal.

Leptophyllia conclavina OPPENHEIM, 1930

(Fig. 197 in the book edition)

1930 *Leptophyllia conclavina* n. sp. – OPPENHEIM, p. 143, pl. 17, fig. 1, 2, pl. 20, fig. 4, 5, pl. 21, fig. 1, 2, 4-8

1982 *Leptophyllia conclavina* Oppenheim 1930 – BEAUVAIS, (2), p. 210, fig. 96, pl. 68, fig. 3

Measurements.

(HUJI 24314, lectotype of *Leptophyllia conclavina* OPPENHEIM, 1930)
c 45×57 mm
s 208

Determination. Type material.

Frequency. Type material.

Leptophyllia irregularis REUSS, 1854

(Fig. 198 in the book edition)

1854 *Leptophyllia irregularis* – REUSS, p. 101, pl. 7, fig. 2, 3

1982 *Leptophyllia irregularis* Reuss 1854 – BEAUVAIS, (2), p. 209, pl. 42, fig. 8

Measurements.

(NHMW 1864/0040/1312, lectotype of *Leptophyllia irregularis* REUSS, 1854)
c 32×63 mm
s 360
(GPSL FLX 1553)
c 45×54 mm
s 375

Determination. Type material.

Frequency. Collection material.

Leptophyllia reussi (MILNE EDWARDS, 1857)

(Fig. 199 in the book edition)

1854 *Trochosmilia elongata* – REUSS, p. 87, pl. 7, fig. 4-6

1857 *Trochosmilia* ? *Reussi* – MILNE EDWARDS, (2), p. 164

1982 *Acrosmilia reussi* (H. Milne-Edwards) 1857 – BEAUVAIS, (2), p. 140, pl. 40, fig. 4

Measurements.

(MHE A0675)
c 25×26 mm
s 263

Determination. Type material.

Frequency. Rare.

Leptophyllia trochiformis OPPENHEIM, 1930

(Fig. 200 in the book edition)

1930 *Leptophyllia trochiformis* n. sp. – OPPENHEIM, p. 147, pl. 35, fig. 10

1982 *Rhizangia trochiformis* (Oppenheim) 1930 – BEAUVAIS, (2), p. 217, pl. 43, fig. 3

Measurements.

(MHE A2001)
c 31×41 mm
s 178

Determination. Type material.

Frequency. Rare.

Leptophyllia varusensis (ORBIGNY, 1850)

(Fig. 201 in the book edition)

1850 *Acrosmilia varusensis* – ORBIGNY, (2), p. 181

Measurements.

(GPSL FLX 8076)
c 42×45 mm
s 220

Determination. Type material.

Frequency. Rare.

Leptophyllia sp. 1

(Fig. 202 in the book edition)

Measurements.

(MHE A0043)
c 10×13 mm
s 80

Frequency. Rare.

Leptophyllia sp. 2

(Fig. 203 in the book edition)

Measurements.

(MHE A1994)
c 17×20 mm
s 118

Frequency. Abundant.

Loboseris BEAUVAIS, 1982

Type species. *Mussa abbreviata* REUSS, 1854.

Description. Plocoid colony with large coral-lites, polygonal or irregular in outline.

Frequency. Very rare.

Distribution. U.CEN-SAN.

Loboseris abbreviata (REUSS, 1854)

(Fig. 204 in the book edition)

1854 *Mussa abbreviata* – REUSS, p. 104, pl. 4, fig. 4-6

1982 *Loboseris abbreviata* (Reuss) 1854 – BEAUVAIS, (2), p. 261, pl. 47, fig. 3

Measurements.

(GBA 1854/0007/0050, holotype of *Mussa abbreviata* REUSS, 1854)

clmin 8-12 mm
clmax 16-19 mm
cmin 12-17 mm
cmax 19-23 mm
s ca. 140

(MHE A2159)

	n	min-max	µ	s	cv	µ±s
clmin	6	9.32-12.1	10.4	0.93	8.9	9.46-11.3
clmax	5	11.2-12.1	11.7	0.33	2.8	11.4-12.1
cmin	7	8.39-14.9	12.2	1.93	15.9	10.2-14.1
cmax	5	14.1-19.0	15.3	2.07	13.5	13.2-17.4
s	4	70-106	90.3	15.0	16.5	75-105

Determination. Type material.

Frequency. Rare.

Siderocoenia BEAUVAIS, 1982

Type species. *Thamnaraea lithodes* FELIX, 1903.

Description. The genus is similar to *Leptophyllastrea*, but the structures are smaller, the septa are thicker and in a lower number.

Frequency. Rare.

Distribution. CON-SAN.

Distance of rows	Number of septa	Species
2.3 - 2.9 mm	20 - 24	*S. lithodes*
3.0 - 3.7 mm	15 - 22	*S. sp. 1*
	23 - 25	*S. sp. 2*
3.6 - 4.1 mm	23 - 24	*S. sp. 3*

Fig. 52. Species of the genus *Siderocoenia*.

Siderocoenia lithodes (FELIX, 1903)

(Fig. 208 in the book edition)

1903 *Thamnaraea lithodes* nov. sp. – FELIX, p. 182, text-fig. 8, pl. 23, fig. 6
1930 *Gosaviaraea* (?) *lithodes* Felix – OPPENHEIM, p. 59, pl. 29, fig. 2, pl. 33, fig. 7
1982 *Siderocoenia lithodes* (Felix) 1903 – BEAUVAIS, (2), p. 219, pl. 43, fig. 4

Measurements.

(NHMW 1864/0040/1399, syntype of *Thamnaraea lithodes* FELIX, 1903)

	n	min-max	µ	s	cv	µ±s
crd	6	2.14-2.82	2.56	0.24	9.6	2.31-2.80
cdw	6	3.32-4.03	3.63	0.26	7.3	3.36-3.89
s	22					

(GPSL FLX 1375)

	n	min-max	µ	s	v	µ±s
crd	10	2.23-3.23	2.68	0.32	12.1	2.35-3.00
cdw	10	1.61-2.77	2.22	0.37	16.9	1.84-2.59
s	5	19-22	20.2	1.30	6.4	19-22

Determination. Type material.

Frequency. Normal.

Siderocoenia sp. 1

(Fig. 209 in the book edition)

Measurements.

(MHE A1151)

	n	min-max	µ	s	cv	µ±s
crd	12	2.98-4.29	3.67	0.48	13.1	3.19-4.16
cdw	13	1.76-3.67	2.64	0.55	21.0	2.09-3.20
s	20	13-24	18.3	3.19	17.4	15-21

Frequency. Rare.

Siderocoenia sp. 2

(Fig. 210 in the book edition)

Measurements.

(MHE A1264)

	n	min-max	µ	s	cv	µ±s
crd	10	2.66-3.24	2.90	0.17	5.8	2.73-3.07
cdw	10	2.17-3.00	2.63	0.26	10.1	2.37-2.90
s	10	21-29	24.3	2.86	11.8	21-27

Frequency. Normal.

Siderocoenia sp. 3

(Fig. 211 in the book edition)

Measurements.

(MHE A1556)

	n	min-max	µ	s	cv	µ±s
crd	8	3.22-4.41	3.76	0.37	9.9	3.38-4.13
cdw	8	2.60-4.14	3.31	0.67	20.2	2.64-3.98
s	10	20-28	23.9	2.92	12.2	21-27

Frequency. Normal.

Synastrea MILNE EDWARDS & HAIME, 1848

Type species. *Astrea agaricites* GOLDFUSS, 1826.

Description. Thamnasterioid colony with strong, only at the inner margin perforated septa, that distinguish hardly in length and thickness. The corallites are regularly distributed, often slightly depressed. Costae run between all corallites.

Frequency. Common.

Distribution. HAU-MAA.

Distance of corallites	Number of septa	Species
3 - 4.3 mm	22 - 27	*S. cf. cladophora*
	34 - 40	*S. provencialis*
4 - 5 mm	32 - 40	*S. heberti*
	43 - 49	*S. confusa*
	50 - 58	*S. agaricites*
5 - 5.5 mm	34 - 39	*S. ? salisburgensis*
	40 - 49	*S. exaltata*
5.5 - 6.4 mm	43 - 50	*S. cf. catadupensis*
	50 - 60	*S. catadupensis*
6 - 7.5 mm	37 - 40	*S. junctiseptata*
	50 - 55	*S. cf. rennensis*
	55 - 70	*S. rennensis*

Fig. 53. Species of the genus *Synastrea*.

Synastrea agaricites (GOLDFUSS, 1826)

(Fig. 214 in the book edition)

1826 *Astraea Agaricites* – GOLDFUSS, p. 66, pl. 22, fig. 9
1930 *Synastraea agaricites* Goldfuss sp. – OPPENHEIM, p. 156, pl. 22, fig. 5, pl. 28, fig. 4
1982 *Synastrea agaricites* (Goldfuss) 1826 – BEAUVAIS, (2), p. 122, pl. 37, fig. 3

Measurements.

(IPB GF 223, syntype of *Astrea agaricites* GOLDFUSS, 1826)

	n	min-max	µ	s	cv	µ±s
ccd	10	3.34-4.66	4.28	0.42	9.9	3.85-4.70
s	4	45-57	50.8	5.05	9.9	46-56

(MHE A0514)

	n	min-max	µ	s	cv	µ±s
ccd	25	3.45-5.31	4.45	0.51	11.5	3.93-4.96
s	10	42-62	53.8	7.09	13.1	47-61

Determination. Type material.

Frequency. Normal.

Synastrea catadupensis (VAUGHAN, 1899)

(Fig. 215 in the book edition)

1899 *Mesomorpha catadupensis*, n. sp. – VAUGHAN, p. 246, pl. 41, fig. 1-3

Measurements.

(MHE A1043)

	n	min-max	µ	s	cv	µ±s
ccd	30	4.44-7.10	5.88	0.77	13.0	5.11-6.65
s	5	50-58	52.8	3.34	6.3	49-56

Determination. Type material.

Frequency. Normal.

Synastrea cf. *catadupensis* (VAUGHAN, 1899)

(Fig. 216 in the book edition)

Measurements.

(MHE A1004)

	n	min-max	µ	s	cv	µ±s
ccd	25	4.64-7.30	5.99	0.82	13.6	5.17-6.81
s	15	32-63	46.9	11.1	23.6	36-58

Frequency. Normal.

Synastrea ? *cladophora* (FELIX, 1903)

(Fig. 217 in the book edition)

1903 *Thamnaraea cladophora* nov. sp. – FELIX, p. 183, pl. 17, fig. 10, 11
1930 *Gosaviaraea* ? *cladophora* Felix – OPPENHEIM, p. 62, pl. 45, fig. 3
1982 *Synastrea cladophora* (Felix) 1903 – BEAUVAIS, (2), p. 127, fig. 90, pl. 39, fig. 1

Measurements.

(NHMW 1859/0050/0541, lectotype of *Thamnaraea cladophora* FELIX, 1903)

	n	min-max	µ	s	cv	µ±s
ccd	10	3.54-6.41	4.96	0.88	17.8	4.08-5.85
s	30-40					

Determination. Type material.

Frequency. Type material.

Synastrea cf. *cladophora* (FELIX, 1903)

(Fig. 218 in the book edition)

Measurements.

(BSGP AS I 1969, paralectotype of *Thamnaraea cladophora* FELIX, 1903)

	n	min-max	µ	s	cv	µ±s
ccd	7	3.11-4.74	3.82	0.62	16.4	3.19-4.45
s	6	20-25	22.2	1.94	8.7	20-24

Frequency. Collection material.

Synastrea confusa (REUSS, 1854)

(Fig. 219 in the book edition)

1854 *Thamnastraea confusa* – REUSS, p. 119, pl. 19, fig. 7, 8
1982 *Dimorphomeandra confusa* (Reuss) 1854 – BEAUVAIS, (2), p. 57, pl. 26, fig. 4

Measurements.

(MHE A0840)

	n	min-max	µ	s	cv	µ±s
ccd	20	3.75-5.84	4.79	0.56	11.8	4.23-5.36
s	10	40-56	48.3	5.22	10.8	43-54

Determination. Type material.

Frequency. Normal.

Synastrea ? *exaltata* (REUSS, 1854)

(Fig. 220 in the book edition)

1854 *Thamnastraea exaltata* – REUSS, p. 118, pl. 19, fig. 5, 6
1930 *Synastraea exaltata* Reuss sp. – OPPENHEIM, p. 161, pl. 33, fig. 9, pl. 41, fig. 5
1982 *Corbariastraea exaltata* (Reuss) 1854 – BEAUVAIS, (2), p. 19, fig. 65, 66, pl. 22, fig. 8, pl. 23, fig. 1

Measurements.

(MHE A1046)

	n	min-max	µ	s	cv	µ±s
ccd	35	3.78-6.55	5.20	0.82	15.9	4.37-6.03
s	12	43-58	51.6	3.91	7.5	48-56

Determination. Literature - REUSS (1854).

Frequency. Normal.

Synastrea heberti (ALLOITEAU, 1952)

(Fig. 221 in the book edition)

1952 *Uxacalcaraea Heberti* All. – ALLOITEAU, p. 665
1957 *Uxacalcaraea Heberti* nov. gen., nov. sp. – ALLOITEAU, p. 221, pl. 8, fig. 7, pl. 9, fig. 12

Measurements.

(MHE A0754)

	n	min-max	µ	s	cv	µ±s
ccd	30	2.98-5.97	4.54	0.96	21.1	3.58-5.51
s	13	26-40	32.7	4.06	12.4	29-37

Determination. Type material.

Frequency. Abundant.

Synastrea junctiseptata OPPENHEIM, 1930

(Fig. 222 in the book edition)

1930 *Synastraea junctiseptata* n. sp. – OPPENHEIM, p. 174, pl. 28, fig. 1
1982 *Corbariastraea junctiseptata* (Oppenheim) 1930 – BEAUVAIS, (2), p. 20, fig. 67, pl. 23, fig. 2

Measurements.

(HUJI 23892, syntype of *Synastrea junctiseptata* OPPENHEIM, 1930)

	n	min-max	µ	s	cv	µ±s
ccd	30	6.36-9.66	7.74	0.91	11.7	6.82-8.65
s	10	31-44	38.1	3.92	10.3	34-42

Determination. Type material.

Frequency. Type material.

Synastrea provencialis (ORBIGNY, 1850)

(Fig. 223 in the book edition)

1850 *Polyphyllastrea Provencialis* – ORBIGNY, (2), p. 207
1982 *Synastrea provencialis* (d'Orbigny) 1850 – BEAUVAIS, (2), p. 124, pl. 38, fig. 1

Measurements.

(MHE A0842)

	n	min-max	µ	s	cv	µ±s
ccd	35	2.87-5.00	3.91	0.57	14.7	3.33-4.48
s	15	30-41	35.1	3.88	11.0	31-39

Determination. Type material.

Frequency. Normal.

Synastrea rennensis (ALLOITEAU, 1952)

(Fig. 224 in the book edition)

1952 *Corbariastraea rennensis* All. – ALLOITEAU, p. 676, pl. 10, fig. 7

1957 *Corbariastraea rennensis* nov. sp. – ALLOITEAU, p. 214, 419, fig. 156-158, pl. 4, fig. 3, pl. 14, fig. 2, pl. 18, fig. 2

Measurements.

(MHE A0652)

	n	min-max	µ	s	cv	µ±s
ccd	16	4.99-7.57	6.23	0.86	13.8	5.37-7.09
s	7	57-74	65.4	5.38	8.2	60-71

Determination. Type material.

Frequency. Normal.

Synastrea cf. *rennensis* (ALLOITEAU, 1952)

(Fig. 225 in the book edition)

Measurements.

(MHE A1520)

	n	min-max	µ	s	cv	µ±s
ccd	30	5.53-10.27	7.71	1.24	16.1	6.46-8.96
s	5	48-60	52.8	4.76	9.0	48-58

Frequency. Rare.

Synastrea salisburgensis (BEAUVAIS, 1982)

(Fig. 226 in the book edition)

1982 *Fungiastraea salisburgensis* nov. sp. – BEAUVAIS, (2), p. 75, pl. 27, fig. 5, pl. 28, fig. 1

Measurements.

(MHE A0579)

	n	min-max	µ	s	cv	µ±s
ccd	30	3.92-6.39	5.15	0.72	14.1	4.42-5.88
s	10	29-40	34.9	3.81	10.9	31-39

Determination. Literature - BEAUVAIS (1982).

Frequency. Normal.

Synhydnophora LÖSER & HEINRICH, 2018

Type species. *Synhydnophora wagreichi* LÖSER & HEINRICH, 2018.

Description. Hydnophoroid colony. No septal symmetry. Septa with few perforations. Septal lateral faces with pennulae. Columella difficult to identify. No wall. Endotheca made of dissepiments.

Frequency. Very rare.

Distribution. CON-CAM.

Synhydnophora multilamellosa (REUSS, 1854)

(Fig. 228 in the book edition)

1854 Hydnophora multilamellosa – REUSS, p. 111, pl. 14, fig. 5, 6

1930 Hydnophoraraea multilamellosa Reuss – OPPENHEIM, p. 228, pl. 14, fig. 2, pl. 47, fig. 9

1982 Hydnophora multilamellosa Reuss 1854 – BEAUVAIS, (1), p. 92, fig. 16, pl. 5, fig. 5

Measurements.

(NHMW 1864/0040/1349, syntype of *Hydnophora multilamellosa* REUSS, 1854)

	n	min-max	µ	s	cv	µ±s
md	20	2.40-4.21	3.30	0.54	16.3	2.76-3.84
s	15	16-26	20.7	2.96	14.2	18-24

(MHE A1938)

	n	min-max	µ	s	cv	µ±s
md	15	3.24-4.84	3.91	0.53	13.6	3.38-4.45
s	12	16-31	21.2	4.42	20.9	17-26

Determination. Type material.

Frequency. Normal.

Synhydnophora wagreichi LÖSER & HEINRICH, 2018

(Fig. 229 in the book edition)

2018 Synhydnophora wagreichi spec. nov. – LÖSER & HEINRICH, p. 134, fig. 6

Measurements.

(BSPG 2018 II 1164, holotype of *Synhydnophora wagreichi* LÖSER & HEINRICH, 2018)

	n	min-max	µ	s	cv	µ±s
md	20	3.32-5.41	4.48	0.61	13.7	3.86-5.10
s	15	17-30	22.3	3.75	16.8	19-26

Determination. Type material.

Frequency. Rare.

Valliculastraea ALLOITEAU, 1957

Type species. *Valliculastraea jauberti* ALLOITEAU, 1957.

Description. Thamnasterioid-cerioid colony with clearly marked corallites. A wall is present, but often not clearly visible.

Frequency. Very rare.

Distribution. U.TUR-MAA.

Small corallite diameter	Large corallite diameter	Number of septa	Species
2.2 - 2.3 mm	2.4 - 3.2 mm	24 - 26	*V. tignaria*
2.8 - 3.0 mm	3.5 mm	49 - 53	*V. sp. 1*
3.6 - 4.4 mm	4.6 - 5.1 mm	43 - 53	*V. sp. 2*

Fig. 54. Species of the genus *Valliculastraea*.

Valliculastraea tignaria (OPPENHEIM, 1930)

(Fig. 232 in the book edition)

1930 *Meandraraea tignaria* n. sp. – OPPENHEIM, p. 214, pl. 19, fig. 3

1982 *Parasynastraea tignaria* (Oppenheim) 1930 – BEAUVAIS, (2), p. 145

Measurements.

(HUJI Opp.2476, lectotype of *Meandraraea tignaria* OPPENHEIM, 1930)

	n	min-max	μ	s	cv	μ±s
clmin	15	2.00-2.66	2.29	0.21	9.2	2.08-2.50
clmax	15	2.82-3.51	3.19	0.19	6.1	2.99-3.39
s	15	22-30	25.2	2.39	9.5	23-28

(MHE A1507)

	n	min-max	μ	s	cv	μ±s
clmin	15	1.94-2.42	2.11	0.14	6.9	1.97-2.26
clmax	15	1.89-2.74	2.32	0.22	9.6	2.10-2.55
s	10	20-27	23.3	2.40	10.3	21-26

Determination. Type material.

Frequency. Rare.

Valliculastraea sp. 1

(Fig. 233 in the book edition)

Measurements.

(MHE A1628)

	n	min-max	μ	s	cv	μ±s
clmin	10	2.56-3.18	2.84	0.22	7.8	2.62-3.07
clmax	10	2.98-4.19	3.51	0.44	12.6	3.07-3.96
s	5	46-58	52.8	4.86	9.2	48-58

Frequency. Rare.

Valliculastraea sp. 2

(Fig. 234 in the book edition)

Measurements.

(MHE A1943)

	n	min-max	μ	s	cv	μ±s
clmin	15	3.40-4.93	4.19	0.48	11.4	3.71-4.67
clmax	15	4.24-6.29	5.36	0.53	9.9	4.83-5.90
s	10	43-57	49.7	4.42	8.9	45-54

Frequency. Rare.

Superfamily Eugyroidea ACHIARDI, 1875

Description. Colonial (cerioid, flabelloid, hydnophoroid, meandroid, phaceloid, plocoid) corals. Septa compact. Septal symmetry generally regular, in various systems, or in size orders. Septa poorly ornamented. Microstructure poorly known, probably of small trabeculae. Lonsdaleoid septa only in the felixigyrids; main septa absent. Synapticulae and pali absent. Columella rare. Endotheca well-developed. Marginarium absent. Wall compact, parathecal, septothecal, or paraseptothecal. Coenosteum and budding varies.

Family Eugyridae ACHIARDI, 1875

Description. Colonial (cerioid, flabelloid, hydnophoroid, meandroid or hybrid) corals. Septal symmetry irregular. Columella rare.

Hydnophoraraea OPPENHEIM, 1930

Type species. *Monticularia styriaca* MICHELIN, 1847 emend. ORBIGNY, 1850.

Description. Hydnophoroid colony. Corallite centres can be recognised in places. Septa straight, free, in length and thickness often alternating. Their lateral faces bear thorns. The columella is rudimentary developed; it is difficult to assign the elements between the crests to any morphological unit.

Frequency. Rare.

Distribution. CEN-MAA.

Type of crests	Distance of crests	Septa per crest	Species
Crests conical	1.4 - 1.7 mm	8 - 12	*H. parviconus*
	1.6 - 2.2 mm	8 - 10	*H. cf. parviconus*
	2.1 - 2.3 mm	11 - 13	*H. cf. rapulum*
	2.3 - 2.9 mm	8 - 12	*H. rapulum*
	3 - 4 mm	11 - 16	*H. styriaca*
Crests polygonal	2.3 - 2.9 mm	20 - 25	*H. digitata*
	2.9 - 3.5 mm	30 - 50	*H. kossmati*
	4 - 5 mm	25 - 40	*H. reussi*

Fig. 55. Species of the genus *Hydnophoraraea*.

Hydnophoraraea digitata (FROMENTEL, 1877)

(Fig. 238 in the book edition)

1877 *Hydnophora digitata* – FROMENTEL, p. 469, pl. 107, fig. 3

Measurements.

(A1066)

	n	min-max	μ	s	cv	μ±s
md	20	1.77-2.84	2.30	0.33	14.5	1.96-2.63
s	20	14-49	25.1	10.2	40.6	15-35

Determination. Type material.

Frequency. Rare.

Hydnophoraraea kossmati (FELIX, 1903)

(Fig. 239 in the book edition)

1903 *Hydnophora Kossmati* nov. sp. – FELIX, p. 281, text-fig. 43, 44, pl. 22, fig. 8

Measurements.

(GPSL FLX 3799, syntype of *Hydnophora kossmati* FELIX, 1903)

	n	min-max	μ	s	cv	μ±s
md	20	2.27-4.41	3.23	0.64	20.0	2.58-3.88
s	20	16-82	46.9	24.1	51.2	23-71

Determination. Type material.

Frequency. Rare.

Hydnophoraraea parviconus OPPENHEIM, 1930

(Fig. 240 in the book edition)

1930 *Hydnophoraraea parviconus* Oppenheim n. sp. – OPPENHEIM, p. 227, pl. 18, fig. 3-5, 8

Measurements.

(MHE A0784)

	n	min-max	μ	s	cv	μ±s
ccd	35	1.02-1.79	1.49	0.22	15.1	1.26-1.71
ml	30	0.48-0.81	0.61	0.07	12.7	0.53-0.69
s	30	8-10	8.93	0.98	10.9	8-10

Determination. Type material.

Frequency. Abundant.

Hydnophoraraea cf. *parviconus* OPPENHEIM, 1930

(Fig. 241 in the book edition)

Measurements.

(MHE A0836)

	n	min-max	μ	s	cv	μ±s
md	20	1.48-2.33	1.89	0.27	14.4	1.62-2.16
s	30	8-12	9.26	1.11	12.0	8-10

Frequency. Normal.

Hydnophoraraea rapulum OPPENHEIM, 1930

(Fig. 242 in the book edition)

1930 *Hydnophoraraea rapulum* n. sp. – OPPENHEIM, p. 230, pl. 14, fig. 3, pl. 18, fig. 7

Measurements.

(MHE A0609)

	n	min-max	μ	s	cv	μ±s
md	25	1.87-2.86	2.35	0.32	13.8	2.03-2.68
s	20	8-16	10.3	2.59	25.2	8-13

Determination. Type material.

Frequency. Rare.

Hydnophororaraea cf. *rapulum* OPPENHEIM, 1930

(Fig. 243 in the book edition)

Measurements.

(MHE A0346)

	n	min-max	μ	s	cv	μ±s
ml	6	0.33-0.62	0.45	0.09	21.0	0.35-0.54
md	10	1.52-2.77	2.11	0.37	17.6	1.73-2.48
s	5	10-12	10.6	0.89	8.4	10-11

Frequency. Normal.

Hydnophororaraea reussi (MILNE EDWARDS, 1857)

(Fig. 244 in the book edition)

1854 *Ulophyllia crispa* – REUSS, p. 106, pl. 11, fig. 6
1857 *Isastraea Reussana* – MILNE EDWARDS, (2), p. 528
1982 *Collignonastraea reussi* (H. Milne Edwards) 1857 – BEAUVAIS, (2), p. 246, fig. 101, pl. 45, fig. 3, pl. 70, fig. 2

Measurements.

(NHMW 1864/0040/1308, holotype of *Isastrea reussi* MILNE EDWARDS, 1857)

	n	min-max	μ	s	cv	μ±s
md	5	3.46-5.08	4.36	0.70	16.1	3.65-5.06
s	5	29-48	37.2	6.97	18.7	30-44

Determination. Type material.

Frequency. Rare.

Hydnophororaraea styriaca (MICHELIN, 1847)

(Fig. 245 in the book edition)

1847 *Monticularia styriana* – MICHELIN, p. 295, pl. 68, fig. 2
1854 *Hydnophora styriaca* – REUSS, p. 111
1903 *Hydnophora styriaca* Reuss (Mich. sp.) – FELIX, p. 279, text-fig. 41, 42
1930 *Hydnophororaraea styriaca* Michelin sp. – OPPENHEIM, p. 224, pl. 14, fig. 4, pl. 18, fig. 1, 6
1982 *Hydnophora styriaca* (Michelin) 1847 – BEAUVAIS, (1), p. 88, fig. 14, 15, pl. 5, fig. 6, pl. 7, fig. 2, pl. 62, fig. 3, 4

Measurements.

(HUJI 23941, holotype of *Hydnophororaraea grandiconus* OPPENHEIM, 1930)

md	3.5-4.5 mm
s	10-12

Determination. Other literature.

Frequency. Collection material.

Superfamily Felixaraeoidea BEAUVAIS, 1982

Description. Solitary and colonial (astreoid, meandroid, phaceloid) corals. Septa compact or perforated. In the latter case, younger septal cycles have more perforations than older. Septa very thick, those of the first cycles more. Septal symmetry regular or subregular radial. Septal upper margins with granulae, lateral faces with thorns. Lonsdaleoid septa and main septum absent. Microstructure of large trabeculae. Synapticulae common. Pali absent, columella parietal. Endotheca mostly absent. Marginarium and wall absent. Coenosteum in some genera. Budding extracalicinal.

Family Felixaraeidae BEAUVAIS, 1982

Astreoid	Coenosteum broad	*Litharaeopsis*
	Coenosteum narrow	*Pseudofavia*
Solitary		*Felixaraea*

Fig. 56. Classification of the family Felixaraeidae.

Felixaraea BEAUVAIS, 1982

Type species. *Felixaraea rennensis* BEAUVAIS, 1982.

Description. Turbinate solitary coral with a circular outline. The septa are perforated, younger (thinner) septa more than older (thicker) ones.

Frequency. Rare.

Distribution. M.CEN-MAA.

Corallite diameter	Number of septa	Species
10 - 20 mm	50 - 100	*F. pollicaris*
20 - 30 mm	75 - 110	*F. rennensis*
20 - 40 mm	130 - 150	*F. pratzi*
50 - 70 mm	220 - 310	*F. gigantea*

Fig. 57. Species of the genus *Felixaraea*.

Felixaraea gigantea (OPPENHEIM, 1930)

(Fig. 250 in the book edition)

1930 *Haplaraea gigantea* n. sp. – OPPENHEIM, p. 37, pl. 29, fig. 1

1982 *Felixaraea gigantea* (Oppenheim) 1930 – BEAUVAIS, (2), p. 27, fig. pl. 24, fig. 1

Measurements.

(GPSL FLX 8105)
c 52×69 mm
s 310

Determination. Type material.

Frequency. Collection material.

Felixaraea pollicaris (OPPENHEIM, 1930)

(Fig. 251 in the book edition)

1930 *Haplaraea pollicaris* n. sp. – OPPENHEIM, p. 36, pl. 24, fig. 5, pl. 25, fig. 2, pl. 27, fig. 6, pl. 29, fig. 8

1982 *Felixaraea pollicaris* (Oppenheim) 1930 – BEAUVAIS, (2), p. 28, fig. 69, pl. 24, fig. 2

Measurements.

(MHE A1266)
c 15×16 mm
s 93

Determination. Type material.

Frequency. Abundant.

Felixaraea pratzi (FELIX, 1903)

(Fig. 252 in the book edition)

1903 *Haplaraea Pratzi* nov. sp. – FELIX, p. 184, text-fig. 9, pl. 17, fig. 1

1982 *Felixaraea pratzi* (Felix) 1903 – BEAUVAIS, (2), p. 25, fig. 68, pl. 23, fig. 4

Measurements.

(GPSL FLX 8028)
c 21×23 mm
s 130

Determination. Type material.

Frequency. Rare.

Felixaraea rennensis BEAUVAIS, 1982

(Fig. 253 in the book edition)

1982 *Felixaraea rennensis* Alloiteau – BEAUVAIS, (2), p. 25

Measurements.

(GPSL FLX 8027)
c 25×27 mm
s 96

Determination. Type material.

Frequency. Rare.

Litharaeopsis BEAUVAIS, 1982

Type species. *Litharaea latistellata* FELIX, 1903.

Description. Astreoid colony. The coenosteum is broad, the costae are non-confluent. Septa very strong, perforated at the inner margin and standing in a rather regular radial symmetry.

Frequency. Very rare.

Distribution. U.TUR-MAA.

Small corallite diameter	Number of septa	Species
(1.9) 2.4 - 3.3 mm	22-28	*L. vaughani*
3.3 - 3.9 mm	25-28	*L. sp.*
3.7 - 4.8 (5.3) mm	32 - 40	*L. latistellata*
6.5 - 6.8 mm	24	*L. magnifica*

Fig. 58. Species of the genus *Litharaeopsis*.

Litharaeopsis latistellata (FELIX, 1903)

(Fig. 256 in the book edition)

1903 *Litharaea latistellata* nov. sp. – FELIX, p. 180, pl. 20, fig. 17

1930 *Astraraea latistellata* Felix sp. – OPPENHEIM, p. 53, pl. 11, fig. 4

1982 *Litharaeopsis latistellata* (Felix) 1903 – BEAUVAIS, (2), p. 35, fig. 72, pl. 25, fig. 3

Measurements.

(MHE A0869)

	n	min-max	µ	s	cv	µ±s
clmin	5	3.64-3.82	3.73	0.07	2.0	3.65-3.80
clmax	5	4.75-5.67	5.13	0.33	6.6	4.79-5.47
ccd	7	4.96-6.38	5.67	0.52	9.3	5.14-6.20
s	5	37-44	39.0	2.91	7.4	36-42

Determination. Type material.

Frequency. Normal.

Litharaeopsis magnifica (OPPENHEIM, 1930)

(Fig. 257 in the book edition)

1930 *Astraraea magnifica* n. sp. – OPPENHEIM, p. 52, pl. 8, fig. 1

Measurements.

(HUJI 33200, syntype of *Astraraea magnifica* OPPENHEIM, 1930)

	n	min-max	µ	s	cv	µ±s
clmin	10	4.63-6.19	5.35	0.60	11.2	4.75-5.95
clmax	10	5.25-8.87	7.05	1.12	15.9	5.92-8.17
ccd	10	5.54-7.05	6.30	0.49	7.9	5.80-6.80
s	24					

Determination. Type material.

Frequency. Type material.

Litharaeopsis vaughani (FELIX, 1903)

(Fig. 258 in the book edition)

1903 *Litharaea Vaughani* nov. sp. – FELIX, p. 179, text-fig. 4-6, pl. 20, fig. 19

1930 *Astraraea vaughani* Felix n.sp. – OPPENHEIM, p. 50, pl. 8, fig. 2

1982 *Litharaeopsis vaughani* (Felix) 1903 – BEAUVAIS, (2), p. 37, fig. 73, pl. 25, fig. 4

Measurements.

(BSPG 1878 XI 387, syntype of *Litharaea vaughani* FELIX, 1903)

	n	min-max	µ	s	cv	µ±s
clmin	20	2.31-3.14	2.68	0.23	8.8	2.44-2.92
clmax	20	3.02-4.57	3.63	0.46	12.7	3.17-4.10
ccd	20	3.40-5.43	4.23	0.61	14.6	3.61-4.85
s	10	21-26	24.1	1.96	8.1	22-26

Determination. Type material.

Frequency. Normal.

Litharaeopsis sp.

(Fig. 259 in the book edition)

Measurements.

(GPSL FLX 948)

	n	min-max	µ	s	cv	µ±s
clmin	15	3.33-4.99	4.23	0.54	12.7	3.69-4.77
clmax	15	3.90-5.57	4.96	0.51	10.3	4.45-5.47
ccd	15	4.73-7.39	6.27	0.87	13.9	5.39-7.15
s	10	23-31	27.3	2.58	9.4	25-30

Frequency. Collection material.

Pseudofavia OPPENHEIM, 1930

Type species. *Parastrea grandiflora* REUSS, 1854.

Description. Astreoid colony with large polygonal corallites. The coenosteum is very narrow what gives the colony a cerioid appearance. The costae are non-confluent. Septa strong, perforated mainly at the inner margin.

Frequency. Very rare.

Distribution. U.TUR-SAN.

Small corallite diameter	Large corallite diameter	Number of septa	Species
12 - 15 mm	13 - 18 mm	30 - 40	*P. paronai*
10 - 18 mm	15 - 24 mm	50 - 70	*P. grandiflora*
16 - 24 mm	23 - 31 mm	60 - 80	*P. sp.*

Fig. 59. Species of the genus *Pseudofavia*.

Pseudofavia grandiflora (REUSS, 1854)

(Fig. 262 in the book edition)

1854 *Parastraea grandiflora* – REUSS, p. 120, pl. 16, fig. 10

1903 *Parastraea grandiflora* Reuss – FELIX, p. 181, text-fig. 7

1930 *Pseudofavia grandiflora* Reuss sp. – OPPENHEIM, p. 65, pl. 40, fig. 5-7

1982 *Pseudofavia grandiflora* (Reuss) 1854 – BEAUVAIS, (2), p. 16, pl. 33, fig. 3

Measurements.

(GPSL FLX 8064)

	n	min-max	µ	s	cv	µ±s
clmin	10	13.2-18.6	15.4	1.82	11.8	13.6-17.3
clmax	10	14.4-25.1	21.5	3.68	17.1	17.1-25.2
ccd	20	15.6-21.6	18.2	1.88	10.3	16.4-20.1
s	10	37-61	53.3	8.15	15.2	45-61

Determination. Type material.

Frequency. Rare.

Pseudofavia paronai (ZUFFARDI-COMERCI, 1930)

(Fig. 263 in the book edition)

1930 *Thamnasteria Paronai* n. sp. – ZUFFARDI-COMERCI, p. 22, pl. 5, fig. 2

Measurements.

(MHE A1601)

	n	min-max	µ	s	cv	µ±s
cmin	6	11.5-15.8	13.3	1.70	12.8	11.6-15.0
cmax	6	16.3-19.9	18.2	1.51	8.3	16.7-19.7
ccd	12	10.8-20.3	15.1	2.96	19.6	12.1-18.1
s	6	34-41	38.5	2.66	6.9	36-41

Determination. Type material.

Frequency. Rare.

Pseudofavia sp.

(Fig. 264 in the book edition)

Measurements.

(GPSL FLX 7940)

	n	min-max	µ	s	cv	µ±s
cmin	7	17.1-25.3	21.2	3.11	14.7	18.0-24.3
cmax	7	22.9-34.8	26.8	4.03	15.0	22.7-30.8
ccd	16	16.8-26.6	22.4	3.11	13.9	19.3-25.5
s	7	64-88	74.7	8.36	11.1	66-83

Frequency. Collection material.

Superfamily Haimesastraeoidae VAUGHAN & WELLS, 1943

Description. Colonial (phaceloid) corals (in the Cretaceous). Septa compact, in a regular hexameral symmetry, connected to each other only in the centre of the corallite. Septal upper margin smooth, lateral face with alternating keels parallel to the upper margin, inner margin swollen. Lonsdaleoid septa and main septum absent. Microstructure of small trabeculae. Synapticulae and pali absent. Columella poorly defined. Endotheca with few tabulae. Marginarium absent. Wall probably septothecal. Coenosteum narrow. Budding extracalicinal.

Family Haimesastraeidae VAUGHAN & WELLS, 1943

Diplothecocora REIG ORIOL, 1992

Type species. *Diplothecocora guillermoi* REIG ORIOL, 1992.

Description. Phaceloid coral with a regular radial septal symmetry.

Frequency. Very rare.

Distribution. U.CAM-L.MAA.

Diplothecocora sp.

(Fig. 265 in the book edition)

Measurements.

(GPSL FLX 8375)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.03-1.65	1.34	0.14	10.6	1.20-1.49
clmax	30	1.36-1.92	1.57	0.16	10.5	1.41-1.74
s	25	16-22	18.1	1.68	9.2	16-20

Frequency. Collection material.

Superfamily Haplaraeoidea VAUGHAN & WELLS, 1943

Description. Solitary and colonial (phaceloid, thamnasterioid) corals. Septa perforated, more common at their inner margins, medium thick, in an irregular radial symmetry. Septa often connected to each other. Lateral faces and upper margin unknown. Lonsdaleoid and main septa absent. Microstructure of septa of medium-sized trabeculae. Synapticulae abundant. Pali absent, columella probably parietal. Endotheca varies. Marginarium absent. Wall generally absent. Coenosteum varies, with costae. Budding extracalicinal.

Family Astraraeidae BEAUVAIS, 1982

Astreoid		*Elephantaria*
Solitary	Patellate	*Astraraeatrochus*
	Turbinate	*Astraraeidae indet.*
Thamnasterioid	Coenosteum narrow	*Astraraea*
	Coenosteum extended	*?Astraraea*

Fig. 60. Classification of the family Astraraeidae.

Astraraea FELIX, 1900

Type species. *Thamnasteria multiradiata* REUSS, 1854.

Description. Thamnasterioid coral with slightly depressed corallites. The septa are numerous, confluent and without any symmetry.

Frequency. Occasional.

Distribution. TUR-L.MAA.

Distance of corallites	Number of septa	Species
4.0 - 4.4 mm	55 - 56	*A. sp. 1*
4.9 - 5.7 mm	28 - 35	*A. sp. 2*
	40 - 44	*A. aff. senessei*
5.5 - 7.1 mm	39 - 47	*A. columellata*
	46 - 62	*A. submedia*
7.1 - 8.9 mm	62 - 70	*A. rosi*
10.5 - 11.8 mm	70 - 80	*A. sp. 3*
14 - 16 mm	80 - 90	*A. aff. multiradiata*
22 mm	100	*A. multiradiata*

Fig. 61. Species of the genus *Astraraea*.

Astraraea columellata OPPENHEIM, 1930

(Fig. 269 in the book edition)

1930 *Astraraea columellata* n. sp. – OPPENHEIM, p. 46, pl. 8, fig. 4, 6, pl. 9, fig. 4, 5, pl. 33, fig. 5

1982 *Kobya columellata* (Oppenheim) 1930 – BEAUVAIS, (2), p. 39, fig. 74

Measurements.

(MHE A1227)

	n	min-max	μ	s	cv	μ±s
ccd	30	5.14-7.92	6.53	0.74	11.3	5.79-7.27
s	12	36-50	42.5	3.96	9.3	39-46

Determination. Type material.

Frequency. Normal.

Astraraea multiradiata (REUSS, 1854)

(Fig. 270 in the book edition)

1854 *Thamnastraea multiradiata* – REUSS, p. 118, pl. 7, fig. 1

1903 *Astraraea multiradiata* Felix (Reuss sp.) – FELIX, p. 186, text-fig. 10, 11

1930 *Astraraea multiradiata* Reuss sp. – OPPENHEIM, p. 40, pl. 11, fig. 1, 2

1982 *Astraraea multiradiata* Reuss 1854) – BEAUVAIS, (2), p. 30, fig. 70, pl. 24, fig. 3, pl. 25, fig. 1

Measurements.

(GPSL FLX 1146)

	n	min-max	μ	s	cv	μ±s
ccd	8	14.3-23.2	18.4	3.49	18.9	14.9-21.9
s		90-110				

Determination. Literature - REUSS (1854).

Frequency. Collection material.

Astraraea aff. *multiradiata* (REUSS, 1854)

(Fig. 271 in the book edition)

Measurements.

	n	min-max	μ	s	cv	μ±s
ccd	8	12.4-20.2	16.4	2.51	15.3	13.9-18.9
s		80-90				

Frequency. Rare.

Astraraea rosi REIG ORIOL, 1992

(Fig. 272 in the book edition)

1992 *Astraraea rosi* n. sp. – REIG ORIOL, p. 16, pl.3, fig.8

Measurements.

(MHE A0653)

	n	min-max	μ	s	cv	μ±s
ccd	20	6.22-9.96	7.74	1.33	17.1	6.41-9.08
s	5	60-67	63.2	2.86	4.5	60-66

Determination. Type material.

Frequency. Normal.

Astraraea aff. *senessei* ALLOITEAU, 1939

(Fig. 273 in the book edition)

Measurements.

(MHE A0861)

	n	min-max	μ	s	cv	μ±s
ccd	30	4.00-7.31	5.70	0.88	15.4	4.81-6.58
s	10	37-48	41.5	3.43	8.2	38-45

Frequency. Normal.

Astraraea submedia OPPENHEIM, 1930

(Fig. 274 in the book edition)

1930 *Astraraea submedia* n. sp. – OPPENHEIM, p. 45, pl. 10, fig. 3, pl. 12, fig. 6

1982 *Astraraea submedia* Oppenheim 1930 – BEAUVAIS, (2), p. 33

Measurements.

(MHE A0684)

	n	min-max	μ	s	cv	μ±s
ccd	30	5.42-9.16	7.11	0.99	13.9	6.12-8.10
s	10	53-64	60.6	3.16	5.2	57-64

Determination. Type material.

Frequency. Normal.

Astraraea sp. 1

(Fig. 275 in the book edition)

Measurements.

(MHE A1824)

	n	min-max	μ	s	cv	μ±s
ccd	25	3.17-5.06	4.23	0.54	12.9	3.68-4.78
s	10	45-63	53.1	6.08	11.4	47-59

Frequency. Rare.

Astraraea sp. 2

(Fig. 276 in the book edition)

Measurements.

(MHE A0825)

	n	min-max	μ	s	cv	μ±s
ccd	15	4.08-6.91	5.68	0.94	16.6	4.73-6.63
s	10	24-34	28.2	3.58	12.7	25-32

Frequency. Rare.

Astraraea sp. 3

(Fig. 277 in the book edition)

Measurements.

(GPSL FLX 4879)

	n	min-max	μ	s	cv	μ±s
ccd	8	8.76-11.8	10.5	1.14	10.8	9.37-11.7
s	5	75-81	78.0	2.82	3.6	75-81

Frequency. Rare.

?Astraraea FELIX, 1900

Description. The thamnasterioid-astreoid informal genus has an extended coenosteum made of costae and synapticulae. The costae are sub- to non-confluent.

Frequency. Very rare.

Distribution. CON-SAN.

Distance of corallites	Number of septa	Species
3.1 mm	37	*?A. sp.*
4.9 - 5.4 mm	36 - 42	*?A. tenuiseptata*
7.5 mm	33	*?A. scutellum*

Fig. 62. Species of the genus *?Astraraea*.

?Astraraea scutelum (OPPENHEIM, 1930)

(Fig. 280 in the book edition)

1930 *Dimorphastraea scutelum* n. sp. – OPPENHEIM, p. 195, pl. 22, fig. 1, 7

Measurements.

(HUJI Opp.24575, lectotype of *Dimorphastrea scutelum* OPPENHEIM, 1930)

ccd 7-8 mm
s 30-36

Determination. Type material.

Frequency. Type material.

?Astraraea tenuiseptata (OPPENHEIM, 1930)

(Fig. 281 in the book edition)

1930 *Astraraea tenuiseptata* n. sp. – OPPENHEIM, p. 55, pl. 16, fig. 3

Measurements.

(MHE A1714)

	n	min-max	μ	s	cv	μ±s
ccd	15	4.61-5.93	5.44	0.41	7.6	5.03-5.86
s	10	35-45	39.9	3.60	9.0	36-44

Determination. Literature - OPPENHEIM (1930).

Frequency. Rare.

?Astraraea sp.

(Fig. 282 in the book edition)

Measurements.

(MHE A1485)

	n	min-max	μ	s	cv	μ±s
ccd	30	2.52-3.66	3.05	0.32	10.6	2.72-3.37
s	10	34-41	36.9	2.07	5.6	35-39

Frequency. Rare.

Astraraeatrochus LÖSER & HEINRICH, 2018

Type species. *Astraraeatrochus bachi* LÖSER & HEINRICH, 2018.

Description. Solitary coral with an inverse conical form and a circular to elliptical corallite outline. Septa are subcompact without symmetry. Columella parietal. Synapticulae present. Wall probably epithecal. Endotheca with few dissepiments.

Frequency. Very rare.

Distribution. U.TUR-SAN.

Astraraeatrochus bachi LÖSER & HEINRICH, 2018

(Fig. 283 in the book edition)

2018 *Astraraeatrochus bachi* spec. nov. – LÖSER & HEINRICH, p. 137, fig. 8

Measurements.

(BSPG 2018 II 1599, holotype of *Astraraeatrochus bachi* LÖSER & HEINRICH, 2018)

c 23×31 mm
s 199

Determination. Type material.

Frequency. Rare.

Elephantaria OPPENHEIM, 1930

Type species. *Elephantaria lindstroemi* OPPENHEIM, 1930.

Description. Astreoid colony with often elevated corallites. The corallites have larger distances to each other compared to *Astraraea*. The costae are sub- to non-confluent.

Frequency. Very rare.

Distribution. CON-MAA.

Distance of corallites	Number of septa	Species
3 - 4 mm	30 - 40	*E. lindstroemi*
4.3 - 5.2 mm	26 - 27	*E. sp. 1*
5.4 - 5.9 mm	35 - 45	*E. microkothos*
7.5 mm	43	*E. sp. 2*

Fig. 63. Species of the genus *Elephantaria*.

Elephantaria lindstroemi OPPENHEIM, 1930

(Fig. 286 in the book edition)

1930 Elephantaria lindstroemi n. sp. – OPPENHEIM, p. 2, pl. 39, fig. 6, 7

Measurements.

(MHE A1263)

	n	min-max	μ	s	cv	μ±s
ccd	30	3.06-4.76	3.89	0.45	11.7	3.43-4.34
s	10	33-42	36.9	3.17	8.6	34-40

Determination. Type material.

Frequency. Normal.

Elephantaria microkothos (BARON-SZABO, 2008)

(Fig. 287 in the book edition)

2008 *Polyphylloseris microkothos* n. sp. – BARON-SZABO, p. 166, pl. 15, fig. 5

Measurements.

(GPSL FLX 1013)

	n	min-max	μ	s	cv	μ±s
ccd	10	4.52-6.22	5.36	0.50	9.4	4.85-5.87
s	38-45					

Determination. Type material.

Frequency. Rare.

Elephantaria sp. 1

(Fig. 288 in the book edition)

Measurements.

(MHE A1904)

	n	min-max	μ	s	cv	μ±s
ccd	20	3.20-5.64	4.46	0.78	17.5	3.68-5.24
s	10	22-29	24.1	1.91	7.9	22-26

Frequency. Rare.

Elephantaria sp. 2

(Fig. 289 in the book edition)

Measurements.

(MHE A1030)

	n	min-max	μ	s	cv	μ±s
clmin	6	3.64-5.36	4.44	0.69	15.6	3.75-5.14
clmax	6	4.68-5.36	5.07	0.30	6.0	4.76-5.37
ccd	5	6.62-8.73	7.42	0.87	11.7	6.55-8.29
s	4	42-43	42.8	0.50	1.1	42-43

Frequency. Rare.

Astraraeidae indet.

Description. Informal genus without name. Turbinate solitary coral with circular outline. The columella is parietal. The endotheca consists of numerous dissepiments. The wall is absent or epithecal.

Frequency. Very rare.

Astraraeidae indet. sp.

(Fig. 290 in the book edition)

Measurements.

(GPSL FLX 8077)

c	37 mm
s	176

Frequency. Collection material.

Superfamily Heterocoenioidea OPPENHEIM, 1930

Description. Solitary and colonial (cerioid, phaceloid, and plocoid) corals. Septa compact, thick, with ornamented lateral faces. Symmetry radial and bilateral. Lonsdaleoid septa may occur. Septal microstructure with small trabeculae, visible as a medium dark line. Synapticulae absent, pali absent. Columella rarely developed. Endotheca well-developed. Marginarium present in some genera. Wall trabecular or septothecal. Budding extracalicinal.

Septal symmetry bilateral		Carolastraeidae
Septal symmetry radial	Main septum absent	Agatheliidae
	Main septum present	Heterocoeniidae

Fig. 64. Classification of the superfamily Heterocoenioidea.

Family Agatheliidae BEAUVAIS & BEAUVAIS, 1975

Description. Solitary corals or (phaceloid, plocoid) colonies. Septa in a higher number as in the other families, generally in a radial symmetry with septal cycles generally regular, except for large corallites. No costae. Lonsdaleoid and main septa absent. Columella weak. Marginarium absent.

Phaceloid		*?Caranthophyllum*
Plocoid	Costae and columella absent	*Agathelia*
	Costae and vague columella present	*?Agathelia*

Fig. 65. Classification of the family Agatheliidae.

Agathelia REUSS, 1854

Type species. *Agathelia asperella* REUSS, 1854.

Description. Plocoid colony, corallites circular to elliptical. Septa in a radial symmetry, in three to four sub-regular cycles. No costae. A columella does not exist but is pretended by the inner septal margin. The coenosteum is made of tabulae and vertical trabeculae.

Frequency. Occasional.

Distribution. CON-LU.CAM.

Small lumen diameter	Species
1.1 - 1.2 mm	*A. sp.*
1.4 - 1.5 mm	*A. subasperella*
1.8 - 2.3 mm	*A. asperella*
2.4 - 2.5 mm	*A. cf. asperella*

Fig. 66. Species of the genus *Agathelia*.

Agathelia asperella REUSS, 1854

(Fig. 295 in the book edition)

1854 *Agathelia asperella* – REUSS, p. 82, pl. 9, fig. 10-12
1903 *Agathelia asperella* Reuss – FELIX, p. 262, text-fig. 30-32
1930 *Agathelia asperella* Reuss – OPPENHEIM, p. 349, pl. 31, fig. 1-5, pl. 47, fig. 2, 5, 8, 10
1982 *Agathelia asperella* Reuss 1854 – BEAUVAIS, (1), p. 44, fig. 6-8, pl. 61, fig. 7, pl. 62, fig. 1, 2

Measurements.

(MHE A0406)

	n	min-max	µ	s	cv	µ±s
clmin	15	1.56-2.28	1.93	0.21	11.1	1.71-2.14
clmax	15	1.56-3.47	2.42	0.43	17.8	1.99-2.85
cmin	20	2.07-3.58	2.81	0.46	16.6	2.34-3.28
cmax	15	3.17-4.38	3.69	0.37	10.0	3.32-4.06
ccd	20	2.26-3.87	3.09	0.41	13.3	2.67-3.50
s	10	24-34	26.3	3.36	12.8	23-30

(MHE A2158)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.53-2.13	1.87	0.16	8.6	1.71-2.03
clmax	30	1.58-2.45	2.13	0.14	6.9	1.98-2.28
cmin	30	2.40-3.52	2.98	0.29	9.9	2.68-3.27
cmax	30	2.48-4.01	3.37	0.33	9.8	3.03-3.70
ccd	35	2.69-4.07	3.38	0.37	11.0	3.01-3.75
s	30	22-32	24.8	2.73	11.0	22-28

Determination. Type material.

Frequency. Abundant.

Agathelia cf. *asperella* REUSS, 1854

(Fig. 296 in the book edition)

Measurements.

(GPSL FLX 3512)

	n	min-max	µ	s	cv	µ±s
clmin	11	1.86-3.04	2.46	0.36	14.9	2.09-2.83
clmax	9	2.28-3.80	2.84	0.49	17.5	2.34-3.34
cmin	9	2.99-5.29	4.15	0.71	17.3	3.43-4.87
cmax	8	3.01-5.75	4.28	0.82	19.2	3.46-5.11
ccd	15	3.61-6.84	5.06	0.80	15.9	4.25-5.87
s	10	21-32	26.9	3.63	13.5	23-31

Frequency. Abundant.

Agathelia subasperella LÖSER, 2014

(Fig. 297 in the book edition)

2014 *Agathelia subasperella* n. sp. – LÖSER, p. 306, fig. 5.1-5.2

Measurements.

(GBA 2003/023/0004, holotype of *Agathelia subasperella* LÖSER, 2014)

	n	min-max	µ	s	cv	µ±s
clmin	25	1.14-1.86	1.50	0.18	12.5	1.31-1.68
clmax	25	1.34-2.89	1.94	0.38	19.5	1.56-2.32
cmin	25	1.79-3.69	2.52	0.48	19.2	2.04-3.01
cmax	25	1.97-4.50	3.05	0.64	21.1	2.41-3.70
ccd	25	2.36-4.63	3.28	0.63	19.3	2.64-3.91
s	15	16-27	22.1	3.13	14.1	19-25

Determination. Type material.

Frequency. Normal.

Agathelia sp.

(Fig. 298 in the book edition)

Measurements.

(MHE A1040)

	n	min-max	μ	s	cv	μ±s
clmin	15	0.91-1.35	1.12	0.15	13.7	0.96-1.27
clmax	15	1.20-1.71	1.41	0.14	10.5	1.26-1.56
cmin	15	1.54-2.77	2.10	0.34	16.4	1.75-2.45
cmax	15	1.84-3.28	2.50	0.43	17.3	2.06-2.93
s	10	18-25	21.6	2.36	10.9	19-24

Frequency. Normal.

?Agathelia REUSS, 1854

Description. Plocoid colony with elliptical corallites. Septa in a regular hexameral symmetry and three cycles. Costae present. A vague lamellar columella exists. It is often connected to one septum. The coenosteum consists of tabulae and vertical trabeculae. The wall is septothecal.

Frequency. Very rare.

Distribution. CON-SAN.

?Agathelia kittliana (FELIX, 1903)

(Fig. 299 in the book edition)

1903 *Elasmocoenia Kittliana* nov. sp. – FELIX, p. 301, text-fig. 52, pl. 19, fig. 14

1930 *Elasmocoenia kittliana* Felix – OPPENHEIM, p. 428, fig. 2, pl. 46, fig. 11

1982 *Paraplacocoenia kittliana* (Felix) 1903 – BEAUVAIS, (1), p. 118, fig. 33, pl. 9, fig. 5, pl. 10, fig. 2

Measurements.

(GPSL FLX 8110)

	n	min-max	μ	s	cv	μ±s
clmin	15	1.89-2.63	2.28	0.24	10.8	2.03-2.53
clmax	15	2.22-3.56	2.93	0.37	12.7	2.56-3.31
s	10	20-26	21.6	2.01	9.3	20-24

Determination. Type material.

Frequency. Rare.

?Carantophyllum ALLOITEAU, 1957

Description. Phaceloid colony with densely packed circular to elliptical corallites. Septa in a regular radial hexameral symmetry and three cycles. No costae and no columella.

Frequency. Very rare.

?Carantophyllum sp. 1

(Fig. 300 in the book edition)

Measurements.

	n	min-max	μ	s	cv	μ±s
clmin	10	1.29-2.26	1.77	0.33	18.9	1.44-2.11
clmax	10	1.85-2.60	2.25	0.24	10.7	2.01-2.49
cmin	10	1.84-3.33	2.66	0.44	16.8	2.21-3.11
cmax	10	2.86-3.87	3.29	0.32	9.7	2.97-3.61
s	24					

Frequency. Rare.

?Carantophyllum sp. 2

(Fig. 301 in the book edition)

Measurements.

(GPSL FLX 3504)

	n	min-max	μ	s	cv	μ±s
clmin	25	1.25-1.95	1.63	0.19	11.7	1.44-1.82
clmax	25	1.51-2.15	1.87	0.16	8.6	1.71-2.04
cmin	25	2.38-3.77	2.95	0.41	14.1	2.53-3.37
cmax	25	2.73-3.95	3.21	0.33	10.3	2.88-3.55
s	24					

Frequency. Collection material.

Family Carolastraeidae ELIÁŠOVÁ, 1976

Description. Colonial (cerioid, phaceloid, plocoid) corals with septa in a bilateral septal symmetry. One or various larger septa can be present in one face of the corallite. Lonsdaleoid and main septa absent. Marginarium absent.

Crinopora ORBIGNY, 1849

Type species. *Alveolites massiliensis* MICHELIN, 1847.

Description. Plocoid colony with corallites having an irregular outline, elliptical to rectangular. The septa are in a bilateral symmetry. There is a strong main septum, often another three septa, and fine septal thorns. Costae, pali, a columella and synapticulae are absent. The endotheca consists of fine and regular tabulae. The wall is compact and trabecular. The coenosteum consists of large dissepiments and vertical trabeculae that are visible as fine granulations on the surface of the coral.

Frequency. Common.

Distribution. U.TUR-LU.CAM.

Small corallite diameter	Large corallite diameter	Species
0.5 - 0.6 mm	0.6 - 0.8 mm	*C. thomasi*
0.6 - 0.7 mm	0.8 - 0.9 mm	*C. ireneae*
0.7 - 1.0 mm	1.0 - 1.3 mm	*C. massiliensis*

Fig. 67. Species of the genus *Crinopora*.

Crinopora ireneae LÖSER & HEINRICH, 2018

(Fig. 305 in the book edition)

2018 *Crinopora ireneae* spec. nov. – LÖSER & HEINRICH, p. 139, fig. 9

Measurements.

(BSPG 2018 II 1240, holotype of *Crinopora ireneae* LÖSER & HEINRICH, 2018)

	n	min-max	μ	s	cv	μ±s
clmin	35	0.60-0.74	0.67	0.03	4.9	0.63-0.70
clmax	35	0.77-0.97	0.85	0.05	6.6	0.80-0.91

Determination. Type material.

Frequency. Abundant.

Crinopora massiliensis (MICHELIN, 1847)

(Fig. 306 in the book edition)

1847 *Alveolites Massiliensis* – MICHELIN, p. 305, pl. 73, fig. 1

Measurements.

(MHE A0303)

	n	min-max	μ	s	cv	μ±s
clmin	20	0.81-1.23	0.92	0.11	12.4	0.81-1.04
clmax	20	1.00-1.66	1.23	0.20	16.9	1.02-1.44

Determination. Other literature.

Frequency. Abundant.

Crinopora thomasi LÖSER & HEINRICH, 2018

(Fig. 307 in the book edition)

2018 *Crinopora thomasi* spec. nov. – LÖSER & HEINRICH, p. 140, fig. 10

Measurements.

(BSPG 2018 II 702, holotype of *Crinopora thomasi* LÖSER & HEINRICH, 2018)

	n	min-max	μ	s	cv	μ±s
clmin	40	0.45-0.70	0.56	0.06	12.0	0.49-0.62
clmax	40	0.63-0.97	0.76	0.09	12.6	0.66-0.86

Determination. Type material.

Frequency. Abundant.

Family Heterocoeniidae OPPENHEIM, 1930

Description. Only (phaceloid, plocoid) colonies. Symmetry radial, cycles subregular. A larger septum is often present. Lonsdaleoid septa and a marginarium can be present.

Phaceloid		*Somalites*
Plocoid	Budding extracalicinal	*Heterocoenia*
	Budding intracalicinal	*Pachyheterocoenia*

Fig. 68. Classification of the family Heterocoeniidae.

Heterocoenia MILNE EDWARDS & HAIME, 1848

Type species. *Lithodendron exigua* MICHELIN, 1847.

Description. Plocoid colony with circular corallites. Septal symmetry regular. A main septum can be present. A trabecular wall always exists. The coenosteum is granulated at its surface.

Frequency. Very rare.

Distribution. APT-MAA.

Septal symmetry	Number of septa	Small lumen diameter	Large lumen diameter	Species
Without symmetry	1	1 mm	1.1 mm	*H. sp.*
3	6	1.2 mm	1.5 mm	*H. reussi*
		1.4 mm	1.6 mm	*H. bacillaris*
		1.6 mm	1.9 mm	*H. subramosa*
		2.2 - 2.5 mm	2.3 - 2.8 mm	*H. oculinaeformis*
4	4	1.5 mm	1.9 - 2.1 mm	*H. tetrasepta*

Fig. 69. Species of the genus *Heterocoenia*.

Heterocoenia bacillaris (GOLDFUSS, 1826)

(Fig. 310 in the book edition)

1826 *Gorgonia bacillaris* – GOLDFUSS, p. 19, pl. 7, fig. 3-16

Measurements.

(BSPG 2003 XX 6784)

	n	min-max	µ	s	cv	µ±s
clmin	9	1.05-1.77	1.38	0.19	14.1	1.18-1.57
clmax	8	1.47-2.05	1.64	0.21	12.9	1.42-1.85
s	6					

Determination. Type material.

Frequency. Rare.

Heterocoenia oculinaeformis FELIX, 1903

(Fig. 311 in the book edition)

1903 *Heterocoenia oculinaeformis* nov. sp. – FELIX, p. 238, text-fig. 22 a-e

Measurements.

(GPSL FLX 1881)

	n	min-max	µ	s	cv	µ±s
clmin	18	1.17-3.51	2.26	0.61	27.3	1.64-2.88
clmax	18	1.78-3.53	2.50	0.64	25.7	1.86-3.14
s	6					

Determination. Type material.

Frequency. Collection material.

Heterocoenia reussi MILNE EDWARDS, 1857

(Fig. 312 in the book edition)

1854 *Heterocoenia provincialis* – REUSS, p. 100, pl. 10, fig. 3, 4

1857 *Heterocoenia Reussi* – MILNE EDWARDS, (2), p. 284

1982 *Heterocoenia reussi* H. Milne Edwards 1857 – BEAUVAIS, (3), p. 13, pl. 50, fig. 3

Measurements.

(MHE A0900)

	n	min-max	µ	s	cv	µ±s
clmin	9	1.12-1.44	1.19	0.10	8.8	1.08-1.29
clmax	9	1.28-1.85	1.46	0.18	12.6	1.27-1.64
s	6					

Determination. Literature - REUSS (1854).

Frequency. Rare.

Heterocoenia subramosa REIG ORIOL, 1994

(Fig. 313 in the book edition)

1994 *Heterocoenia subramosa* n. sp. – REIG ORIOL, p. 11, pl. 1, fig. 3, pl. 2, fig. 10

Measurements.

(NHMW 1864/0040/1291)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.45-1.83	1.61	0.11	7.3	1.49-1.73
clmax	20	1.67-2.17	1.84	0.13	7.5	1.71-1.98
ccd	10	2.50-4.23	3.28	0.53	16.2	2.75-3.81
s	6					

Determination. Type material.

Frequency. Collection material.

Heterocoenia tetraseptata EGUCHI, 1951

(Fig. 314 in the book edition)

1951 *Heterocoenia tetraseptata* n.sp. – EGUCHI, p. 41, pl. 4, fig. 8, 9

Measurements.

(MHE A0561)

	n	min-max	µ	s	cv	µ±s
clmin	8	1.30-1.61	1.45	0.13	9.5	1.31-1.59
clmax	8	1.79-2.48	2.09	0.23	10.9	1.86-2.33
s	4					

Determination. Type material.

Frequency. Rare.

Heterocoenia sp.

(Fig. 315 in the book edition)

Measurements.

(MHE A1681)

	n	min-max	μ	s	cv	μ±s
clmin	10	0.87-1.04	0.96	0.06	6.2	0.90-1.02
clmax	10	0.92-1.46	1.13	0.17	15.1	0.95-1.30
cmin	8	3.28-4.00	3.55	0.21	6.0	3.34-3.77
cmax	8	3.62-4.80	4.04	0.43	10.6	3.61-4.48
ccd	20	3.68-5.78	4.67	0.59	12.6	4.08-5.26

Frequency. Rare.

Pachyheterocoenia LÖSER & HEINRICH, 2018

Type species. *Pachyheterocoenia leipnerae* LÖSER & HEINRICH, 2018.

Description. Plocoid colony with septa in an irregular radial symmetry. A main septum is often present, as well as a marginarium and lonsdaleoid septa. Septothecal wall present or absent. Endotheca well developed. Budding intracalicinal, marginal, in the wall.

Frequency. Occasional.

Distribution. CEN-LU.CAM.

Septal symmetry	Small corallite diameter	Larger outer diameter	Species
4	2.2 mm	2.8 mm	*P. sp. 1*
6	2 - 3 mm	2.5 - 3.5 mm	*P. sp. 2*
	3 - 5 mm	4 - 6 mm	*P. leipnerae*
	5 - 7 mm	6.5 - 7.5 mm	*P. grandis*
	6 - 7 mm	8 - 9 mm	*P. fuchsi*
	8 - 9 mm	10 - 11 mm	*P. sp. 3*

Fig. 70. Species of the genus *Pachyheterocoenia*.

Pachyheterocoenia fuchsi (FELIX, 1903)

(Fig. 319 in the book edition)

1903 *Heterocoenia Fuchsi* nov. sp. – FELIX, p. 231, pl. 19, fig. 3

1930 *Heterocoenia fuchsi* Felix – OPPENHEIM, p. 264, pl. 31, fig. 20

1982 *Pachycoenia fuchsi* (Felix) 1903 – BEAUVAIS, (3), p. 22, pl. 52, fig. 1, 3

Measurements.

(MHE A1727)

	n	min-max	μ	s	cv	μ±s
clmin	6	3.26-5.08	4.06	0.62	15.3	3.43-4.68
clmax	6	4.74-5.48	5.11	0.28	5.5	4.82-5.39
cmin	8	5.44-6.91	6.48	0.51	7.9	5.96-6.99
cmax	9	6.88-10.1	8.64	1.12	13.0	7.51-9.77
s	6					

Determination. Type material.

Frequency. Normal.

Pachyheterocoenia grandis (REUSS, 1854)

(Fig. 320 in the book edition)

1854 *Heterocoenia grandis* – REUSS, p. 100, pl. 10, fig. 1, 2

1903 *Heterocoenia grandis* Reuss – FELIX, p. 229, pl. 19, fig. 1, 6, 7

1930 *Heterocoenia grandis* Reuss – OPPENHEIM, p. 262, pl. 48, fig. 9

1982 *Heterocoenia grandis* Reuss 1854 – BEAUVAIS, (3), p. 11, pl. 50, fig. 2

Measurements.

(MHE A0637)

	n	min-max	μ	s	cv	μ±s
clmin	4	2.43-3.16	2.77	0.31	11.1	2.46-3.08
clmax	4	3.76-4.10	3.91	0.14	3.6	3.77-4.05
cmin	11	4.73-7.35	5.84	0.94	16.1	4.89-6.78
cmax	11	5.32-7.38	6.53	0.69	10.5	5.84-7.22
s	8	11-15	12.8	1.28	10.0	11-14

Determination. Type material.

Frequency. Abundant.

Pachyheterocoenia leipnerae LÖSER & HEINRICH, 2018

(Fig. 321 in the book edition)

2018 *Pachyheterocoenia leipnerae* spec. nov. – LÖSER & HEINRICH, p. 143, fig. 11, 12

Measurements.

(BSPG 2018 II 547, holotype of *Pachyheterocoenia leipnerae* LÖSER & HEINRICH, 2018)

	n	min-max	μ	s	cv	μ±s
clmin	20	1.09-1.59	1.29	0.13	10.2	1.16-1.43
clmax	20	1.40-1.98	1.70	0.16	9.6	1.53-1.86
cmin	15	3.02-4.82	3.79	0.60	15.9	3.18-4.39
cmax	15	3.70-5.89	4.73	0.64	13.7	4.08-5.38
s	10	6-12	8.60	2.17	25.2	6-11

(BSPG 2018 II 592, paratype of *Pachyheterocoenia leipnerae* LÖSER & HEINRICH, 2018)

	n	min-max	μ	s	cv	μ±s
clmin	17	1.06-1.84	1.41	0.25	18.3	1.15-1.67
clmax	17	1.60-2.44	1.97	0.22	11.2	1.74-2.19
cmax	17	4.96-6.42	5.73	0.45	7.9	5.28-6.18
cmin	17	3.54-5.99	4.95	0.64	13.0	4.30-5.59
s	6	12	12.0	0.0	0.0	12

Determination. Type material.

Frequency. Abundant.

Pachyheterocoenia sp. 1

(Fig. 322 in the book edition)

Measurements.

(GPSL FLX 1806)

	n	min-max	μ	s	cv	μ±s
clmin	30	0.92-1.14	1.03	0.06	5.8	0.97-1.09
clmax	30	1.38-1.84	1.56	0.10	7.0	1.45-1.67
cmin	35	1.69-2.61	2.15	0.25	11.5	1.90-2.40
cmax	35	2.15-3.31	2.79	0.32	11.4	2.47-3.11
s	15	6-14	9.33	2.22	23.8	7-12

Frequency. Rare.

Pachyheterocoenia sp. 2

(Fig. 323 in the book edition)

Measurements.

(MHE A1976)

	n	min-max	μ	s	cv	μ±s
clmin	7	1.08-1.62	1.37	0.22	16.3	1.15-1.59
clmax	7	1.47-2.08	1.72	0.18	10.9	1.53-1.91
cmin	7	2.61-3.23	3.09	0.21	7.0	2.87-3.30
cmax	8	2.90-3.76	3.25	0.32	9.8	2.93-3.57
s	12					

Frequency. Rare.

Pachyheterocoenia sp. 3

(Fig. 324 in the book edition)

Measurements.

(MHE A1173)

	n	min-max	μ	s	cv	μ±s
clmin	14	2.64-4.48	3.46	0.55	16.1	2.90-4.02
clmax	14	3.89-5.83	4.85	0.54	11.2	4.30-5.39
cmin	10	6.87-9.16	8.02	0.83	10.3	7.19-8.86
cmax	10	9.82-11.8	10.9	0.67	6.1	10.2-11.6
s	12-18					

Frequency. Rare.

Somalites PAMOUKTCHIEV, 1983

Type species. *Somalites minimus* PAMOUKTCHIEV, 1983.

Description. Phaceloid colony with a regular radial septal symmetry. A main septum can be present.

Frequency. Very rare.

Distribution. U.TUR-SAN.

Somalites sp.

(Fig. 325 in the book edition)

Measurements.

(MHE A0290)

	n	min-max	μ	s	cv	μ±s
clmin	15	1.06-1.59	1.34	0.14	10.8	1.20-1.49
clmax	15	1.16-2.59	1.81	0.38	21.4	1.42-2.20
cmin	15	1.96-2.99	2.44	0.25	10.4	2.19-2.70
cmax	15	2.36-3.82	3.08	0.44	14.3	2.64-3.52
s	6					

(MHE A0648)

	n	min-max	μ	s	cv	μ±s
clmin	7	1.14-1.86	1.48	0.29	20.0	1.18-1.78
clmax	5	1.65-2.06	1.84	0.19	10.6	1.64-2.03
cmin	7	2.20-2.72	2.53	0.17	7.0	2.35-2.71
cmax	7	2.61-3.50	2.89	0.29	10.1	2.60-3.18
s	6					

Frequency. Rare.

Superfamily Madreporoidea DANA, 1846

Description. Colonial (phaceloid, plocoid) corals. Septa compact, very thin, in an irregular radial symmetry. Septa often connected to each other. Lateral faces with fine thorns, upper margin unknown. Lonsdaleoid and main septa absent. Microstructure of septa of small trabeculae. Synapticulae absent. Pali absent, columella present in most genera, lamellar or by septal fusion. Endotheca present. Marginarium absent. Wall thick, lamellar. Coenosteum made of lamellae. Budding extracalicinal and intracalicinal.

Family Madreporidae DANA, 1846

Solitary		*Madreporidae indet.*
Plocoid	Colony thick branching, corallite outline and septal symmetry irregular	*Ogilviastraea*
	Colony thin branching, corallite outline and septal symmetry regular	*Haimesiphyllia*
Phaceloid		*Palaeohelia*

Fig. 71. Classification of the family Madreporidae.

Haimesiphyllia ALLOITEAU, 1957

Type species. *Rhabdophyllia salsensis* HAIME, 1854.

Description. Plocoid colony, growing as a thin branch. Corallites circular. Septa in a regular symmetry. Without columella.

Frequency. Very rare.

Distribution. CON-CAM.

Haimesiphyllia sp.

(Fig. 327 in the book edition)

Measurements.

(MHE A1659)

	n	min-max	μ	s	cv	μ±s
clmin	7	1.91-3.17	2.55	0.52	20.3	2.03-3.07
clmax	6	2.34-3.87	3.22	0.53	16.6	2.68-3.75
s	4	24-28	25.25	1.89	7.4	23-27

(MHE A1680)

clmin	1.61-1.66 mm
clmax	1.84-2.09 mm
s	24

(MHE A2089)

	n	min-max	μ	s	cv	μ±s
clmin	5	1.51-1.71	1.59	0.08	5.4	1.51-1.68
clmax	5	1.80-2.10	1.99	0.12	6.0	1.87-2.11
s	24					

Frequency. Rare.

Madreporidae indet.

Description. Cylindric solitary coral. A septal symmetry does not exist.

Frequency. Very rare.

Madreporidae indet. sp. indet.

(Fig. 328 in the book edition)

Measurements.

(MHE A1194)

cl	5.6×6.3 mm
c	10 mm
s	44

Frequency. Rare.

Ogilviastraea OPPENHEIM, 1930

Type species. *Placohelia bigemmis* FELIX, 1903.

Description. Plocoid colony growing as thick branches. The corallites are small, with a irregular outline and irregular septal symmetry. Columella absent or very small.

Frequency. Rare.

Distribution. CON-SAN.

Small corallite diameter	Number of septa	Species
1.8 - 2.1 mm	24 - 40	*O. sp.*
2.6 - 2.7 mm	32	*O. cf. bigemmis*
2.9 - 3.6 mm	24 - 48	*O. bigemmis*

Fig. 72. Species of the genus *Ogilviastraea*.

Ogilviastraea bigemmis (FELIX, 1903)

(Fig. 332 in the book edition)

1903 *Placohelia bigemmis* nov. sp. – FELIX, p. 325, pl. 22, fig. 12, 13

1930 *Ogilviastraea* n. g. *bigemmis* Felix sp. – OPPENHEIM, p. 357, pl. 34, fig. 8-12

1982 *Ogilviastraea bigemmis* (Felix) 1903 – BEAUVAIS, (2), p. 113, fig. 89, pl. 37, fig. 4

Measurements.

(GPSL FLX 4639, holotype of *Oculina schlosseri* FELIX, 1903)

clmin	2.5-3.4 mm
clmax	2.8-5.0 mm
s	32-34

(MHE A1049)
clmin 2.7-3.9 mm
clmax 2.9-4.6 mm
s 36-40

Determination. Type material.

Frequency. Normal.

Ogilviastraea cf. *bigemmis* (FELIX, 1903)

(Fig. 333 in the book edition)

Measurements.

(GPSL FLX 4680, paralectotype of *Placohelia bigemmis* FELIX, 1903)
clmin 1.7-2.6 mm
clmax 2.3-2.7 mm
s 26-34

Frequency. Rare.

Ogilviastraea sp.

(Fig. 334 in the book edition)

Measurements.

(BSPG 2003 XX 6787)
clmin 1.3-2.8 mm
clmax 2.1-2.2 mm
s 24
(GPSL FLX 8072)
clmin 2.1-2.2 mm
clmax 2.8-3.5 mm
s 25-37

Frequency. Normal.

Palaeohelia ALLOITEAU, 1958

Type species. *Palaeohelia collignoni* ALLOITEAU, 1958.

Description. Phaceloid colony with thin branches. Septa without symmetry. A weak columella is formed by the fusion of septa in the corallite centre.

Frequency. Very rare.

Distribution. BAR-SAN.

Palaeohelia sp.

(Fig. 335 in the book edition)

Measurements.

(MHE A2024)

	n	min-max	μ	s	cv	μ±s
clmin	25	0.81-1.38	1.04	0.14	13.9	0.90-1.19
clmax	25	1.07-1.83	1.35	0.23	17.2	1.12-1.58
cmin	25	1.31-2.70	1.95	0.41	21.3	1.53-2.36
cmax	25	1.73-2.99	2.32	0.39	17.1	1.92-2.72
s	15	14-30	22.7	4.00	17.6	19-27

Frequency. Rare.

Superfamily Misistelloidea ELIÁŠOVÁ, 1976

Description. Solitary and colonial (phaceloid, plocoid) corals. Septa compact, in varying thickness, in a subregular radial symmetry. Septa not connected to each other (plesiosmiliids) or only in the centre of the corallite (Misistellidae). Lateral faces with fine granulae or smooth, upper margin smooth. Lonsdaleoid and main septa absent. Microstructure of septa of small trabeculae. Synapticulae absent. Pali absent, columella present in most genera, lamellar or by septal fusion. Endotheca present. Marginarium absent. Wall absent or epithecal. Coenosteum varies. Budding intracalicinal.

Group of the genus *Plesiosmilia*

Montlivaltoides HE & XIAO, 1990

Type species. *Montlivaltoides typicus* HE & XIAO, 1990.

Description. Phaceloid coral with irregular corallite outline. A lamellar columella can be present. No pali. Endotheca made of dissepiments. No wall, just a thin epitheca.

Frequency. Very rare.

Distribution. APT-SAN.

Montlivaltoides ngariensis HE & XIAO, 1990

(Fig. 336 in the book edition)

1990 *Montlivaltoides ngariensis* He et Xiao sp. nov. – HE & XIAO, p. 155, 249, pl. 18, fig. 8, pl. 17, fig. 7

Measurements.

(MHE A1267)
c 10×13 mm
s 48

Determination. Other literature.

Frequency. Rare.

Montlivaltoides typicus HE & XIAO, 1990

(Fig. 337 in the book edition)

1990 *Montlivaltoides typicus* He et Xiao gen. et sp. nov. – HE & XIAO, p. 155, 248, pl. 19, fig.1, pl. 18, fig. 6

Measurements.

(FKR)

	n	min-max	μ	s	cv	μ±s
cmin	16	6.08-10.4	7.43	1.20	16.1	6.22-8.63
cmax	10	7.88-15.7	10.5	2.81	26.8	7.65-13.3
s	10	34-53	41.8	6.39	15.2	35-48

Determination. Other literature.

Frequency. Collection material.

Plesiosmilia MILASCHEWITSCH, 1876

Type species. *Plesiosmilia turbinata* MILASCHEWITSCH, 1876.

Description. Cylindric or turbinate solitary coral with circular or slightly elliptical outline. Columella lamellar, well developed and often connected to one septum. No pali. Endotheca made of large dissepiments. No wall, just a thin epitheca, that often lacks.

Frequency. Very rare.

Distribution. BAJ-SAN.

Corallite diameter	Number of septa	Species
7 - 14 mm	48 - 70	*P. gracilis*
10 - 15 mm	80 - 120	*P. sp.*
15 - 21 mm	48	*P. fromenteli*
20 - 30 mm	80 - 120	*P. acrisionae*

Fig. 73. Species of the genus *Plesiosmilia*.

Plesiosmilia acrisionae (FELIX, 1903)

(Fig. 339 in the book edition)

1903 *Plesiophyllia Acrisionae* nov. sp. – FELIX, p. 241, text-fig. 23

1930 *Plesiophyllia acrisionae* Felix – OPPENHEIM, p. 294, pl. 33, fig. 11

Measurements.

(NHMW 1859/0050/0355, lectotype of *Kobyphyllia acrisionae* Felix, 1903)

c 13×24 mm

s 80

Determination. Type material.

Frequency. Type material.

Plesiosmilia fromenteli (ANGELIS D'OSSAT, 1905)

(Fig. 340 in the book edition)

1905 *Peplosmilia Fromenteli* – ANGELIS D'OSSAT, p. 242, pl. 17, fig. 6 a-g

Measurements.

(MHE A2034)

c 9×17 mm

s 51

Determination. Type material.

Frequency. Rare.

Plesiosmilia gracilis (PREVER, 1909)

(Fig. 341 in the book edition)

1909 *Coelosmilia gracilis* – PREVER, p. 110, text-fig. 16, pl. 10, fig. 26

Measurements.

(MHE A2135)

c 9 mm

s 51

Determination. Type material.

Frequency. Normal.

Plesiosmilia sp.

(Fig. 342 in the book edition)

Measurements.

(MHE A2070)

c 11×19 mm

s 92

Frequency. Rare.

Trochophyllia ALLOITEAU, 1952

Type species. *Montlivaltia melania* FROMENTEL, 1861.

Description. Cylindric or turbinate solitary coral with circular or slightly elliptical outline. No columella, no pali. Endotheca made of large dissepiments. No wall, just a thin epitheca, that often lacks.

Frequency. Very rare.

Distribution. BTH-L.MAA.

Corallite diameter	Number of septa	Species
11 - 15 mm	48 - 60	*T. aprutina*
13 - 16 mm	80 - 96	*T. sp.*
12 - 18 mm	60 - 70	*T. communis*
18 - 25 mm	80 - 120	*T. discus*

Fig. 74. Species of the genus *Trochophyllia*.

Trochophyllia aprutina (PREVER, 1909)

(Fig. 344 in the book edition)

1909 *Coelosmilia aprutina* – PREVER, p. 109, text-fig. 14, pl. 10, fig. 25

Measurements.
(MHE A0915)
c 11 mm
s 60

Determination. Type material.

Frequency. Normal.

Trochophyllia communis (PREVER, 1909)

(Fig. 345 in the book edition)

1909 *Trochosmilia communis* – PREVER, p. 106, text-fig. 8-10, pl. 10, fig. 4

Measurements.
(MHE A2038)
c 11×19 mm
s 70

Determination. Type material.

Frequency. Rare.

Trochophyllia discus (FROMENTEL, 1863)

(Fig. 346 in the book edition)

1863 *Trochosmilia discus* – FROMENTEL, p. 262, pl. 64, fig. 2

Measurements.
(MHE A0912)
c 22×30 mm
s 88

Determination. Type material.

Frequency. Rare.

Trochophyllia sp.

(Fig. 347 in the book edition)

Measurements.
(MHE A0914)
c 14×17 mm
s 89

Frequency. Normal.

Superfamily Montastraeoidea YABE & SUGIYAMA, 1941

Description. Colonial (astreoid, cerioid, plocoid) corals. Septa compact, mostly in a subregular radial symmetry. Septa generally not connected to each other. Lateral faces and upper margin with granulae or smooth. Lonsdaleoid and main septa absent. Microstructure of septa of medium-sized trabeculae. Synapticulae absent. Pali absent, columella present in most genera. Endotheca generally present. Marginarium absent. Wall subcompact, mainly septothecal. Coenosteum varies, often extended, with costae. Budding extracalicinal.

Family Placocoeniidae ALLOITEAU, 1952

Description. Plocoid colonies with regular corallites. Symmetry generally regular radial. Columella lamellar except for one genus. Wall subcompact. Coenosteum extended.

Phyllocoeniopsis CHEVALIER, 1954

Type species. *Astrea cribraria* MICHELIN, 1841.

Description. Plocoid colony with small (< 3mm) circular corallites. Septa in a regular radial symmetry. No columella. The coenosteum is extended and made by costae.

Frequency. Very rare.

Distribution. U.TUR.

Small corallite diameter	Large corallite diameter	Number of septa	Species
1.4 mm	1.8 mm	24	*P. dendroides*
2.1 mm	2.4 mm	24 - 32	*P. sp.*

Fig. 75. Species of the genus *Phyllocoeniopsis*.

Phyllocoeniopsis dendroides (OPPENHEIM, 1930)

(Fig. 349 in the book edition)

1930 *Placocoenia dendroides* n. sp. – OPPENHEIM, p. 404, pl. 16, fig. 2

1982 *Ficariastraea dendroides* (Oppenheim) 1930 – BEAUVAIS, (1), p. 249, fig. 59

Measurements.

(HUJI Opp.20579, lectotype of *Placocoenia dendroides* OPPENHEIM, 1930)

	n	min-max	µ	s	cv	µ±s
clmin	10	1.27-1.60	1.45	0.10	7.4	1.34-1.56
clmax	10	1.63-2.07	1.74	0.14	8.5	1.59-1.89
s	24					

(NHMW 2006z0396/0002)

	n	min-max	µ	s	cv	µ±s
clmin	10	1.30-1.72	1.52	0.17	11.5	1.34-1.69
clmax	10	1.34-2.02	1.73	0.22	12.9	1.51-1.96
s	24					

Determination. Type material.

Frequency. Collection material.

Phyllocoeniopsis sp.

(Fig. 350 in the book edition)

Measurements.

(MHE A0263)

	n	min-max	µ	s	cv	µ±s
clmin	9	1.64-2.50	2.07	0.27	13.4	1.79-2.35
clmax	9	2.06-2.84	2.42	0.24	10.0	2.18-2.67
s	9	24-34	30.0	3.60	12.0	26-34

Frequency. Rare.

Superfamily Montlivaltioidea FELIX, 1900

Description. Solitary and (astreoid, cerioid, flabelloid, meandroid, phaceloid, thamnasterioid) colonial corals. Septa compact. Septal thickness normal, septa in an irregular radial symmetry. Septal generations can be distinguished. Septa not connected to each other. Septal lateral faces with vertical keels, upper margins with granulae. Lonsdaleoid septa and main septum absent. Microstructure of large trabeculae. Synapticulae absent. Pali rarely present. Columella in some genera, generally lamellar. Endotheca well-developed. Marginarium absent. Wall poorly defined. Coenosteum present, depending on the organisation form. Budding generally extracalicinal.

Family Lasmogyridae VAUGHAN & WELLS, 1943

Astrogyra FELIX, 1900

Type species. *Gyrosmilia edwardsi* REUSS, 1854.

Description. Meandroid colony with broad and short corallite rows. Within rows, the corallites have a more thamnasterioid arrangement. The septa are strong and alternate in thickness. The costae are non-confluent. No columella.

Frequency. Very rare.

Distribution. U.TUR-L.CAM.

Solitary	Corallite laterally compressed	*Placosmilia*
	Corallite outline circular	*?Placosmilia*
Astreoid		*Astrogyra*
Flabelloid	Corallites distinct	*Glyphephyllia*
	Corallites indistinct	*Lasmogyra*
Phaceloid		*?Lasmogyra*

Fig. 76. Classification of the family Lasmogyridae.

Astrogyra FELIX, 1900

Type species. *Gyrosmilia edwardsi* REUSS, 1854.

Description. Meandroid colony with broad and short corallite rows. Within rows, the corallites have a more thamnasterioid arrangement. The septa are strong and alternate in thickness. The costae are non-confluent. No columella.

Frequency. Very rare.

Distribution. U.TUR-L.CAM.

Astrogyra edwardsi (REUSS, 1854)

(Fig. 352 in the book edition)

1854 *Gyrosmilia Edwardsi* – REUSS, p. 92, pl. 4, fig. 1-3
1930 *Astrogyra edwardsi* Reuss sp. – OPPENHEIM, p. 308, pl. 32, fig. 5
1982 *Astrogyra edwardsi* (Reuss) 1854 – BEAUVAIS, (1), p. 78, pl. 5, fig. 2

Measurements.

(GPSL FLX 2781)
crd 7.6-8.9 mm
s 39-47
(BSPG 1997 XI 932)
cmin 20.4-28.8 mm
cdw 10.5-16 mm
s 43-46

Determination. Type material.

Frequency. Rare.

Glyphephyllia FROMENTEL, 1870

Type species. *Glyphephyllia dumortieri* FROMENTEL, 1870.

Description. Flabelloid colony. Corallites can be distinguished. No columella.

Frequency. Very rare.

Distribution. CEN-SAN.

Glyphephyllia sp.

(Fig. 353 in the book edition)

Measurements.

(MHE A1670)
cmin 8.3-9.7 mm
cmax 12.2-16.1 mm
cdw 9 mm
s 34-49

Frequency. Rare.

Lasmogyra ORBIGNY, 1849

Type species. *Lobophyllia occitanica* MICHELIN, 1847.

Description. Flabelloid colony, that is often folded and therefore appear meandroid. Corallites can not be distinguished. Lamellar columella present.

Frequency. Very rare.

Distribution. CON-SAN.

Width of rows	Density of septa (5 mm)	Species
7.5 mm	6	*L. gracilis*
8 - 9 mm	8 - 9	*L. tortuosa*
12 mm	8 - 9	*L. cf. tortuosa*
15 - 24 mm	4 - 9	*L. occitanica*
28 - 38 mm	5 - 7	*L. sinuosa*

Fig. 77. Species of the genus *Lasmogyra*.

Lasmogyra gracilis FELIX, 1900

(Fig. 356 in the book edition)

1900 *Lasmogyra gracilis* Felix – FELIX, p. 3
1903 *Lasmogyra gracilis* nov. sp. – FELIX, p. 246, pl. 21, fig. 4
1930 *Lasmogyra gracilis* Felix – OPPENHEIM, p. 301, pl. 32, fig. 4, 13
1982 *Placosmilia gracilis* (Felix) 1900 – BEAUVAIS, (1), p. 66, pl. 4, fig. 2, 3, pl. 59, fig. 7

Measurements.

(GBA 1903/004/0062/03, lectotype of *Lasmogyra gracilis* FELIX, 1900)
cmin 7.5 mm
sd 6/5 mm

Determination. Type material.

Frequency. Type material.

Lasmogyra occitanica (MICHELIN, 1847)

(Fig. 357 in the book edition)

1847 *Lobophyllia occitanica* – MICHELIN, p. 291, pl. 67, fig. 2
1903 *Lasmogyra occitanica* d'Orbigny (Michelin sp.) – FELIX, p. 248, pl. 21, fig. 1, 3
1930 *Lasmogyra occitanica* Michelin sp. – OPPENHEIM, p. 303, pl. 32, fig. 2
1982 *Placosmilia occitanica* (Michelin) 1846 – BEAUVAIS, (1), p. 60, pl. 59, fig. 2

Measurements.
(GPSL FLX 8112)
cmin 14-16 mm
sd 5-7/5 mm
(MHE A1965)
cmin 17 mm
sd 6-9/5 mm

Determination. Type material.

Frequency. Rare.

Lasmogyra sinuosa (REUSS, 1854)

(Fig. 358 in the book edition)

1854 *Euphyllia sinuosa* – REUSS, p. 92, pl. 17, fig. 3
1903 *Lasmogyra sinuosa* Felix (Reuss sp.) – FELIX, p. 249, pl. 21, fig. 2, 5, text-fig. 27
1930 *Lasmogyra sinuosa* Reuss sp. – OPPENHEIM, p. 304, pl. 30, fig. 12
1982 *Placosmilia sinuosa* (Reuss) 1854 – BEAUVAIS, (1), p. 62, pl. 3, fig. 3

Measurements.
(GPSL FLX 2573)
cmin 26-29.4 mm
cmax ca. 70 mm
sd 5/5 mm

Determination. Type material.

Frequency. Collection material.

Lasmogyra tortuosa FELIX, 1900

(Fig. 359 in the book edition)

1900 *Lasmogyra tortuosa* Felix – FELIX, p. 3
1903 *Lasmogyra tortuosa* nov. sp. – FELIX, p. 247, pl. 21, fig. 12, text-fig. 26
1930 *Lasmogyra tortuosa* Felix – OPPENHEIM, p. 302, pl. 32, fig. 1

Measurements.
(GPSL FLX 2545, lectotype of *Lasmogyra tortuosa* FELIX, 1900)
cmin 9 mm
sd 7-9/5 mm

Determination. Type material.

Frequency. Rare.

Lasmogyra cf. *tortuosa* FELIX, 1900

(Fig. 360 in the book edition)

Measurements.
(MHE A1457)
cmin 12 mm
sd 8-9/5 mm

Frequency. Rare.

?Lasmogyra ORBIGNY, 1849

Description. Short fragments of a phaceloid coral. Septal symmetry irregular; two to three generations can be distinguished. A thin lamellar columella can be present. Endotheca well developed.

Frequency. Very rare.

Distribution. CON-SAN.

Corallite diameter	Number of septa	Species
10 - 14 mm	50 - 70	*?L. sp. 1*
13 - 19 mm	70 - 80	*?L. sp. 2*

Fig. 78. Species of the genus *?Lasmogyra*.

?Lasmogyra sp. 1

(Fig. 364 in the book edition)

Measurements.
(MHE A2069)
c 11×14 mm
s 71

Frequency. Normal.

?Lasmogyra sp. 2

(Fig. 365 in the book edition)

Measurements.
(MHE A1473)
c 16×19 mm
s 68

Frequency. Normal.

Placosmilia MILNE EDWARDS & HAIME, 1848

Type species. *Turbinolia cymbula* MICHELIN, 1847.

Description. Laterally compressed solitary coral, that could be even flabelloid. Lamellar columella present. Wall absent, dissepiments are just more densely in the external area.

Frequency. Very rare.

Distribution. CEN-SAN.

Small corallite diameter	Number of septa	Species
10 - 15 mm	100	*P. excelsa*
18 - 22 mm	110 -130	*P. cymbula*
25 - 30 mm	120 -160	*P. salisburgensis*
25 - 40 mm	approx. 200	*P. ? rudis*

Fig. 79. Species of the genus *Placosmilia*.

Placosmilia cymbula (MICHELIN, 1847)

(Fig. 367 in the book edition)

1847 *Turbinolia cymbula* – MICHELIN, p. 288, pl.67, fig.1

Measurements.

(BSPG 2003 XX 6798)
c 20×38 mm
s 130

Determination. Type material.

Frequency. Normal.

Placosmilia excelsa (FROMENTEL, 1877)

(Fig. 368 in the book edition)

1877 *Glyphephyllia excelsa* – FROMENTEL, p. 464, pl. 99, fig. 1

Measurements.

(MHE A2112)
c 15×30 mm
s 100

Determination. Type material.

Frequency. Rare.

Placosmilia ? *rudis* (SOWERBY, 1832)

(Fig. 369 in the book edition)

1832 *Cyathophyllum rude* – SOWERBY, p. 417, pl.37, fig.2
1854 *Montlivaultia rudis* – REUSS, p. 102, pl. 6, fig. 14, 15
1903 *Montlivaltia rudis* M. Edwards et J. Haime (Sow. sp.) – FELIX, p. 239

Measurements.

(MHE A1437)
c 27×56 mm
s 230

Determination. Other literature.

Frequency. Normal.

Placosmilia salisburgensis (MILNE EDWARDS & HAIME, 1848)

(Fig. 370 in the book edition)

1848 *Trochosmilia Saltzburgiana* – MILNE EDWARDS & HAIME, p. 237
1982 *Placosmiliopsis salisburgensis* (H. Milne-Edwards et J. Haime) 1848 – BEAUVAIS, (1), p. 74, fig. 12, pl. 4, fig. 7, 8

Measurements.

(NHMW 2006z0391/0009)
cmin 27 mm
s 160

Determination. Literature - REUSS (1854).

Frequency. Normal.

?Placosmilia ORBIGNY, 1849

Description. Solitary coral with an irregular circular outline. Columella unknown. Wall probably epithecal. Dissepiments well developed.

Frequency. Very rare.

?Placosmilia latona (FELIX, 1903)

(Fig. 371 in the book edition)

1903 *Montlivaltia Latona* nov. sp. – FELIX, p. 240, pl. 22, fig. 4
1930 *Plesiophyllia* (?) *latona* Felix – OPPENHEIM, p. 297, pl. 35, fig. 5, pl. 45, fig. 8
1982 *Peplosmilia latona* (Felix) 1903 – BEAUVAIS, (1), p. 72, fig. 11, pl. 4, fig. 6

Measurements.

(NHMW 1864/0040/1244, syntype of *Montlivaltia latona* FELIX, 1903)
c 25×26 mm
s 88

(GPSL FLX 2591)
c 37×47 mm
s 127

Determination. Type material.
Frequency. Collection material.

Flabelloid	Individual corallites can be distinguished			*Elasmophyllia*
	Individual corallites cannot be distinguished	Columella absent		*Strotogyra*
		Columella present	Flabelloid	*Phragmosgyra*
			Corallite outline elongated	*Diploctenium*
Meandroid	Coenosteum absent, series long and straight			*Cycloria*
	Coenosteum narrow, series short and sinuous			*Orbignygyra*
	Coenosteum broad	Series long		*Pachygyra*
		Series short		*Psilogyra*
Phaceloid	Septal symmetry regular, costae vague, wall thin			*Nefophyllia*
	Septal symmetry irregular, costae conspicuous, wall thick			*Pleurocora*
Plocoid	Corallite outline circular	Costae with external pali, columella lamellar		*Hydnophoropsis*
		Costae without pali, columella vague		*Pachyphyllia*
	Corallite outline elliptical	Coenosteum with trabeculae		*Nefocoenia*
		Coenosteum without trabeculae	Columella lamellar	*Barysmilia*
			Columella parietal	*Reussicoenia*
Solitary	Corallite outline rhomboid			*Flabellosmilia*
	Corallite outline elliptical	Costae poorly developed		*Aulosmilia*
		Costae well developed		*Dasmiopsis*
	Corallite outline elliptical			*Phyllosmilia*

Fig. 80. Classification of the family Phyllosmiliidae.

Superfamily Phyllosmilioidea FELIX, 1903

Description. Solitary and (astreoid, flabelloid, meandroid, phaceloid, plocoid) colonial corals. Septa compact. First septal generation thicker than all others. Symmetry irregular or subregular radial. Septa in some genera connected to each other. Septal distal margins smooth, lateral faces with fine thorns, inner margins often swollen or T-shaped. Lonsdaleoid septa very rare. Main septum absent. Microstructure of very small trabeculae, only marked by a dark line. The costae are made by medium-sized trabeculae that result in granulated costal surfaces. Synapticulae and pali absent. Columella present or absent. Endotheca mostly present. Marginarium absent. Wall generally

present, septothecal. Coenosteum present in some genera. Budding varies.

Family Phyllosmiliidae FELIX, 1903

Aulosmilia ALLOITEAU, 1952

Type species. *Trochosmilia archiaci* FROMENTEL, 1863.

Description. Solitary coral with an elliptical outline. Costae are not pronounced. The septal symmetry is quite regular, but not all septa reach the upper margin. The columella is lamellar, but generally deep in the corallite. A superficial section will probably not show the columella. The endotheca is poorly developed.

Frequency. Common.

Distribution. U.APT-EOC.

Small corallite diameter	Number of septa	Density of septa (5 mm)	Species
8 - 15 mm	110	12 - 15	*A. sp.*
10 - 20 mm	100 - 170	10 -15	*A. parkinsoni*
	200	10	*A. psecadiophora*
15 - 25 mm	170	11	*A. inflexa*
17 - 21 mm	110	8	*A. cristata*
20 - 35 mm	100	6	*A. inconstans*
25 - 32 mm	180	8	*A. crassisepta*

Fig. 81. Species of the genus *Aulosmilia*.

Aulosmilia crassisepta (FROMENTEL, 1862)

(Fig. 377 in the book edition)

1862 *Trochosmilia crassisepta* – FROMENTEL, p. 267, pl. 35, fig. 2

Measurements.

(MHE A0975)
c 30×41 mm
s 152
ds 9/5 mm

Determination. Type material.

Frequency. Rare.

Aulosmilia cristata BEAUVAIS, 1982

(Fig. 378 in the book edition)

1982 *Aulosmilia cristata* nov. sp. – BEAUVAIS, (1), p. 224, pl. 19, fig. 9

Measurements.

(MHE A0062)
c 17×31 mm
s 111
sd 7-8/5 mm

Determination. Literature - BEAUVAIS (1982).

Frequency. Rare.

Aulosmilia inconstans (FROMENTEL, 1862)

(Fig. 379 in the book edition)

1862 *Trochosmilia inconstans* – FROMENTEL, p. 266, pl. 30, fig. 1, pl. 33, fig. 1

Measurements.

(A0712)
c 20×33 mm
s 114
sd 6/5 mm

Determination. Type material.

Frequency. Rare.

Aulosmilia inflexa (REUSS, 1854)

(Fig. 380 in the book edition)

1854 *Trochosmilia inflexa* – REUSS, p. 86, pl. 5, fig. 3-5

Measurements.

(MHE A1471)
c 22×35 mm
s 158
sd 8-12/5 mm

Determination. Type material.

Frequency. Abundant.

Aulosmilia parkinsoni (MILNE EDWARDS & HAIME, 1848)

(Fig. 381 in the book edition)

1848 *Placosmilia Parkinsonii* – MILNE EDWARDS & HAIME, p. 235

Measurements.

(MHE A2043)
c 18×28 mm
s 124
sd 10/5 mm

Determination. Type material.

Frequency. Abundant.

Aulosmilia psecadiophora (FELIX, 1903)

(Fig. 382 in the book edition)

1903 *Trochosmilia psecadiophora* nov. sp. – FELIX, p. 331, pl. 24, fig. 7
1982 *Phragmosmilia psecadiophora* (Felix) 1903 – BEAUVAIS, (1), p. 228, fig. 50, pl. 20, fig. 2

Measurements.

(MHE A0495)
c 20×47 mm
s 200
sd 10/5 mm

Determination. Type material.

Frequency. Rare.

Aulosmilia sp.

(Fig. 383 in the book edition)

Measurements.

(MHE A0016)
c 11×30 mm
s 96
sd 15/5 mm

Frequency. Normal.

Barysmilia MILNE EDWARDS & HAIME, 1848

Type species. *Dendrophyllia brevicaulis* MICHELIN, 1841.

Description. Plocoid colony with elliptical corallites, often as very short corallite rows. The septal symmetry is irregularly radial. The coenosteum is present, often very narrow.

Frequency. Very rare.

Distribution. U.CEN-SAN.

Small corallite diameter	Number of septa	Species
2.0 - 3.0 mm	24	*B. irregularis*
2.8 - 3.6 mm	48	*B. tuberosa*
4.0 - 4.6 mm	30 - 42	*B. gigantea*

Fig. 82. Species of the genus *Barysmilia*.

Barysmilia gigantea (OPPENHEIM, 1930)

(Fig. 386 in the book edition)

1930 *Placocoenia gigantea* n. sp. – OPPENHEIM, p. 415, pl. 23, fig. 1

Measurements.

(HUJI 33257, holotype of *Placocoenia gigantea* OPPENHEIM, 1930)

	n	min-max	μ	s	cv	μ±s
clmin	10	3.94-5.45	4.59	0.54	11.9	4.04-5.14
clmax	10	4.40-7.43	5.70	1.07	18.9	4.62-6.78
s	5	28-36	31.6	3.04	9.6	29-35

(GPSL FLX 1647)

	n	min-max	μ	s	cv	μ±s
clmin	8	3.43-4.91	4.33	0.46	10.7	3.86-4.79
clmax	7	4.92-7.56	6.28	0.87	13.9	5.41-7.16
s	7	33-50	39.9	6.38	16.0	33-46

Determination. Type material.

Frequency. Rare.

Barysmilia irregularis (REUSS, 1854)

(Fig. 387 in the book edition)

1854 *Placocoenia irregularis* – REUSS, p. 100, pl. 9, fig.9
1903 *Placocenia irregularis* Reuss – FELIX, p. 300, text-fig. 51, pl. 20, fig. 14, pl. 25, fig. 4
1930 *Placocoenia irregularis* Reuss – OPPENHEIM, p. 408, pl. 34, fig. 2
1982 *Barysmilia irregularis* (Reuss) 1854 – BEAUVAIS, (1), p. 183, pl. 14, fig. 10, pl. 15, fig. 1

Measurements.

(MNHN 1864/0040/1283, holotype of *Placocoenia irregularis* REUSS, 1854)

	n	min-max	μ	s	cv	μ±s
clmin	10	2.26-3.17	2.64	0.32	12.3	2.31-2.96
clmax	10	4.05-6.58	5.34	0.91	17.0	4.43-6.25
s	10	21-35	27.2	3.55	13.0	24-31

(GPSL FLX 8109)

	n	min-max	µ	s	cv	µ±s
clmin	20	2.14-3.02	2.45	0.20	8.5	2.24-2.66
clmax	15	3.53-6.20	4.45	0.84	18.9	3.61-5.29
s	15	20-34	27.2	4.47	16.4	23-32

Determination. Type material.

Frequency. Rare.

Barysmilia tuberosa REUSS, 1854

(Fig. 388 in the book edition)

1854 *Barysmilia tuberosa* – REUSS, p. 91, pl. 10, fig. 14, 15

1930 *Stenosmilia tuberosa* Reuss sp. – OPPENHEIM, p. 435, pl. 30, fig. 9

1982 *Barysmilia tuberosa* Reuss 1854 – BEAUVAIS, (1), p. 180, pl. 15, fig. 2

Measurements.

(GPSL FLX 5013)

	n	min-max	µ	s	cv	µ±s
clmin	15	2.87-4.00	3.46	0.31	9.0	3.14-3.77
clmax	15	4.48-7.54	6.00	0.87	14.5	5.12-6.87
s	10	30-40	35.9	3.66	10.2	32-40

Determination. Type material.

Frequency. Collection material.

Cycloria REUSS, 1854

Type species. *Leptoria patellaris* REUSS, 1854.

Description. Meandroid colony with tholiform crests. Coenosteum absent. The corallite rows are mostly regular and parallel. A lamellar columella is present.

Frequency. Rare.

Distribution. CON-L.CAM.

Width of rows	Density of septa (5 mm)	Species
1.1 - 1.3 mm	17 - 18	*C. ? patellaris*
1.2 - 1.3 mm	20 - 24	*C. sp.*
1.3 - 1.5 mm	15 - 20	*C. senessei*
1.5 - 1.8 mm	15 - 17	*C. tenella*
1.6 - 1.9 mm	22 - 25	*C. radiata*
2.0 - 2.4 mm	10 - 18	*C. delicatula*
6.0 - 7.0 mm	6 - 7	*C. voracissima*

Fig. 83. Species of the genus *Cycloria*.

Cycloria delicatula (REUSS, 1854)

(Fig. 391 in the book edition)

1903 *Leptoria delicatula* Reuss – FELIX, p. 278

1982 *Meandroria radiata delicatula* (Reuss) nov.s.sp. – BEAUVAIS, (1), p. 212, pl. 18, fig. 4

Measurements.

(MHE A1440)

	n	min-max	µ	s	cv	µ±s
crw	7	1.86-2.39	2.11	0.18	8.6	1.93-2.30
crd	3	3.57-4.09	3.80	0.26	6.9	3.53-4.07
sd	8-12/5 mm					

Determination. Literature - REUSS (1854).

Frequency. Normal.

Cycloria ? *patellaris* (REUSS, 1854)

(Fig. 392 in the book edition)

1854 *Leptoria patellaris* – REUSS, p. 110, pl. 14, fig. 9-12

1930 *Cycloria patellaris* Reuss – OPPENHEIM, p. 237, pl. 28, fig. 3

1982 *Meandroria patellaris* (Reuss) 1854 – BEAUVAIS, (1), p. 213, fig. 49, pl. 17, fig. 3

Measurements.

(MHE A0619)

	n	min-max	µ	s	cv	µ±s
crw	20	0.93-1.35	1.11	0.14	13.0	0.96-1.25
crd	15	1.27-1.82	1.53	0.17	11.2	1.35-1.70
sd	18/5 mm					

Frequency. Normal.

Cycloria radiata (MICHELIN, 1847)

(Fig. 393 in the book edition)

1847 *Meandrina radiata* – MICHELIN, p. 294, pl. 68, fig.3

Measurements.

(GBA 2003/023/0021/02)

	n	min-max	µ	s	cv	µ±s
crw	18	1.27-2.13	1.71	0.25	14.6	1.46-1.96
crd	10	1.74-2.72	2.19	0.34	15.7	1.85-2.54
sd	16-20/5 mm					

Determination. Type material.

Frequency. Rare.

Cycloria senessei (ALLOITEAU, 1939)

(Fig. 394 in the book edition)

1939 *Leptoria Senessei* nov. sp. – ALLOITEAU, p. 8, pl. 1, fig. 7

Measurements.

(MHE A0509)

	n	min-max	μ	s	cv	μ±s
crw	20	1.01-1.51	1.28	0.14	11.0	1.14-1.42
crd	20	1.40-2.49	1.93	0.28	14.6	1.65-2.22
sd	20/5 mm					

Determination. Type material.

Frequency. Normal.

Cycloria tenella (GOLDFUSS, 1826)

(Fig. 395 in the book edition)

1826 *Maeandrina tenella* Goldf. – GOLDFUSS, p. 63, pl. 21, fig. 4

1982 *Meandroria tenella* (Goldfuss) 1826 – BEAUVAIS, (1), p. 210, pl. 18, fig. 2, 3, pl. 19, fig. 1

Measurements.

(GPSL FLX 3688)

	n	min-max	μ	s	cv	μ±s
crw	20	1.34-1.95	1.60	0.16	10.0	1.44-1.76
crd	15	2.00-2.63	2.26	0.22	9.9	2.03-2.49
sd	16-18/5 mm					

Determination. Type material.

Frequency. Normal.

Cycloria ? *voracissima* (OPPENHEIM, 1930)

(Fig. 396 in the book edition)

1930 *Leptoria voracissima* n. sp. – OPPENHEIM, p. 388, pl. 37, fig. 1

1982 *Astrogyra voracissima* (Oppenheim) 1930 – BEAUVAIS, (1), p. 81, fig. 13, pl. 6, fig. 1

Measurements.

(HUJI Opp.33203, holotype of *Leptoria voracissima* OPPENHEIM, 1930)

	n	min-max	μ	s	cv	μ±s
crw	10	5.67-7.59	6.54	0.52	8.0	6.01-7.07
sd	6-7/5 mm					

Determination. Type material.

Frequency. Type material.

Cycloria sp.

(Fig. 397 in the book edition)

Measurements.

(MNHN nn)

	n	min-max	μ	s	cv	μ±s
crw	20	0.91-1.47	1.20	0.17	14.1	1.03-1.37
crd	20	1.34-2.26	1.83	0.27	15.1	1.55-2.11
sd	20-24/5 mm					

Frequency. Rare.

Dasmiopsis OPPENHEIM, 1930

Type species. *Trochocyathus lamellicostatus* REUSS, 1854.

Description. *Dasmiopsis* is a *Aulosmilia* with well developed costae of the first three septal cycles. The columella is deep in the corallite and cannot be observed in a superficial section.

Frequency. Very rare.

Distribution. U.TUR-SAN.

Dasmiopsis lamellicostatus (REUSS, 1854)

(Fig. 398 in the book edition)

1854 *Trochocyathus lamellicostatus* – REUSS, p. 79, pl. 13, fig. 17-19

1930 *Dasmiopsis lamellicostatus* Reuss – OPPENHEIM, p. 542, pl. 20, fig. 6, 7, pl. 26, fig. 13

1982 *Dasmiopsis lamellicostatus* (Reuss) 1854 – BEAUVAIS, (1), p. 235, fig. 53, 54, pl. 20, fig. 6-8, pl. 44, fig. 1

Measurements.

(GPSL FLX 8031)

c	21×28 mm
s	96

Determination. Type material.

Frequency. Collection material.

Diploctenium GOLDFUSS, 1826

Type species. *Diploctenium cordatum* GOLDFUSS, 1826.

Description. Flabellate, lateraly compressed coral, that compares well to *Phyllosmilia*, but the lateral ends are bent down during the ontogenesis giving the coral the typical flabellate appearance. The ends may meet, fuse together or not. Since corallites cannot be distinguished it is unknown whether *Diploctenium* is a solitary or colonial coral. A lamellar columella is present, and the septa are connected to it.

Frequency. Very rare.

Distribution. U.TUR-DAN.

Width of rows	Density of septa (5 mm)	Species
7 - 10 mm	7 - 10	*D. pavoninum*
11 - 15 mm	6 - 10	*D. lunatum*
14 mm	14 - 18	*D. sp. 1*
19 - 20 mm	7 - 8	*D. sp. 2*

Fig. 84. Species of the genus *Diploctenium*.

Diploctenium lunatum (BRUGUIÈRE, 1792)

(Fig. 401 in the book edition)

1792 *Madrepora lunata* – BRUGUIÈRE, p. 461, pl. 24, fig. 5, 6
1903 *Diploctenium lunatum* Michelin (Bruguière sp.) – FELIX, p. 347, text-fig. 65
1982 *Diploctenium lunatum* (Bruguière) 1792 – BEAUVAIS, (1), p. 164, fig. 42

Measurements.

(GPSL FLX 5316)
cmin 15-16 mm
sd 6-7/5 mm

Determination. Type material.

Frequency. Rare.

Diploctenium pavoninum REUSS, 1854

(Fig. 402 in the book edition)

1854 *Diploctenium pavoninum* – REUSS, p. 91, pl. 1, fig. 5, 6
1930 *Diploctenium pavoninum* Reuss – OPPENHEIM, p. 532, pl. 41, fig. 8
1982 *Diploctenium pavoninum* Reuss 1854 – BEAUVAIS, (1), p. 173, fig. 46, pl. 14, fig. 7

Measurements.

(GPSL FLX 8074)

	n	min-max	µ	s	cv	µ±s
cmin	8	7.95-9.80	9.21	0.60	6.5	8.61-9.82
clmin	8	3.05-4.39	3.86	0.47	12.2	3.39-4.34

sd 10/5 mm

Determination. Type material.

Frequency. Rare.

Diploctenium sp. 1

(Fig. 403 in the book edition)

Measurements.

(MHE A1669)
cmin 14 mm
sd 18/5 mm

Frequency. Rare.

Diploctenium sp. 2

(Fig. 404 in the book edition)

Measurements.

(MHE A0015)

	n	min-max	µ	s	cv	µ±s
cmin	5	17.9-19.3	18.7	0.54	2.9	18.2-19.3
clmin	5	5.65-7.08	6.30	0.58	9.2	5.72-6.88

sd 7-9/5 mm

Frequency. Rare.

Elasmophyllia FROMENTEL, 1873

Type species. *Thecosmilia deformis* REUSS, 1854.

Description. Flabelloid colony, where individual corallites can be clearly distinguished.

Frequency. Very rare.

Distribution. CEN-SAN.

Width of rows	Density of septa (5 mm)	Species
6 - 9 mm	12 - 15	*E. sp.*
8 mm	6	*E. deformis*
9 -15 mm	9 - 11	*E. pulchella*

Fig. 85. Species of the genus *Elasmophyllia*.

Elasmophyllia deformis (REUSS, 1854)

(Fig. 408 in the book edition)

1854 *Thecosmilia deformis* – REUSS, p. 103, pl. 5, fig. 10-12
1903 *Elasmophyllia deformis* Felix (Reuss) – FELIX, p. 244, text-fig. 25
1930 *Elasmophyllia deformis* Reuss sp. – OPPENHEIM, p. 290, pl. 31, fig. 6, 7, pl. 32, fig. 6-12
1982 *Latiphyllia deformis* (Reuss) 1854 – BEAUVAIS, (1), p. 51, fig. 10, pl. 2, fig. 5

Measurements.
(MHE A2037)
c 8×33 mm
s 118
sd 6/5 mm

Determination. Type material.

Frequency. Normal.

Elasmophyllia pulchella (OPPENHEIM, 1930)

(Fig. 409 in the book edition)

1930 *Thecosmilia* (?) *pulchella* n. sp. – OPPENHEIM, p. 287, pl. 30, fig. 1

Measurements.
(GPSL FLX 8037)
cmin 9-12 mm
s 98
sd 9/5 mm
(HUJI 24353, holotype of *Thecosmilia pulchella* OPPENHEIM, 1930)
cmin 11-15 mm
cdw 8 mm
s 70-80
sd 11/5 mm

Determination. Type material.

Frequency. Normal.

Elasmophyllia sp.

(Fig. 410 in the book edition)

Measurements.
(MHE A2121)

	n	min-max	μ	s	cv	μ±s
crw	5	5.69-9.81	6.92	1.67	24.2	5.24-8.60
cdw	3	6.33-7.21	6.65	0.48	7.2	6.17-7.13
s	34-42		sd	12-15/5 mm		

Frequency. Rare.

Flabellosmilia OPPENHEIM, 1930

Type species. *Flabellum bisinuatum* REUSS, 1854.

Description. The solitary coral compares well to *Phyllosmilia*, but has a central swelling.

Frequency. Very rare.

Distribution. CON-SAN.

Flabellosmilia bisinuatum (REUSS, 1854)

(Fig. 411 in the book edition)

1854 *Flabellum bisinuatum* – REUSS, p. 81, pl. 16, fig. 11, 12
1930 *Flabellosmilia bisinuatum* Reuss sp. – OPPENHEIM, p. 539, pl. 41, fig. 3, 4
1982 *Flabellosmilia bisinuatum* (Reuss) 1854 – BEAUVAIS, (1), p. 176, pl. 14, fig. 8

Measurements.
(NHMW 1864/0040/1213, syntype of *Flabellum bisinuatum* REUSS, 1854)
c 16×37 mm
s 96
(GPSL FLX 8030)
c 18×35 mm
s 140

Determination. Type material.

Frequency. Collection material.

Septal symmetry	Number of septa	Small corallite diameter	Species
6	24	1.4 - 1.6 mm	*H. reussi*
		1.6 - 1.7 mm	*H. cf. reussi*
		1.8 - 2.0 mm	*H. salisburgensis*
		2.0 - 2.3 mm	*H. dumortieri*
		2.7 - 3.0 mm	*H. oppenheimi*
10	40	3.5 mm	*H. sp.*

Fig. 86. Species of the genus *Hydnophoropsis*.

Hydnophoropsis SÖHLE, 1899

Type species. *Hydnophoropsis thecalis* SÖHLE, 1899.

Description. Plocoid colony with regular circular corallites. The symmetry of septa is regular; different systems occur. The columella is lamellar. The coenosteum is rather broad and

shows isolated trabeculae; that are the tips of external pali which originate from the costae. So, the surface of the coenosteum appears granulated.

Frequency. Occasional.

Distribution. ALB-MAA.

Hydnophoropsis dumortieri (FROMENTEL, 1879)

(Fig. 414 in the book edition)

1879 *Placocoenia Dumortieri* – FROMENTEL, p. 508, pl. 136, fig. 1
1903 *Placocoenia Dumortieri* Fromentel – FELIX, p. 297, text-fig. 49
1930 *Placocoenia dumortieri* de Fromentel – OPPENHEIM, p. 405, pl. 38, fig. 12, 42, fig. 1, 3-5
1982 *Placocoenia dumortieri* de Fromentel 1879 – BEAUVAIS, (1), p. 107, fig. 20, 21

Measurements.

(GPSL FLX 8026)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.89-2.56	2.25	0.21	9.4	2.04-2.46
clmax	30	2.27-3.28	2.71	0.22	8.3	2.49-2.94
ccd	30	2.27-4.03	3.23	0.53	16.4	2.70-3.77
s	24					

Determination. Type material.

Frequency. Abundant.

Hydnophoropsis oppenheimi (BEAUVAIS, 1982)

(Fig. 415 in the book edition)

1930 *Heliastraea lilli* Reuss – OPPENHEIM, p. 322, pl. 48, fig. 12
1982 *Columnocoenia oppenheimi* nov. sp. – BEAUVAIS, (1), p. 121

Measurements.

(MHE A1597)

	n	min-max	µ	s	cv	µ±s
clmin	20	2.51-3.05	2.82	0.14	5.2	2.67-2.96
clmax	20	2.76-3.50	3.19	0.20	6.3	2.99-3.40
ccd	30	3.95-6.41	4.99	0.67	13.4	4.31-5.66
s	15	21-24	23.8	0.77	3.2	23-25

Determination. Literature - OPPENHEIM (1930).

Frequency. Rare.

Hydnophoropsis reussi (BEAUVAIS, 1982)

(Fig. 416 in the book edition)

1930 *Placocoenia coronata* Reuss sp. – OPPENHEIM, p. 410, pl. 38, fig. 8, pl. 40, fig. 3
1982 *Stephanaxophyllia reussi* nov. sp. – BEAUVAIS, (1), p. 127, pl. 10, fig. 4

Measurements.

(MHE A0424)

	n	min-max	µ	s	cv	µ±s
clmin	12	1.23-1.67	1.39	0.14	10.6	1.24-1.53
clmax	12	1.57-2.04	1.75	0.12	7.2	1.62-1.88
ccd	15	2.04-3.25	2.48	0.34	13.9	2.13-2.82
s	24					

Determination. Literature - OPPENHEIM (1930).

Frequency. Normal.

Hydnophoropsis cf. *reussi* (BEAUVAIS, 1982)

(Fig. 417 in the book edition)

Measurements.

(MHE A1500)

	n	min-max	µ	s	cv	µ±s
clmin	18	1.47-1.80	1.64	0.09	5.9	1.54-1.74
clmax	18	1.66-2.16	1.89	0.13	7.3	1.75-2.03
ccd	33	2.28-5.69	3.73	0.87	23.5	2.85-4.61
s	15	20-24	23.6	1.12	4.7	22-25

Frequency. Rare.

Hydnophoropsis salisburgensis (MILNE EDWARDS, 1857)

(Fig. 418 in the book edition)

1857 *Heliastraea Salisburgensis* – MILNE EDWARDS, (2), p. 477
1982 *Polystephanastraea salisburgensis* (H. Milne-Edwards) 1857 – BEAUVAIS, (1), p. 97, fig. 17, pl. 6, fig. 2, 3, pl. 7, fig. 3

Measurements.

(MHE A0429)

	n	min-max	µ	s	cv	µ±s
clmin	10	1.61-2.34	1.97	0.20	10.1	1.77-2.17
clmax	10	2.01-2.39	2.16	0.11	5.5	2.04-2.28
ccd	15	2.37-3.91	3.22	0.36	11.1	2.86-3.58
s	24					

Determination. Type material.

Frequency. Abundant.

Hydnophoropsis sp.

(Fig. 419 in the book edition)

Measurements.

(NHMW 1864/0040/1403B)

	n	min-max	µ	s	cv	µ±s
clmin	7	2.70-3.97	3.29	0.49	15.0	2.79-3.78
clmax	7	3.50-5.22	4.38	0.64	14.7	3.73-5.03
ccd	8	4.87-8.34	6.40	1.17	18.3	5.23-7.58
s	40					

Frequency. Collection material.

Nefocoenia OPPENHEIM, 1930

Type species. *Araeacis lobata* REUSS, 1854.

Description. Plocoid colony with elliptical or enlarged corallites. The septal symmetry is irregular. A hexameral symmetry predominates, but with an increasing size of the corallites the number of septa increases as well. A lamellar columella is present. The coenosteum consists of tabulae and large trabeculae that appear as granulation on the colony surface.

Frequency. Occasional.

Distribution. CON-LU.CAM.

Small corallite diameter	Species
1.1 - 1.2 mm	*N. organum*
1.3 - 1.5 mm	*N. werneri*
1.5 - 1.6 mm	*N. seewaldi*
1.7 - 1.9 mm	*N. lobata*
2.2 - 2.3 mm	*N. ammergensis*
3.4 mm	*N. sp.*

Fig. 87. Species of the genus *Nefocoenia*.

Nefocoenia ammergensis (SÖHLE, 1899)

(Fig. 422 in the book edition)

1899 *Favia Ammergensis* sp. n. – SÖHLE, p. 45, pl. 9, fig. 5, 5a

Measurements.

(MHE A1598)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.64-2.58	2.08	0.29	14.0	1.79-2.38
clmax	20	2.34-3.26	2.76	0.25	9.2	2.51-3.02
s	10	22-24	23.4	0.96	4.1	22-24

Determination. Type material.

Frequency. Rare.

Nefocoenia lobata (REUSS, 1854)

(Fig. 423 in the book edition)

1854 *Araeacis lobata* – REUSS, p. 83, pl. 13, fig. 13, 14

1930 *Nefocoenia lobata* Reuss sp. – OPPENHEIM, p. 418, pl. 17, fig.3, pl. 19, fig.6, pl. 23, fig. 3, pl. 25, fig. 3

Measurements.

(MHE A0580)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.10-1.76	1.43	0.21	14.8	1.22-1.64
clmax	30	1.61-3.08	2.18	0.42	19.4	1.76-2.60
ccd	20	1.77-3.53	2.57	0.44	17.2	2.13-3.02
s	10	22-35	26.4	4.52	17.1	22-31

Determination. Literature - REUSS (1854).

Frequency. Abundant.

Nefocoenia organum (OPPENHEIM, 1930)

(Fig. 424 in the book edition)

1930 *Placocoenia organum* n. sp. – OPPENHEIM, p. 414, pl. 33, fig. 2

Measurements.

(MHE A0658)

	n	min-max	µ	s	cv	µ±s
clmin	20	0.89-1.54	1.18	0.20	17.0	0.98-1.38
clmax	15	1.50-3.48	2.49	0.54	21.9	1.95-3.04
s	6	21-25	22.3	1.50	6.7	21-24

Determination. Type material.

Frequency. Rare.

Nefocoenia seewaldi LÖSER & HEINRICH, 2018

(Fig. 425 in the book edition)

2018 *Nefocoenia seewaldi* spec. nov. – LÖSER & HEINRICH, p. 145, fig. 13

Measurements.

(BSPG 2018 II 0646, holotype of *Nefocoenia seewaldi* LÖSER & HEINRICH, 2018)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.34-1.71	1.47	0.11	7.6	1.35-1.58
clmax	20	1.74-2.82	2.30	0.29	12.9	2.00-2.59
s	15	14-23	18.9	2.58	13.7	16-21

Determination. Type material.

Frequency. Abundant.

Nefocoenia werneri LÖSER & HEINRICH, 2018

(Fig. 426 in the book edition)

2018 *Nefocoenia werneri* spec. nov. – LÖSER & HEINRICH, p. 146, fig. 14

Measurements.

(BSPG 2018 II 1409, holotype of *Nefocoenia werneri* LÖSER & HEINRICH, 2018)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.02-1.82	1.38	0.23	16.7	1.15-1.61
clmax	20	1.47-2.71	2.14	0.38	17.8	1.75-2.52
s	10	22-36	30.9	4.53	14.6	27-35

Determination. Type material.

Frequency. Abundant.

Nefocoenia sp.

(Fig. 427 in the book edition)

Measurements.

(NHMW 2006z0391/0025)

	n	min-max	µ	s	cv	µ±s
clmin	15	2.95-3.79	3.40	0.27	8.0	3.12-3.67
clmax	15	3.79-4.41	4.09	0.17	4.1	3.92-4.26
ccd	35	5.81-9.25	7.25	0.88	12.2	6.36-8.13
s	24					

Frequency. Collection material.

Nefophyllia WELLS, 1937

Type species. *Placosmilia angusta* REUSS, 1854.

Description. Phaceloid colony with elliptical corallites. Septal symmetry regularly radial. Costae finely granulated.

Frequency. Rare.

Distribution. CEN-LU.CAM.

Small corallite diameter	Large corallite diameter	Number of septa	Species
5 - 7.5 mm	8.5 - 12 mm	48	*N. tenuicostata*
6.5 - 10 mm	8 - 14 mm	96	*N. sp.*
11 - 15 mm	14 - 20 mm	96	*N. angusta*

Fig. 88. Species of the genus *Nefophyllia*.

Nefophyllia angusta (REUSS, 1854)

(Fig. 430 in the book edition)

1854 *Placosmilia angusta* – REUSS, p. 84, pl. 5, fig. 6-9
1903 *Platysmilia angusta* Felix (Reuss sp.) – FELIX, p. 287, pl. 20, fig. 7-9
1982 *Nefophyllia angusta* (Reuss) 1854 – BEAUVAIS, (1), p. 231, fig. 51, pl. 19, fig. 10

Measurements.

(GPSL FLX 8041)
c 12×18 mm
s 96

Determination. Type material.

Frequency. Normal.

Nefophyllia tenuicosta (REUSS, 1854)

(Fig. 431 in the book edition)

1854 *Rhabdophyllia tenuicosta* – REUSS, p. 105, pl. 6, fig. 18-21
1903 *Stenosmilia tenuicosta* Felix (Reuss sp.) – FELIX, p. 303, text-fig. 53, pl. 22, fig. 11
1930 *Stenosmilia tenuicostata* Reuss sp. – OPPENHEIM, p. 434, pl. 42, fig. 8, 9
1982 *Barysmilia tenuicostata* (Reuss) 1854 – BEAUVAIS, (1), p. 182, pl. 14, fig. 9

Measurements.

(MHE A2099)
cmin 4.3-5.2 mm
cmax 6.2-7.7 mm
s 48-58

Determination. Type material.

Frequency. Rare.

Nefophyllia sp.

(Fig. 432 in the book edition)

Measurements.

(MHE A0414)
cmin 8.1-8.4 mm
cmax 12.8-15.5 mm
s 96

Frequency. Normal.

Orbignygyra ALLOITEAU, 1952

Type species. *Diploria neptuni* ORBIGNY, 1850.

Description. Meandroid colony with short, often sinuous, wide calicular rows. The coenosteum

is very narrow or even absent. The columella is lamellar.

Frequency. Very rare.

Distribution. CON-LU.CAM.

Small corallite diameter	Density of septa (5 mm)	Species
2.2 mm	12	*O. sp.*
3.1 - 3.2 mm	10	*O. salisburgensis*
3.8 - 4.4 mm	8 - 10	*O. neptuni*
5.0 - 5.8 mm	15	*O. michelini*

Fig. 89. Species of the genus *Orbignygyra*.

Orbignygyra michelini (REUSS, 1854)

(Fig. 435 in the book edition)

1854 *Maeandrina Michelini* – REUSS, p. 109, pl. 15, fig. 8, 9

1930 *Maeandrella* n. g. *michelini* Reuss – OPPENHEIM, p. 380, pl. 42, fig. 12

1982 *Maeandrofungia michelini* (Reuss) 1854 – BEAUVAIS, (2), p. 115, pl. 37, fig. 6

Measurements.

(GBA 1854/0007/0067, holotype of *Meandrina michelini* REUSS, 1854)

	n	min-max	µ	s	cv	µ±s
crw	7	4.03-6.16	5.19	0.71	13.6	4.48-5.90
crd	5	5.72-6.83	6.05	0.46	7.6	5.59-6.51
sd	15/5 mm					

Determination. Type material.

Frequency. Collection material.

Orbignygyra neptuni (ORBIGNY, 1850)

(Fig. 436 in the book edition)

1850 *Diploria Neptuni* – ORBIGNY, (2), p. 208

Measurements.

(GPSL FLX 1755)

	n	min-max	µ	s	cv	µ±s
crw	10	3.22-4.76	4.13	0.53	12.9	3.59-4.66
crd	6	5.21-6.50	5.78	0.43	7.5	5.34-6.22
sd	10/5 mm					

Determination. Type material.

Frequency. Rare.

Orbignygyra salisburgensis (MILNE EDWARDS & HAIME, 1849)

(Fig. 437 in the book edition)

1847 *Meandrina tenella*? Goldfuss – MICHELIN, p. 293, pl. 66, fig. 5

1849 *Meandrina*? *Saltzburgiana* – MILNE EDWARDS & HAIME, p. 284

1903 *Dendrogyra Salisburgensis* – FELIX, p. 306, text-fig. 54, 55, pl. 22, fig. 14

1930 *Meandroria koninckі* forma *salisburgensis* – OPPENHEIM, p. 387, pl. 43, fig. 1, pl. 46, fig. 10

Measurements.

(NHMW 2006z0396/0001)

	n	min-max	µ	s	cv	µ±s
clmin	30	2.78-3.43	3.09	0.18	6.0	2.90-3.27
clmax	30	5.14-11.5	8.12	1.99	24.5	6.13-10.1
crd	30	4.19-6.31	5.19	0.49	9.5	4.69-5.69
sd	10-11/5 mm					

Determination. Other literature.

Frequency. Collection material.

Orbignygyra sp.

(Fig. 438 in the book edition)

Measurements.

(MHE A1931)

	n	min-max	µ	s	cv	µ±s
crw	20	1.60-2.67	2.21	0.32	14.9	1.88-2.54
crd	10	2.11-3.29	2.68	0.41	15.5	2.26-3.09
sd	12/5 mm					

Frequency. Rare.

Pachygyra MILNE EDWARDS & HAIME, 1848

Type species. *Lobophyllia labyrinthica* MICHELIN, 1847.

Description. Meandroid colony with long, straight or sinuous corallite rows, that are separated by a mostly wide coenosteum. Individual corallites cannot be distinguished. The corallite rows can be in the same level as the coenosteum, or can be elevated. In the latter case, the coral appears flabelloid.

Frequency. Rare.

Distribution. U.ALB-EOC.

Width of rows	Density of septa (5 mm)	Species
1.0 - 1.2 mm	10 - 12	*P. ilerdensis*
1.5 - 1.8 mm	10 - 15	*P. ? microphyes*
1.7 - 2.1 mm	15 - 20	*P. pusulifera*
1.9 - 2.5 mm	8 - 15	*P. crassolamellosa*
2.5 - 2.8 mm	10 - 12	*P. princeps*
3.3 - 3.9 mm	8 - 12	*P. cucullata*
4.8 - 5.4 mm	10 - 20	*P. labyrinthica*

Fig. 90. Species of the genus *Pachygyra*.

Pachygyra crassolamellosa (MILNE EDWARDS & HAIME, 1849)

(Fig. 441 in the book edition)

1849 *Diploria crasso-lamellosa* – MILNE EDWARDS & HAIME, p. 291
1854 *Diploria crasso-lamellosa* – REUSS, p. 109, pl. 15, fig. 10, 11
1903 *Diploria crasso-lamellosa* M. Edwards et J. Haime – FELIX, p. 275, text-fig. 37
1930 *Diploria crasse-lamellosa* M. E. et H. – OPPENHEIM, p. 390, pl. 40, fig. 12
1982 *Orbignygyra crasso-lamellosa* (H. Milne-Edwards et J. Haime) 1849 – BEAUVAIS, (1), p. 206, pl. 17, fig. 2, pl. 18, fig. 1

Measurements.

(MHE A1280)

	n	min-max	μ	s	cv	μ±s
crw	10	2.00-2.57	2.25	0.15	6.9	2.09-2.40
sd	12/5 mm					

Determination. Type material.

Frequency. Normal.

Pachygyra cucullata (ZUFFARDI-COMERCI, 1930)

(Fig. 442 in the book edition)

1930 *Eugyra cucullata* n. sp. – ZUFFARDI-COMERCI, p. 15, pl. 3, fig. 3, 8

Measurements.

(MHE A1265)

	n	min-max	μ	s	cv	μ±s
crw	10	3.37-3.88	3.65	0.18	5.0	3.47-3.84
crd	4	16.2-18.9	17.4	1.17	6.7	16.2-18.6
sd	9-10/5 mm					

Determination. Type material.

Frequency. Rare.

Pachygyra ilerdensis (REIG ORIOL, 1989)

(Fig. 443 in the book edition)

1989 *Orbignygyra ilerdensis* nov. sp. – REIG ORIOL, p. 14, pl. 3, fig. 8, pl. 4, fig. 7, 8

Measurements.

(MHE A0603)

	n	min-max	μ	s	cv	μ±s
crw	20	0.82-1.19	1.00	0.10	10.8	0.89-1.11
crd	10	2.52-3.58	3.03	0.34	11.4	2.69-3.38
sd	12/5 mm					

Determination. Type material.

Frequency. Rare.

Pachygyra labyrinthica (MICHELIN, 1847)

(Fig. 444 in the book edition)

1847 *Lobophyllia labyrinthica* – MICHELIN, p. 290, pl. 66, fig. 3

Measurements.

(MHE A1731)

crw	4.1-5.4 mm
sd	16/5 mm

Determination. Type material.

Frequency. Rare.

Pachygyra ? *microphyes* FELIX, 1903

(Fig. 445 in the book edition)

1903 *Pachygyra microphyes* nov. sp. – FELIX, p. 311, pl. 24, fig. 1

Measurements.

(MHE A0864)

	n	min-max	μ	s	cv	μ±s
crw	15	1.30-1.84	1.54	0.18	12.2	1.35-1.72
crd	15	2.92-3.93	3.48	0.27	7.9	3.21-3.76
sd	12/5 mm					

Determination. Literature - FELIX (1903).

Frequency. Normal.

Pachygyra princeps REUSS, 1854

(Fig. 446 in the book edition)

1854 *Pachygyra princeps* – REUSS, p. 93, pl. 3, fig. 1-3
1982 *Pachygyra princeps* Reuss 1854 – BEAUVAIS, (1), p. 188, pl. 16, fig. 1, pl. 17, fig. 1

Measurements.

(MHE A1013)

	n	min-max	µ	s	cv	µ±s
crw	7	2.21-2.81	2.50	0.22	9.0	2.28-2.73
crd	4	5.47-8.40	6.73	1.25	18.6	5.47-7.99
sd	12/5 mm					

Determination. Type material.

Frequency. Rare.

Pachygyra pusulifera OPPENHEIM, 1930

(Fig. 447 in the book edition)

1930 *Pachygyra pusulifera* n. sp. – OPPENHEIM, p. 450, pl. 33, fig. 8

Measurements.

(MHE A1508)

	n	min-max	µ	s	cv	µ±s
crw	10	1.55-2.04	1.81	0.14	8.1	1.66-1.96
crd	8	10.5-18.1	12.8	2.69	21.0	10.1-15.5
sd	16-20/5 mm					

Determination. Type material.

Frequency. Normal.

Pachygyra ? sp.

(Fig. 448 in the book edition)

Measurements.

(A1600)

	n	min-max	µ	s	cv	µ±s
crw	10	6.95-9.09	8.25	0.63	7.6	7.62-8.89
crd	6	9.91-14.9	12.3	2.10	17.1	10.2-14.4
sd	6/5 mm					

Frequency. Rare.

Pachyphyllia ALLOITEAU, 1957

Type species. *Phyllocoenia toucasi* FROMENTEL, 1884.

Description. Plocoid colony with circular corallites. The septal symmetry is regular, hexameral or octomeral. The columella is variable; it can be small and lamellar or absent. External pali are very rare.

Frequency. Occasional.

Distribution. APT-SAN.

Septal symmetry	Number of septa	Small corallite diameter	Species
6	24	1.4 - 1.6 mm	*P. sp. 1*
		1.8 - 2.1 mm	*P. sp. 2*
		2.2- 2.4 mm	*P. robusta*
		2.5 - 2.8 mm	*P. cf. robusta*
		3.0 - 3.5 mm	*P. andrusovi*
8	32	2.6 - 2.8 mm	*P. major*
		3.1 - 3.3 mm	*P. dumortieri*

Fig. 91. Species of the genus *Pachyphyllia*.

Pachyphyllia andrusovi (KÜHN & ANDRUSOV, 1930)

(Fig. 452 in the book edition)

1930 *Cretastraea andrusovi* nov. spec. – KÜHN & ANDRUSOV, p. 4, pl. 1, fig. 3, pl. 2, fig. 1

Measurements.

(MHE A0493)

	n	min-max	µ	s	cv	µ±s
clmin	10	3.04-3.80	3.33	0.24	7.4	3.08-3.58
clmax	10	3.82-4.79	4.29	0.37	8.7	3.92-4.67
ccd	10	3.98-6.27	5.04	0.75	15.0	4.28-5.80
s	24					

Determination. Type material.

Frequency. Normal.

Pachyphyllia dumortieri (FROMENTEL, 1884)

(Fig. 453 in the book edition)

1884 *Phyllocoenia Dumortieri* – FROMENTEL, p. 548, pl. 156, fig. 1

Measurements.

(MHE A1028)

	n	min-max	µ	s	cv	µ±s
clmin	30	2.48-3.78	3.06	0.38	12.5	2.67-3.44
clmax	30	3.00-4.47	3.81	0.28	7.5	3.52-4.09
ccd	30	3.38-6.86	4.68	0.86	18.3	3.82-5.54
s	15	30-32	31.6	0.82	2.6	31-32

Determination. Type material.

Frequency. Normal.

Pachyphyllia major (FELIX, 1903)

(Fig. 454 in the book edition)

1903 *Placocoenia major* nov. sp. – FELIX, p. 298, text-fig. 50, pl. 20, fig. 1

1930 *Placocoenia major* Felix – OPPENHEIM, p. 407, pl. 32, fig. 8

1982 *Placocoenia major* (Felix) 1903 – BEAUVAIS, (1), p. 111, fig. 22, 23, pl. 7, fig. 5, pl. 8, fig. 2, 3

Measurements.

(NHMW 1864/0001/0684, lectotype of *Placocoenia major* FELIX, 1903)

	n	min-max	µ	s	cv	µ±s
clmin	15	2.30-2.87	2.60	0.20	7.7	2.40-2.81
clmax	15	2.79-3.73	3.26	0.29	8.8	2.97-3.55
ccd	25	3.16-5.14	4.16	0.59	14.2	3.57-4.75
s	8	24-33	29.9	2.69	9.0	27-33

Determination. Type material.

Frequency. Type material.

Pachyphyllia robusta (OPPENHEIM, 1930)

(Fig. 455 in the book edition)

1930 *Placocoenia robusta* n. sp. – OPPENHEIM, p. 407, pl. 37, fig. 3

1982 *Placocoenia robusta* (Oppenheim) 1930 – BEAUVAIS, (1), p. 109

Measurements.

(MHE A0749)

	n	min-max	µ	s	cv	µ±s
clmin	20	2.01-2.71	2.34	0.23	9.9	2.10-2.57
clmax	20	1.95-4.17	3.04	0.54	17.9	2.49-3.58
ccd	20	2.69-4.78	3.48	0.57	16.5	2.90-4.05
s	24					

Determination. Type material.

Frequency. Normal.

Pachyphyllia cf. *robusta* (OPPENHEIM, 1930)

(Fig. 456 in the book edition)

Measurements.

(MHE A0327)

	n	min-max	µ	s	cv	µ±s
clmin	10	2.16-3.01	2.59	0.31	12.2	2.27-2.91
clmax	10	2.75-3.61	3.33	0.23	7.1	3.09-3.56
ccd	15	2.50-5.25	3.76	0.69	18.3	3.07-4.45
s	10	24-34	26.8	3.42	12.7	23-30

Frequency. Normal.

Pachyphyllia sp. 1

(Fig. 457 in the book edition)

Measurements.

(NHMW 2006z0391/0013)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.43-1.89	1.58	0.10	6.6	1.48-1.69
clmax	20	1.57-2.01	1.84	0.10	5.9	1.73-1.95
ccd	30	2.17-3.48	2.70	0.36	13.3	2.34-3.06
s	20	20-24	22.7	1.53	6.7	21-24

Frequency. Rare.

Pachyphyllia sp. 2

(Fig. 458 in the book edition)

Measurements.

(MHE A0382)

	n	min-max	µ	s	cv	µ±s
clmin	10	1.40-2.06	1.72	0.21	12.7	1.50-1.94
clmax	10	1.47-2.56	2.17	0.32	14.9	1.84-2.49
s	24					

Frequency. Abundant.

Pachyphylliopsis LÖSER & HEINRICH, 2018

Description. Plocoid coral colony with septa in a radial symmetry. The columella is extremely large, styliform, and circular to elliptical in outline.

Frequency. Very rare.

Distribution. CON-MAA.

Small corallite diameter	Large corallite diameter	Species
1.2 mm	1.5 mm	*P. sp. 1*
1.3 mm	1.8 mm	*P. sp. 2*
1.6 mm	1.9 mm	*P. magnum*

Fig. 92. Species of the genus *Pachyphylliopsis*.

Pachyphylliopsis magnum LÖSER & HEINRICH, 2018

(Fig. 461 in the book edition)

2018 *Pachyphylliopsis magnum* spec. nov. – LÖSER & HEINRICH, p. 148, fig. 15

Measurements.

(2018 II 1609, holotype of *Pachyphylliopsis magnum* LÖSER & HEINRICH, 2018)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.32-1.84	1.60	0.14	8.9	1.46-1.75
clmax	30	1.54-2.23	1.87	0.17	9.1	1.70-2.04
ccd	45	1.76-3.47	2.62	0.41	15.7	2.21-3.03
s	20	20-24	22.5	1.53	6.8	21-24

Determination. Type material.

Frequency. Rare.

Pachyphylliopsis sp. 1

(Fig. 462 in the book edition)

Measurements.

(MHE A1882)

	n	min-max	µ	s	cv	µ±s
clmin	15	1.02-1.31	1.18	0.09	7.6	1.09-1.27
clmax	15	1.38-1.64	1.50	0.08	5.4	1.42-1.58
ccd	30	1.50-2.12	1.81	0.17	9.7	1.63-1.98
s	15	20-24	22.5	1.45	6.4	21-24

Frequency. Rare.

Pachyphylliopsis sp. 2

(Fig. 463 in the book edition)

Measurements.

(BSPG 2003 XX 6792)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.19-1.52	1.34	0.09	7.4	1.24-1.44
clmax	20	1.35-2.36	1.81	0.26	14.6	1.54-2.07
ccd	20	1.55-2.56	1.89	0.24	12.8	1.65-2.14
s	10	22-30	24.8	2.52	10.2	22-27

Frequency. Rare.

Phragmosgyra REIG ORIOL, 1994

Type species. *Phragmosgyra torallolensis* REIG ORIOL, 1994.

Description. Flabelloid, often sinuous colony, where individual corallites cannot be distinguished.

Frequency. Very rare.

Distribution. CON-M.EOC.

Width of rows	Density of septa (5 mm)	Species
3 - 7 mm	10 - 15	*Ph. fenestrata*
7 - 13 mm	8 - 10	*Ph. poseidonis*

Fig. 93. Species of the genus *Phragmosgyra*.

Phragmosgyra fenestrata (FELIX, 1900)

(Fig. 465 in the book edition)

1900 *Lasmogyra fenestrata* Felix – FELIX, p. 3
1903 *Lasmogyra fenestrata* nov. sp. – FELIX, p. 246, pl. 21, fig. 6-8
1982 *Placosmilia fenestrata* (Felix) 1900 – BEAUVAIS, (1), p. 68, pl. 4, fig. 4, pl. 59, fig. 3, 5, 6

Measurements.

(MHE A1109)

clmin 3.1-3.6 mm
cmin 7.2-8.3 mm
sd 15/5 mm

Determination. Type material.

Frequency. Rare.

Phragmosgyra poseidonis (FELIX, 1903)

(Fig. 466 in the book edition)

1903 *Rhipidogyra Poseidonis* nov. sp. – FELIX, p. 310, pl. 22, fig. 6, 7
1930 *Rhipidogyra poseidonis* Felix – OPPENHEIM, p. 442, pl. 48, fig. 4, 5

Measurements.

(MHE A1999)

	n	min-max	µ	s	cv	µ±s
cmin	5	8.35-9.24	8.91	0.33	3.7	8.58-9.25
sd	10/5 mm					

Determination. Type material.

Frequency. Normal.

Phyllosmilia FROMENTEL, 1862

Type species. *Turbinolia basochesi* DEFRANCE, 1828.

Description. Solitary turbinate coral. The corallite is laterally compressed. It is much wider than thick. The increase in height is proportional to the increase in width, therefore the coral has – in side view – a triangular outline. The lumen is narrow. A lamellar columella is present; the septa are regularly connected to it (a feature that shares *Phyllosmilia* with *Diploctenium*).

Frequency. Occasional.

Distribution. CEN-CAM.

Small corallite diameter	Density of septa (5 mm)	Species
4 - 8 mm	15 - 16	*Ph. complanata*
6 - 11 mm	12	*Ph. expansa*
9 - 12 mm	10	*Ph. arcuata*
11 - 14 mm	16	*Ph. sp.*
12 - 15 mm	6 - 8	*Ph. subinduta*
	10	*Ph. cuneiformis*
	12 - 13	*Ph. vicentei*
16 - 20 mm	8 - 12	*Ph. didymoides*

Fig. 94. Species of the genus *Phyllosmilia*.

Phyllosmilia arcuata (FROMENTEL, 1863)

(Fig. 469 in the book edition)

1863 *Trochosmilia arcuata* – FROMENTEL, p. 268, pl. 38, fig. 1

Measurements.

(MHE A0565)
c 11×29 mm
s 233
sd 10/5 mm

Determination. Type material.

Frequency. Abundant.

Phyllosmilia complanata (GOLDFUSS, 1826)

(Fig. 470 in the book edition)

1826 *Turbinolia complanata* – GOLDFUSS, p. 53, pl. 15, fig. 10
1930 *Trochosmilia complanata* Goldfuss – OPPENHEIM, p. 487, pl. 12, fig. 8, pl. 26, fig. 15
1982 *Phyllosmilia complanata* (Goldfuss) 1826 – BEAUVAIS, (1), p. 154, fig. 40, pl. 12, fig. 8

Measurements.

(MHE A0902)
c 8×34 mm
s 190
sd 15/5 mm

Determination. Type material.

Frequency. Rare.

Phyllosmilia cuneiformis (MILNE EDWARDS & HAIME, 1848)

(Fig. 471 in the book edition)

1848 *Placosmilia cuneiformis* – MILNE EDWARDS & HAIME, p. 234
1982 *Phyllosmilia cuneiformis* (H. Milne-Edwards et J. Haime) 1848 – BEAUVAIS, (1), p. 147

Measurements.

(GPSL FLX 8020)
c 14×32 mm
s 160
sd 10/5 mm

Determination. Type material.

Frequency. Abundant.

Phyllosmilia didymoides (FROMENTEL, 1862)

(Fig. 472 in the book edition)

1862 *Trochosmilia didymoides* – FROMENTEL, p. 279, pl. 32, fig. 3

Measurements.

(MNHN ohne Nummer)
c 17×47 mm
s 192
sd 8/5 mm

Determination. Type material.

Frequency. Normal.

Phyllosmilia expansa FROMENTEL, 1862

(Fig. 473 in the book edition)

1862 *Phyllosmilia expansa* – FROMENTEL, p. 237, pl. 11, fig. 1

Measurements.

(MHE A1458)

c 7×27 mm
s 160
sd 12/5 mm

Determination. Type material.

Frequency. Rare.

Phyllosmilia subinduta (REUSS, 1854)

(Fig. 474 in the book edition)

1854 *Trochosmilia subinduta* – REUSS, p. 87, pl. 5, fig. 15, 16
1982 *Phyllosmilia subinduta* (Reuss) 1854 – BEAUVAIS, (1), p. 149, pl. 12, fig. 4

Measurements.

(MHE A0503)

c 13×46 mm
s 150
sd 8/5 mm

Determination. Type material.

Frequency. Normal.

Phyllosmilia vicentei (REIG ORIOL, 1992)

(Fig. 475 in the book edition)

1992 *Placosmilia vicentei* n. sp. – REIG ORIOL, p. 19, pl. 4, fig. 1, 2

Measurements.

(MHE A1447)

c 14×37 mm
s 174
sd 12/5 mm

Determination. Type material.

Frequency. Normal.

Phyllosmilia sp.

(Fig. 476 in the book edition)

Measurements.

(MNHN ohne Nummer)

c 11×32 mm
s 192
sd 16/5 mm

Frequency. Rare.

Pleurocora MILNE EDWARDS & HAIME, 1848

Type species. *Lithodendron gemmans* MICHELIN, 1847.

Description. The genus forms phaceloid colonies with thick branches. The wall is thick. The costae are strong and provided with pronounced granulations. The septal symmetry is vague. A lamellar columella is present. The endotheca is poorly developed.

Frequency. Very rare.

Septal symmetry	Corallite diameter	Species
6	2.5 - 4 mm	*P. ornata*
	7 - 11 mm	*P. rudis*
10	12 - 15 mm	*P. sp.*

Fig. 95. Species of the genus *Pleurocora*.

Pleurocora ornata (FELIX, 1903)

(Fig. 481 in the book edition)

1903 *Haplohelia ornata* nov. sp. – FELIX, p. 323, pl. 17, fig. 14, 15
1930 *Cladocora ornata* Felix sp. – OPPENHEIM, p. 363, pl. 48, fig. 8
1982 *Haplohelia ornata* Felix 1903 – BEAUVAIS, (1), p. 131, pl. 11, fig. 2

Measurements.

(MHE A2008)

	n	min-max	μ	s	cv	μ±s
clmin	12	1.16-2.06	1.59	0.27	17.3	1.32-1.87
clmax	11	1.68-3.47	2.48	0.60	24.5	1.87-3.09
cmin	8	1.73-2.40	2.07	0.23	11.4	1.83-2.30
cmax	9	2.45-3.98	3.26	0.48	14.8	2.77-3.74
s	12	22-36	30.5	5.24	17.2	25-36

Determination. Type material.

Frequency. Rare.

Pleurocora rudis REUSS, 1854

(Fig. 482 in the book edition)

1854 *Pleurocora rudis* – REUSS, p. 113, pl. 11, fig. 13-15
1982 *Haplohelia rudis* (Reuss) 1854 – BEAUVAIS, (1), p. 130, fig. 35, pl. 10, fig. 6, pl. 11, fig. 1

Measurements.

(MHE A0567)

clmin	1.8-3 mm
clmax	1.8-4 mm
s	12-30

Determination. Literature - REUSS (1854).

Frequency. Abundant.

Pleurocora sp.

(Fig. 483 in the book edition)

Measurements.

(MHE A0531)

	n	min-max	µ	s	cv	µ±s
clmin	5	3.38-4.56	3.92	0.42	10.7	3.50-4.34
clmax	4	4.25-7.15	5.55	1.35	24.4	4.19-6.91
cmin	5	8.0-10.8	9.29	1.08	11.6	8.20-10.4
cmax	4	11.2-14.7	12.8	1.66	13.0	11.1-14.4
s	40					

Frequency. Rare.

Psilogyra FELIX, 1903

Type species. *Psilogyra telleri* FELIX, 1903.

Description. Meandroid colony with short, generally straight corallite rows, that are separated by a broad coenosteum. Individual corallites can be distinguished in places. Without columella.

Frequency. Very rare.

Distribution. SAN.

Psilogyra telleri FELIX, 1903

(Fig. 484 in the book edition)

1903 *Psilogyra Telleri* nov. sp. – FELIX, p. 309, pl. 24, fig. 4
1982 *Psilogyra telleri* Felix 1903 – BEAUVAIS, (1), p. 242, fig. 55, 56, pl. 20, fig. 10

Measurements.

(GPSL FLX 1733)

	n	min-max	µ	s	v	µ±s
crw	10	2.41-3.71	3.17	0.45	14.2	2.72-3.62
crd	5	4.99-6.29	5.4	0.52	9.6	4.88-5.92
s	10-12					
sd	8/5 mm					

Determination. Type material.

Frequency. Collection material.

Reussicoenia BEAUVAIS, 1982

Type species. *Oulastrea edwardsi* REUSS, 1854.

Description. Plocoid colony with corallites with an elliptical or irregular outline. Septa in a regular radial symmetry. Coenosteum narrow. Wall thick. Columella parietal.

Frequency. Very rare.

Distribution. CON-SAN.

Reussicoenia edelbachensis BEAUVAIS, 1982

(Fig. 485 in the book edition)

1982 *Reussicoenia edelbachensis* nov. sp. – BEAUVAIS, (1), p. 140, fig. 37, pl. 11, fig. 4

Measurements.

(HUJI 20609, holotype of *Reussicoenia edelbachensis* BEAUVAIS, 1982)

	n	min-max	µ	s	cv	µ±s
clmin	20	1.52-1.82	1.68	0.09	5.7	1.58-1.77
clmax	20	1.71-2.17	1.97	0.12	6.3	1.84-2.09
ccd	40	1.78-3.07	2.39	0.37	15.5	2.02-2.77
s	24					

Determination. Type material.

Frequency. Type material.

Reussicoenia edwardsi (REUSS, 1854)

(Fig. 486 in the book edition)

1854 *Ulastraea Edwardsi* – REUSS, p. 115, pl. 16, fig. 1-3
1982 *Reussicoenia edwardsi* (Reuss) 1854 – BEAUVAIS, (1), p. 138, fig. 36, pl. 11, fig. 3, pl. 13, fig. 1, pl. 63, fig. 2

Measurements.

(LI RSS 1990.21, holotype of *Oulastrea edwardsi* REUSS, 1854)

	n	min-max	µ	s	cv	µ±s
clmin	25	1.48-2.64	2.02	0.35	17.4	1.67-2.38
clmax	25	1.87-3.61	2.76	0.44	16.1	2.32-3.21
cmin	25	2.07-3.45	2.76	0.39	14.3	2.36-3.15
cmax	25	2.86-4.93	3.83	0.53	13.9	3.30-4.37
s	10	30-34	31.7	1.15	3.6	31-33

Determination. Type material.

Frequency. Type material.

Strotogyra WELLS, 1937

Type species. *Rhipidogyra undulata* REUSS, 1854.

Description. Small flabelloid colony. Indivudual corallites can hardly be distinguished. No columella.

Frequency. Very rare.

Distribution. U.TUR-LU.CAM.

Strotogyra undulata (REUSS, 1854)

(Fig. 488 in the book edition)

1854 *Rhipidogyra undulata* – REUSS, p. 93, pl. 20, fig. 10-12
1930 *Rhipidogyra undulata* Reuss – OPPENHEIM, p. 438, pl. 23, fig. 5-7, pl. 24, fig. 3, 4
1982 *Strotogyra undulata* (Reuss) 1854 – BEAUVAIS, (1), p. 192, fig. 47, pl. 7, fig. 6

Measurements.

(MHE A0494)
cmin 8.8-9.3 mm
sd 9/5 mm

Determination. Type material.

Frequency. Rare.

Strotogyra sp.

(Fig. 489 in the book edition)

Measurements.

(MHE A0730)

	n	min-max	µ	s	cv	µ±s
clmin	8	3.36-6.17	4.93	0.95	19.2	3.98-5.88
cmin	10	5.41-8.43	7.10	0.99	13.9	6.10-8.09
sd		11-12/5 mm				

Frequency. Rare.

Superfamily Poritoidea GRAY, 1842

Description. Colonial (astreoid, plocoid) corals. Septa irregularly perforated. Symmetry of septa irregular radial or bilateral. Septa connected to each other. Septal distal margin coarsely dentated, lateral face with rare granulae, inner margin slightly swollen in places. Lonsdaleoid septa and main septum absent. Microstructure of medium-sized trabeculae. Synapticulae abundant. Pali present in some genera. Columella and endotheca present. Marginarium absent. Wall varies. Coenosteum generally present. Budding extracalicinal.

Family Actinacididae VAUGHAN & WELLS, 1943

Actinacis ORBIGNY, 1849

Type species. *Actinacis martiniana* ORBIGNY, 1849.

Description. Astreoid colony. The corallites are small, elliptical, well marked and with large distances to each other. Septal symmetry is between radial and bilateral. Septa often and regularly connected to each other. Pali present but because of the septal perforations not well visible.

Frequency. Very common.

Distribution. U.BAR-OLI.

Septal symmetry	Small corallite diameter	Large corallite diameter	Species
6	0.7 - 0.8 mm	0.8 - 0.9 mm	*A. garumnica*
	0.8 - 0.9 mm	1.0 - 1.1 mm	*A. parvistella*
	0.9 - 1.1 mm	1.1 - 1.3 mm	*A. mammillata*
	1.2 - 1.4 mm	1.3 - 1.7 mm	*A. sp. 1*
	1.5 - 1.6 mm	1.7 - 1.8 mm	*A. magna*
	1.8 - 2.0 mm	2.0 - 2.4 mm	*A. sp. 2*
10	0.8 - 0.9 mm	0.9 - 1.1 mm	*A. rollei*

Fig. 96. Species of the genus *Actinacis*.

Actinacis garumnica (VIDAL, 1921)

(Fig. 493 in the book edition)

1921 *Stylophora garumnica*, n. sp. – VIDAL, p. 6, pl. 8, fig. 8-10

Measurements.

(MHE A1929)

	n	min-max	µ	s	cv	µ±s
clmin	35	0.73-0.99	0.84	0.06	8.0	0.77-0.91
clmax	35	0.77-1.09	0.94	0.08	9.3	0.85-1.02
ccd	35	1.06-2.07	1.60	0.22	13.8	1.38-1.82
s	24					

Determination. Type material.

Frequency. Normal.

Actinacis magna ALLOITEAU, 1958

(Fig. 494 in the book edition)

1958 *Actinacis magna* nov. sp. – ALLOITEAU, p. 179, text-fig. 26, pl. 16, fig. 3, 4, pl. 18, fig. 6

Measurements.

(MHE A1591)

	n	min-max	µ	s	cv	µ±s
clmin	30	1.52-1.83	1.63	0.08	5.1	1.55-1.71
clmax	30	1.59-1.96	1.77	0.11	6.3	1.66-1.89
ccd	30	3.04-4.97	3.90	0.43	11.1	3.47-4.34
s	10	24-26	24.4	0.84	3.4	24-2

Determination. Type material.

Frequency. Rare.

Actinacis mammillata OPPENHEIM, 1930

(Fig. 495 in the book edition)

1930 *Actinacis mammillata* n. sp. – OPPENHEIM, p. 12, pl. 15, fig. 7, 8

1982 *Actinacis mammillata* Oppenheim 1930 – BEAUVAIS, (2), p. 276, fig. 114, pl. 49, fig. 5

Measurements.

(MHE A0944)

	n	min-max	µ	s	cv	µ±s
clmin	20	0.83-1.10	0.97	0.08	8.7	0.89-1.06
clmax	20	0.91-1.38	1.14	0.13	11.7	1.00-1.27
ccd	20	1.38-2.51	2.01	0.27	13.7	1.74-2.29
s	24					

Determination. Type material.

Frequency. Abundant.

Actinacis parvistella OPPENHEIM, 1930

(Fig. 496 in the book edition)

1930 *Actinacis parvistella* n. sp. – OPPENHEIM, p. 9, pl. 1, fig. 3

1982 *Actinacis parvistella* Oppenheim 1930 – BEAUVAIS, (2), p. 273, fig. 107-109, pl. 49, fig. 1-2, pl.69, fig.3

Measurements.

(MHE A0796)

	n	min-max	µ	s	cv	µ±s
clmin	30	0.69-0.92	0.81	0.06	8.3	0.74-0.87
clmax	30	0.83-1.10	0.96	0.08	9.0	0.88-1.05
ccd	20	1.26-1.77	1.51	0.16	10.7	1.35-1.67
s	24					

Determination. Type material.

Frequency. Abundant.

Actinacis rollei REUSS, 1864

(Fig. 497 in the book edition)

1864 *Actinacis Rollei* – REUSS, p. 27 pl. 8 fig. 6

Measurements.

(MHE A0800)

	n	min-max	µ	s	cv	µ±s
ccd	25	1.12-1.93	1.52	0.23	15.3	1.29-1.75
clmin	25	0.74-1.08	0.91	0.08	9.3	0.82-0.99
clmax	25	0.92-1.27	1.08	0.09	9.1	0.98-1.18
s	24					

Determination. Type material.

Frequency. Rare.

Actinacis sp. 1

(Fig. 498 in the book edition)

Measurements.

(BSPG 2003 XX 6786)

	n	min-max	µ	s	cv	µ±s
clmin	16	1.22-1.50	1.34	0.10	7.5	1.24-1.44
clmax	16	1.47-1.92	1.67	0.13	8.3	1.53-1.81
ccd	20	2.06-3.57	2.70	0.40	14.9	2.30-3.11
s	24					

Frequency. Abundant.

Actinacis sp. 2

(Fig. 499 in the book edition)

Measurements.

(MHE A1543)

	n	min-max	µ	s	cv	µ±s
clmin	11	1.71-2.05	1.88	0.10	5.4	1.78-1.98
clmax	11	1.98-2.64	2.26	0.21	9.4	2.04-2.47
ccd	18	2.96-5.75	4.56	0.80	17.6	3.75-5.36
s	10	24-28	26.8	1.68	6.2	25-2

Frequency. Rare.

Superfamily Thamnasterioidea REUSS, 1864

Description. Solitary and colonial (astreoid, cerioid, plocoid, reptoid, and thamnasterioid) corals. Septa almost not perforated. Normal septal thickness, septal symmetry regular radial or irregular, septa often and regularly connected to each other. Upper septal border and lateral faces with granulations. No lonsdaleoid septa, no main septum. Microstructure of medium-sized trabeculae. Synapticulae present. Pali absent. Columella present, styliform or by septal fusion. Endotheca present. Marginarium absent. Wall absent or present. Coenosteum depending on the colony type. Budding extracalicinal.

Family Siderastraeidae VAUGHAN & WELLS, 1943

Description. Astreoid, cerioid, plocoid, reptoid, and thamnasterioid colonies. The symmetry is regular or subregular radial in varying systems, or irregular. The columella is formed by septal fusion.

Eosiderastrea LÖSER, 2016

Type species. *Siderastrea cuyleri* WELLS, 1932.

Description. Astreoid colony with large corallites (approximately 10 mm). The symmetry of septa is irregularly radial but the symmetry axes are difficult to decipher. The septa are regularly connected to each other; in the corallite centre they are connected to form the columella.

Frequency. Very rare.

Distribution. U.VAL-LU.CAM.

Septal symmetry	Septal cycles	Small corallite diameter	Species
7	4	7.4 mm	*E. sp.*
10	4	8.3 - 9.6 mm	*E. glomerata*
		11 - 12 mm	*E. cf. glomerata*

Fig. 97. Species of the genus *Eosiderastrea*.

Eosiderastrea glomerata (REUSS, 1854)

(Fig. 502 in the book edition)

1854 *Brachyphyllia glomerata* – REUSS, p. 104, pl. 2, fig. 11, 12

2016 *Eosiderastrea reussi* (Milne Edwards, 1857) – LÖSER, p. 393, pl. 5, figs. 1-5

Measurements.

(MHE A0601)

	n	min-max	μ	s	cv	μ±s
cmin	4	7.11-9.19	8.30	0.86	10.4	7.44-9.17
cmax	4	9.55-12.3	11.0	1.18	10.8	9.80-12.2
ccd	7	6.46-9.73	7.87	1.08	13.7	6.79-8.95
s	5	58-74	66.6	7.33	11.0	59-74

Determination. Type material.

Frequency. Rare.

Eosiderastrea cf. *glomerata* (REUSS, 1854)

(Fig. 503 in the book edition)

Measurements.

(GPSL FLX 3425)

	n	min-max	μ	s	cv	μ±s
cmin	4	9.00-11.8	10.7	1.24	11.5	9.46-11.9
cmax	4	10.4-13.0	11.5	1.10	9.6	10.4-12.6
ccd	5	8.18-12.8	9.80	1.80	18.4	7.99-11.6
s		90-96				

Frequency. Collection material.

Eosiderastrea sp.

(Fig. 504 in the book edition)

Measurements.

(GPSL FLX 3256)

	n	min-max	μ	s	cv	μ±s
cmin	12	6.15-8.42	7.43	0.77	10.3	6.66-8.21
cmax	12	8.56-12.3	10.1	1.23	12.1	8.87-11.3
ccd	15	6.38-8.85	7.44	0.81	10.9	6.63-8.26
s	10	52-65	56.5	4.81	8.5	52-61

Frequency. Collection material.

Palaeosiderofungia LÖSER, 2016

Type species. *Thamnasteria exigua* REUSS, 1854.

Description. Thamnasterioid colony. The corallites are often arranged in rows. A septal symmetry does not exist.

Frequency. Very rare.

Distribution. APT-SAN.

Palaeosiderofungia exigua (REUSS, 1854)

(Fig. 505 in the book edition)

1854 *Thamnastraea exigua* – REUSS, p. 119, pl. 18, fig. 5, 6

1903 *Thamnastraea exigua* Reuss – FELIX, p. 209, text-fig. 15

1930 *Synastraea exigua* Reuss sp. – OPPENHEIM, p. 166, pl. 36, fig. 12

1982 *Dimorphomeandra exigua* (Reuss) 1854 – BEAUVAIS, (2), p. 55, pl. 26, fig. 1

2016 *Palaeosiderofungia exigua* (Reuss, 1854) – LÖSER, p. 7, fig. 1d-f, 2a-c

Measurements.

(GBA 1854/007/0099, syntype of *Thamnasteria exigua* REUSS, 1854)

	n	min-max	µ	s	cv	µ±s
crd	10	2.26-4.32	3.21	0.65	20.3	2.56-3.87
cdw	15	1.87-3.61	2.67	0.43	16.4	2.23-3.10
ccd	20	2.62-4.01	3.11	0.47	15.1	2.63-3.58
s	10	29-40	33.6	3.53	10.5	30-37

(MHE A0522)

	n	min-max	µ	s	cv	µ±s
crd	5	3.17-4.41	3.82	0.55	14.4	3.27-4.37
cdw	12	2.16-3.35	2.70	0.39	14.5	2.31-3.10
s	15	21-35	27.1	3.92	14.4	23-31

Determination. Type material.

Frequency. Normal.

Family Thamnasteriidae REUSS, 1864

Description. Generally thamnasterioid, small dimensions. The septa are in an irregular symmetry. The columella is styliform.

Ahrdorffia TRAUTH, 1911

Type species. *Porites stellulata* REUSS, 1854.

Description. Thamnasterioid colony with small corallites. The costae are confluent to sub-confluent. Corallites often difficult to recognize, when small or in large distances arranged. Septa without symmetry, in a low number, and often connected to each other. Columella small and styliform.

Frequency. Rare.

Distribution. BAJ-L.EOC.

Distance of corallites	Number of septa	Species
1.0 - 1.2 mm	20 - 25	*A. sp. 1*
1.2 - 1.6 mm	16 - 23	*A. urgonensis*
	22 - 25	*A. cf. urgonensis*
1.3 - 1.7 mm	27 - 31	*A. sp. 2*
1.5 - 2.1 mm	22 - 27	*A. vaughani*
2.5 - 2.9 mm	25 - 26	*A. sp. 3*

Fig. 98. Species of the genus *Ahrdorffia*.

Ahrdorffia urgonensis (KOBY, 1898)

(Fig. 508 in the book edition)

1898 *Thamnastraea urgonensis* – KOBY, p. 82, pl. 19, fig. 4-8, pl. 20, fig. 1, 2

Measurements.

(MHE A1532)

	n	min-max	µ	s	cv	µ±s
ccd	30	0.85-1.52	1.19	0.18	15.1	1.01-1.37
s	10	20-22	20.8	1.03	4.9	20-22
sd	6/1 mm					

Determination. Type material.

Frequency. Normal.

Ahrdorffia cf. *urgonensis* (KOBY, 1898)

(Fig. 509 in the book edition)

Measurements.

(MHE A0525)

	n	min-max	µ	s	cv	µ±s
ccd	40	1.02-2.04	1.43	0.27	19.2	1.16-1.71
s	15	17-25	21.9	2.78	12.7	19-25
sd	5/1 mm					

Frequency. Rare.

Ahrdorffia vaughani (WELLS, 1932)

(Fig. 510 in the book edition)

1932 *Centrastrea vaughani* Wells, n.sp. – WELLS, p. 247, pl. 36, fig. 1-3

Measurements.

(GPSL FLX 3139)

	n	min-max	µ	s	cv	µ±s
ccd	35	1.11-2.03	1.53	0.24	15.8	1.29-1.77
s	10	22-28	25	1.87	7.5	23-27
sd	5-6/1 mm					

Determination. Type material.

Frequency. Normal.

Ahrdorffia sp. 1

(Fig. 511 in the book edition)

Measurements.

(MHE A1178)

	n	min-max	µ	s	cv	µ±s
ccd	35	0.84-1.21	1.06	0.10	9.4	0.96-1.16
s	15	20-27	23.3	2.28	9.8	21-26
sd	7/1 mm					

Frequency. Rare.

Ahrdorffia sp. 2

(Fig. 512 in the book edition)

Measurements.

(MHE A1031)

	n	min-max	µ	s	cv	µ±s
ccd	45	1.21-2.17	1.63	0.26	16.5	1.36-1.89
s	15	27-36	31.2	3.27	10.5	28-34
sd	6/1 mm					

Frequency. Normal.

Ahrdorffia sp. 3

(Fig. 513 in the book edition)

Measurements.

(MHE A1393)

	n	min-max	µ	s	cv	µ±s
ccd	30	1.67-3.53	2.58	0.50	19.5	2.08-3.09
s	10	24-28	25.3	1.56	6.1	24-27
sd	4/1 mm					

Frequency. Rare.

Order Helioporacea Bock, 1938

Family Aulopsammiidae REUSS, 1854

Description. Small tubes, that are growing on other organisms or forming dense phaceloid colonies. The tubes show fine lines and pores. Septa are allmost not visible.

Epiphaxum LONSDALE, 1850

Type species. *Epiphaxum auloporoides* LONSDALE, 1850.

Description. Reptoid or bushy phaceloid colony with small corallites (< 2mm). Whereas the corallites are well visible, septa are rudimentary or are absent.

Frequency. Very rare.

Distribution. U.CEN-REC.

Small corallite diameter	Large corallite diameter	Number of septa	Species
0.5 mm	0.6 mm		*E. lithothamnioides*
0.5 - 0.7 mm	0.7 - 0.9 mm	14 - 24	*E. murchisoni*
0.8 mm	1.0 mm	22	*E. sp.*
0.7 - 1.1 mm	1.4 - 1.6 mm	14 - 18	*E. auloporoides*
1.4 mm	1.7 mm	24 - 26	*E. reptans*

Fig. 99. Species of the genus *Epiphaxum*.

Epiphaxum auloporoides LONSDALE, 1850

(Fig. 515 in the book edition)

1850 *Epiphaxum auloporoides* – LONSDALE, p. 261, pl. 18, fig. 35-37

Measurements.

(MHE A0837)

	n	min-max	µ	s	cv	µ±s
clmin	4	0.68-0.82	0.76	0.06	7.9	0.70-0.82
clmax	4	1.35-1.45	1.42	0.04	3.3	1.37-1.47
s	18					

Determination. Type material.

Frequency. Rare.

Epiphaxum lithothamnioides (FELIX, 1903)

(Fig. 516 in the book edition)

1903 *Aulopsammia lithothamnioides* nov. sp. – FELIX, p. 357, text-fig. 66 a-b

1930 *Epiphaxum lithothamnioides* Felix sp. – OPPENHEIM, p. 25, pl. 43, fig. 12

Measurements.

(GPSL FLX 6135, syntype of *Aulopsammia lithothamnioides* FELIX, 1903)

	n	min-max	µ	s	cv	µ±s
clmin	16	0.30-0.78	0.50	0.12	24.2	0.37-0.62
clmax	16	0.40-0.90	0.60	0.13	22.2	0.47-0.74
cmin	14	1.12-2.16	1.71	0.28	16.4	1.43-1.99
cmax	14	1.60-2.87	2.32	0.38	16.4	1.94-2.70

Determination. Type material.

Frequency. Type material.

Epiphaxum murchisoni (REUSS, 1854)

(Fig. 517 in the book edition)

1854 *Aulopsammia Murchisoni* m. – REUSS, p. 130, pl. 10, fig. 11-13

1930 *Epiphaxum murchisoni* Reuss – OPPENHEIM, p. 22, pl. 36, fig. 3-6

1982 *Epiphaxum murchisoni* (Reuss) 1854 – BEAUVAIS, (3), p. 24, fig. 117, pl. 53, fig. 5, 6, pl. 54, fig. 1-5, pl. 61, fig. 2

Measurements.

(MHE A0540)

	n	min-max	µ	s	cv	µ±s
clmin	21	0.34-0.60	0.45	0.06	13.5	0.39-0.51
clmax	21	0.47-0.85	0.67	0.09	14.5	0.57-0.77
s	7	13-22	16.1	3.23	20.0	13-19

(NHMW 2006z0391/0003)

	n	min-max	µ	s	cv	µ±s
clmin	30	0.61-0.82	0.70	0.04	6.8	0.65-0.75
clmax	30	0.64-1.00	0.80	0.09	12.3	0.70-0.90
cmin	30	1.09-1.83	1.42	0.20	14.2	1.22-1.62
cmax	30	1.29-2.44	1.69	0.31	18.5	1.38-2.01
s	10	17-22	19.6	1.64	8.4	18-21

Determination. Literature - REUSS (1854).

Frequency. Normal.

Epiphaxum reptans (FELIX, 1903)

(Fig. 518 in the book edition)

1903 *Aulopsammia reptans* nov. sp. – FELIX, p. 356, pl. 22, fig. 10

Measurements.

(NHMW 2006z0396/0003)

	n	min-max	µ	s	cv	µ±s
clmin	5	1.28-1.59	1.43	0.14	10.1	1.29-1.58
clmax	6	1.52-1.88	1.68	0.11	7.0	1.56-1.80
s	23-26					

Determination. Type material.

Frequency. Collection material.

Epiphaxum sp.

(Fig. 519 in the book edition)

Measurements.

(GPSL FLX 5788)

	n	min-max	µ	s	cv	µ±s
clmin	25	0.72-1.03	0.83	0.08	10.4	0.74-0.92
clmax	25	0.74-1.27	1.00	0.14	14.3	0.85-1.14
s	10	20-27	22.4	2.06	9.2	20-24

Frequency. Collection material.

Family Helioporidae MOSELEY, 1876

Description. The family encompasses genera that form small plocoid colonies. The corallites are small (generelly below 2 mm in diameter). The structure is simple because it is only made by trabeculae and tabulae. The so-called septa are just short wing-like extensions of the trabeculae that reach into the corallites. Pali, a columella or synapticulae do not exist. The tabulae cross corallites and coenosteum in the same level. The coenosteum is formed by trabeculae and is granulated on its surface.

Small corallite diameter	Number of septa	Species
0.5 - 0.7 mm	14 - 17	*H. aff. labyrinthicum*
	18 - 20	*H. labyrinthicum*
0.6 - 0.8 mm	13 - 17	*H. ramosa*
0.8 - 1.0 mm	14 - 17	*H. tenera*
	17 - 21	*H. spongiosa*
	22 - 24	*H. vermiculata*
	24 - 28	*H. aff. micropora*
1.0 - 1.2 mm	17 - 20	*H. radiata*
1.1 - 1.4 mm	20 - 25	*H. bulbosa*
	28 - 30	*H. blainvillei*
1.4 - 1.7 mm	23 - 29	*H. partschi*
1.8 - 2.0 mm	26 - 30	*H. glomerata*

Fig. 100. Species of the genus *Heliopora*.

Heliopora BLAINVILLE, 1830

Type species. *Millepora coerulea* PALLAS, 1766.

Description. The genus forms small spheric, fingerlike or incrusting colonies. The corallites are circular and very regular. The septa are short. The coenosteum appears celular with

very fine pores and tiny spines, or rarely vermiculate.

Frequency. Common.

Distribution. HAU-REC.

Heliopora blainvillei MICHELIN, 1841

(Fig. 522 in the book edition)

1841 *Heliopora Blainvilleana* – MICHELIN, p. 27, pl. 7, fig. 6, 6 a

Measurements.

(MHE A0881)

	n	min-max	µ	s	cv	µ±s
clmin	9	1.08-1.64	1.41	0.15	10.9	1.26-1.57
clmax	3	1.69-1.91	1.78	0.11	6.2	1.67-1.90
ccd	12	2.39-4.10	3.28	0.53	16.3	2.75-3.82
s	5	28-32	29.4	1.67	5.6	28-31

Determination. Type material.

Frequency. Rare.

Heliopora bulbosa (ORBIGNY, 1849)

(Fig. 523 in the book edition)

1849 *Polytremacis bulbosa*, d'Orb. – ORBIGNY, p. 11

Measurements.

(MHE A0582)

	n	min-max	µ	s	cv	µ±s
clmin	12	0.87-1.27	1.04	0.12	11.7	0.92-1.17
clmax	12	0.90-1.63	1.21	0.20	16.6	1.00-1.41
s	11	20-28	24.1	2.50	10.4	22-27

Determination. Type material.

Frequency. Normal.

Heliopora glomerata (ORBIGNY, 1850)

(Fig. 524 in the book edition)

1850 *Polytremacis glomerata* – ORBIGNY, (2), p. 209

Measurements.

(MHE A0440)

	n	min-max	µ	s	cv	µ±s
clmin	10	1.25-2.03	1.67	0.25	15.4	1.41-1.93
clmax	10	1.71-2.27	2.02	0.19	9.5	1.83-2.21
s	5	25-29	26.8	1.48	5.5	25-28

Determination. Type material.

Frequency. Rare.

Heliopora labyrinthicum (WELLS, 1932)

(Fig. 525 in the book edition)

1932 *Epiphaxum labyrinthicum* Wells, n.sp. – WELLS, p. 254, pl. 37, fig. 8

Measurements.

(MHE A0747)

	n	min-max	µ	s	cv	µ±s
clmin	14	0.44-0.61	0.52	0.05	9.5	0.47-0.57
clmax	14	0.45-0.69	0.59	0.06	11.2	0.52-0.65
s	6	18-20	18.3	0.81	4.4	18-19

Determination. Type material.

Frequency. Normal.

Heliopora aff. *labyrinthicum* (WELLS, 1932)

(Fig. 526 in the book edition)

Measurements.

(GPSL FLX 8100)

	n	min-max	µ	s	cv	µ±s
clmin	10	0.47-0.63	0.54	0.06	11.3	0.48-0.60
clmax	10	0.56-0.73	0.63	0.05	8.0	0.58-0.68
s	8	14-18	15.6	1.84	11.8	14-17

Frequency. Rare.

Heliopora aff. *micropora* (ORBIGNY, 1850)

(Fig. 527 in the book edition)

Measurements.

(MHE A1651)

	n	min-max	µ	s	cv	µ±s
clmin	25	0.77-1.03	0.90	0.07	8.5	0.82-0.98
clmax	25	0.86-1.11	1.00	0.07	7.2	0.93-1.07
s	10	20-29	24.2	2.69	11.1	22-27

Frequency. Normal.

Heliopora partschi (REUSS, 1854)

(Fig. 528 in the book edition)

1854 *Polytremacis Partschi* – REUSS, p. 131, pl. 34, fig. 1-3

1930 *Polytremacis partschi* Reuss – OPPENHEIM, p. 554, pl. 40, fig. 4, pl. 41, fig. 6, 7, pl. 42, fig. 15, pl. 48, fig. 6, 7

1982 *Polytremacis partschi* Reuss 1854 – BEAUVAIS, (3), p. 34, fig. 118-121, pl. 54, fig. 8, pl. 55, fig. 1-4, pl. 47, fig. 2, 3

Measurements.

(GPSL FLX 5397)

	n	min-max	µ	s	cv	µ±s
clmin	25	1.37-1.93	1.71	0.16	9.3	1.55-1.87
clmax	25	1.59-2.01	1.84	0.10	5.9	1.73-1.95
s	20	26-32	29.0	1.58	5.4	27-31

Determination. Type material.

Frequency. Normal.

Heliopora radiata (ORBIGNY, 1850)

(Fig. 529 in the book edition)

1850 *Centrastrea radiata* – ORBIGNY, (2), p. 207

Measurements.

(MHE A0748)

	n	min-max	µ	s	cv	µ±s
clmin	8	0.88-1.35	1.09	0.13	12.4	0.95-1.23
clmax	8	1.00-1.35	1.18	0.11	10.1	1.06-1.30
s	7	18-24	19.7	2.13	10.8	18-22

Determination. Type material.

Frequency. Normal.

Heliopora ramosa (ORBIGNY, 1849)

(Fig. 530 in the book edition)

1849 *Dactylacis ramosa*, d'Orb. – ORBIGNY, p. 11

Measurements.

(BSPG 2003 XX 7356)

	n	min-max	µ	s	cv	µ±s
clmin	20	0.51-0.72	0.59	0.04	8.3	0.54-0.64
clmax	20	0.58-0.80	0.66	0.05	8.7	0.60-0.71
s	25	12-17	14.3	1.69	11.8	13-16

Determination. Type material.

Frequency. Abundant.

Heliopora spongiosa VETTERS, 1925

(Fig. 531 in the book edition)

1925 *Heliopora spongiosa* n. sp. – VETTERS, p. 11, pl. 1, fig. 9, 10

Measurements.

(MHE A0802)

	n	min-max	µ	s	cv	µ±s
clmin	20	0.60-0.81	0.70	0.05	7.7	0.64-0.75
clmax	23	0.65-0.92	0.79	0.07	9.0	0.72-0.86
s	16	16-23	19.1	1.78	9.3	17-21

Determination. Other literature.

Frequency. Normal.

Heliopora tenera TRAUTH, 1911

(Fig. 532 in the book edition)

1911 *Heliopora tenera* – TRAUTH, p. 89, pl. 4, fig. 3, text-fig. 6

Measurements.

(GPSL FLX 6539)

	n	min-max	µ	s	cv	µ±s
clmin	20	0.74-1.00	0.84	0.08	9.7	0.76-0.92
clmax	20	0.88-1.12	0.97	0.06	6.8	0.91-1.04
s	15	10-17	14.3	1.90	13.3	12-16

Determination. Type material.

Frequency. Normal.

Heliopora vermiculata (FELIX, 1903)

(Fig. 533 in the book edition)

1903 *Aulopsammia vermiculata* nov. sp. – FELIX, p. 358, pl. 22, fig. 9, text-fig. 67

1930 *Epiphaxum vermiculatum* Felix sp. – OPPENHEIM, p. 24, pl. 41, fig. 1, pl. 42, fig. 7

1982 *Epiphaxum vermiculata* (Felix) 1903 – BEAUVAIS, (3), p. 27, pl. 61, fig. 3, 4

Measurements.

(MHE A1324)

	n	min-max	µ	s	cv	µ±s
clmin	15	0.76-1.18	0.96	0.13	13.5	0.83-1.09
clmax	15	1.00-1.40	1.14	0.11	9.7	1.03-1.26
s	12	21-25	22.8	1.21	5.3	22-24

Determination. Type material.

Frequency. Rare.

Pseudopolytremacis MORYCOWA, 1971

Type species. *Pseudopolytremacis spinoseptata* MORYCOWA, 1971.

Description. Colonial plocoid form with small corallites as *Heliopora*, but differs in thorn-like outcrows of the trabeculae in the corallites which appears as pali in a transversal section.

Frequency. Very rare.

Distribution. BAR-SAN.

Pseudopolytremacis spinoseptata MORYCOWA, 1971

(Fig. 534 in the book edition)

1971 *Pseudopolytremacis spinoseptata* n.sp. – MORYCOWA, p. 140, text-fig. 42, pl. 39, fig. 1, pl. 40, fig. 2

Measurements.

(MHE A0803)

	n	min-max	µ	s	cv	µ±s
clmin	20	0.64-0.91	0.77	0.07	9.7	0.70-0.85
clmax	20	0.72-0.94	0.84	0.06	7.3	0.78-0.90
s	20	12-17	14.9	1.25	8.4	14-16

Determination. Type material.

Frequency. Rare.

8 Appendices

I Abbreviations

Collection acronyms

BSPG, Bayerische Staatssammlung für Paläontologie und Geologie (München)

FKR, Fossilienkabinett (Rußbach am Pass Gschütt)

GBA, Geologische Bundesanstalt (Wien)

GPIT, Institut für Geologie und Paläontologie (Tübingen)

GPSL, Geologische und Paläontologische Sammlung der Universität (Leipzig)

HUJI, Jerusalem National History Museum, Collections of the Hebrew University

IPB, Geologisch-Paläontologisches Institut (Bonn)

LI, Oberösterreichische Landesmuseen (Linz)

MHE, Sammlung Matthias Heinrich (Eckental)

MNHN, Muséum National d'Histoire Naturelle (Paris)

NHMW, Naturhistorisches Museum Wien

UPMC, Université Pierre et Marie Curie (Paris)

Measurements of corals

c, calicular diameter (outer diameter)

ccd, distance between calicular centres

cdw, distance between calicular centres within calicular series

cl, calicular diameter (lumen, calicular pit)

clmax, large lumen

clmin, small lumen

cmax, larger outer calicular diameter

cmin, smaller outer calicular diameter

crd, distance of calicular series

crw, width of calicular series

md, distance between monticule in a hydnophoroid colony

ml, length of monticules in hydnophoroid colony

s, number of septa in the adult corallite

sd, density of septa

II Stratigraphic framework

The table below gives an overview on the chronostratigraphy of the Mesozoic and Cenozoic.

Era-them	System	Serie	Stage	Base (ma)	Abbr.
Cenozoic	Pleistocene			1,8	PLE
	Neogene		Pliocene	5,3	PLI
			Miocene	23,0	MIO
	Paleogene		Oligocene	33,9	OLI
			Eocene	55,8	EOC
			Paleocene	65,0	PAL
Mesozoic	Creta-ceous	Upper	Maastricht.	71,3	MAA
			Campanian	83,5	CAM
			Santonian	85,8	SAN
			Coniacian	89,0	CON
			Turonian	93,5	TUR
			Cenoman.	98,9	CEN
		Lower	Albian	112,1	ALB
			Aptian	121,0	APT
			Barremian	127,0	BAR
			Hauterivian	132,0	HAU
			Valanginian	147,0	VAL
			Berriasian	144,4	BER
	Jurassic	Upper	Tithonian	150,7	TIT
			Kimmeridg.	154,1	KIM
			Oxfordian	159,4	OXF
		Middle	Callovian	164,4	CAL
			Bathonian	169,2	BTH
			Bajocian	175,0	BAJ
			Aalenian	180,1	AAL
		Lower	Toarcian	189,6	TOA
			Pliensbach.	195,3	PLB
			Sinemurian	201,9	SIN
			Hettangian	205,7	HET
	Triassic	Upper	Rhetian	209,6	RHT
			Norian	220,7	NOR
			Carnian	225,0	CAR
		Middle	Ladinian	240,0	LAD
			Anisian	250,0	ANI
		Lower		251,0	TRI

Fig. 101. *Stratigraphy*. The values in the column »Base« follow HARDENBOL et al. (1998). This time-scale is not up to date but it is biostratigraphically better supported than later published time-scales. The abbreviations in the last colum are those applied in the systematic part. Not shown in the table: DAN (Danian), LUT (Lutetian) and REC (Extant).

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