

The Mesozoic Corals. Bibliography 1758-1993.

Supplement 27 (-2025)

Compiled by Hannes Löser¹

Summary

This supplement to the bibliography (published in the Coral Research Bulletin 1, 1994) contains 38 additional references to literary material on the taxonomy, palaeoecology and palaeogeography of Mesozoic corals (Triassic - Cretaceous; Scleractinia, Octocorallia). The bibliography is available in the form of a data bank with a menu-driven search program for Windows-compatible computers.

Key words: Scleractinia, Octocorallia, corals, bibliography, Triassic, Jurassic, Cretaceous, data bank

Résumé

Le supplément à la bibliographie (publiée dans Coral Research Bulletin 1, 1994) contient 38 autres références au sujet de la taxinomie, paléoécologie et paléogéographie des coraux mésozoïques (Trias - Crétacé; Scleractinia, Octocorallia). La bibliographie peut être livrée sur la base des données avec un programme de recherche contrôlée par menu avec un ordinateur Windows-compatible.

Mots-clés: Scleractinia, Octocorallia, coraux, bibliographie, Trias, Jurassique, Crétacé, base des données

Zusammenfassung

Die Ergänzung zur Bibliographie (erschieden im Coral Research Bulletin 1, 1994) enthält 38 weitere Literaturzitate zur Taxonomie und Systematik, Paläoökologie und Paläogeographie der mesozoischen Korallen (Trias-Kreide; Scleractinia, Octocorallia). Die Daten sind als Datenbank zusammen mit einem menügeführten Rechercheprogramm für Windows-kompatible Computer verfügbar.

Schlüsselworte: Scleractinia, Octocorallia, Korallen, Bibliographie, Trias, Jura, Kreide, Datenbank

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Preface

New papers published the previous three years yield 38 references for a supplement to the bibliography. For the form of arrangement and abbreviations please refer to the bibliography itself (Coral Research Bulletin 1, 1994).

The supplement

AOUISSI, R., EL QOT, G.M., SALMI-LAOUAR, S., GOMEZ-ESPINOSA, C. & BUITRÓN-SÁNCHEZ, B.E.

2024. Cenomanian gastropods of Bellezma-Aures mountains (Batna, NE Algeria): Taxonomy, palaeoecology and palaeobiogeography. – *Journal of African Earth Sciences*, 209, 105100: 1-21; Amsterdam (Elsevier Scientific Publishing Company). C • k • DZ

Twenty-one gastropod species are identified from the Cenomanian deposits of Bellezma-Aures mountains, eastern Saharan Atlas, Algeria. Among of these taxa four species [*Tylostoma elevatum* (Shumard), *T. torrubiae* Sharpe, *Nerinea olisiponensis* Sharpe and *Calliophalus orientalis* Douvillé] are recorded for the first time in the mounts of Batna. These gastropods taxa are found scattered in the 'Marnes de Smail' Formation and their community changes can be attributed to minor sea-level fluctuation associated to variation in the sedimentation rate and hydrodynamics. Furthermore, the palaeobiogeographic distribution of these gastropod assemblages display tethyan affinity and their subsequent faunal exchange in that time interval. [original abstract]

BOIVIN, S., LATHULIÈRE, B. & MARTINI, R.

2024. Coral Moroccan biodiversity after the End-Triassic mass extinction. – *Bulletin de la Société géologique de France*, 196, 6: 1-60; Paris. N • j • MA

Each new coral-bearing outcrop found in Lower Jurassic strata is useful to understand the evolution of corals between the end-Triassic mass extinction and the Toarcian anoxic event. Here we provide new taxonomic data on corals issued from fieldwork on four outcrops from the region of Amellagou, in the High Atlas Mountains, Morocco. A set of 157 coral specimens have been collected from a small biostrome, a giant reef and two olistholiths, spanning from Hettangian–Sinemurian time interval to early Pliensbachian. These corals are distributed in 14 families, 22 genera and 27 species. Among these species, two are new: *Lepidophyllia* (*Heterastraea*) *microcalix* sp. nov., represented enough to allow a population study and *Paracui* *fi* a *castellum* sp. nov. The study extends the last appearance datum of several genera known only in the Triassic till now, namely: *Parastraeomorpha*, *Araiophyllum*, *Paracui* *fi* a, *Pinacophyllum* and, possibly, *Paravolzeia*. For this reason, the severity of the end-Triassic mass extinction is questioned in comparison to the extinction events that happened around the Pliensbachian–Toarcian boundary. For this reason, moreover, the phyletic discontinuity between some Triassic and Jurassic taxa is also addressed. Some Lazarus taxa known from Triassic and Pliensbachian remain absent in Hettangian and now, at a lesser degree, in Sinemurian. That is why we assume that the absence of these taxa is only due to the poor preservation of coral environments during these times. This study also changes our view on the first appearance datum of several genera that were known in Jurassic strata, namely: *Proleptophyllia*, *Vallimeandropsis* and, possibly, *Lochmaeosmilia*. A special attention is given to the distribution of colonial arrangements and points to the important proportion of cerioid and solitary corals. Additionally, the study highlights the existence of significant proportions of thamnasterioid and meandroid forms. The presence of corals with such a level of integration, together with the occurrence of two species that show platy to ramose transition in their colony shape, namely *Hispaniastraea murciana* and *Chrondrocoenia clavellata*, stresses the effectiveness of a photosymbiosis in these Early Jurassic coral communities. Lastly, the proportion of solitary specimens increased over time, revealing the uniqueness of coral assemblages during the Pliensbachian. [original abstract]

BOVER ARNAL, T., STRASSER, A. & SALAS, R.

2024. Fossil corals with skeletal lesions comparable to modern ones. – *Geologica acta*, 22, 9: 1-23; Barcelona. C • k • E

Whereas post-mortem bioerosional features such as bivalve, sponge or worm borings are frequently preserved in ancient corals, reports of ante-mortem skeletal anomalies on Cretaceous specimens are rare. Here, we document the occurrence of fossil skeletal lesions produced during the life span of the colonies in exceptionally well-preserved Aptian (Early Cretaceous) scleractinians from the Maestrat Basin (East Iberia). These ante-mortem damage features are characterized by millimetric to centimetric areas of skeletal depression, as well as upward growth around damaged areas indicating regeneration. Depressed skeletal lesions are commonly overprinted by post-mortem lithophagid borings. Distribution of skeletal anomalies on the colonies can be focal or multifocal, and their location basal, medial and/or apical. The extent of the skeletal anomalies can be mild (occupying <10% of the colony) to extreme (occupying =50% of the colony). The edges of the skeletal anomalies are distinct (disk-shaped) or annular (ring-shaped), the margins are mainly smooth to uneven, and the shapes are circular, oblong, pyriform, linear, or irregular. The skeletal anomalies exhibited by the corals are comparable to tissue lesions produced in modern corals either by predation, bioerosion or disease, which may be followed by skeletal overgrowth or denudation. Although demonstrating disease in fossil colonies is challenging, there is no reason to believe that corals did not experience diseases back in the Cretaceous. This paper gives an example of the potential of coral anomalies originating from tissue lesions and skeletal damage to be preserved in the geological record, a factor that may have been often overlooked in the study of fossil coral communities. [original abstract]

BURGER, M., DIMITRIJEVIC, D. & KIESSLING, W.

2024. Bioerosion and encrustation in Late Triassic reef corals from Iran. – *Facies*, 70: 1-12; Erlangen. D • t • IN

Hard substrate communities can impact coral reef growth by adding or removing calcium carbonate when they act as encrusters or bioeroders, respectively. Although such sclerobiont communities are known across the Phanerozoic, the Triassic saw a substantial increase in reef macrobioerosion. This study provides the first quantitative assessment of sclerobionts in a Late Triassic (Norian) reef coral community (from the Nayband Formation in central Iran) and establishes some post-Paleozoic trends in reef bioerosion. Sclerobionts were common on the dominant coral *Pamiroseris rectilamellosa* and covered between 0 and 26.4% of total coral surface area among the 145 colonies investigated. Encrustation was significantly more prevalent (1.78% of total area) than bioerosion (0.36% of total area). The underside of corals was 3.5 times more affected by sclerobionts than the upper surfaces. This suggests that the sclerobionts preferentially colonized dead parts of the corals. The main encrusting taxa were polychaete worms (76.2%), followed by bivalves (11.9%). The main bioeroders were Polychaeta (51.4%), Porifera (22.2%), and Bivalvia (20.7%). The lack of a correlation between encrustation and bioerosion intensity suggests that the number of sclerobionts is not simply a function of exposure time before final burial. Our review of the published literature suggests a declining trend in the relative importance of bivalves, polychaetes and cirripeds in reefs, whereas sponges increased in importance from the Triassic until today. [original abstract]

CHESNEL, V., LÓPEZ-MURILLO, E., LÖSER, H. & VELÁZQUEZ-HERAS, J.E.

2024. Puerto Nispero, a Maastrichtian carbonate platform in Costa Rica. – *Journal of South American Earth Sciences*, 141, 104953: 1-20; Amsterdam. C • k • CR

This contribution presents a comprehensive analysis of the Puerto Nispero deposits in Costa Rica, focusing on their lithofacies and associated textural analysis, paleoenvironmental interpretation, and stratigraphic position. The study identifies seven distinct lithofacies types, revealing a diverse range of textures and organisms. Notable discoveries include corals from various families and genera, nerineid gastropods, and abundant rhodoliths. The stratigraphic columns, exceeding 100 m in thickness, provide valuable insights into the paleoenvironmental conditions, suggesting a transition from offshore open marine settings to a shallow platform and a protected lagoon. The presence of the planktonic foraminifers *Rugoglobigerina rugosa* and *Globotruncanella* sp., along with the gastropods and corals *Nerinea* sp., *Rostellana* sp., and *Marcelohelia* sp., indicates a Maastrichtian age. Based on these findings, we propose a new lithostratigraphic unit, the Puerto Nispero Formation, thus challenging the previous correlation with the Barra Honda Formation. [original abstract]

DEJAX, J., FISCHER, J.-C., GUÉRIN-FRANIATTE, S. & HANZO, M.

2012. L'inventaire paléontologique du secteur stratotypique hettangeois. In: HANZO, M. (coord.), *Stratotype Hettangeois*. – *Patrimoine géologique*, 3: 88-137. C • j • F

EHEVARRÍA, J., HODGES, M.S., DAMBORENEA, S.E., STANLEY, G.D. & MANCENIDO, M.O.

- 2017.** Recovery of scleractinian morphologic diversity during the Early Jurassic in Mendoza Province, Argentina. – *Ameghiniana. Revista de la Asociación Paleontológica Argentina*, 54, 1: 70-82; Buenos Aires. D • j • RA

After a diversity peak during the Late Triassic, corals were severely affected by the end-Triassic extinction. The study of their recovery is fundamental for a better understanding of the ecological rearrangement undergone by Early Jurassic marine invertebrate faunas. In this contribution we analyze the morphologic recovery shown by scleractinians in southern Mendoza Province, which is the only place in the Neuquén Basin with marine outcrops spanning the Triassic/Jurassic boundary. A two-stage recovery pattern was recognized. During the first stage (Hettangian—Sinemurian) only solitary corals, most of them discoidal, could be found. After a hiatus encompassing the latest Early Sinemurian and the Late Sinemurian, the second stage (Pliensbachian) developed. A sharp increase in morphological diversity of solitary corals is then recorded, with discoidal, cupulate, patellate, turbinate, trochoid/turbinate, trochoid/ceratoid and maybe cylindrical morphologies. Additionally, colonial forms with low degree of corallite integration (phaceloid and cerioid colonies) appeared in the basin. The diversification trend hereby described provides useful insight regarding the scleractinian recovery after the end-Triassic mass extinction event within southern basins of South America. Furthermore, this recovery pattern is comparable with the one recognized for other regions (Chile, western North America, central Asia) yet it differs from that observed in some European basins. The trend outlined herein for Early Jurassic corals from the Neuquén Basin may reflect a large-scale phenomenon and/or the action of local adverse conditions (such as fluvial influence), which is open to further testing. [original abstract]

EHEVARRÍA, J., HOQUI, M., DAMBORENEA, S.E., MANCENIDO, M.O. & GARBEROGLIO, R.M.

- 2024.** Coral-dominated communities from the Jurassic of Argentina: an overview. – *Revista de la Asociación Geológica Argentina*, 81, 3: 386-413; Buenos Aires. D • j • RA

This paper is a synthesis of the knowledge on the Jurassic coral-dominated communities of Argentina, providing novel information for some of them. Scleractinian corals were scarce during the Hettangian-Sinemurian but were frequent and diverse during the Pliensbachian. Three main communities are recognized for this last age: the earliest Pliensbachian Puesto Araya reef (Mendoza Province), the late Early to early Late Pliensbachian Piedra Pintada coral meadow (Neuquén Province), and the Late Pliensbachian to earliest Toarcian patches from Chubut Basin. After the end-Pliensbachian and Early Toarcian biotic crises, scleractinian corals reappeared in the Jurassic basins of Argentina in the latest Alalenian to Early Bajocian. By this last age they present high diversity, probably generating meadows. There are also some Callovian coral records spread throughout the Neuquén Basin. During the Oxfordian, coral-dominated communities reached their maximum development in the Jurassic of Argentina. A large coral reef of 13 km of lateral extension was described for Bardas Blancas (Mendoza Province), recognizing different zones within it. Coral meadows were described at Coihue Co and Covunco, while small patches developed at Las Lajas (Neuquén Province). Finally, during the Tithonian, coral meadows developed at Picún Leufú (Neuquén Province), and some corals were recorded in Mallín Cotidiano (Chubut Province, Austral Basin). The general trends observed for corals in Argentina (diversity peaks during the Pliensbachian and Bajocian, severe reduction during the Toarcian, the Oxfordian bioconstruction optimum) match the 'global' trends based mostly on the records from the Northern Hemisphere. These communities also bear great relevance in palaeoenvironmental interpretations, indicating shallow and well-lit marine environments. [original abstract]

EMMERSON, B.K.

- 1870.** Die Liasmulde von Markoldendorf bei Einbeck. – *Zeitschrift der Deutschen Geologischen Gesellschaft*, 22: 271-334, pl. 8-10; Berlin. N • j • D

FITTON, W.H.

- 1836.** Observations on some of the Strata between the Chalk and the Oxford Oolite, in the South-east of England. – *Transactions of the Geological Society of London*, (2) 4, 2: 103-378; London. C • k • GB

GARBEROGLIO, R.M., LÖSER, H., LAZO, D.G., CATALDO, C. & LUCI, L.

- 2024.** First description of Tithonian corals from the Picún Leufú Depocentre, Neuquén Basin, west-central Argentina. – *Journal of South American Earth Sciences*, 146, 105096: 1-12; Amsterdam. D • j • RA

A small scleractinian coral fauna from the Late Jurassic (Tithonian) of the Neuquén Basin (west-central Argentina) is described for the first time. It comprises only two species: *Eocolumastrea octaviae* (Prever, 1909) and *Stelidioseris columbaris* (Scott and Aleman, 1984). The first was already reported from the region's Early Cretaceous, and the second is a new register for the basin. The first occurrence of the genus *Eocolumastrea* is extended from the Valanginian to the late Tithonian. Both corals were colonial and, when favorable conditions arose, thrived in a mixed carbonate-siliciclastic environment above or slightly below storm waves level. The coral fauna of the Picún Leufú Formation presents, regarding its taxonomy and type of build-up, great similarity to that of the Valanginian-Hauterivian Agrio Formation of the same basin. It differs notably from that of the Oxfordian La Manga Formation, suggesting a change in paleoenvironmental conditions, probably, among others, a general increase in the sedimentation rate of the studied basin between the Oxfordian and the Hauterivian. [original abstract]

GIROD, P. & LÖSER, H.

- 2023.** Korallen. [In:] SCHNEIDER, C. & GIROD, P. [Eds.]: Fossilien aus dem Campan von Hannover. 4. Aufl. – *Arbeitskreis Paläontologie Hannover*, p. 106-135; Hannover. D • k • D

HOFFMANN, M., KOŁODZIEJ, B. & KOWAL-KASPRZYK, J.

- 2021.** A lost carbonate platform deciphered from clasts embedded in flysch: Štramberg-type limestones, Polish Outer Carpathians. – *Annales Societatis Geologorum Poloniae*, 91: 203-251; Kraków. D • j • PL

Limestones designated the Štramberg-type are the most common carbonate exotic clasts (exotics) embedded in the uppermost Jurassic–Miocene flysch deposits of the Polish Outer Carpathians. About 80% of stratigraphically determinable carbonate exotics from the Silesian, Sub-Silesian and Skole units (nappes) are of Tithonian (mostly)–Berriasian (sporadically Valanginian) age. A study of these exotics revealed eight main facies types: coral-microbial boundstones (FT 1), microencruster-microbial-cement boundstones (FT 2), microbial and microbial-sponge boundstones (FT 3), detrital limestones (FT 4), foraminiferal-algal limestones (FT 5), peloidal-bioclastic limestones (FT 6), ooid grainstones (FT 7), and mudstones-wackestones with calpionellids (FT 8). Štramberg-type limestones in Poland and the better known Štramberg Limestone in the Czech Republic are remnants of lost carbonate platforms, collectively designated the Štramberg Carbonate Platform. Narrow platforms were developed on intra-basinal, structural highs (some of them are generalized as the Silesian Ridge), with their morphology determined by Late Jurassic synsedimentary tectonics. An attempt was made to reconstruct the facies distribution on the Tithonian–earliest Cretaceous carbonate platform. In the inner platform, coral-microbial patch-reefs (FT 1) grew, while the upper slope of the platform was the depositional setting for the microencruster-microbial-cement boundstones (FT 2). Microbial and microbial-sponge boundstones (FT 3), analogous to the Oxfordian–Kimmeridgian boundstones of the northern Tethyan shelf (also present among exotics), were developed in a deeper setting. In the inner, open part of the platform, foraminiferal-algal limestones (FT 5) and peloidal-bioclastic limestones (FT 6) were deposited. Poorly sorted, detrital limestones (FT 4), including clast-supported breccias, were formed mainly in a peri-reefal environment and on the margin of the platform, in a high-energy setting. Ooid grainstones (FT 7), rarely represented in the exotics, were formed on the platform margin. Mudstones-wackestones with calpionellids (FT 8) were deposited in a deeper part of the platform slope and/or in a basinal setting. In tectonic grabens, between ridges with attached carbonate platforms, sedimentation of the pelagic (analogous to FT 8) and allodapic ("pre-flysch") Cieszyn Limestone Formation took place. The most common facies are FT 4 and FT 1. Sedimentation on the Štramberg Carbonate Platform terminated in the earliest Cretaceous, when the platform was destroyed and drowned. It is recorded in a few exotics as thin, nep-tunian dykes (and large dykes in the Štramberg Limestone), filled with dark, deep-water limestones. Reefal facies of the Štramberg Carbonate Platform share similarities in several respects (e.g., the presence of the microencruster-microbial-cement boundstones) with reefs of other intra-Tethyan carbonate platforms, but clearly differ from palaeogeographically close reefs and coral-bearing facies of the epicontinental Tethyan shelf (e.g., coeval limestones from the subsurface of the Carpathian Foredeep and the Lublin Upland in Poland; the Ernstbrunn Limestone in Austria and Czech Republic). Corals in the

Štramberk Limestone and Štramberk-type limestones are the world's most diverse coral assemblages of the Jurassic–Cretaceous transition. The intra-basinal ridge (ridges), traditionally called the Silesian Cordillera, which evolved through time from an emerged part of the Upper Silesian Massif to an accretionary prism, formed the most important provenance area for carbonate exotic clasts in the flysch of the Silesian Series. They are especially common in the Lower Cretaceous Hradište Formation and the Upper Cretaceous–Paleocene Istebna Formation. The Baška-Inwald Ridge and the Sub-Silesian Ridge were the source areas for clasts from the Silesian and Sub-Silesian units (e.g., in the Hradište Formation), while the Northern (Marginal) Ridge was the source for clasts from the Skole Unit (e.g., in the Maastrichtian–Paleocene Ropiánka Formation). [original abstract]

KHAMOSHI, T., ARAB, A.L. & VAZIRI, M.R.

2023. Paleontology of Lower Cretaceous deposits in Baghin section based on corals. – *Scientific Quarterly Journal, Geosciences*, 33, 4, 130: 111-126. D • k • IN

In order to study the Lower Cretaceous deposits' coral fossils, the Baghin section was chosen and sampled. This section consists of a sequence of green marl, limestone and shaly limestone deposits. In this section, diverse groups of microfossils (orbitolinids, algae and ostracods) and macrofossils (corals, echinoids, bivalves, brachiopods, gastropods,...) are present. The presence of diverse collection fossils, especially large orbitolinid foraminifera indicated a favorable environmental conditions and absence of planktonic foraminifera indicated shallow environmental conditions. Also, the presence of platycopid and podocopid ostracods and corals confirm the shallow, warm, light and suitable paleoecological conditions. [original abstract]

KHAMOSHI, T., ARAB, A.L. & VAZIRI, M.R.

2024a. The first report of Lower Cretaceous corals from the Baghin section, west of Kerman, Iran. – *Cretaceous Research*, 158, 105851: 1-25; Amsterdam. D • k • IN

In the Baghin section, west of Kerman, Iran, Aptian scleractinian corals are described for the first time in relation to taxonomically related genera and species. The superfamilies are Actinastreaoidea, Cladocoroidea, Cycloporoidea, Eugyroida, Styliinoidea, Montlivaltioidea, Caryophylloidea and Misistelloidea. Other macrofossil groups are echinoids, gastropods, brachiopods and bivalves and confirm the Aptian age. Regarding identified corals, it was concluded that the study area can be correlated with Aptian-Albian of other Lower Cretaceous coral faunas of Basque-Cantabrian Basin in the Central Tethys, and also most closely related to faunas of the Aptian Pelagonium South margin and the Aptian-Albian Bisbee Basin in the western Atlantic. [original abstract]

KHAMOSHI, T., ARAB, A.L. & VAZIRI, M.R.

2024b. Scleractinian Corals from the Early and Late Aptian of Baghin Area (Southwest of Kerman, Iran): Introduction and Paleoenvironmental Analysis. – *Iranian Journal of Science*, 48: 901-915. D • k • IN

From the Early and Late Aptian sediments of the Baghin area, southwest of Kerman, Iran, a fairly low diverse scleractinian coral assemblage is described on the basis of paleoenvironmental factors for the first time. The fauna, collected from 6 stratigraphic horizons, encompasses 21 species from 15 genera, belonging to the families Actinastreaeidae, Caryophylliidae, Columastreaeidae, Eugyridae, Lasmogyridae, Lato-meandriidae, Rayasmiliidae, Solenocoeniidae and Stylinidae. The fauna is dominated by low corallite integration forms (plocoid and cerioid arrangements), while highly integrated corals (hydnochoroid, thamnasteroid, meandroid types) and solitary forms are subordinated. In the Baghin section, the $\delta^{13}\text{C}$ values present a prominent negative excursion followed by a major positive excursion, which is considered geochemically characteristic of Oceanic Anoxic Event 1a (OAE1a). Additionally, the $\delta^{18}\text{O}$ values suggest a pronounced warming of oceanic waters throughout the studied interval. Although the corals generally had favorable ecological conditions for development, no coral fabric was observed that would suggest biohermal development. The Aptian scleractinian assemblage of the Baghin area exhibits an example of a non-reef-building coral population, that thrived on marly substrate, along the southern rim of the eastern Tethys. [original abstract]

LATHUILIÈRE, B., SCHLÖGL, J., TOMAŠOVÝKH, A. & IVANOVA, D.

2023. Coral assemblages and environments from Bajocian reefs in the Western Carpathians. – *Geobios*, 79: 17-41; Lyon. N • j • SK

The systematics of the coral assemblages of the Vršatec Limestone from the Pieniny Klippen Belt (Western Carpathians) that inhabited the NW Tethyan margin during the Bajocian is revisited here based on a new

and extensive sampling of coral specimens collected at four outcrops. The assemblage consists of 12 genera and 13 species, including the new species *Proaplophyllia slovakensis* and the first Bajocian occurrence of the genus *Enallhelia*. Morphometric analyses also allow us to synonymize multiple species citations of the genus *Thecosmilia* into a single species. A quantitative study shows that five genera tend to be most common at all outcrops, namely *Cladophyllia*, *Dendraræa*, *Isastrea*, *Periseris*, and *Thecosmilia*, documenting relatively high homogeneity in the qualitative generic composition of coral assemblages but quantitative differences among the four outcrops. Coral specimens are frequently affected by macroborings (*Gastrochaenolites*, *Entobia*, and *Trypanites*) and coated by microbialitic components. We suggest that these reefs grew in the optimum of the Bajocian reefal window (i.e., shallow-water photic environments above storm wave base). We also identify three traps (typological, nominal, and induction traps) that led in the past to the false stratigraphic attribution of these reefs, when they were erroneously assigned to the Oxfordian rather than to the Bajocian. [original abstract]

LEÓN-OLVERA, R.G., LÖSER, H., SÁNCHEZ-BERISTAIN, F. & GARCÍA-BARRERA, P.

2023. Primer registro de *Columactinastræa formosa* Goldfuss, 1829 (Scleractinia) para el Tetis occidental. – *Boletín de la Sociedad Geológica Mexicana*, 75, 2, A31052: 1-11; Mexico City. D • k • MEX

The fossil coral *Columactinastræa formosa* Goldfuss, 1826 (Scleractinia) is reported for the first time from the Western Atlantic. The fossil was found in the Ocozocoautla Formation (Cretaceous, Maastrichtian) in Chiapas, Mexico. There are earlier reports of the species from the United Arabian Emirates (Campanian and Maastrichtian) and some European localities (Coniacian and Santonian). The possible palaeobiogeographic origin of *C. formosa* and the dispersal of the species is discussed. [original abstract]

LÖSER, H.

2024. Cretaceous Corals. [In:] GUERRERO-ARENAS, R. & JIMÉNEZ HIDALGO, E. [Eds.]: *Unveiling the past environments of a megadiverse country through its fossil record*. – p. 31-61; New York, N.Y. (Springer). G

The chapter gives an overview over the morphology, study methods, evolution, classification, taxonomy, and paleoecology of the post-paleozoic corals of the order Scleractinia with a strong focus on Cretaceous corals. The topic paleoecology encompasses case studies of coral faunas from the Valanginian/Hauterivian of Puebla, the Early Albian of Baja California, and the Middle Albian of Sonoran (all Mexico). Scleractinian corals requires particular environmental conditions and are very sensitive to changes of their life habitat, such as salinity, temperature, turbidity, nutrient supply, or oceanic anoxic events. Fossil coral associations may not assist in the reconstructions of the original communities if they are allochthonous. The same applies to the richness of fauna that are obscured by the weakness of the species concept in fossil corals. [original abstract]

LÖSER, H.

2025a. Revision of corals (Late Jurassic to Early Cretaceous, Northern Mexico) previously established by Imlay and Wells. – *Boletín de la Sociedad Geológica Mexicana*, 76, 3, A190424: 1-18; Mexico City. D • k • MEX

New Mesozoic (Kimmeridgian to Albian) corals from northern Mexico (Mexican states Coahuila, Durango and Sonora), that were established by Imlay and Wells between 1940 and 1946, are revised on the basis of the type material kept at the Museum of Paleontology of the University of Michigan in Ann Arbor (Mich., USA). From the six new species, only one may remain in use, and the other five species are considered to be synonyms of older taxa. [original abstract]

LÖSER, H.

2025b. The Cretaceous corals from the Bisbee Group (Sonora, Mexico; Late Barremian - Early Albian) : family Columastreaeidae. – *Paleontología mexicana*, 14, 2: 77-86; Mexico City. D • k • MEX

The current work constitutes the fifth part of the systematic revision of the corals from the Bisbee Group in Sonora, north-west Mexico (Late Barremian to Early Albian) and deals with the family Columastreaeidae. Nine species from the genera *Eocolumastrea* and *Nudacolumastrea* are described and illustrated. The genus *Eocolumastrea* is one of the most common genera in Lower Cretaceous coral faunas, whereas *Nudacolumastrea* is rarer. [original abstract]

LÖSER, H., CRUZ PALMA, J.M. & CHESNEL, V.

- 2025.** A Maastrichtian coral fauna from Costa Rica. – *Palaeontographica*, 331, 4-6: 123-149; Stuttgart (Schweizerbart). N • k • CR

From Puerto Nispero (Guanacaste, Costa Rica), a Maastrichtian shallow marine coral fauna is described. It encompasses 17 species in seven genera of the superfamilies Actinastreoidea, Felixaraoidea, Misistelloidea, Poritoidea, and Helioporacea. The new genus *Mespilophyllia* (superfamily Misistelloidea), and one new species of the genus *Marcelohelia* (superfamily Felixaraoidea), are established. The superfamily Poritoidea dominates the fauna with the genera *Actinacis*, *Litharaea*, and *Multicolumastraea*. The genus *Litharaea* replaces the poorly known genus *Goniopora*. The fauna encompasses species that are known from both the Late Cretaceous and the Early Palaeogene. Three genera – *Marcelohelia*, *Mespilophyllia*, and *Multicolumastraea* – are restricted to the Maastrichtian. Only 12 species could be indicated outside of the study area. They show most affinities to the Palaeogene of the Aquitanian Basin (France), the Coniacian of the Gosau Basin (Austria), the Eocene of southern Mexico, and various Campanian faunas from both the Western Tethys and the Western Atlantic. [original abstract]

LÖSER, H., WERNER, W. & DARGA, R.

- 2023.** Middle Cenomanian coral fauna from the Roßsteinalmen (Northern Calcareous Alps, Bavaria, Southern Germany) – a revised and extended version. – *Zitteliana*, 97: 89-147; München. N • k • D

In the Northern Calcareous Alps, relics of a formerly widely distributed shallow marine facies belonging to the Branderfleck Formation (upper Albian to lower Turonian) crop out and contain locally abundant corals. The fauna described here derives from Middle Cenomanian sediments. This study complements a former revision. In total, the fauna includes 98 species in 46 genera, belonging to 16 scleractinian superfamilies and two octocorallian families. One species – *Enallhelia octasepta* – is described as new. The fauna that was formerly located at the northern part of the Apulian plate (Austroalpine unit), south of the Penninic Ocean, shows palaeobiogeographic relationships to Cenomanian faunas from the Basque-Cantabrian Basin, the Prebetic zone, the Pelagonium, and the Quillan Basin, indicating stronger connections to Tethyan rather than Boreal faunas. The fauna also shares species with Aptian and Albian, but also with Late Cretaceous faunas of the Gosau Basin. Eight genera experienced a range extension; five genera have their last occurrence in the Middle Cenomanian fauna, and three genera have their first occurrence. Although the fauna presents numerous genera that became widespread in the Late Cretaceous, its generic composition is more closely related to late Early Cretaceous corals than to post-Cenomanian corals. The faunal turnover at the Cenomanian/Turonian boundary was not marked by the sudden appearance of new faunal elements, but rather by the disappearance of taxa. Some faunal elements that constitute post-Cenomanian faunas already existed in the Cenomanian, but they were very rare. The increase of taxa after the Cenomanian/Turonian boundary took place during the Coniacian and Santonian. [original abstract]

LÖSER, H. & WILMSEN, M.

- 2023.** Lower Cenomanian (Cretaceous) corals from Cóbreces (Cantabria, northern Spain). Part 2: family Latomeandridae. – *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, 307, 3: 277-304; Stuttgart. D • k • E

The present contribution constitutes the second part of a series of publications on the lower Cenomanian (lower Upper Cretaceous) coral fauna of Cóbreces in Cantabria (Spain). The fauna, derived from a complex of several patch reefs in the lower Altamira Formation, encompasses a total of approximately 140 coral species and is the largest known Cenomanian coral fauna to date. Here, corals of the family Latomeandridae (superfamily Cyclolitoidea) with eight genera and 31 species are presented. [original abstract]

LÖSER, H. & WILMSEN, M.

- 2024a.** Lower Cenomanian (Cretaceous) corals from Cóbreces (Cantabria, northern Spain). Part 3: families Microsolenidae, Negoporitidae, and Synastreidae. – *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, 311, 2: 141-164; Stuttgart. D • k • E

The present contribution constitutes the third part of a series of publications on the lower Cenomanian (lower Upper Cretaceous) coral fauna of Cóbreces in Cantabria (Spain). The fauna, derived from a complex of several patch reefs in the lower Altamira Formation, encompasses a total of approximately 140 coral species and is the largest

known Cenomanian coral fauna to date. Here, corals of the families Microsolenidae, Negoporitidae, and Synastreidae (superfamily Cyclolitoidea) with nine genera and 25 species are presented. [original abstract]

LÖSER, H. & WILMSEN, M.

- 2024b.** Lower Cenomanian (Cretaceous) corals from Cóbreces (Cantabria, northern Spain). Part 4: superfamilies Dendrogyroidea and Eugyroidea. – *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, 313, 1: 67-82; Stuttgart. D • k • E

The present contribution constitutes the fourth part of a series of publications on the lower Cenomanian (lower Upper Cretaceous) coral fauna of Cóbreces in Cantabria (Spain). The fauna, derived from a complex of several patch reefs in the lower Altamira Formation, encompasses a total of approximately 140 coral species and is the largest known Cenomanian coral fauna to date. Here, corals of the superfamilies Dendrogyroidea and Eugyroidea (including the families Dendrogyridae, Eugyridae, Solenocoeniidae, and the informal *Felixigyra* group) with six genera and 13 taxa are presented. [original abstract]

LÖSER, H. & WILMSEN, M.

- 2025.** Lower Cenomanian (Cretaceous) corals from Cóbreces (Cantabria, northern Spain). Part 5: superfamily Heterocoenioidae. – *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, 316, 1: 103-120; Stuttgart. N • k • E

The present contribution constitutes the fourth part of a series of publications on the lower Cenomanian (lower Upper Cretaceous) coral fauna of Cóbreces in Cantabria (Spain). The fauna, derived from a complex of several patch reefs in the lower Altamira Formation, encompasses a total of approximately 140 coral species and is the largest known Cenomanian coral fauna to date. Here, corals of the superfamilies Dendrogyroidea and Eugyroidea (including the families Dendrogyridae, Eugyridae, Solenocoeniidae, and the informal *Felixigyra* group) with six genera and 13 species are presented. [original abstract]

MARTINDALE, R.C., KRYSZYN, L., CORSETTI, F.A. & BOTJER, D.J.

- 2013.** From fore reef to lagoon: Evolution of the Upper Triassic Dachstein Carbonate Platform on the Tennengebirge (Salzburg, Austria). – *Palaios*, 28: 755-770; Lawrence, Kan.. C • t • A

Carnian and Norian (Upper Triassic) limestones and dolostones along the Eisriesenwelt trail on the Tennengebirge (Salzburg, Austria) reveal a progression from fore-reef to lagoonal environments, including a small Norian reef with both Carnian and Norian characteristics. Here, we provide high-resolution biostratigraphic age constraints of the Tennengebirge platform carbonates and describe an early Norian patch reef that is built by large *Retiophyllia* corals and encrusted by "Tubiphytes," sponges, and microbial fabrics. The tall (up to 4 m), narrow phaceloid *Retiophyllia* coral colonies exhibit phototropic growth patterns—coral branches that are at the top of the colony grew longer than those on the side of the colony—thus, we suggest that these corals had a symbiotic association with photoautotrophs (most likely zooxanthellae). The well-constrained ammonoid and conodont biostratigraphy presented here establish that the Tennengebirge patch reef was deposited in the early Norian, nevertheless, it contains features typically associated with Carnian reefs (small, encrusting sponges, Carnian-style microbial crusts, and "Tubiphytes"). The Carnian traits of the Norian reef emphasize the importance of accurate biostratigraphic dating; obtaining independent age estimates for reef outcrops is crucial to correctly determine the timing and magnitude of transitions in Triassic reef ecology. [original abstract]

MASSE, J.P., MORYCOWA, E. & FENERCI-MASSE, M.

- 2009.** Corrigendum to: "Valanginian-Hauterivian scleractinian coral communities from the Marseille region (SE France)". – *Cretaceous Research*, 30, 2: 503; Amsterdam. C • k • F

MELNIKOVA, G.K. & RONIEWICZ, E.

- 2021.** Lower Jurassic corals from the Pamir Mountains, Central Asia. – *Palaeoworld*, 30, 1: 461-494; Amsterdam (Elsevier Scientific Publishing Company). N • j • TJ

The paper describes new Lower Jurassic corals from the South-Eastern Pamir Mountains (Tajikistan) and interprets their relationships with contemporaneous West Tethyan corals. Taxonomic similarities with Pliensbachian European and North African faunas indicate a Pliensbachian age for this fauna, which was previously considered to be of Hettangian/Sinemurian age. Together with the taxa earlier described from the Pamirs, this fauna consists of 30 species of 25 genera, including Triassic holdover genera such as *Stylophylloids*, *Phacelostylophyllum* and *Eocomoseris*. The bulk of the fauna represents new Jurassic genera: *Alichurastrea*, *Eomicrophyllia*, *Guembelastromorpha*, *Gurumdynia*, *Pinacomorpha*, *Protostephanastrea*, *Psenophyllia*, *Sedekastrea* and *Stylimorpha*. Earlier coral studies of the region concerned the genera: *Archaeosmilia* Melnikova, 1975, *Archaeosmiliopsis* Melnikova, 1975, *Cylismilia* Roniewicz, 1988, *Pachysmilia* Melnikova, 1989, and *Prodonacosmilia* Melnikova in Melnikova and Roniewicz, 1976. Two species that were considered to belong to the genus *Cylismilia*, are redescribed and reclassified in the genera *Psenophyllia*, and *Archaeosmilia* Melnikova, respectively. [original abstract]

SALAMON, K. & KOŁODZIEJ, B.

- 2021.** Unravelling the microbiome of fossil corals: a message from microborings. – *Historical biology*, 34, 7: 1228–1239. C • jkc • BG/H/PL

The coral microbiome comprises skeleton-associated microendoliths (boring algae, bacteria and fungi) which are important for coral health and reef conditions. The analysis of microborings is a key tool in deciphering of the skeletal microbiome of fossil corals. Even micrometre-size traces have a high preservation potential and indicate the trace-maker organisms that inhabited skeletons of live corals. SEM studies of resin replicas and naturally occurring internal moulds of microborings were performed on skeletons of Jurassic, Cretaceous, Palaeogene, and Miocene colonial corals. This study and a literature review show that microborings (mostly 2–10 µm in diameter) which were formed in coral skeletons during their lifetimes are common in some fossil corals. They are ubiquitous throughout the whole colony, concentrated in the inner part of skeletal elements, and located commonly roughly along their longitudinal axis, in the direction of the coral growth. Post-mortem microborings, occurring at the margin of the skeletal elements, were rare in the examined samples. The coral-associated microendoliths were like in modern reef corals, mainly represented by *Ostreobium quekettii* or similar green algae, and less commonly by red algae, cyanobacteria, and fungi. Analyses of microborings can be also applied in studies of the skeleton microbiome of modern living corals. [original abstract]

SAMANIEGO-PESQUEIRA, A., LÖSER, H. & MORENO BEDMAR, J.A.

- 2023.** Middle Albian corals from the Espinazo del Diablo Formation (Cretaceous; Lampazos area, Sonora, Mexico). – *Bulletin of Geosciences*, 98, 2: 111-159; Praha. N • k • MEX

A coral fauna from limestones of the Middle Albian, Espinazo del Diablo Formation in the Lampazos area, 10 km SE of Tepache town is described. The corals did not form bioconstructions. A total of 46 species assigned to 22 genera that belong to the superfamilies Actinastreaoidea, Cladocoroidea, Cyclolitoidea, Eugyroidea, Heterocoenioidae, Misistelloidea, Stylioidae, and Thamnasterioidea are reported. One genus and three species are described as new. The new genus *Pentacoeniopsis* belongs to the family Solenocoeniidae. The generic composition shows that the fauna is dominated by Early Cretaceous corals; almost all species were indicated in the early Aptian and early Albian. Four genera have a range beyond the Santonian. Due to the relatively high number of endemic taxa, the coral fauna of the Lampazos area shows a low number of shared species with other studied areas, coral fauna of the Bisbee Basin being the closest with only 15 shared taxa. [original abstract]

SANDERS, D., BARON-SZABO, R.C., GEBHARDT, H. & SCHLAGINTWEIT, F.

- 2025.** An Upper Cretaceous mesophotic coral reef (Gosau Group, Eastern Alps, Austria): Significance for the palaeoreef record. – *Cretaceous Research*, 172, 106123: 1-27; Amsterdam. D • k • A

Cretaceous reefs that record coral growth under mesophotic conditions apparently are very rare. Hereunder we present a middle-upper Coniacian to lower Santonian reef composed mainly of coral platestone that is located within the synorogenic wedge-top succession of the Eastern Alps (Gosau Group, Turonian to Ypresian) near Strobl am Wolfgangsee (Salzburg, Austria). In the studied reef, an exposed 15–18

m of coral platestone is overlain by a few meters of domestone-mixstone and bioclastic lime stones. The platestones display a dense, continuous, interlocked fabric with a matrix of wackestone with planktic foraminifera and calcareous nannoplankton. Bioencrustation of coralla and boring traces are scarce. Hippuritids and radiolitids settled on the corals, but only few developed in to adults. The dome/mixstones comprise massive and branched corals, show a packed fabric, and contain intercalated single sand clusters of rudists. In the reefal interval, one helioporid octocoral and 25 colonial scleractinian species (25 % pennular species) were identified. The top bioclastic limestones contain dasycladaleans, Miliolina, Textulariina and rare Rotaliina. The vertical succession from coral platestones to bioclastic limestones indicates shoaling. The platy-foliaceous shapes and packing of coralla in the platestones, and the scarce encrustation suggest constrictal to low-superstratal growth under mesophotic conditions. In the dome/mixstones, toppled corals and rudists indicate episodic disturbance. In Jurassic seas mesophotic reefs were widespread, yet the studied reef is the first Upper Cretaceous example. This contrast in reef style may be attributable to: (1) intensified production and dispersal of chalk; (2) extinction/emigration of Jurassic microsolonids; and, (3) implicit description of Cretaceous mesophotic reefs. [original abstract]

SCHWARZBACH, M.

- 1938.** Karpatische Kreidekorallen als Geschiebe in Schlesien. – *Jahresberichte der Geologischen Vereinigung Ober-schlesiens, Abhandlungen*, 25-31. D • k • PL

SCHWEIZER-KLEMP, K.

- 1985.** Beiträge zur Korallenfauna des oberen weissen Juras in Württemberg unter besonderer Berücksichtigung der Korallensammlung der naturkundlichen Sammlungen der Stadt Ulm. – *Mitteilungen des Vereins für Naturwissenschaften und Mathematik*, 34: 37-85; Ulm (Donau). D • j • D

STONE, T., MARTINDALE, R.C., BODIN, S., LATHUILLIÈRE, B. & KRENCKER, F.-N.

- 2025.** Ecological differences in upper Pliensbachian (Early Jurassic) reef communities determined by environmental conditions in carbonate settings. – *Journal of African Earth Sciences*, 224, 105547: 1-20; Amsterdam (Elsevier Scientific Publishing Company). D • j • MA

Reef communities changed dramatically during the Early Jurassic as they recovered from the End-Triassic Mass Extinction. The Atlas Rift Zone in Morocco provided expansive shallow water substrate, which allowed a variety of reef communities to develop, such as lithotid bivalves that established themselves as new and prolific reef builders alongside corals, microbialites, and sponges in the Sinemurian and Pliensbachian stages. To better understand the dynamics between these reef builders and their environments, a detailed facies analysis of upper Pliensbachian reefs and a quantitative analysis of their composition was undertaken. We describe two distinct environmentally controlled reef types in the Central High Atlas Mountains. Lithotid bivalves dominated reef construction in lagoonal environments and, together with phaceloid corals, commonly built bioherms and bio-stromes that ranged from 1 to 2 m tall and up to several hundred meters wide. Meanwhile, on the platform edge, microbialites, corals, and sponges constructed patch reefs up to 7 m tall and 20 m wide. These two reef types share common facies, as many of the same reef inhabitants, and some framework builders, grew in both environments. Despite the facies overlap, the communities in these two environmental settings are distinct, which is likely a result of environmental controls on the dominant reef framework builders. Moderately turbid waters and soft substrate in lagoons were ideal conditions for lithotids but excluded many corals, sponges, and micro-bialites. Conversely, the clear, oligotrophic waters at the platform edge allowed photosynthetic and photosymbiotic organisms to thrive (e.g., coral and microbial reefs), while firmer substrate and higher wave energy may have prevented lithotids from establishing dense populations. [original abstract]

VINN, O., HOEKSEMA, B.W., KOŁODZIEJ, B. & KOZLOVÁ, Z.

- 2023.** When a worm loves a coral: A symbiotic relationship from the Jurassic/Cretaceous boundary. – *Diversity*, 15: 1-11. D • jk • CZ/PL

Reefal limestones of the Štramberk Carbonate Platform are preserved as olistoliths and pebbles in deep-water flysch of the Outer Carpathians (Czech Republic, Poland). They contain the richest coral assemblages of the Jurassic/Cretaceous transition (Tithonian–Berriasian). Symbiotic associations between corals and tube-dwelling macroorganisms were recognized only in the branching scleractinian corals *Calamophylloids*

flabellum and *Calamophyllopsis* sp. One to seven calcareous tubes were recognized either in coral calyces, embedded in the wall, or attached to it. Two types of tubes were recognized: Type 1: tubes with a diameter of 0.3–0.6 mm and a very thin wall (ca. 0.05 mm), mostly occurring inside corallites, and nearly exclusively in the Štramberk-type limestone of Poland; Type 2: tubes with an outer diameter of 0.8–2.0 mm and a thick wall (ca. 0.1 mm, some even up to 0.2 mm), mostly found in the Štramberk Limestone of the Czech Republic. Growth lamellae were observed in some thick walls. Most tubes are almost straight, some are curved. The tubes were probably produced by serpulids or by embedment of organic-walled sabellid polychaete worms. It is likely the oldest record of a sabellid–coral association. Modification of the coral skeleton in contact with tubes indicates that the worms were associated with live corals. For many modern and fossil worm–coral associations, this symbiotic association is interpreted as mutualistic or commensal. [original abstract]

ZHU, XIU-PING, LIANG, KUN, LIAO, WEI-HUA & JIA-RUN, YIN
2025. Scleractinian corals from the Middle Jurassic Buqu

Formation, Qiangtang block and their palaeogeographic implications. – *Palaeoworld*, 35, 1, 200978: 1-15; Amsterdam (Elsevier Scientific Publishing Company).

D•j•RC

This is the first comprehensive systematic study of the Middle Jurassic scleractinian corals from the Qiangtang block, based on 225 fossil coral specimens collected from the Buqu Formation in the Biluocuo area of northern Xizang (Tibet). Three species of three genera are identified: *Montlivaltia zangbeiensis*, *Pseudocoenia slovenica*, and *Kobyastraea coquandi*. The assemblage is dominated by solitary *Montlivaltia* (92.44%), with significantly fewer compound colonies of *Pseudocoenia* (4.89%) and *Kobyastraea* (2.67%). Comparative analysis reveals that the Qiangtang coral fauna shows strong affinities with contemporaneous Tethyan assemblages, particularly showing the closest similarities to coral communities from East-Central Iran. These findings provide compelling evidence for a close palaeobiogeographic connection between the Qiangtang block and the central Tethyan region during the Middle Jurassic. [original abstract]