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The Mesozoic Corals. Bibliography 1758-1993.

Supplement 23 (-2017)

Compiled by Hannes Löser¹

Summary

This supplement to the bibliography (published in the Coral Research Bulletin 1, 1994) contains 22 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. Updates are available through the Internet (www.cp-v.de).

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 22 autres références au sujet de la taxinomie, paléoécologie et paléogéographie des coraux mésozoïques (Trias - Crétacé; Scleractinia, Octocorallia). Par le service de mise à jour (www.cp-v.de), 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 (erschienen im Coral Research Bulletin 1, 1994) enthält 22 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 im Rahmen eines Änderungsdienstes im Internet (www.cp-v.de) verfügbar.

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

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Preface

Numerous hints given by colleagues and new papers edited the previous year yield 18 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

BERESI, M., CABALERI, N., LÖSER, H. & ARMELLA, C.

- 2017.** Coral patch reef system and associated facies from southwestern Gondwana: paleoenvironmental evolution of the Oxfordian shallow-marine carbonate platform at Portada Covunco, Neuquén Basin, Argentina. – *Facies*, 63, 4: 1-22; Erlangen. D • j • RA

During the Middle Oxfordian, the epicontinental shelf of the Neuquén Basin was a site of major coralline evolution and reef building. This work expounds the studies performed on the La Manga patch reefs at Portada Covunco locality, near Zapala city, Neuquén province. Based on the results of 12 facies/microfacies types and the vertical succession of coral morphotypes a shallowing-upward trend ranging from a shallow subtidal-lagoon- to intertidal settings is inferred. The microfacies model suggests an ooidal shoal area in the highest energy zone and various patch reefs on the shallow carbonate platform. Autochthonous reefal facies comprise a low diversity of platy coral and mixed coral-siliceous sponge framestone, ramose coral bafflestone, and microbial bindstone. Non-reefal facies are composed of ooidal packstone, bedded bioclastic wackestone-packstone, and marl levels. Several shallowing-upward episodes are evidenced by local erosional surfaces (main exposure surface-MES). The succession of platy corals (exclusively *Australoseris*) followed by ramose corals (*Etallonasteria*, *Stelidioseria*, and *Stephanasteria rollei*) probably reflects local environmental changes. The upward change in reefal composition is best interpreted in response to extrinsic physical parameters (local relatively minor sea-level fluctuations). Siliceous sponges occur in low percentages. The La Manga reefal succession could be correlated with the “global carbonate reef event”. This event occurred in most basins associated with the Tethyan oceanic belt and the North Atlantic Ocean, in low paleolatitude. The Portada Covunco reefs grew at higher paleolatitudes (nearly 39° south), within an embayment of the Neuquén Basin, with open circulation to the paleo-Pacific Ocean on the southwestern margin of the Gondwana realm. [original abstract]

BERNECKER, M. & WEIDLICH, O.

- 2005.** Azooxanthellate corals in the Late Maastrichtian - Early Paleocene of the Danish basin: bryozoan and coral mounds in a boreal shelf setting. [In:] FREIWALD, A. & ROBERTS, J.M. [Eds.]: Cold-water corals and ecosystems. – , 3-25; Berlin (Springer). D • kp • DK

The Late Cretaceous-Danian of the northwest European shelf represents one of the largest and longest-lived cool-water carbonate shelves in the stratigraphic record. The paleolatitude of the Danish basin was 45°N during that time. The heterozoan faunas are dominated by bryozoans, echinoids, molluscs, brachiopods, serpulids, and, to varying degree, by azooxanthellate corals. During the Late Maastrichtian, rare soft-substrate-dwelling solitary scleractinians occur, including *Parasmilia cylindrica*, *P. excavata*, *Caryophyllia* sp. as well as octocorals, especially *Moltkia minuta*. Contemporaneous bryozoan mound complexes below the photic zone, which provided hard substrates for the settlement of larvae, were not colonized by azooxanthellate corals. Neither environmental nor faunal changes among the corals across the Cretaceous-Tertiary (K/T) boundary were significant. After the K/T boundary, the first solitary corals (moulds of *Parasmilia biseriata*, *P. cincta*, *Trochocyathus hemisphericus*, *Caryophyllia* sp.) and octocorals appeared in the Cerithium Limestone, which lies above the Fish Clay. Similar to their Late Maastrichtian counterparts, these corals formed level-bottom communities. The Early Danian post-Cerithium Limestone represents the peak of bryozoan mound development. Corals are present but rare. The Middle Danian is characterized by reduced bryozoan mound growth and by the mound-forming dendroid scleractinians *Dendrophyllia candelabrum*, *Oculina becki* and *Faksephyllia faxoensis*, which flourished predominately in the vicinity of the Ringkøbing-Fyn High. Nine species of solitary scleractinians, stylasterinid hydrocorals, and octocorals contributed to reef building. Important criteria for the interpretation of “cold and deep-water coral bioherms” are (1) absence of

algae, (2) low-diverse azooxanthellate coral communities, (3) dominance of dendroid growth forms in the corals, (4) surrounding pelagic sediment adjacent to the coral mounds, (5) occurrence of pelagic organisms (globigerinid foraminifers, coccoliths) in the lime mud, (6) breakdown of coral colonies predominantly by bioerosion instead of mechanical destruction waves, (7) mound- or bank-like morphology of the buildups and (8) occurrence at a high paleolatitude. Mound morphology and growth direction were traced by variations in the abundance of colonial corals. Gross morphology of scleractinian corals, stylasterinid hydrocorals and octocorals suggests an azooxanthellate character of the reefbuilders: the scleractinians developed dendroid growth forms, while stylasterinids and octocorals formed fan-like colonies oriented perpendicular to the nutrient-rich currents. Strong bioerosion was responsible for the break-down of the skeletons, and the resulting bioclasts formed the substrate for larvae. Modern azooxanthellate *Oculina* coral reefs along the shelf edge off central eastern Florida, USA show similarities in position, morphology, environment, water depth and current orientation with the coral mounds of the Paleocene and suggest a paleodepth for the counterparts from the Danish basin of 100-300 m. [original abstract]

BERRY, K.

- 2017.** New paleontological constraints on the paleogeography of the Western Interior Seaway near the end of the Cretaceous (late Campanian-Maastrichtian) with a special emphasis on the paleogeography of southern Colorado, U.S.A. – *Rocky Mountain Geology*, 52, 1: 1-16. C • k • USA

There is considerable debate regarding the paleogeography of the Western Interior Seaway (WIS) near the close of the Cretaceous. To investigate this issue, the paleogeographic implications of recent advancements in the biostratigraphy of the lower to upper Maastrichtian, transitional-marine strata in the Raton Basin are explored. In southern Colorado, the western shoreline of the WIS should be shifted about 100 km farther west than current projections for the end of the early Maastrichtian. Strong marine connections among the WIS, the Gulf of Mexico, and the North Atlantic appear to have persisted at least until the end of the early Maastrichtian. A marine connection between the WIS and the Gulf of Mexico is projected to have lasted through the end of the Cretaceous. Closure of the WIS to the Arctic Ocean is projected to have occurred earlier and farther north than other models, which close the WIS to the Arctic Ocean through the formation of the Dakota Isthmus in the latest Maastrichtian. Closure of the WIS in Canada during the early late-Maastrichtian (Hoploscaphites birkelundae ammonite biozone) appears to have permitted the dispersal of land plants, such as “Cissites” *panduratus* and *Credneria protophylloides*, among landmasses previously isolated by epeiric seaways covering much of North America and western Greenland during the Late Cretaceous and is consistent with preexisting biostratigraphic constraints on the paleogeography of the WIS. [original abstract]

BO, JING-FANG, WANG, XUN-LIAN, GOA, JIN-HAN, YAO, JIAN-XING & WANG, GEN-HOU

- 2017.** Upper Triassic reef coral fauna in the Renacuo area, northern Tibet, and its implications for palaeobiogeography. – *Journal of Asian Earth Sciences*, 146: 114-133; Amsterdam. D • t • RC

Upper Triassic reef corals from the Riganpeicuo Formation in northern Tibet represent important scleractinian coral fauna that help explain the palaeobiogeography of the eastern Tethys region during the Late Triassic period. The corals were discovered in bedded limestone in patch reefs or biostromes of the Renacuo area. In this paper, 15 genera and 25 species are identified and categorized, the systematic composition of these corals and their relationships with other Triassic coral faunas are also discussed. The results show that these corals are composed of the typical elements of the western Tethys, with the following genera and species that are endemic to China: *Radiophyllia* cf. *astylatus*, *Margarosmia zongangensis* and *Conophyllopsis qamdoensis*, and the genera *Retiophyllia*, *Margarosmia*, *Hydrasemia*, *Procycolites*, *Pamiroseria*, *Araiophyllum*, *Stylophyllopsis*, *Stylophyllum* and *Guembelastrea* provide important links to the Tethys province. The coral fauna also highlights the connection between the Qiangtang terrane and the Songpan-Ganzi fold belt, but shows that the areas are distinct from the Himalayan terrane. It has been interpreted that the Qiangtang terrane and the Songpan-Ganzi fold belt were in the vicinity of the gradually-closed Paleo-Tethys Ocean, which resulted in the free transmigration of the benthonic organisms of these areas. On the other hand, the Himalayan terrane was separated from the Qiangtang terrane by a wide ocean-meso Tethys during the Late Triassic period, which made it impossible for the benthonic organisms on both flanks to freely migrate toward the opposite continental margins. [original abstract]

EL-SABBAGH, A.M., EL-HEDENY, M.M. & MANSOUR, A.S.

- 2017.** Paleoeology and paleoenvironment of the Middle–Upper Jurassic sedimentary succession, central Saudi Arabia. – *Proceedings of the Geologists' Association*, 128: 340-359; London. D • j • SA

Four Middle–Upper Jurassic sections from central Saudi Arabia have been investigated to evaluate microfacies types and macro-invertebrate paleocommunities and to interpret their paleoecology and paleoenvironments. The studied Jurassic successions are part of the Middle–Upper Callovian Tuwaiq Mountain Limestone and the Middle–Upper Oxfordian Hanifa Formation. Three main facies were recorded, including mud-supported microfacies, grain-supported microfacies and boundstones. A data matrix comprising 48 macrobenthic species in 35 samples collected from four sections were grouped into fifteen assemblages and one poorly fossiliferous interval by means of a Q-mode cluster analysis. The recorded macrofaunal assemblages have been subdivided into low-stress and high-stress on the basis of hydrodynamic conditions, substrate type, nutrient supply and hypoxia. The low-stress assemblages occur in (a) high-energy paleoenvironments with firm substrates; (b) high-energy shoals with unstable substrates of low cohesion and in (c) low-energy open marine environments with soft-substrates. The moderate- to high-stress assemblages occur in (a) oligotrophic environments with reduced terrigenous input in shelf lagoonal or in restricted inner ramp settings; (b) low-energy, soft substrate environments with hypoxia below the sediment–water interface; and, in (c) high-energy shoals and shelf lagoonal environments. The temporal distribution patterns of epifaunal and infaunal bivalve taxa are controlled by variations in water energy, substrate characteristics and productivity level. The reported litho- and biofacies confirmed that the Callovian Tuwaiq Mountain Limestone and the Oxfordian Hanifa Formation were deposited across wide spectrum of depositional environments, ranging from restricted lagoon to moderately deeper open marine basin, and providing the perfect conditions for macrofossils. [original abstract]

ENGELKE, J., ESSER, K.J.K., LINNERT, C., MUTTERLOSE, J. & WILMSEN, M.

- 2016.** The benthic macrofauna from the Lower Maastrichtian chalk of Krons Moor (northern Germany, Saturn quarry): taxonomic outline and palaeoecologic implications. – *Acta Geologica Polonica*, 66, 4: 671-694; Warszawa. D • k • D

The benthic macroinvertebrates of the Lower Maastrichtian chalk of Saturn quarry at Krons Moor (northern Germany) have been studied taxonomically based on more than 1,000 specimens. Two successive benthic macrofossil assemblages were recognised: the lower interval in the upper part of the Krons Moor Formation (Belemnella obtusa Zone) is characterized by low abundances of macroinvertebrates while the upper interval in the uppermost Krons Moor and lowermost Hemmoor formations (lower to middle Belemnella sumensis Zone) shows a high macroinvertebrate abundance (eight times more than in the B. obtusa Zone) and a conspicuous dominance of brachiopods. The palaeoecological analysis of these two assemblages indicates the presence of eight different guilds, of which epifaunal suspension feeders (fixo-sessile and libero-sessile guilds), comprising approximately half of the trophic nucleus of the lower interval, increased to a dominant 86% in the upper interval, including a considerable proportion of rhynchonelliform brachiopods. It is tempting to relate this shift from the lower to the upper interval to an increase in nutrient supply and/or a shallowing of the depositional environment but further data including geochemical proxies are needed to fully understand the macrofossil distribution patterns in the Lower Maastrichtian of Krons Moor. [original abstract]

GAMEIL, M., FÜRSICH, F.T. & MANDURAH, M.H.

- 2013.** Upper Jurassic record of Polyphylloseris (Egypt, Northern Sinai). – *Arabian Journal of Geosciences*, 6, 11: 4271-4278. N • j • ET

Genus Polyphylloseris is a scleractinian colonial coral that has been established by d'Orbigny (1849) from the Neocomian of Yonne, France. The genus is characterized by having elevated domal calices that are mammillar or craterlike in shape and with porous confluent septa. Columella is absent or rudimentary, and the lower surface of the corallum is covered with a thick and wrinkled holotheca. Specimens having the above-mentioned characteristics have been collected from the Upper Jurassic Arousiah Member of the Masajid Formation (Callovian - Oxfordian) of Gebel Maghara, Northern Sinai, Egypt. They are characterized by having a cupolate colonial form and porous pennulate septa which reach 40-50 in number. Based on these characters and other characters such as density of septa, height, and width of mammillar calices, the studied material is attributed to a new species named

Polyphylloseris magharensis. The new species is a first undoubted record of Polyphylloseris in the Jurassic. Previously recorded undoubted ages of the genus are Early and Late Cretaceous. The fewer number of septa and the smaller-sized and closer mammillar calices allow differentiation of the species from other species such as Polyphylloseris icaunensis d'Orbigny and Polyphylloseris convexa d'Orbigny. [original abstract]

JINGFANG, BO, XUNLIAN, WANG, JINHAN, GAO, JIANXING, YAO & GENHOU, WANG

- 2017.** Upper Triassic reef coral fauna in the Renacuo area, northern Tibet, and its implications for palaeobiogeography. – *Journal of Asian Earth Sciences*, 146: 114-133; Amsterdam. D • t • RC

Upper Triassic reef corals from the Riganpeicuo Formation in northern Tibet represent important scleractinian coral fauna that help explain the palaeobiogeography of the eastern Tethys region during the Late Triassic period. The corals were discovered in bedded limestone in patch reefs or biostromes of the Renacuo area. In this paper, 15 genera and 25 species are identified and categorized, the systematic composition of these corals and their relationships with other Triassic coral faunas are also discussed. The results show that these corals are composed of the typical elements of the western Tethys, with the following genera and species that are endemic to China: Radiophyllia cf. astylatus, Margarosmia zogangensis and Conophyllopsis qamdoensis, and the genera Retiophyllia, Margarosmia, Hydrasmlia, Procycolites, Pamiroseris, Araiophyllum, Stylophyllopsis, Stylophyllum and Guembelastrea provide important links to the Tethys province. The coral fauna also highlights the connection between the Qiangtang terrane and the Songpan-Ganzi fold belt, but shows that the areas are distinct from the Himalayan terrane. It has been interpreted that the Qiangtang terrane and the Songpan-Ganzi fold belt were in the vicinity of the gradually-closed Paleo-Tethys Ocean, which resulted in the free transmigration of the benthonic organisms of these areas. On the other hand, the Himalayan terrane was separated from the Qiangtang terrane by a wide ocean –meso Tethys during the Late Triassic period, which made it impossible for the benthonic organisms on both flanks to freely migrate toward the opposite continental margins. [original abstract]

JOHNSON, M.E. & MCKERROW, W.S.

- 1995.** The Sutton Stone: an Early Jurassic rocky shore deposit in South Wales. – *Palaeontology*, 38, 3: 529-541; London. D • j • GB

LATHUILIÈRE, B.

- 2011.** Faune corallienne des récifs toarciens du Moyen Atlas marocain, Première approche. – *Bulletin de la Société géologique de France*, 182: 533-544; Paris. D • j • MA

The Liassic is generally and rightly considered to be a time period in the history of the Earth when reefal activity was restricted in comparison to the intervals that preceded and followed it [Kiessling et al., 1999]. Extinctions at the end of the Rhaetian and at the beginning of the Toarcian are largely responsible for this [Kiessling et al., 2007; Lathuilière and Marchal, 2005; 2009]. The Toarcian stage, in particular, is a time when coral reef-building was extremely limited and the little that we know is clearly insufficient [Beauvais, 1986]. The reefs described in the Moroccan Middle Atlas by Elmi et al. [2002] open a window into the Toarcian coral fauna, still poorly known throughout the entire planet. They were described in the Upper Toarcian of the Middle Atlas of Morocco. They are located in the Awragh-Afennourir syncline (western Middle Atlas, just at south of the tabular Middle Atlas, fig. 1). They consist of bioherms, 1 to 12 m thick, placed on top of tilted blocks (fig. 2). These reefs lie on a formation consisting of yellow bioclastic limestones, dated as Levisoni Zone Gemma Subzone, and are covered by a terebratulid bed, the bottom of which is assigned to the Upper part of the Meneghinii Zone [Elmi et al. 2002]. These reefs occurred at a paleolatitude of 18°N [Besse and Courtillot, 1991]. A set of 18 coral samples collected by S. Elmi is identified and analyzed in this paper. The material was sampled from several reefs. In most cases the specimens are free of debris. I did not have the opportunity to access the outcrops myself; the samples were entrusted to me by S. Elmi. His approach was to sample taxa representative of the diversity of these reefs. Consequently, I had at my disposal only a few specimens per taxon and therefore open nomenclature is often preferred, in order to avoid the proliferation of specific taxa before having a clearer understanding of intraspecific variability. The material is deposited in the collections of the University H. Poincaré in Nancy (UHP). The taxa belong to the genera Cladophyllia, Diplocoenia?, Montlivaltia (two species), Thecosmia (two species), Isastrea?, Latomeandra, Periseris, Microphyllia (three species) and Proleptophyllia (two species). Comparisons are performed with the only general monograph on Liassic

corals from Morocco [Beauvais, 1986]. Among the 82 taxa described by this author, only 19 taxa are identified in the "Upper Liassic" from South Rifian ridges or from the High Atlas. The fauna described here is derived completely from the Middle Atlas. Only three of 15 genera are in common between the two studies: *Montlivaltia*, *Isastrea* and *Microphyllia*. Some differences may be explained by particular ecologies (e.g. *Ellipsoidastraea*, *Cardiastrea*), but these differences must not be overinterpreted because the number of specimens is low in both studies. [original abstract]

LATHUILLÈRE, B., CHARBONNIER, S. & PACAUD, J.-M.

- 2017.** Nomenclatural and taxonomic acts and remarks for the revision of Jurassic corals. – *Zitteliana*, 89: 133-150; München. N • j • F

The revision of Jurassic coral genera requires some nomenclatural and taxonomic acts such as designation of type species or type specimens, statement on availability and reversal of precedence. These acts lead to the erection of *Gillismilia* nov. gen. and *Polystylidiidae* nov. fam. [original abstract]

LÖSER, H.

- 2017.** Taxonomy and distribution of the coral genus *Placophora* (Cretaceous; Scleractinia). – *Zitteliana*, 89: 151-160; München. D • k • AUS/CH/CZ/D/E/EAT/F/I/MEX

The Early to early Late Cretaceous Scleractinian coral genus *Placophora* is revised on the basis of the type material of all known species and additional material from various outcrops worldwide. The genus has an ambivalent position between the families Agatheliidae, Columastraenidae, Placocoeniidae, and Stylinidae. The genera *Pseudoheliastrea* and *Mckenziephyllia* are considered junior synonyms. Eleven species are known, four of which remain in open nomenclature. The genus is relatively rare but it achieved a wide geographic distribution with indications from the western Atlantic, the European Boreal, the central, eastern and southern Tethys, and was even found near Antarctic areas. It ranges from the Valanginian to the Cenomanian. [original abstract]

LÖSER, H. & BILOTTE, M.

- 2017.** Taxonomy of a platy coral association from the Late Cenomanian of the southern Corbières (Aude, France). – *Annales de Paléontologie*, 103: 3-17; Paris. D • k • F

The Upper Cenomanian cover of the Palaeozoic Mouthoumet Massif (southern Corbières, Aude, France), on the southern flank of the Bézu anticline, shows accumulations of large platy corals. However, while being already presented in stratigraphic, palaeoecological and sedimentological contexts, these organisms have not been the subject of a palaeontological study. The coral fauna encompasses 16 species of the families Leptophylliidae, Microsolenidae, and Siderastraeidae and is here presented in detail. [original abstract]

LÖSER, H. & LANG, F.

- 2017.** Korallen aus dem Kimmeridgium von Saal bei Kelheim. – *Steinkern*, 30: 94-109. D • j • D

MELNIKOV, M.E., PLETNEV, S.P., BASOV, I.A., PUNINA, T.A. & PULYAEVA, I.A.

- 2006.** [New geological and paleontological data on Fedorov Guyot (Magellan Seamounts, Pacific Ocean).]* – *Tikhookeanskaya Geologiya*, 25, 1: 3-13. C • k • pac

Expedition investigations carried out by the „Yuzhmorgeologiya" in 2001-2004 in the Pacific Ocean on board R/V „Gelendzhik" resulted in new materials that made it possible to reveal the features of the morphological structure of Fedorov Guyot and to elucidate the matter and paleontological character of the structural-formational rock complexes of the Early Cretaceous through the Pleistocene. The analysis of macro- and microfauna in sedimentary rocks allowed us to distinguish the „transgressive" phases in the development of the guyot: Cenomanian-Turonian, Late Campanian-Maastrichtian, Late Paleocene-Middle Eocene, and Late Cenozoic. findings of Paleogene malacofauna and corals in association with planktonic foraminifers allow a conclusion about the existence of relatively shallow-water conditions in the Fedorov Guyot area in the Early Paleocene. [original abstract]

MELNIKOVA, G.K. & RONIEWICZ, E.

- 2017.** Early Jurassic corals with dominating solitary growth forms from the Kasamurg Mountains, Central Asia. – *Palaeoworld*, 26, 1: 124-148; Amsterdam (Elsevier Scientific Publishing Company). N • j • AF

First description of two Early Jurassic shallow-water coral faunas differing in age and ecological type is presented from the middle Afghanistan, the Nalbandon River area at the Kasamurg Mountains range. Hettangian/Sinemurian corals consist mainly of solitary and phaceloid forms: solitary *Amphiastreid* Coral A, *Archaeosmilia duncani*, *Fungiaphyllia communis* n. gen. n. sp., *Fungiaphyllia?* sp., *Oppelismilia* aff. *gemmans*, *O. spectabilis* n. sp., *Parepismilia dronovi* n. sp., *P. dolichostoma* n. sp., solitary *Stylophylloids* sp., phaceloid *Theactinastrea fasciculata*, and rare colonial corals, cerioid *Guembelastraea dronovi* n. sp. and *Stephanastrea* sp., as well as some indeterminable forms. The second fauna, close to Pliensbachian-Toarcian border, contains *Fungiaphyllia communis*. Two families are described as new, family *Oppelismiliidae* and *Parepismiliidae*. The corals are contained in micrite with fine quartz grains, generally, with remnants of molluscs and echinoderms, in some occurrences with benthic forams and small gastropods. In their growth forms and generic contents the corals partly resemble the Hettangian fauna from British Isles, Hettangian/Sinemurian fauna from the Pamir Mountains, and partly resemble the middle Early Jurassic fauna from Morocco. The corals are discussed from palaeoecological, palaeoenvironmental, and evolutionary aspects. [original abstract]

PLETNEV, S.P., MELNIKOV, M.E., PUNINA, T.A. & ZAKHAROV, YU.D.

- 2015.** [Age and paleogeographic stages of development guyot of magellan seamounts (Pacific ocean).]* – *Geologiya i polechnye iskopaemye Mirovogo okeana*, 1: 46-57. C • k • pac

Expeditionary investigations carried out by GKC «Yuzhmorgeologiya» in 2000-2010 i.e. in the Pacific Ocean on board R/V «Gelendzhik» resulted in new materials that made it possible to reveal the features of morphological structure of Magellan seamounts and to elucidate the matter and paleontological character of the structural formation complexes of rocks from Early Cretaceous to Pleistocene inclusive. Analysis of macro- and microfauna in sedimentary rocks allowed us to distinguish the «transgressive» phases in development of the Guyot: Cenomanian-Turonian, Late Campanian-Maastrichtian, Late Paleocene-Middle Eocene and Late Cenozoic. There is Oligocene hiatus in all guyots of the Magellan Seamounts. [original abstract]

SELWOOD, E.B., EDWARDS, R.A., SIMPSON, S., CHESHER, J.A. & HAMBLIN, R.J.O.

- 1984.** Geology of the country around Newton Abbott : memoir for 1:50,000 geological Sheet 339, New Series. – 228 p.; London (British Geological Survey). D • k • GB

SERRAN-BRAÑAS, C.I. & CENTENO-GARCÍA, E.

- 2015.** Taphonomic signatures, ichnofacies analysis and depositional dynamics of fossil macro-invertebrate assemblages of the San Juan Raya Formation, Zapotitlán Basin, Puebla, Mexico. – *Historical biology*, 27, 7: 915-937. D • k • MEX

In this paper, we describe the taphofacies and ichnofacies from Aptian strata of the San Juan Raya Formation in the Santa Ana Teloxtoxtoc area, Puebla, Mexico. A composite stratigraphic section was analysed on a bed-by-bed scale up to a total thickness of 765.5 m. Our results show the presence of 10 taphofacies and 3 ichnofacies. The taphofacies and ichnofacies interpretation, and its correlation with the sedimentary lithofacies, enabled the determination of a palaeoenvironmental model for the study area that corresponds to a shallow marine, open-coast, clastic system with episodic sedimentation as a product of storm events. This system had several variations in sub-environments, from foreshore to offshore. Foreshore and shoreface environments are characterised by taphofacies Tf1, Tf2, Tf3 and Tf10 and Psl and Skl ichnofacies, representing lower faunal diversity moments (with the exception of Tf3 taphofacies). Meanwhile, taphofacies Tf4, Tf5, Tf6, Tf7, Tf8 and Tf9 were representative of shelf environments and are described as moments of medium-to-high faunal diversity (with the exception of Tf5 taphofacies). [original abstract]

SINDOWSKI, K.-H.

- 1936.** Der Hauptrogenstein im Breisgau. Versuch einer Gliederung. – *Berichte der Naturforschenden Gesellschaft zu Freiburg i.Br.*, 35: 1-120; Freiburg i.Br.

C • j • D

STOLARSKI, J. & MAZUR, M.

- 2005.** Nanostructure of biogenic versus abiogenic calcium carbonate crystals. – *Acta Palaeontologica Polonica*, 50: 847-865; Warszawa.

C • tjk

The mineral phase of the aragonite skeletal fibers of extant scleractinians (*Favia*, *Goniastrea*) examined with Atomic Force Microscope (AFM) consists entirely of grains ca. 50–100 nm in diameter separated from each other by spaces of a few nanometers. A similar pattern of nanograin arrangement was observed in basal calcite skeleton of extant calcareous sponges (*Petrobiona*) and aragonitic extant stylasterid coralla (*Adelopora*). Aragonite fibers of the fossil scleractinians: Neogene *Paracyathus* (Korytnica, Poland), Cretaceous *Rennensismilia* (Gosau, Austria), *Trochocyathus* (Black Hills, South Dakota, USA), Jurassic *Isastraea* (Ostromice, Poland), and unidentified Triassic *tropiastraeid* (Alpe di Specie, Italy) are also nanogranular, though boundaries between individual grains occasionally are not well resolved. On the other hand, in diagenetically altered coralla (fibrous skeleton beside aragonite bears distinct calcite signals) of the Triassic corals from Alakir Cay, Turkey (*Pachysolenia*), a typical nanogranular pattern is not recognizable. Also aragonite crystals produced synthetically in sterile environment did not exhibit a nanogranular pattern. Unexpectedly, nanograins were recognized in some crystals of sparry calcite regarded as abiotically precipitated. Our findings support the idea that nanogranular organization of calcium carbonate fibers is not, per se,

evidence of their biogenic versus abiogenic origin or their aragonitic versus calcitic composition but rather, a feature of CaCO_3 formed in an aqueous solution in the presence of organic molecules that control nanograin formation. Consistent orientation of crystallographic axes of polycrystalline skeletal fibers in extant or fossil coralla, suggests that nanograins are monocrystalline and crystallographically ordered (at least after deposition). A distinctly granular versus an unresolvable pattern of nano-organization of CaCO_3 fibers seems to correspond, respectively, to an original versus a diagenetically depleted amount of organic matter bounding a mineral phase; this is consistent with qualitative and quantitative analyses of organic matter content in extant and fossil skeletons. [original abstract]

WRIGHT, J.K.

- 2017.** The Corallian Group (Upper Jurassic) of Wiltshire, England. 3: Lyneham to Royal Wootton Bassett. – *Proceedings of the Geologists' Association*, 128: 626-635; London.

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New information from boreholes at Lyneham and the construction of a relief road south of Royal Wootton Bassett has been combined with field mapping to produce the first synthesis of the transition between the Upper Jurassic shelf sediments of the Wessex Basin and the laterally equivalent clay facies sediments overlying the East Midlands Microcraton. Periodic uplifts of the Wootton Bassett High at the northern margin of the Wessex Basin saw the repeated attempts to spread clay facies sedimentation southwards into central and southern Wiltshire frustrated by uplifts of the high. This resulted in periods of erosion followed by new episodes of shallow water shelf sedimentation succeeded by deeper water strata, these beds resting upon the eroded edges of the older sediments. [original abstracts]