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The Mesozoic Corals.
Bibliography 1758-1993.

Supplement 14 (-2008)

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Summary

This supplement to the bibliography (published in the Coral Research Bulletin 1, 1994) contains 32 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 32 autres références au sujet de la taxinomie, paléoécologie et paléogéographie des coraux mesozoïques (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 32 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 32 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).

I am indebted to all colleagues who have sent me copies of their recently published papers for their help in completing the bibliography.

The supplement

CARUTHERS, A.H. & STANLEY, G.D.

2008. Systematic analysis of Upper Triassic silicified corals from Wrangellia and the Alexander Terrane, Alaska and Bristish Columbia. – *Journal of Paleontology*, 82, 3: 470-491; Lawrence, Kan. N • t • CDN/USA

Acid processing allowed systematic identification of 458 Upper Triassic silicified scleractinian corals (20 genera, 47 species) from the Alexander terrane (southeast Alaska) and Wrangellia (Wrangell Mountains, southern Alaska and Vancouver Island, Canada). Coral faunas, here presented, show taxonomic affinity with coeval collections from other Cordilleran terranes, specifically the Wallowa terrane (northeastern Oregon and Idaho) and Peru (South America) as well as the distant Tethys region. Genera from the Alexander terrane include: Kompsasteria Roniewicz, Gablonzeria Cuif, Cuifia Melnikova, Paracuifia Melnikova, Distichophyllia Cuif, Retiophyllia Cuif, Kuhnastraea Cuif, Margarosmilia Volz, Distichomeandra Cuif, Astraeomorpha Reuss, Pamiroseris Melnikova, Crassistella Roniewicz, Stylophyllum Frech, and Meandrostylis Frech. Genera from Wrangellia include: Gablonzeria Cuif, Distichophyllia Cuif, Retiophyllia Cuif, Kuhnastraea Cuif, Margarosmilia Volz, Distichomeandra Cuif, Astraeomorpha Reuss, Parastraeomorpha Roniewicz, Chondrocoenia Roniewicz, Pamiroseris Melnikova, Crassistella Roniewicz, Ampakabastraea? Alloiteau, Recticostastraea Stanley and Whalen, Meandrostylis Frech, Anthostylis Roniewicz, and the new genus Campesteria n. gen. New species include: Gablonzeria grandiosa n. sp., Paracuifia smithi n. sp., Paracuifia jennieae n. sp., P. anomala n. sp., Retiophyllia dendriformis n. sp., R. obtusa n. sp., and Campesteria prolixia n. sp. [original abstract]

CLIMACO, A.

1992. Upper Triassic (Norian Rhaetian) coral fauna in the Verbicaro Unit (northern Calabria, Southern Italy). – *Studi Trentini si scienze naturali, acta geologica*, 69: 51-59, 2 pls.; Trento. D • t • I

DECROUEZ, D.

1993. Les collections du département de géologie et de paléontologie des Invertébrés du Museum Genève (47:) La collection Lamarck. – *Revue de Paléobiologie*, 12, 1: 311-323; Genève. C • k • F

EGUCHI, M.

1948. A new Spongiomorpha from the Orbitolina sandstone of Iwate prefecture and its significance in Japan. – *Journal of Paleontology*, 22, 3: 365-367; Tulsa, Okla. N • k • J

FÜRSICH, F.T., CALLOMON, J.H., PANDEY, D.K. & JAITLY, A.K.

2004. Environments and faunal patterns in the Kachchh rift basin, western India, during the Jurassic. – *Rivista italiana di paleontologia e stratigrafia*, 110, 1: 181-190; Milano. C • j • IND

GALE, A.S.

2002. Corals. [In:] SMITH, A.B. & BATTEN, D.J. [Eds.]: Fossils of the Chalk. – *Field guide to fossils*, 2: 42-46, pl. 5; London (The Palaeontological Association). D • k • GB

GREPPIN, E.

?1905. Über Originalien der geologischen Sammlungen des Basler Naturhistorischen Museums. – *Verhandlungen der Naturforschenden Gesellschaft in Basel*, 15, 1: 25-132; Basel. C • j • CH/F

HELM, C. & BÖBIG, A.-F.

2006. Oberjura-Riffkalkstein als Geschiebe aus der Umgebung Lüneburgs. – *Geschiebekunde aktuell*, 22, 3: 99-102; Hamburg. D • j • D

HOPPE, W.

1926. Paläontologie und Paläogeographie der Jura- und Kreideschichten der Isthmuswüste. – *Die Kriegsschauplätze 1914-1918 geologisch dargestellt*, 14: 16-82; Berlin (Borntraeger). C • jk • ET

IBA, Y. & SANO, SHIN-ICHI

2007. Mid-Cretaceous step-wise demise of the carbonate platform biota in the Northwest Pacific and establishment of the North Pacific biotic province. – *Palaeogeography, Palaeoclimatology, Palaeoecology*, 245, 3/4: 462-482; Amsterdam. C • k • J

The global spatiotemporal distribution of the Cretaceous carbonate platform biota, which is characterized by "tropical" Mesogean (= Cretaceous Tethys) taxa, is an important aspect of Earth's paleobiogeography. All available records of this biota in the Northwest Pacific (Japan and Sakhalin Island) are summarized in order to elucidate its stratigraphic distribution patterns and faunal changes, with special attention given to the biota of the Late Aptian-Early Albian. This carbonate platform biota flourished from the Berriasian to Early Albian interval in the Northwest Pacific, indicating that the Northwest Pacific clearly belonged to the Tethyan biotic realm at that time. A step-wise demise of the carbonate platform biota transpired in the latest Aptian to middle Albian interval. Mesogean key taxa (rudists and dasycladacean algae), some Mesogean indicators (hermatypic corals and stromatoporoids) and nerineacean gastropods disappeared at the Late Aptian to Early Albian transition. Following this event, other Mesogean indicators (orbitolinid foraminifers and calcareous red algae) and coated grains disappeared at the Early to middle Albian transition. There is no record of carbonate platform biota in the Northwest Pacific during the long interval between the Middle Albian and Paleocene. The step-wise demise of the carbonate platform biota in the latest Aptian-middle Albian interval strongly implies a "vicariance event", which separated the North Pacific from the Tethyan biotic realm and established the North Pacific biotic province. [original abstract]

KÄSTNER, M., SCHÜLKE, I. & WINSEMANN, J.

2008. Facies architecture of a Late Jurassic carbonate ramp: the Korallenoolith of the Lower Saxony Basin. – *International Journal of Earth Sciences*, 97, 5: 991-1011; Berlin (Springer). C • j • D

The sedimentary succession of a Late Jurassic (Oxfordian to basal Kimmeridgian) carbonate ramp is described and interpreted. The study area is located in the central part of the Lower Saxony Basin in NW Germany, which forms part of the Central European Basin. Eight well-exposed and undeformed sections of the study area (Süntel area, Wesergebirge and eastern part of the Wiehengebirge) provide detailed information about lithofacies and lateral thickness variations. Biostratigraphically, the age of these sediments is poorly constrained. Twenty microfacies types are recognized that can be grouped into seven facies associations: (a) strongly bioturbated marlstones deposited near storm wave base (SWB), (b) foraminifera-rich wackestones, (c) wackestones and floatstones with biostromes and (d) bioclastic limestones deposited between SWB and fair-weather wave base (FWWB), (e) oolitic and iron-oolitic limestones and (f) siliciclastic sediments deposited above FWWB, and (g) lagoonal deposits. These facies associations characterize a storm dominated shallow mixed carbonate-siliciclastic ramp. Based on facies changes, quartz content, and gamma ray logs, the Korallenoolith Formation can be subdivided into a lower carbonate-dominated and an upper siliciclastic-dominated part, build up by different scales of small- to large-scale deepening- and shallowing-upward cycles. A preliminary correlation of measured outcrops of this formation is presented. [original abstract]

LÖSER, H.

2008a. Morphology, taxonomy and distribution of the Cretaceous coral genus Aulastraeopora (Late Barremian-Early Cenomanian; Scleractinia). – *Rivista italiana di paleontologia e stratigrafia*, 114, 1: 19-27; Milano. D • k • E/GR/I/RC/USA

The Cretaceous coral genus Aulastraeopora is being revised, mainly on the basis of sample material. This genus of solitary growth form is characterised by medium-sized to large specimens, compact septa in a regular hexameral or tetrameral symmetry and lonsdaleoid septa. Related genera are Preverastraea and Apoplacophyllia, which only differ by their cerioid-astreoid and phaceloid growth forms. There are four species of Aulastraeopora. The genus, which occurred world-wide, is restricted to the period from the Late Barremian to the Late Cenomanian, being most common in the Aptian to Early Albian. Forty-one samples are either known from the literature or have been to hand. This makes Aulastraeopora a rare genus. [original abstract]

LÖSER, H.

2008b. Early Cretaceous coral faunas from East Africa (Tanzania, Kenya; Late Valanginian-Aptian) and revision of the Dietrich collection (Berlin, Germany). – *Palaeontographica*, 285, 1/3: 23-75, 5 pls.; Stuttgart (Schweizerbart). D • k • EAT

The extensive vertebrate excavations of the Late Jurassic to Early Cretaceous around the Tendaguru hill in Tanzania in the early 20th century also yielded significant invertebrate faunas. The corals were first described by Dietrich (1926) and his work conformed to a remarkably high standard for his time. Since then, progress in examination methods and other criteria of coral classification has made a modern revision necessary. In addition, the stratigraphy of the coral bearing sediments has greatly improved over the past ten years, allowing a better palaeobiogeographic analysis. The present paper gives an introduction to the research history, discusses the various denominations of the lithostratigraphical units exposed in the Tendaguru area, and explains the progress of the stratigraphy of these units. Using both the original material described by Dietrich, as well as collection material that he did not describe, the corals of the Cretaceous are described and illustrated using new thin sections. Several corals from the Early Cretaceous of Kenya are also included. The Jurassic corals from the Tendaguru area have not been examined. In total, 15 species from the Late Valanginian to Early Aptian unit and 31 species from the Late Aptian are described. Two genera described by Dietrich that were largely forgotten and many species established by him that were not precisely interpreted in later literature are revised here. Camptodocis replaces Actinareopsis Roniewicz, 1968, and Metaulastrea corresponds to the concept of Amphiaulastrea Geyer, 1955, which is considered a junior synonym of Pleurostylina and should no longer be used. Together, these revisions place the Cretaceous corals of the Tendaguru area in a modern taxonomic and palaeobiogeographic context. [original summary]

LÖSER, H.

2008c. A new solitary coral genus of the suborder Heterocoeniina (Scleractinia) from the Aptian (Cretaceous) of Spain. – *Paläontologische Zeitschrift*, 82, 3: 279-284; Stuttgart. N • k • E

The new scleractinian coral genus Hexasmiliopsis is described on the basis of material from the Early Aptian (Early Cretaceous) of Murcia (Spain). The new genus of the Heterocoeniidae family is characterised by its solitary growth form, a very strong main septum and the presence of apophysal septa. It is closely related to the genera Hexasmilia (phaceloid growth form), Rodinosmilia and Tiarasmilia (both without main septum). The genus is monospecific and represents only the type species, Hexasmiliopsis saldanai. [original abstract]

LÖSER, H.

2008d. Remarks on the genus Hexasmilia (Scleractinia; Cretaceous) and description of a new species from the Aptian of Spain. – *Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen*, 250, 1: 45-52; Stuttgart. N • k • E/F

The morphological characteristics of the genus Hexasmilia de Fromentel, 1870 are analysed for the first time, using material from the type locality of the type species. The position of the genus within the Heterocoeniidae family (Heterocoeniina suborder) is confirmed. The genus differs from Heterocoenia by its phaceloid growth mode and the presence of apophysal septa. Up to now, Hexasmilia was believed a monospecific genus, but in addition to the type species, the genus includes the species Hexasmilia pachythecalia (Kuzmicheva, 1980), previously attributed to Hexapetalum. Hexasmilia elmari n. sp. from the Aptian of Spain is newly described and further material is presented in open nomenclature. The genus reaches from the Late Barremian to the Santonian. [original abstract]

LÖSER, H. & SALDAÑA-VILLODRE, J.C.

2008. Colonial corals from the Early Aptian siliciclastic Montlivaltia Marls of Jumilla (Murcia, Spain). – *Revista Española de Paleontología*, 23, 1: 1-6; Madrid. D • k • E

Three species of colonial scleractinian corals are reported from Early Aptian sandy marls of the so-called Montlivaltia marls from a section exposed on the SE flank of the Sierra de Sopalmo, south of Jumilla in Murcia, Spain. While solitary corals of the genus Montlivaltia are extremely common in the marls, colonial corals are rare. The three colonial coral species presented here (Cryptocoenia sp. n. aff. C. pygmaea, Holocystis elegans, and Columnocoenia aragonensis) are all common Early Cretaceous species. They range in age from the late Barremian to early Albian with the exception of Columnocoenia aragonensis, which ranges from the Valanginian to Cenomanian. Their geographical distribution is large and all species were found in the central Tethys as well as in the Caribbean province. All species were previously found in siliciclastic environments and while Holocystis elegans occurs primarily in such facies, the other two species occur in pure carbonates as well. [original abstract]

MARTIN-GARIN, B., LATHUILIÈRE, B., VERRECCHIA, E. P. & GEISTER, J.

2007. Use of fractal dimensions to quantify coral shape. – *Coral Reefs*, 26: 541-550; Berlin. D • j • F

A morphometrical method to quantify and characterize coral corallites using Richardson Plots and Kaye's notion of fractal dimensions is presented. A Jurassic coral species (Aplosmilia spinosa) and Wve Recent coral species were compared using the Box-Counting Method. This method enables the characterization of their morphologies at calicular and septal levels by their fractal dimensions (structural and textural). Moreover, it is possible to determine differences between species of Montastraea and to tackle the high phenotypic plasticity of Montastraea annularis. The use of fractal dimensions versus conventional methods (e.g., measurements of linear dimensions with a calliper, landmarks, Fourier analyses) to explore a rugged boundary object is discussed. It appears that fractal methods have the potential to considerably simplify the morphometrical and statistical approaches, and be a valuable addition to methods based on Euclidian geometry. [original abstract]

MELNIKOVA, G.K. & RONIEWICZ, E.

2007. The Middle Triassic scleractinia-like coral Furcophyllia from the Pamir Mountains. – *Acta Palaeontologica Polonica*, 52, 2: 401-406; Warszawa. N • t • TJ

Furcophyllia is an unusual solitary coral with septa regularly splitting into branching sets called herein septal brooms. This pattern of the septal apparatus is so different from classical scleractinians, that, despite showing a trabecular microstructure of septa comparable to that of the Scleractinia, the genus was originally ascribed to a group of corals informally referred as sleractiniamorphs, previously known from the Ordovician and Permian. The genus Furcophyllia emerged together with Scleractinians of various groups after the post-Permian crisis of skeletonized anthozoans, some of them markedly differing in their skeletal features from typical Scleractinia. So far, the genus was represented only by the middle Carnian Furcophyllia septafindens from the Dolomites (Southern Alps). Herein, we report Furcophyllia shaitanica sp. nov. from Late Ladinian limestone boulders found in the volcano-clastic deposits of the South Eastern Pamirs. [after the original abstract]

MILER, M. & PAVŠIĆ, J.

2008. Triassic and Jurassic beds in Krim Mountains area (Slovenia). – *Geologija, Razprave in poročila*, 51, 1: 87-99; Ljubljana. D • tk • SLO

MOOSLEITNER, G.

2007. Winzig, aber sensationell! Meine kleinste Fossilfundstelle. – *Fossilien*, 5: 288-298; Weinstadt (Goldschneck Verlag). D • k • F

MORYCOWA, E. & DECROUEZ, D.

2006. Early Aptian scleractinian corals from the Upper Schrattenkalk of Hergiswil (Lucerne region, Helvetic

Zone of central Switzerland. – *Revue de Paléobiologie*, 25: 791-838; Genève. D • k • CH

The paper deals with scleractinian corals from the Upper Schrattenkalk (Early Aptian) in the area of Hergiswil near Lucerne in the Helvetic Zone of the Swiss Alps. The coral assemblage is dominated by small lamellar and massive colonies, in places grouped in small lenses, mainly from suborder Microsolenina and Astraeoina. From 38 taxa, 28 species have been described (including 2 new species) and ten at the generic level, only. The identified coral taxa are characteristic of Urgonian facies of the European and near East Tethyan realm.

MORYCOWA, E. & MASSE, J.P.

2007. Actinaraeopsis ventosiana, a new sleractinian species from the Lower Cretaceous of Provence (SE France). – *Annales Societatis Geologorum Poloniae*, 77: 141-145; Kraków. N • k • F

Actinaraeopsis ventosiana is a new scleractinian coral species from the Lower Cretaceous shallow-water limestones of the Mont Ventoux (Provence, SE France). To date only two Late Jurassic species of this genus have been known, i.e. Actinaraeopsis araneola Roniewicz and A. exilis Roniewicz. The new species shows some similarity to the Jurassic species A. araneola, but differs in microstructure details and morphometric parameters.

PRICE, G.D., DASHWOOD, B., TAYLOR, G.K., KALIN, R.M. & **OGLE, N.**

2007. Carbon isotope and magnetostratigraphy of the Cretaceous (Barremian - Aptian) Pabellón Formation, Chañarcillo Basin, Chile. – *Cretaceous Research*, 29, 2: 183-191; London. C • k • RCH

RONIEWICZ, E.

2008. Kimmeridgian-Valanginian reef corals from The Moesian platform from Bulgaria. – *Annales Societatis Geologorum Poloniae*, 78, 2: 91-134; Kraków. N • jk • BG

RONIEWICZ, E., MANDL, G.W., EBLI, O. & LOBITZER, H.

2007. Early Norian scleractinian corals and microfacies data of the Dachstein limestone of Feisterscharte, Southern Dachstein Plateau (Northern Calcareous Alps, Austria). – *Jahrbuch der Geologischen Bundesanstalt*, 147 (3-4): 577-594; Wien. D • t • A

This is the first report concerning an Early Norian coral fauna from the Northern Calcareous Alps. The coral-bearing limestones outcrop in the vicinity of the Feisterscharte, in the southern Dachsteinplateau. In this Alpine region, aside from the Dachsteinplateau, Early Norian corals have been recorded only from the Gosaukamm range, which is also a part of the Dachstein massif. The exposures at Feisterscharte show one on the most taxonomically diversified Early Norian coral assemblages known so far. In the assemblage, Carnian genera are prevailing in number, and Early Norian index species, Pachysolenia cylindrica Cuif and Pachydendron microthallos Cuif are frequent. The Early Norian age is proved by conodonts. Some remarks on microfacies and foraminifera content of the reef and associated limestones are given. The rocks represent the initial growth stage of the Norian to Rhaetian Dachstein carbonate platform.

ROSENDAHL, W., JUNKER, B., MEGERLE, A. & VOGT, J.

2006. (Eds.) Schwäbische Alb. – *Wanderungen in die Erdgeschichte*, 18: 1-158; München (F. Pfeil). D • j • D

RULLEAU, L.

2006. Biostratigraphie et paléontologie du Lias supérieur et du Dogger de la région lyonnaise. – 382 pp., 34 figs., 166 pl.; St. Just-La-Pendue (Chirat). C • j • F

SANDERS, D. & BARON-SZABO, R.C.

2008. Palaeoecology of solitary corals in soft-substrate habitats: the example of Cunnolites (upper Santonian, Eastern Alps). – *Lethaia*, 41, 1: 1-14; Oslo. D • k • A

The upper Santonian Hofergraben Member (Eastern Alps) provides an example of a soft-substrate habitat suited mainly for solitary corals (Cunnolites), for colonial forms of solitary coral-like shape (Placosmilia, Diploctenium), and for colonial corals of high sediment resistance (e.g. Actinacis, Pachygyra). The Hofergraben Member consists mainly of silty-sandy marls of wave-dominated, low-energy shore zone to shallow neritic environments. Substrates of soft to firm mud supported level-bottoms of non-rudist bivalves, gastropods, solitary corals, colonial corals, rudists, echinoids, and benthic foraminifera. Boring and/or encrustation of fossils overall are scarce. In the marls, Cunnolites is common to abundant. Both a cupolate shape and a lightweight construction of the skeleton aided the coral to keep afloat soft substrata. Cunnolites taphocoenoses are strongly dominated by small specimens (about 13 cm in diameter). Cunnolites was immobile and mostly died early in life upon, either, smothering during high-energy events, rapid sedimentation associated with river plumes, or by toppling and burial induced by burrowing. Comparatively few large survivor specimens may show overgrowth margins interpreted as records of partial mortality from episodic sedimentation or tilting on unstable substrate. Scattered pits and scalloped surfaces on large Cunnolites may have been produced, in some cases at least, by predators (durophagous fish?). Post-mortem, large Cunnolites provided benthic islands to corals, epifaunal bivalves and bryozoans. In a single documented case of probable in vivo contact of Cunnolites with the colonial coral Actinastraea, the latter prevailed. Alps, coral, Cunnolites, palaeoecology, Upper Cretaceous. [original abstract]

TOMÁS, S., LÖSER, H. & SALAS ROIG, R.

2008. Low-light and nutrient-rich coral assemblages in an Upper Aptian carbonate platform of the southern Maestrat Basin (Iberian Chain, eastern Spain). – *Cretaceous Research*, 29: 509-534; London. D • k • E

A Lower Cretaceous (Aptian) succession of carbonate rocks in the southern Maestrat Basin (Iberian Chain, Spain) was analysed in terms of sedimentological and palaeontological criteria. The shallow marine sequence was deposited upon a homoclinal carbonate ramp. Five main facies types were distinguished: (A) peloidal and bioclastic grainstones and rudstones of the inner ramp shoals; (B) orbitolinid wackestones-packstones of the distal outer ramp; (C) peloid and Ostrea wackestones-packstones of the middle outer ramp; (D) coral-algal sheetstones of the proximal outer ramp; and (E) coral-algal platestones-domestones of the middle ramp. Coral-bearing facies types (D) and (E) showed similar major environmental factors: low energy hydrodynamism, low light intensity and apparently nutrient-rich water. Slight differences in these conditions are reflected in the different growth forms and coral assemblages. Coral-algal sheetstones are characterized by sheet-like and lamellar forms with a low coral diversity not clearly dominated by any taxon. Coral-algal platestones-domestones develop platy, tabular and irregular massive forms with a slightly higher coral diversity characterized by a Microsolenina-Faviina association. The coral fauna is revised taxonomically and yielded a total of 22 species in 18 genera (21 Scleractinia species, one Octocorallia species). Genera of the suborders Microsolenina and Faviina predominate, those of the suborders Stylinina, Fungiina, Rhipidogyrina and the order Coenothecalia are subordinate. [original abstract]

TOPCHISHVILI, M.V.

2005. [ed. Atlas of Early Cretaceous fauna of Georgia]*. – *Trudy Akademija Nauk Gruzinskoj SSR, Geologiceskij Institut*, 120: 788 pp., 120 pls.; Tbilisi. D • k • GE

TRUSHEIM, F.

1936. Die geologische Geschichte Südostdeutschlands während der Unterkreide und des Cenomans. – *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, Beil.-Band*, 75: 1-109; Stuttgart (Schweizerbart). C • k • D

ZONNEVELD, J.-P., HENDERSON, C.M., STANLEY, G.D., ORCHARD, M.J. & **GINGRAS, M.K.**

2006. Oldest scleractinian coral reefs on the North American craton: Upper Triassic (Carnian), northeastern British Columbia, Canada. – *Palaeogeography, Palaeoclimatology, Palaeoecology*, 243, 3/4: 421-450; Amsterdam. D • t • CDN

Bioclastic accumulations composed of crinoids, brachiopods, molluscs, spongiomorphs and scleractinian corals occur within Upper Triassic strata of the lower Baldonnel Formation at Pardonet Hill in northeastern British Columbia Canada. These small buildups (not, vert, similar100 to 500 m3) have planar bases and broadly convex tops. These mounds are interpreted as small patch reefs composed of packstone, bioclastic floatstone/rudstone and carbonate breccia intercalated with mixed siliciclastic carbonate sediments deposited in a shallow subtidal setting (i.e. above fairweather wave base). Amalgamated hummocky cross-stratified to current ripple-laminated, quartz-dominated sandstone beds and numerous sharp-based, normally graded bioclastic (commonly

encrinitic) packstone/grainstone - quartz-sandstone couplets characterize inter-reef lithologies. Conodont biostratigraphy indicates that the Pardonet Hill patch reefs occur within strata dated as earliest Upper Carnian (lower nodosus zone). The Pardonet Hill patch reefs originated and developed during an interval of regional sea level lowstand. Strata within which these patch reefs occur represent the westernmost migration of the Triassic shoreline in western Canada. Disappearance of coral reefs in the study area may have been affected by rapid marine transgression and failure of reef faunas to recolonize the new shore zone further to the east. The Pardonet Hill locality occurred on the western margin of the North American craton during the Triassic. Prior to their discovery reef-like structures dominated by corals in the western Panthalassa were limited to allochthonous terranes (now part of the Cordillera). The Pardonet Hill patch reefs occur at approximately 30° Triassic paleolatitude. In modern settings, this is at the extreme latitudinal margin of subtropical zooxanthellate reef development. The presence of benthic faunas characteristic of low-paleolatitude settings on the northwestern coast of Pangea has significant implications in paleotectonic and paleoenvironmental reconstructions. [original abstract]