

Studentenpreisposter

Paläoökologie and mikrofazielle Analyse mariner Flachwasserkarbonate (Untere Gosau-Subgruppe, Oberes Turonium bis Coniacium, Nördliche Kalkalpen, Tirol, Österreich)

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Der Raum Brandenberg im Bezirk Kufstein (Tirol, Österreich) ist bekannt für seine oberkretazischen Sedimentgesteine. Es handelt sich hierbei um terrestrische bis tiefneritische Ablagerungen (vorwiegend Sandsteine und Kalke) des Oberen Turoniums bis Coniaciums. Diese wurden im Zuge einer Transgression abgelagert. Die Auswertung der Flachwasserkalke im Arbeitsgebiet ergab eine sehr hohe Biodiversität fossiler Taxa.

Im Geländebefund zeigen sich fast ausschließlich marine, bioklastische Seichtwasserkalke von knolliger Erscheinung, hell- bis dunkelgrauer Farbe und mehr oder weniger deutlicher Bankung. Mergelige und siliziklastische Einschaltungen sind manchmal vorhanden. Makroskopisch sind einige vollständig erhaltene aber meist fragmentierte Rudistenschalen (Radiolitiden, Hippuritiden und *Plagioptrychus sp.*), scleractine Korallen und Reste von Echinodermaten zu erkennen. In manchen Korallenstöcken sind lithophagide Bivalven in ihren Bohrgängen erhalten. Bei der mikrofaziellen Analyse der Gesteinsdünnschliffe konnten bioklastische Pack-, Grain-, Float-, Rud- und Bafflestones und Kalkarenite unterschieden werden. Neben Korallen und größtenteils fragmentierten Rudisten finden sich hohe Anteile an Gastropoden, Echinodermaten und verschiedenen Kalkalgen in den Dünnschliffen. Benthische Foraminiferen sind nur in einigen wenigen Proben häufig. Gut gerundete Intraklasten, bestehend aus kretazischen Flachwasserkalken und meist deutlich abgegrenzte, sowie angulare Bioklasten ohne Mikritsäume weisen auf häufige Hochenergie-Ereignisse hin.

Es handelt sich bei den untersuchten Gesteinen somit um Ablagerungen eines marinen Flachwasser-Milieus welches durch Fleckenriffe aus Korallen, Rudisten und anderen Riffbildnern geprägt war. Häufige Hochenergie-Ereignisse verhinderten jedoch den Aufbau größerer Riffkörper. Stürme und - angesichts der hohen tektonischen Aktivität im Raum der jungen Alpen im besagten Zeitraum - möglicherweise auch Seebeben und Tsunamis wären als mögliche Ursachen der Hochenergie-Ereignisse denkbar.

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Plesiosaur remains from the Liassic clay pit Klein-Lehmhagen near Grimmen, NE Germany

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Remains of two Lower Toarcian plesiosaurs (*Plesiosauria* gen. et spec. indet.), especially an isolated cervical vertebra and a partial vertebra column, from the Liassic clay pit Klein-Lehmhagen near Grimmen (Mecklenburg, NE Germany) are described. The Liassic outcrop near Grimmen is known since the 19th century for its rich marine fauna including ammonites, fishes and marine reptiles. Furthermore, remains of the dinosaur *Emausaurus ernsti* and terrestrial insects have been found. The material indicates characteristic plesiosaurian features. Both specimens possess two foramina situated on the ventral surface of the centra (foramina subcentralia), which are common in nearly all plesiosaurs. In addition, there are three additional foramina between them. Thus, it is possible that these two specimens represent one genus. Referring to the palaeobiogeographic distribution of Toarcian marine reptiles it presents the northeasternmost occurrence of Lower Toarcian plesiosaurs from Germany.

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Modern-type coral-associated brittlestar fauna in the Middle Miocene of Central Europe

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Echinoderms are a key component of coral reef invertebrate communities, and although brittle stars are prob-

ably among the least conspicuous representatives of this group, they are highly abundant and diverse in modern coral reefs. Here, we report a brittle-star assemblage from the middle Miocene of Austria. The assemblage consists of numerous dislocated skeletal plates, including the highly diagnostic spine-bearing lateral arm plates, retrieved from sediment infillings within a coral patch reef of the Central Paratethys. Preservation of the plates is such that a detailed comparison with the corresponding plates of modern relatives is possible. The middle Miocene assemblage is strikingly similar to modern coral-reef brittle-star communities on family level, and in most cases even on genus level. Almost all of the groups typically found in present-day coral-associated brittle-star communities could be unequivocally identified in the Miocene assemblage. Remarkably, even the relative abundances of the groups in the Miocene fauna are comparable to those found in modern equivalent communities. These observations imply that coral-associated brittle-star communities have remained largely unchanged since the last 15 Ma. In the light of recent hypotheses conferring a leading role to coral reefs in producing evolutionary innovation, the conservatism of brittle-star communities is puzzling and suggests that the mechanisms favouring high origination rates affect individual groups in different ways.

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Rare microfossils from the Shiala and Yong Formation of the Tethyan Garhwal Himalaya, India

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The present study reveals the occurrence of rare Paleozoic microfossils from the Shiala and Yong Limestone Formation. These Lower Paleozoic formations from the Garhwal-Kumaon Tethyan Himalaya are exposed closely to the international boundary with Tibet (China), near the village of Sumna (30°40' N, 80°50' E) located in the Chamoli district of the Garhwal Division, Uttar Pradesh. The Shiala Formation consist of four biostratigraphic zones based on macrofauna. Middle to Upper Ordovician age has been assigned to the Shiala Formation based on

brachiopod or bryozoan assemblage zones. The Yong Limestone Formation overlies the Shiala Formation and was dated to be of Late Silurian age (Ludlovian) based on acritarch assemblage. The fresh rock samples collected from the base of the Shiala and Yong Formation were macerated by 40% HF. 7 Samples yielded a rich assemblage of diverse organic microfossils such as acritachs, chitinozoa, scolecodonts and melanosclerites. The organic-walled Melanosclerites have been reported from the Laurentia, Baltica and Laurasia cratons. They are exclusively marine and can be found in rocks from Cambrian to Devonian age. Melanosclerites have not been studied before from India.

This is the first report of this group of microfossil. Furthermore, the problematic microfossil *Microancienta* occurs in the Yong Formation. The systematic position is completely uncertain. Among other things, they are being compared to foraminifers. The axial-symmetrical microfossil is described from Upper Ordovician Öjlemyrflint erratic boulders of the Isle of Gotland/Sweden and of the Kaolinsand (Plio-/Pleistocene) of the Isle of Sylt/Germany.

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Upper Miocene continental trace fossils around Lake Pannon (Central Paratethys)

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Trace fossils are well known from marine deposits but comparatively few studies exist from terrestrial, fluvial or limnic environments. The Central Paratethys is a case in point, because many ichnological studies were performed in its Middle Miocene marine fossil record, but virtually nothing is known from the Upper Miocene continental environments in and around Lake Pannon. We studied five conspicuous trace fossil associations in the Vienna basin in Austria, Slovakia, Czech Republic and Hungary each restricted to a specific time horizon and palaeoenvironment. The oldest trace fossil associations (11.2 My) were studied at Atzelsdorf (Lower Austria). The small-scale structures (mm-cm sized) are only known from