Der Europäische Waldelefant *Elephas antiquus* Falconer & Cautley, 1847, in Mecklenburg-Vorpommern (NE-Deutschland)

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Funde von pleistozänen Großsäugern sind in Mecklenburg-Vorpommern (NE-Deutschland) wegen der starken Dominanz glazigener Sedimente mit ungünstigem Erhaltungspotential vergleichsweise selten. Trotzdem gelang hier kürzlich der erste sichere Nachweis des Europäischen Waldelefanten *Elephas antiquus* Falconer & Cautley, 1847. Das vorliegende Backenzahnfragment wurde 2007 von Privatsammlern, Hannelore und Horst Schmidt, in einer Kiesgrube bei Woggersin ca. 5 km nordwestlich von Neubrandenburg in im Abbau stehenden glazifluviatilen Kiessanden des Weichsel-Hochglazials entdeckt. Das Fragment ist relativ schlecht erhalten und abgerollt. Die morphologischen Unterschiede zu Backenzähnen des Wollhaarmammuts *Mammuthus primigenius*, das in Meckelenburg-Vorpommern regelmäßiger vertreten ist, sind jedoch deutlich ausgebildet. Für die Determination entscheidend sind u.a. die Schmalheit des Molaren, die starke Fältelung des sehr kräftigen Schmelzes sowie der große Abstand der Schmelzlamellen. Die Zuordnung zu *E. antiquus* konnte auch von R.-D. Kahlke, Weimar und D. Mohl, Rotterdam, bestätigt werden. Nach ihrer Einschätzung stammt das Fragment von einem dritten Unterkiefer-Molar.

Verbreitet war der Europäische Waldelefant von Mittel-Jungpleistozän hauptsächlich in Südeuropa und Vorderasien. Während der Interglaziale, z.B. Holstein oder Eem, erweiterte er sein Areal in West-, Mittel- und Osteuropa.

Der Erhaltungszustand des Fragmentes, sowie sein Vorkommen in weichselkaltzeitlichen Sedimenten, impliziert eindeutig, dass der Zahn umgelagert wurde. Angenommen wird deshalb ein eemzeitliches Alter. Ablagerungen des Eems konnten in der Umgebung von Neubrandenburg schon vielfach belegt werden. Holsteinzeitliche Bildungen sind dagegen als Liefersedimente eher auszuschließen, da sie in Mecklenburg-Vorpommern meist in größeren Tiefenlagen verbreitet sind und zudem von marinen Sedimenten dominiert werden.

Bei dem Backenzahn von Woggersin handelt es sich um eines der nördlichsten bekannten Belege (ca. 53°35' / 13°13'). Die Verbreitung des Europäischen Waldelefanten erreichte insgesamt etwa den 55. Breitengrad. Fundmeldungen des Europäischen Waldelefanten, von seiner nördlichen Arealgrenze, liegen z.B. von S-England, Raalten (Niederlande), Fünen (S-Dänemark) sowie Moskau (W-Russland) vor. Weitere nördliche Fundstellen in Deutschland finden sich z.B. bei Verden (Niedersachsen) sowie im Stadtgebiet und im südlichen Umland von Berlin, im sog. Rixdorfer Horizont.

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Middle Triassic shell beds from the Germanic Basin: refining interpretations of the early Mesozoic patterns in bioclastic concentrations

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Shell beds can serve as a useful proxy for recognizing broad-scale changes in dominant paleocommunity components through time. Shell concentrations are abundant and diverse in the Muschelkak strata (Anisian – Lower Ladinian, Middle Triassic) of the eastern part of the Germanic Basin (Upper Silesia and the Holy Cross Mountains, southern Poland). Ranging from mm-thick pavements to composite beds up to 2 m in thickness, the Middle Triassic shell beds show patterns in thickness and taphonomic characteristics similar to Jurassic concentrations. Just like them, they represent a mixture of archaic (gastropod- and brachiopod-dominated beds) and modern (bivalve-dominated beds) biostratinomic styles. Bivalve-dominated shell beds are the most common taxonomic type in almost all lithostratigraphic intervals studied. Distinct changes in the composition of benthic assemblages are suggested by the appearance of brachiopod-dominated shell beds in the Pelsonian, replacing gastropod-dominated concentrations typical for the Lower Anisian. This temporal trend is primarily controlled by regional environmental changes in the Germanic Basin. The Pelsonian and Fassanian transgression events, resulting in open communication with the Tethys Ocean, changes in the circulation patterns and more widespread development of deeper ramp settings, are probably responsible for increased abundance of brachiopods in the Muschelkalk faunas. Taxonomic composition and the presence of concentrations dominated by small gastropods make the Muschelkalk bioclastic deposits similar to the shell beds occurring in comparable shallow-water facies of the Lower Triassic strata of the Western United States. Therefore, these characteristics of the Lower Triassic shell beds may also reflect local or regional environmental factors, rather than be indicative

of global stressful conditions related to the aftermath of the end-Permian mass extinction event, as suggested by earlier studies.

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New remains of an atoposaurid neosuchian (Archosauria: Crocodyliformes) from the Upper Jurassic (Kimmeridgian) of the Langenberg Quarry, Oker (Lower Saxony, northwestern Germany)

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Bone material of atoposaurid crocodiles is very rare in the fossil record of the Upper Jurassic. The recently discovered remains of two atoposaurid neosuchians from the Langenberg quarry near Oker (Lower Saxony, Germany) comprise: an almost complete skull with a mandible and various postcranial remains; a juvenile skull with mandible; and different isolated postcranial bones. Both skulls are three dimensionally preserved and brevirostrine, with the maxillary rostrum forming 50 % of the total length of the skull. The juvenile cranium possesses a small antorbital fenestra, whereas the adult skull is missing an antorbital fenestra. The jugal is proportionately long. The dorsal surface of the squamosal bears a rounded, longitudinal crest that separates the dorsal part from a bevelled lateral part. The caudolateral corner of the squamosal forms a short, rounded caudolaterally-directed process. The supraoccipital forms the medial third of the caudal margin of the cranial table. The secondary choanae are mostly bounded by the palatines. The dentition comprises teeth that are conical and slightly curved lingually; and lanceolate teeth. There are no clearly identifiable external mandibular fenestrae. The biserial dorsal shield comprises strongly sculptured parasagittal osteoderms. The frontal of the juvenile skull is partially unfused. Specific observed characters indicate that the Langenberg material is closely related to *Theriosuchus*. Being Upper Jurassic the new remains are approximately of the same age as the oldest known atoposaurid *Theriosuchus guimarotae* and represent the first evidence of atoposaurid bone material from Germany. Previously only teeth were known.

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Modern holothurian calcareous ring morphology (Echinodermata) – the need for more detailed studies

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The defining feature of all members of the Holothuroidea is the calcareous ring, which is possessed by nearly all modern sea cucumbers. The calcareous ring supports the pharynx, the anterior section of the water vascular system and provides points of attachment for the longitudinal and (if present) retractor muscles; furthermore, it is known that in some groups, a notch or a perforation in radial elements is present for the passage of radial nerves. However, almost nothing is known about the 3D-morphology and the stereom structure of the holothurian calcareous ring; similarly, the evolutionary origin of this structure is also uncertain.
According to taxonomical studies on modern holothurians, the calcareous ring is considered to be highly important because of major differences in this structure within various orders and/or families. There are a few reports on fossil calcareous ring elements, but this structure was nearly completely neglected by palaeontologists. Isolated fossil calcareous ring elements were mostly misinterpreted as aberrant ossicles or 'fused side shields' of ophiuroids.
However, this structure offers more information, but this can only be deduced through a better '3-D' understanding of the calcareous ring of modern sea cucumbers, which is still largely missing.
Here we offer preliminary results from detailed studies of hard parts using X-ray computed tomography and scanning electron microscopy of members (> 15 species) of the Apodida (Chiridotidae, Myriotrochidae), Aspidochirotida (Holothuriidae, Synallactidae), Dactylochirotida (Ypsilothuriidae), Dendrochirotida (Cucumariidae, Psolidae), Elasipoda (Elpidiidae, Laetmogonidae), and Molpadiida (Caudinidae, Eupyrgidae, Molpadiidae).

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