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having a dorsally hemmed anterior cotyle, instead of being smooth and more prominent. Finally, the ilium shares with *Wesserpeton* a dorsoventrally elongated acetabulum but differs from it and other ilia in presenting a strongly posteriorly-tilted long axis.

Our material supports the presence of a new species of Albanerpetontidae in the Upper Jurassic of Portugal, different from *Celtedens* as previously proposed (Wiechmann, 2000). Its affinities among the family remain to be determined, as the group requires a revision to tackle the recent conflicted hypotheses. Some affinities seem to be shared between our material and the one described from the Lower Cretaceous Isle of Purbeck from United Kingdom assigned to *Celtedens* sp. (McGowan & Ensom, 1997), such as the small suprapalatal pit facing laterolingually, the saddle-shaped cotylar facet in the glenoid fossa of the articular, the frontal bones with bell-shaped outline and a broad, and blunt internasal process. The material from the Lourinhã Formation shares strong affinities with the historic material from the Guimarota beds (Wiechmann, 2003): frontals outline and blunt internasal process; the presence of a lateral suprapalatal pit (which can be divided in Guimarota specimens), and the shape of the labial articular facet of the *pars dentalis* in the premaxilla; and the features in the dentaries, such as the sinusoid convex dental parapet, the labial ornamentation, and the second canal dorsolabially located of the Meckelian canal. However, some differences occur in the overlapping material: the axis possesses a prominent anterior cotyle, without hemmed ridges; the glenoid fossa of the articular exhibits a subvertical cotylar surface; and the presence of the dorsal edge facet of the *pars dentalis* in the premaxillae. However, due to the high number of specimens (over 300 from Lourinhã, several thousands from Guimarota) and their fragmentary nature, more work is still required to quantify and characterize the intraspecific variation and test to what degree these features are diagnostic of a separate species.

This material highlights the importance and the pressing need to describe more bones in Albanerpetontidae and include them in future works in order to solve the intricated relationships of this group.

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Poster Session 1 (Thursday, June 8, 2023)

VERTEBRATE MICROFOSSIL ASSEMBLAGES FROM THE LOURINHÃ FORMATION: A SNEAK PEEK ON THE PALEOECOLOGY OF THE LATE JURASSIC IN PORTUGAL

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Vertebrates Microfossil Assemblages (VMAs) capture a time averaged, accurate record of their surrounding

Table 1. Faunal composition of the three Vertebrates Microfossil Assemblages (VMA).

	Valmitão VMA	Zimbral VMA	Porto das Barcas VMA
Hybodontidae			x
Semionotidae	x	x	x
Pycnodontidae		x	
Caturidae	x	x	x
Albanerpetontidae	x	x	x
Anura indet.	x		
Caudata indet.	x		
Dryolestidae	x		
Multituberculata indet.	x		
Choristodera indet.	x	?	
Sauropterygia	x	x	
Plesiosaura indet.	x	x	
Sincomorpha	x	x	x
Atoposauridae	x	x	x
Bernissartiidae	x		
Goniopholidae	x	x	x
***Lusitanisuchus mitracostatus* (Seiffert, 1970)**	x		
Mesoeucrocodylia indet.	x		
Dromaeosauridae	x	x	
Megalosauridae	x	x	
Thyreophora indet.	x		
Neornitischia indet.	x	x	
***Phyllodon henkeli* Thulborn, 1973**	x		
Rhamphorhynchidae	x	x	

paleocommunities, share similar taphonomic history, and provide reliable signals for paleo-metacommunity analysis (Rogers et al., 2017). They provide a snapshot of the paleobiodiversity over the period of their formations and allow high-resolution information and, therefore, constitute a keystone for integrative paleoecological studies (Eberth et al., 2007; Gilbert et al., 2018). Despite their proven interests, the task of collecting microfossils is time consuming and in general produces relatively unimpressive fossils, which results in very few, well studied Mesozoic VMAs worldwide. Portugal represents one of the major data points for the Upper Jurassic, thanks to the Konzentrat-Lagerstätte of the Guimarota beds (Martin & Krebs, 2000). Nevertheless, despite other slightly younger VMAs that have been reported from the Alcobaça Formation (Malafaia et al., 2010) and the Lourinhã Formation (Guillaume, 2018), no extensive study has been carried out on them.

For this study, six samples of bulk rock have been collected in three different localities (Porto das Barcas, Zimbral, and Valmitão), representing a total sampling of over 150kg. From the 74kg of concentrates retrieved from screen-washing, over 17,000 fossil remains have been collected, among which 3328 vertebrates fossils could have been identified so far. This sample from three localities represent the first statistically significative approach to the microvertebrate diversity of the Lourinhã Formation and its paleoecology.

The Lourinhã Fm. is well known for its vertebrate fossils, mainly dinosaurs, including osteological, ichnological and oological remains of great importance (e.g., Antunes & Mateus, 2003; Fernandes et al., 2021; Mateus & Milàn, 2010). The Late Jurassic succession represents transitional to continental environments, (Hill, 1988) and was subdivided in five members: Praia de Amoreira Mbr., Porto Novo Mbr., Praia Azul Mbr., Assenta Mbr., and Santa Rita Mbr. (Hill, 1988). Traditionally, the formation has been characterized as fluvial and deltaic deposits with shallow marine intercalations, being the marine entrances more common in the Praia Azul Mb., in which three major transgressions have been recognized (e.g., Hill, 1988). The three localities described here are close to the Lourinhã village: Valmitão VMA is located in the upper part of the Porto Novo member while Zimbral VMA and Porto das Barcas VMA belong to the Praia Azul member.

In the Valmitão VMA (5 m-thick) is characterized by a multicolored succession of greyish and purplish silty marls, violet and orange mudstones, being common interbedded brownish sandstones. Strata are dm in thickness and show a tabular geometry. The fine-grained lithologies show massive texture and frequently carbonate nodules, while in the mudstones rhizoliths, rhizotubules and mottling are also very common. The fine to medium sandstones comprise massive or cross-laminated strata with some rounded extraclats (< 2 cm in diameter). Zimbral VMA (2.8 m-thick) involves greyish marls with occasional silty levels that comprise three massive tabular beds. The deposits coarsen upwards (m in thickness) and show coal or plants debris along the strata. Porto das Barcas VMA (3.75 m-thick) comprises massive tabular beds of dark marls with occasional silts and very coarse sandstones interbedded. They form five, dm in thickness, coarsening upwards sequences based on an increase in

sharks and the large number of invertebrate shells recovered in the assemblage. This taphonomic signal is shared with Buenache and Las Hoyas, interpreted as swamp and lacustrine environments (Buscalioni et al., 2008, 2018) but Porto das Barcas is relatively less diverse in obligate taxa, which could be a reflection of a much smaller size.

The analysis of the vertebrate microfossil assemblages, coupled with a detailed sedimentological analysis, shows that the degree of marine influence in the late Jurassic paleoenvironments recorded by the Lourinhã Formation is much more marked than previously identified. Interestingly, the dominance of obligate aquatic and amphibious faunas in the VMAs of the Praia Azul member points towards a more transitional environment, excluding the three well known transgression levels.

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Technical Session 3: Terrestrial Ecosystems – Triassic – Middle Jurassic (Friday, June 9, 2023, 9:00 AM)

THE FAUNA OF THE LOWER BURGERSDORP FORMATION (CYNOGNATHUS ASSEMBLAGE ZONE – LANGBERGIA SUBZONE) OF SOUTH AFRICA

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The Burgersdorp Formation is a non-marine fluvio-lacustrine succession of siliciclastic rocks at the top of the Tarkastad Subgroup (Beaufort Group; Karoo Supergroup) deposited in the main Karoo Basin in South Africa from