

## The first ornithomimosaur remains from Germany

Denis Theda, Darius Nau, René Dederichs, and Achim H. Schwermann

*Acta Palaeontologica Polonica* 70 (3), 2025: 543-555 doi:10.4202/app.01262.2025

Ornithomimosauria is a group of coelurosaurs primarily known from the Cretaceous of Asia and North America. The European record is comparatively sparse, with *Pelecanimimus* from the Lower Cretaceous of Spain being the only unequivocal representative. Here, we present a manual ungual and a distal metatarsal III from a Lower Cretaceous (Barremian to Aptian) karstic fissure fill in Balve, northwestern Germany, which we assign to Ornithomimosauria indet. We also review the literature regarding manual unguals of ornithomimosauria and confirm previous reports of quite consistent positional variation within Ornithomimosauria, with manual ungual I being the most recurved and bearing the largest flexor tubercle, and the unguals of digits II and III being less recurved and possessing smaller tubercles. The manual ungual from Balve is closest in morphology to manual digit III. The metatarsal has a shaft with a strongly triangular cross-section, marking it as a sub- or fully developed arctometatarsal. This type of specialized third metatarsal occurs in a number of different clades of Coelurosauria (Alvarezsauroidea, Ornithomimosauria, Oviraptorosauria, Troodontidae, Tyrannosauridae). Based on its overall morphology and the rarity (Alvarezsauroidea, Troodontidae) or absence (Oviraptorosauria, Tyrannosauridae) of other clades with arctometatarsals from the fossil record of Europe, we regard it as ornithomimosaurian. This is only the second definitive record of European ornithomimosauria, after the description of *Pelecanimimus polyodon* from Spain, and represents the first reported occurrence of this clade in Germany.

**Key words:** Ornithomimosauria, Theropoda, arctometatarsus, unguals, Lower Cretaceous, Germany.

Denis Theda [[theda-paleo@gmx.de](mailto:theda-paleo@gmx.de); ORCID: <https://orcid.org/0009-0003-6984-0219>], Lippisches Landesmuseum Detmold, Ameide 4, 32756 Detmold, Germany.

Darius Nau [[dariusnau@uni-bonn.de](mailto:dariusnau@uni-bonn.de); ORCID: <https://orcid.org/0009-0000-4343-6830>], Bonn Institute for Organismic Biology, University of Bonn, Nussallee 8, 53115 Bonn, Germany.

René Dederichs [[rededpaleo@gmail.com](mailto:rededpaleo@gmail.com); ORCID: <https://orcid.org/0009-0000-2442-1545>], Bonn Institute for Organismic Biology, University of Bonn, Nussallee 8, 53115 Bonn, Germany; University of Zurich, Department of Paleontology, Karl Schmid-Strasse 4, CH-8006 Zurich, Switzerland.

Achim H. Schwermann [[achim.schwermann@lwl.org](mailto:achim.schwermann@lwl.org); ORCID: <https://orcid.org/0000-0001-8928-8773>], LWL-Museum für Naturkunde, Westfälisches

Landesmuseum mit Planetarium, Sentruper Straße 285, Münster 48161, Germany.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see [creativecommons.org](https://creativecommons.org)), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(653.0 kB\)](#)