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ABSTRACT BOOK

AND THE INTRA-CONGRESS FIELD TRIP GUIDEBOOK

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cal features of the tracks and recent research on modern crocodilian tracks we reject their crocodilian origin. These tracks represent the first pterosaur ichnites found in Poland. Altogether with most recent finds, twenty seven isolated specimens of pterosaur tracks (pes and manus prints) and partially preserved trackways have been found. The manual prints are asymmetric, digitigrade, and tridactyl. The pedal prints are elongate, symmetrical, plantigrade and functional-tetradactyl. Most likely these tracks were left by a small pterodactylid or rhamphorhynchoid pterosaur, with wingspans of about 0.5 to 1 m. The footprints have been preserved as a positive hyporelief at the bottom of tidal channel deposits. The palaeoenvironmental interpretation as tidal flat is confirmed by presence of vertically accreted tidal bundles, each representing deposition in one tidal cycle. Most likely, this was one of environments frequented by pterosaurs, which is shown by many other pterosaur tracks' occurrences, where they are clearly associated with marine coastal facies. Similar behaviour is observed in modern birds, finding favourable feeding opportunities in this environment, as well as the safe resting places. On the other hand, the muddy-carbonate surface of the upper tidal flat provided an excellent medium for precise imprinting of delicate tracks made by a light animal. Quick burial of the imprints underneath tidal channel sediments (grainstones) protected these delicate structures from erosion. Presence of subaerial structures, like rhizoids, pterosaur tracks and dinosaur footprints in the Lower Kimmeridgian strata of the northern slope of the Holy Cross Mountains clearly points to emersions at that time. The East European land must have periodically extended far to the west. Naturally, pterosaurs could leave their tracks anywhere on dry land, also on ephemeral shoals in the sea too. However, presence of detrital quartz and quartzite fragments, large wood fragments, as well as occurrence of dinosaur footprints in Wierzbica and Ożarów quarry situated some 75 km to the SE, prove that the discussed pterosaur tracks were rather left on a shore the East European Land.

PROBABLE *ANOMOEPUS* FROM THE LATE JURASSIC OF ASTURIAS, SPAIN

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Numerous trackways and isolated prints of small ornithopod footprints occur in the Late Jurassic (Kimmeridgian) of Asturias, northern Spain (García-Ramos *et al.*, 2006), in sea cliffs along the "Dinosaur Coast". Several such specimens are housed in the Museum of the Jurassic, Asturias. Hindfoot prints are much more abundant than forefoot prints. Only three manus prints are preserved. Only one of them is pentadactyl (with digit V partly obscured by matrix; Fig. 1A); the other two appear tridactyl (Fig. 1B) and tetradactyl, proba-

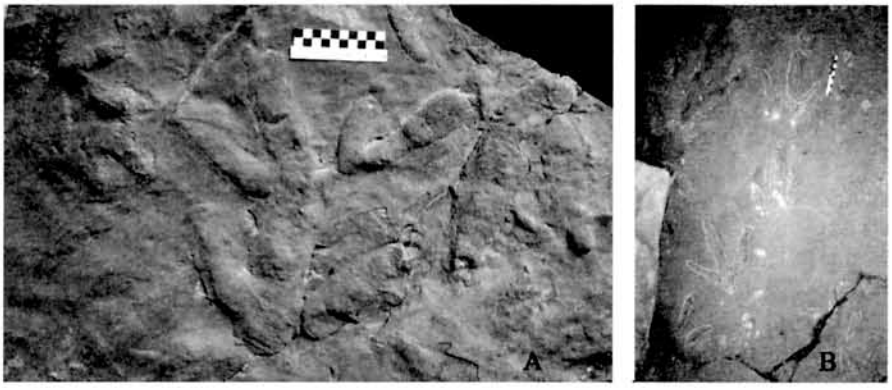

Fig. 1. *Anomoepus* prints from Asturias (Upper Jurassic)

bly due to poor preservation. Manus prints range 5.5–7.5 cm in length and 8–10 cm in width. The tridactyl pes prints range from 9.5 to 20 cm in length and width; one of them shows skin impressions. The metatarsal-phalangeal pad of digit IV is almost in line with the axis of digit III. This last feature, in combination with the pentadactyl manus, is diagnostic of *Anomoepus* (Olsen, Rainforth, 2003). Consequently the question of whether we should expect to find Anomoepus in significantly younger strata than those of the Newark Supergroup (Olsen, Rainforth, 2003) has an affirmative answer in the Asturian Late Jurassic tracksites. Similar tracks have recently been reported from the basal Cretaceous of Canada and Thailand (Lockley *et al.*, in press).

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DINOSAURS FOOTPRINTS IN POLAND – DEVELOPING EDUCATIONAL AND CONSERVATION PROGRAM

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Mesozoic sediments of the northern slope of the Holy Cross Mountains contain dinosaurs footprints and is the richest place of their finds in Poland. The footprints are very important not only as a scientific material but also as educational base and regional tourist attraction. In this region one of the most important place to protect is the oldest record of gregarious behaviour of sauropods from the geological preserve Gagaty Sołtykowskie (Lower Jurassic, Zagaje Formation). The natural cast of tracks can be seen in the outcrop. The footprints were slowly damaged by natural erosion. Previous conservation didn't stop this process effectively. In 2007 a new tight roof was built to protect trackways and also the rock was thoroughly cleaned and conserved using new methods. New foot-bridges built allow to access the footprint outcrops. There are also information stands in Polish and English. The dinosaur footprints from Sołtyków are surely a worthwhile tourist site. The project of conservation and building educational base was supported by the Ministry of Science and Higher Education, but also very important were cooperation and help of volunteers and foresters from Stąporków forestry headquarters.

Another Early Jurassic dinosaur tracks called the Mniów Dinosaur Bridge (Gliniany Las near Mniów, Przysucha Ore-Bearing Formation) is planned for protection and conservation. The track density reaches even dozen footprints per square meters. Fragments of trackway from Gliniany Las are exhibited in Geological Museum of the Polish Geological Institute in Warsaw. The project of trackways protection and conservation in outcrop was prepared in consultation with local government and organization. In the future this unique dinosaur trackways could be local tourist attraction and a part of educational network of the Central European Dinosaur Safari. Brochures with information about dinosaurs footprints in the Holy Cross Mountains were prepared for pupils, teachers and tourists. Information about dinosaur footprints as elements of our geological heritage helps to preserve them for future generation and provide tourist attraction and educational value.