

# A Glimpse of the PAST



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## **A Glimpse of the Past**

Abstract book of the XV Encuentro de Jóvenes Investigadores en Paleontología/ XV Encontro de Jovens Investigadores em Paleontologia

Editors: Sandra Barrios de Pedro, Candela Blanco Moreno, Ane de Celis, Jorge Colmenar, Elena Cuesta, Daniel García Martínez, Francesc Gascó, Ana Jacinto, Elisabete Malafaia, Marcos Martín Jiménez, Carlos de Miguel Chaves, Pedro Mocho, Vanessa Pais, Adrián Páramo Blázquez, Sofia Pereira, Alejandro Serrano Martínez, Daniel Vidal

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### **EDITORS**

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## **The 2016 Dinosaur Expedition to the Late Triassic of the Jameson Land Basin, East Greenland**

Marco Marzola<sup>1,2,3,4,\*</sup>, Octávio Mateus<sup>1,3</sup>,  
Jesper Milàn<sup>5,6</sup>, Lars B. Clemmensen<sup>2</sup>

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<sup>1</sup>GeoBioTec, Departamento de Ciências da Terra, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Quinta da Torre, 2829-516 Caparica, Portugal;

\*Email: m.marzola@campus.fct.unl.pt

<sup>2</sup> Institut for Geovidenskab og Naturforvaltning (IGN), Det Natur- og Biovidenskabelige Fakultet, Københavns Universitet, Øster Voldgade 10, DK-1350 Copenhagen K, Denmark

<sup>3</sup> Museu da Lourinhã, Rua João Luís de Moura, 95, 2530-158 Lourinhã, Portugal

<sup>4</sup> GeoCenter Møns Klint, Stengårdsvej 8, DK-4751 Borre, Denmark

<sup>5</sup> Geomuseum Faxe, Østsjælland Museum, Østervej 2, DK-4640 Faxe, Denmark

<sup>6</sup> Natural History Museum of Denmark, Øster Voldgade 5–7, DK-1350 Copenhagen K, Denmark

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### **INTRODUCTION**

The Norian–Early Rhaetian (Late Triassic) lacustrine rocks forming the Fleming Fjord Formation in the Jameson Land Basin (East Greenland) have the richest vertebrate fossil record from Greenland, and have been target of expeditions since the late 1960’s (i.e., Clemmensen, 1980; Jenkins *et al.*, 1994, 2001, 2008; Milàn *et al.*, 2012; Sulej *et al.*, 2014; Clemmensen *et al.*, 2016). Among the vertebrates from the Jameson Land Basin are fishes, amphibians, turtles, aetosaurs, phytosaurs, pterosaurs, sauropodomorph and theropod dinosaurs, and early mammals (i.e., Jenkins *et al.*, 1994, 1997, 2001, 2008; Clemmensen *et al.*, 1998; Gatesy *et al.*, 1999). The geological experience center GeoCenter Møns Klint promoted their first expedition to the Jameson Land Basin in 2012, recovering, among others, testudines, sauropodomorph dinosaurs, and the first recorded phytosaurs from Greenland (Fig. 1). From July 19<sup>th</sup> to August 04<sup>th</sup> 2016, a second expedition was made to continue the survey of phytosaur material at the ‘Mateus Quarry’, in the middle

of the Malmros Klint Member of the Fleming Fjord Formation (~210 Ma) (Fig. 2A) (Mateus *et al.*, 2014; Clemmensen *et al.*, 2016; Marzola *et al.*, 2016).

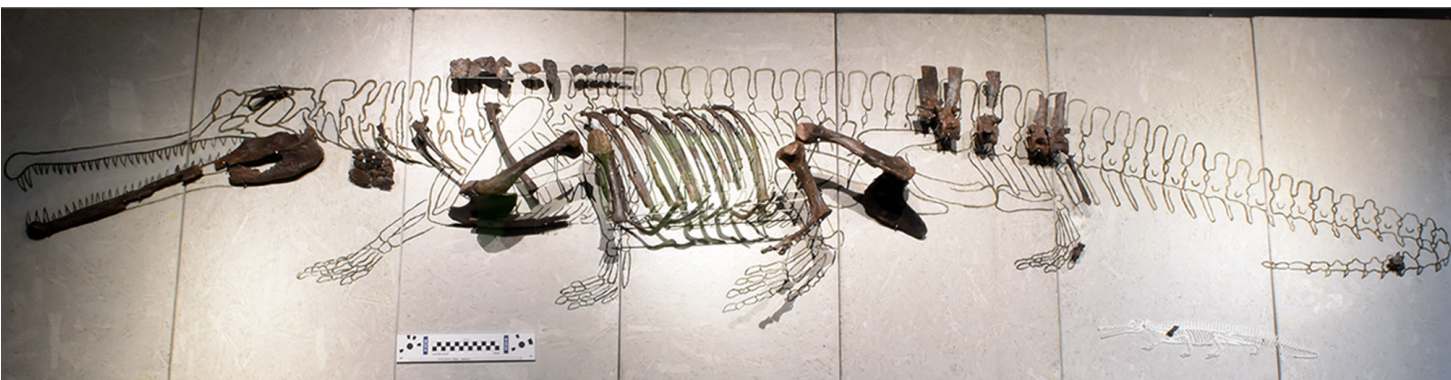
The 2016 Dinosaur Expedition members were Jesper Milàn, Lars B. Clemmensen, Octávio Mateus, Marco Marzola, and Roland Hansen (Polar Logistics Group/Sirius Patrol) (Fig. 2B).

## METHODS, MATERIAL, AND PRELIMINARY RESULTS

The 2016 expedition took place mainly at the ‘Mateus Quarry’ (71°15.584’N, 22°31.798’W, 171 m asl), found by one of us (OM) in 2012, and where four phytosaurs had been already collected in 2012 (see Mateus *et al.*, 2014). In 2016, we expanded the quarry more southwards, following the bone-bearing layer, almost doubling the total area of the 2012 excavation (Fig. 2A). 740 kg of fossil-bearing rocks were recovered in ten days and are now under preparation at the Museu da Lourinhã (Portugal), including fish, amphibian, phytosaur, and dinosaur remains as bones, teeth, and coprolites.

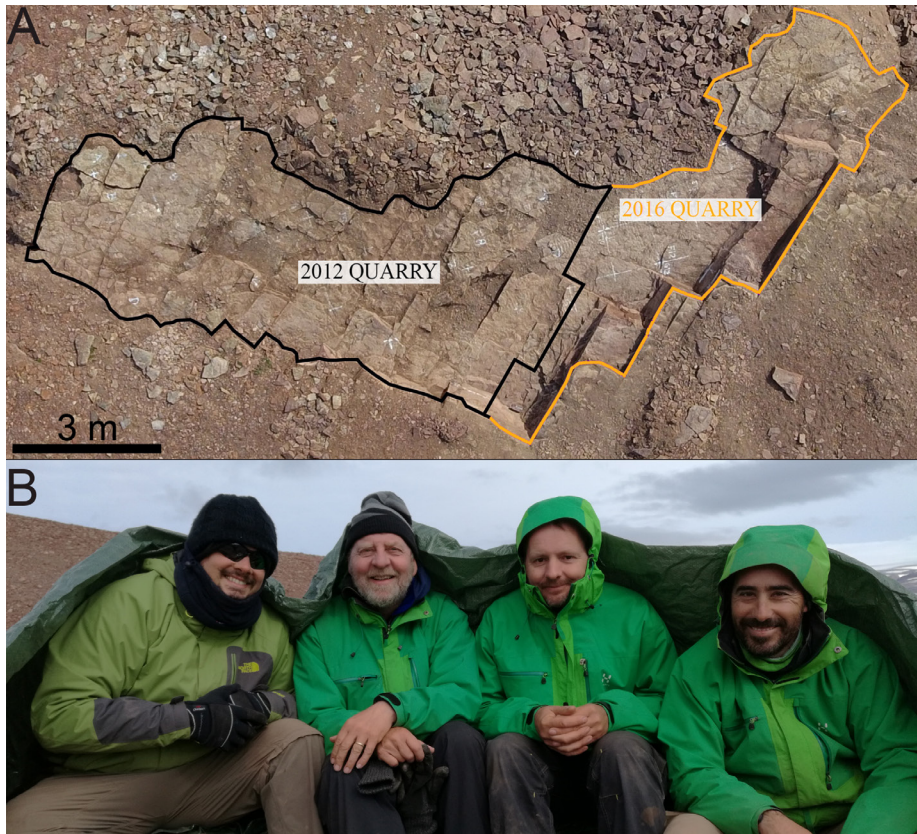
Because of the very early stages of the preparation of the newly recovered material, there are few preliminary results out-coming. Together with some material recovered by our previous expedition in 2012, we recovered tooth plates belonging to dipnoan fish, including a new species of Ceratodontid, yet to be published. Some bone fragments were collected from the given site of the turtle described in Jenkins *et al.* (1994) and, potentially, belonging to the same testudine specimen. Prospection made on outcrops of the Early Jurassic Kap Stewart Formation provided evidence of marine reptiles, namely plesiosaurs, during the earliest stages of the opening of the North Atlantic at a paleolatitude of 44°N (Milàn *et al.*, 2016). Moreover, we noticed that in the study area at the Eastern margin of the Jameson Land Basin, the Late Triassic Fleming Fjord Formation is overlain unconformably by the Late Triassic–Early Jurassic Kap Stewart Formation.

In conclusion, both the 2012 and the 2016 excavations at the Jameson Land Basin have unearthed a bone assemblage of outstanding scientific value for many years to come. The Late Triassic of the Jameson Land Basin has undoubtedly the potential to become one of the most important Late Triassic sites in the world for vertebrate paleontology research.



**Figure 1.** The phytosaur material found at the ‘Mateus Quarry’ as exposed at the GeoCenter Møns Klint.





**Figure 2.** **A.** Aerial image of the ‘Mateus Quarry’, Malmros Klint Member of Fleming Fjord Formation, at Lepidopteris Elv, Jameson land Basin, East Greenland (71°15.584’N, 22°31.798’W, 171 m asl). **B.** The scientific team of the 2016 GeoCenter Møns Klint Dinosaur Expedition. From left to right: Phd candidate Marco Marzola, Prof. Lars B. Clemmensen, expedition leader Dr. Jesper Milàn, and Prof. Octávio Mateus.

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