



# A new dinosaur ichnofauna from Tunisia: Implications for the palaeobiogeography of peri-Adriatic carbonate platforms in the mid-Cretaceous<sup>☆</sup>

Michela Contessi<sup>\*</sup>

Dipartimento di Scienze Biologiche, Geologiche e Ambientali, Alma Mater Studiorum, Università di Bologna, via Zamboni 67, 40126 Bologna, Italy



## ARTICLE INFO

### Article history:

Received 20 January 2013

Received in revised form 30 July 2013

Accepted 19 September 2013

Available online 27 September 2013

### Keywords:

Footprints

North Africa

Ichnology

Carbonate platform

## ABSTRACT

New dinosaur tracks discovered at the Chenini site, near Tataouine (southern Tunisia), are described. Isolated tracks as well as manus/pes couples of a quadrupedal dinosaur are referred to a hadrosaurian tracemaker and assigned to cf. *Apulosauripus federicianus* (Nicosia et al., 2000b), an ichnospecies originally described in the Upper Cretaceous carbonate platform deposits of southern Italy. This discovery thus represents the first report of hadrosaurian tracks in Africa.

The occurrence of tracks similar to *A. federicianus* in Tunisia also represents the first evidence of the presence of comparable ichnofauna in the Upper Cretaceous of both northern Africa and the carbonate platforms of the Mediterranean area. Supporting these new data, the Cenomanian theropod ichnofauna recently described from southern Tunisia is here compared with coeval theropod tracks from the peri-Adriatic carbonate platforms. This comparison documents a number of shared morphological features, suggesting possible affinities of the trackmakers and supporting the hypothesis of a subaerial connection linking the carbonate platforms of the Mediterranean area to the northern margins of Africa in the mid-Cretaceous.

© 2013 Elsevier B.V. All rights reserved.

## 1. Introduction

In the last decade the increasing number of dinosaur skeletal remains and tracksites discovered in Europe has provided important palaeobiogeographic constraints for reconstructing the geodynamic history of the peri-Adriatic carbonate platforms during the mid-Cretaceous. Dinosaur skeletal remains from the Cretaceous of Spain and France share several common elements with their African counterparts, such as spinosaurid theropods, ornithomimid, and titanosaurid and rebbachisaurid sauropods (Le Loeuff, 1991; Sereno et al., 1998; Milner, 2003; Pereda Suberbiola et al., 2003; Rauhut et al., 2003; Sereno et al., 2004; Mezga et al., 2006; Royo-Torres et al., 2006; Smith et al., 2006; Krause et al., 2007; Mezga et al., 2007; Canudo et al., 2009). When several dinosaur tracksites, displaying diversified ichnoassociations, were discovered in carbonate platforms of Italy and Croatia (Dalla Vecchia, 2000; Nicosia et al., 2000a, 2000b, 2007; Petti et al., 2008a; Sacchi et al., 2009), they opened a debate on the paleobiogeographic reconstructions of carbonate platforms in the Mediterranean area during the mid-Cretaceous, and their possible subaerial connections with the

northern African margin (Bosellini, 2002; Nicosia et al., 2007; Petti et al., 2008b; Sacchi et al., 2009; Zarccone et al., 2010; Le Loeuff, 2012; Le Loeuff et al., 2012). Despite an increasing number of studies on Jurassic vertebrate tracksites from Africa (Ellenberger, 1972; Lingham-Soliar and Broderick, 2000; Belvedere et al., 2010; Marty et al., 2010; Mudroch et al., 2011), reports on Cretaceous dinosaur tracks are restricted to a few poorly preserved tracks from Morocco (Ambroggi and De Lapparent, 1954), Sudan (Demathieu and Wycisk, 1990) and Tunisia (Contessi and Fanti, 2012a, 2012b). As a result all palaeogeographic reconstructions in the literature, suggesting a subaerial connection in the mid-Cretaceous, are based on limited stratigraphic and ichnological data from the Mediterranean carbonate platforms, and no comparisons with African ichnofaunas are yet available (Bosellini, 2002; Petti et al., 2008b; Sacchi et al., 2009; Zarccone et al., 2010).

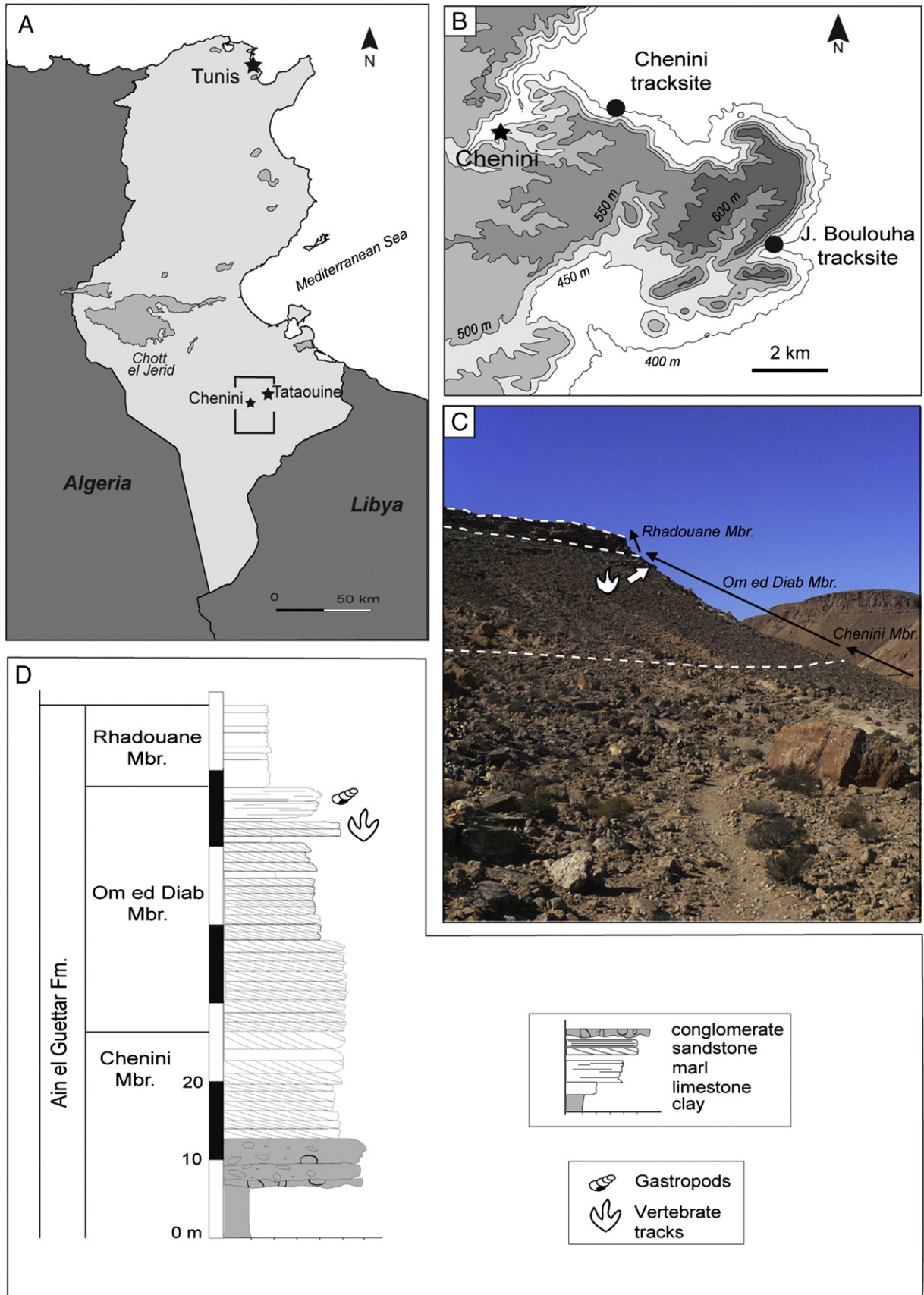
Due to its relative position close to the Mediterranean carbonate platforms during the mid-Cretaceous, Tunisia plays a key role in understanding the palaeogeography of the Mediterranean carbonate platforms, and has been hypothesized as the possible area of connection between Africa and Adria (Bosellini, 2002; Zarccone et al., 2010). Southern Tunisia is well known in the literature for its rich and diverse Lower Cretaceous fossil record, including fish, sharks, turtles, crocodiles, pterosaurs, sauropods, non-avian theropods and rare ornithomimid (De Lapparent, 1960; Benton et al., 2000; Srafi et al., 2004; Fanti et al., 2012). Relevant to this study, three Cretaceous vertebrate tracksites have been discovered in the Tataouine region during recent field work (Contessi and Fanti, 2012b).

Abbreviations: CH, Chenini; BL, Boulouha; PR, Premantura Promontory; SLD, San Lorenzo Di Daila; FL, footprint length; FW, footprint width.

<sup>☆</sup> Institutional abbreviations: MGCC, Museo Geologico Giovanni Capellini, Bologna, Italy.

<sup>\*</sup> Tel.: +39 051 2094565.

E-mail address: [contessi.m@gmail.com](mailto:contessi.m@gmail.com).



**Fig. 1.** Geologic and stratigraphic settings. A) Tunisian map showing the position of the study area. B) Topographic map of the Chenini locality. C) Chenini outcrop, arrow indicates the track-bearing layer. D) Stratigraphic log of the Chenini section.

Download English Version:

<https://daneshyari.com/en/article/4466448>

Download Persian Version:

<https://daneshyari.com/article/4466448>

[Daneshyari.com](https://daneshyari.com)