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Extinctions, survival and innovations of conodont species during the Kačák Episode (Eifelian-Givetian) in south-eastern Morocco

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(+) O.H. WALLISER passed away late December 2010. He was Prof. Emeritus at the Institute und Museum für Geologie und Paläontologie of the University of Göttingen, Germany.
The last two years we studied together the conodont faunas discussed herein.

The Global Stratotype Section and Point (GSSP) for the base of the Givetian is located in the Jebel Mech Irdane in the Tafilalt of SE Morocco (WALLISER 2000). The position of the boundary is based on the first occurrence of the conodont species *Polygnathus hemiansatus* and is within the Kačák Episode (WALLISER *et al*. 1995). However at the time of the discussion of the GSSP for the base of the Givetian the study of the conodont faunas was limited to the group of species that were important for the boundary definition. They belong to the evolutionary lineage *P. pseudofoliatus – P. hemiansatus.* For the present contribution the complete conodont faunas have been studied.The conodont faunas are not only rich by the number of specimens but most species also demonstrate a large variability. This allows to recognize different morphotypes in species and new species that are useful for establishing lineages and for biostratigraphy. The study of the Mech Irdane conodonts is combined with the updating of earlier described conodonts from the same time interval in the Bou Tchrafine section in the Tafilalt (BULTYNCK 1987) and in the Ou Driss section in the Mader (BULTYNCK 1989). HOUSE (1985) introduced the name Kačák Event, after the Kačák Member, a black and calcareous shale in the Bohemian in which the tentaculite *Nowakia otomari* occurs. At the same time WALLISER (1985) proposed the *otomari* Event based on the onset of the dacryoconarid lineage of the species *Nowakia otomari*. Later it was demonstrated that the Kačák Event was not instantaneous but represents a polyphased biotic crisis (GARCÍA-ALCALDE *et al.* 1990). In order to solve this confusing situation WALLISER (2000) proposed an hypoxic Kačák Episode with a Late Eifelian 1 Event and the Late Eifelian 2 Event.

So the Kačák cannot strictly be considered as an event. It is best qualified as an hypoxic episode. Extinctions are limited to five species of the *Polygnathus angusticostatus* group. More important are the innovations in the *Polygnathus pseudofoliatus* group, with several new species. Also the typical Eifelian *Icriodus corniger- struvei* group disappears and is succeeded by the *Icriodus obliquimarginatus* group (Fig. 1).

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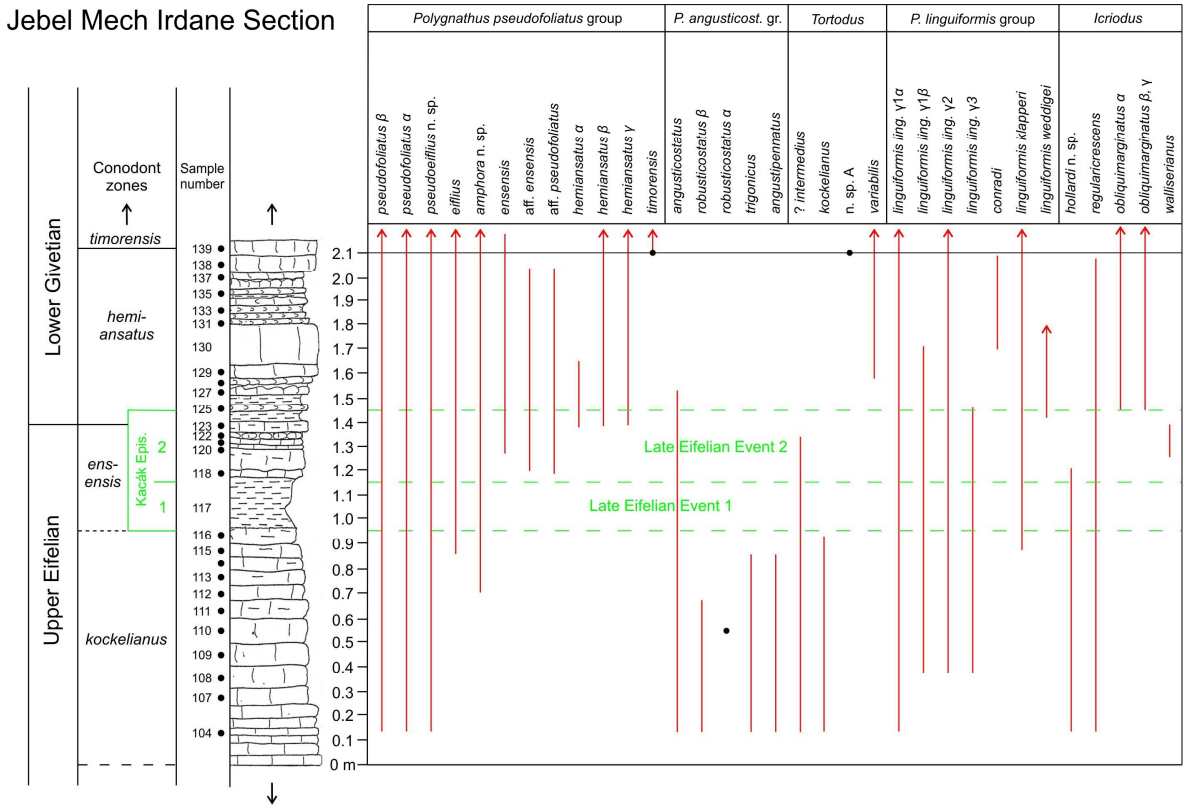

Fig. 1: Conodont distribution in the Mech Irdane Section (Tafilalt, south-eastern Morocco).