Comment on "The oldest stratigraphic record of the Late Cretaceous shark Ptychodus mortoni Agassiz, from Vallecillo, Nuevo León, northeastern Mexico"

by Blanco-Piñón *et al.*, Rev. Mex. Cienc. Geol. (2007), 24, 25-30

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We believe the article by Blanco-Piñón *et al.*(2007) contains severe formal and scientific errors which, to our view, should be revised according to international scientific rules.

The specimen presented by Blanco-Piñón *et al.*(2007) belongs to the type collection of the FCT at Linares. Its correct acronym is UANL-FCT-VC 341 (VC for Vallecillo) or UANL-FCT-R (R for reptiles). FCT alone is incorrect and does not allow the identification of the specimen.

Specimen UANL-FCT-VC341 originates from the Vallecillo area and was discovered in 1995 by one of us (WS) in the collection of the small museum at Vallecillo. The specimen lacks any finding data. Based on the black colour, the high carbonate content as well as the imperfect cleavage of the host rock, it appears to us that the specimen does not originate from the platy limestone member but from the monotonous sediment sequence of black marlstone and limestone overlying the Vallecillo Member. These sediments are widely known from northeastern Mexico as the Agua Nueva Formation. In the Vallecillo area, the unit clearly overlies the platy limestone and is stratigraphically younger. In consequence, the *Ptychodus* specimen discussed here must also result from stratigraphic levels younger than the Vallecillo limestone (Ifrim, 2006).

Blanco-Piñón *et al.*(2007) refer to the presence of *Watinoceras coloradoense* (see also Blanco-Piñón *et al.*, 2005, where the authors refer to Arkell *et al.*, 1978 for the biostratigraphic assignation of UANL-FCT-VC341). In fact, the Treatise of Invertebrate Paleontology on Mesozoic ammonoidea was published by Arkell *et al.* in 1957, and is an overview on generic level only. A more recent volume of the "Treatise" exclusively on Cretaceous ammonites was published by Wright *et al.*(1996). However, these monographs are entirely taxonomic and do not refer to the stratigraphic significance of *W. coloradoense* and the dating by Blanco-Piñón *et al.* is thus invalid. *W. coloradoense* was unknown from the Vallecillo deposits, between 1998 and 2003, when Blanco-Piñón studied the site (Blanco-Piñón, 2003). Later publications, by Buchy *et al.*(2005) and Ifrim *et al.*(2005) refer to *W. coloradoensis*, but they are ignored by Blanco-Piñón *et al.* (2007).

W. coloradoensis does not occur in the black limestone beds of the Agua Nueva Formation. At Vallecillo, this species is restricted to lower part of the platy limestone member, with its last occurrence at least 3m below the transition into the Agua Nueva Formation *s.s.* (Ifrim, 2006, Ifrim and Stinnesbeck, 2007). A co-occurrence of *Watinoceras* and UANL-FCT-VC341 is thus highly unlikely.

Blanco-Piñón *et al.*(2007, p.28) also mention *Spathites* and *Collignoniceras* as representatives of the Vallecillo Member of platy limestones. These genera, however, are representatives of the middle Turonian and not the early Turonian assemblage. In case of co-occurrence with UANL-FCT-VC341, this specimen would thus be of middle Turonian and not early Turonian age. The stratigraphic occurrence of *Ptychodus mortoni* at Vallecillo would then be *in line* with other localities in NE Mexico (*e.g.*, Peyotes, Coahuila and Xilitla, San Luis Potosí), arguing against the

title of their contribution ("The oldest record of…"). In consequence, the argumentation of Blanco-Piñón *et al.*(2007) regarding the age of UANL-FCT-VC341 is incorrect in all aspects. A detailed taxonomic description and biostratigraphic distribution of the ammonites of the Vallecillo Member was recently published by Ifrim (2006) and Ifrim and Stinnesbeck (2007) and is now available.

Other references to the work of our research group are also omitted by Blanco-Piñón *et al.*(2007). For instance, the relationship between the formation of the platy limestone and the latest Cenomanian global oceanic anoxic event (OAE 2) was established by Ifrim *et al.*(2005), and it was specified by Ifrim (2006). It was not Jacobs *et al.*(2005) who established the presence of a plesiopedal mosasaur as part of the Vallecillo fossil assemblage, even though these authors briefly mention the existence of this fossil. The detailed taxonomic description of the specimen by Buchy *et al.*(2005), published in the same volume of the *Nederlands Journal of Geosciences*, however, was not cited. Blanco-Piñón *et al.*(2007) also omit the record of *P. mortoni* from the El Rosario quarry, Coahuila, described by Stinnesbeck *et al.*(2005). This specimen is there precisely dated to early Coniacian age but is not included in the stratigraphic range chart given by Blanco-Piñón *et al.*(2007).

Blanco-Piñón *et al.*(2007) conclude that *Ptychodus* and other vertebrates with button-shaped teeth are necessarily durophagous. We believe that this conclusion is erroneous. Studies on the gastric contents of extant pycnodont fishes (*e.g.*, *Sparassius)* demonstrated that these fishes are omnivorous and well able to prey on fishes and other food items (Ifrim *et al.*, 2005).

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