Reply to the comment by Stinnesbeck et al. on “The oldest stratigraphic record of the Late Cretaceous shark Ptychodus mortoni Agassiz, from Vallecillo, Nuevo León, northeastern Mexico”

Alberto Blanco-Piñón1,* and Luis M. Garibay-Romero2

1 Centro de Investigaciones en Ciencias de la Tierra, Universidad Autónoma del Estado de Hidalgo, Apdo. Postal 1-288, Admón. 1, 42001 Pachuca, Hidalgo, Mexico.
2 Universidad Autónoma de Guerrero. Unidad Académica de Ciencias de la Tierra, Ex-Hacienda de San Juan Bautista, Taxco el Viejo, Guerrero, Mexico.
* alblanc@yahoo.com.

The comments by Stinnesbeck et al. (2007) to our manuscript (Blanco-Piñón et al., 2007) refer to four main points:
1. Stinnebeck et al. (2007) question the validity of the FCT acronym that we used for our description of the specimen of Ptychodus mortoni Agassiz, 1843. The acronym used for this specimen is FCT-341, and we believe it is valid as far as a formal acronym for the paleontological collection of Facultad de Ciencias de la Tierra, Universidad Autónoma de Nuevo León has not yet been assigned.
2. The first works suggesting anoxic conditions in the Vallecillo Member were published by Blanco et al. (2001), Blanco (2003), Blanco-Piñón (2003), and Blanco-Piñón et al. (2002, 2005). Later, Blanco et al. (2006) suggested that anoxic conditions observed in Vallecillo and in other three Mexican assemblages could be related to the Oceanic Anoxic Event 2. The last reference was not included because the work was under revision at the time we submitted Blanco-Piñón et al. (2007). Concerning the works of Ifrim et al. (2005) and Ifrim (2006), we did not omit intentionally those works as suggested by Stинnesbeck et al. (this issue). Ifrim (2006) is the PhD thesis of Christina Ifrim at Karlsruhe University. By the time we submitted our manuscript (February 7, 2006), we did not have access to that thesis because it was defended on a later date (April 26, 2006). Ifrim et al. (2005) was published in the first issue of a novelty journal of restricted circulation that was not accesible to us before submitting Blanco-Piñón et al. (2007) for revision.
3. Stinnesbeck et al. disagreed with the observation we cited after Cappetta (1987) that Ptychodus was a durophagous shark in the phrase “Ptychodus is a highly specialized durophagous shark that lived during the Late Cretaceous” and instead they note that “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)”. We disagree on this observation because:
   a) Pycnodonts (formally into the order Pycnodontiformes) are all extinct fishes.
   b) We could not find references to a fish genus named Sparassius (=Sparassis), because this name correspond to a fungus and not to a fish (Dai et al., 2006).
   c) Ptychodontids are sharks having a characteristic crushing dentition that allowed the shark to feed on hard bodied preys, such as mollusks. This is clearly attributed to Cappetta (1987), actually a world specialist on sharks.
   d) Nowhere in Blanco-Piñón et al. (2007) we wrote “pycnodonts”, and the triangulation Ptychodus-Pycnodontids-Sparassius expressed by Stinnesbeck et al. is out of order. After the carefully review of Ifrim et al. (2005), we consider that this mainly arises from their report of some similarities in the body form of Nursallia and Sparus (not Sparassius). However, we did not find any analysis to support the comparison of the diet, food habits or mouth mechanisms between Sparus, pycnodonts, and sharks. Actually, the comparison between the dentition and diet of these osteichthyans (Nursallia and Sparus), and that of chondrichthyes (Ptychodus) is not easily supported nor formally published. Finally, Blanco and Frey (2001) provided a discussion about the diet of Nursallia sp., which was not cited in Ifrim et al. (2005).
4. Concerning the stratigraphic control of Ptychodus mortoni within the Vallecillo Member, we would like to reply...
b) Stinnesbeck et al. argued that we omitted to refer “the record of *P. mortoni* from the El Rosario quarry, Coahuila, described by Stinnesbeck et al. (2005)” . However, the latter authors just provided imprecise and/or tentative identification of the fish fauna in this locality when wrote “These fishes have apparently been collected randomly at El Rosario and other quarries in the area from coeval sediments of the same depositional area. The following taxa have been tentatively identified by one of us (L. Cavin) on the basis of photographs: *Psychodus* cf. *P. mortoni* Agassiz, 1843 (Figure 4a)” (Stinnesbeck et al. 2005, p. 407). In addition, the tooth in their fig. 4a does not show the characters of *P. mortoni*.

c) The assignation of FCT 341 as the oldest record of *P. mortoni* in the world was based on the presence of *Watinoceras coloradoense*. This ammonite was collected from the same level where FCT 341 was collected and was housed in the Colección Paleontológica de la FCT as unidentified specimen under the catalogue number FCT-257. Later, the specimen was identified by Wolfgang Stinnesbeck as *Watinoceras coloradoense*, and this is the data we used in Blanco-Piñón et al. (2007). Besides, such species of ammonites has been considered as a Lower Turonian ammonite (see e.g., Aguilera-Franco, 2003).

d) The paper by Ifrim and Stinnesbeck (2007), with information about a detailed taxonomic and biostratigraphic distribution of the ammonites of the Vallecillo Formation at Nuevo León, was published in June, 2007, and was thus not available at the time our manuscript was accepted for publication (November, 2006).

Finally, we deeply thank Stinnesbeck et al. (2007) for his comments on the article and for providing new information concerning the Vallecillo assemblage.

REFERENCES


