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Triassic Lingularia (Brachiopoda) from Moya (SE Iberian Ranges, Spain)

Márquez-Aliaga, A.[1], Emig, C. C.[2] and López-Gómez, J.[3]

[1] Instituto Cavanilles de Biodiversidad y Biologia Evolutiva y Departamento de Geología, Universidad de Valencia, c/Dr. Moliner, 50, E-46100 Burjasot, Valencia; ana.marquez@uv.es
[2] BrachNet, 20, rue Chaix, F-13007 Marseille; emig@free.fr
[3] Instituto de Geología Económica CSIC, Facultad de Geología, Universidad Complutense de Madrid, E-28040 Madrid; jlopez@geo.ucm.es

In Spain, during the marine transgression of the Middle Triassic several lingulide populations in the SE portion of the Iberian Ranges (the western part of the Sephardic Province, southern Tethys Realm) were fossilized. Under various names lingulides of this age have been described from a number of localities in the provinces of Valencia, Cuenca, Teruel, Guadalajara, Zaragoza, Balearic, Cadiz (see Márquez-Aliaga *et al.*, 1999). Records of "*Lingula*" in the Iberian Range are plentiful. Most are located in the uppermost part of the Muschelkalk facies, a very shallow marine or brackish environment. In Jalance (Valencia province) and Henarejos (Cuenca province) these specimens have been identified as *Lingularia* cf. *smirnovae* by Márquez-Aliaga *et al.* (1999). And those recently recorded in Moya (Cuenca province) seem to be identical.

This locality is near the village of Moya where Triassic sediments crop out. The exposures in this area are constituted by three facies that broadly correspond to the classic tripartite subdivision of Buntsandstein, Muschelkalk and Keuper. The Buntsandstein is represented by the Cañizar Formation, a fluvial unit dated as Anisian in its uppermost part. The transgressive Muschelkalk facies is represented by two dolomite units, the Landete and the Cañete Formations, respectively Anisian and Ladinian in age, separated by the marly and clayey Mas Formation. The abundant lingulides are in a gently folded level of the Cañete Formation thrust at a low angle over mudstones and marls of the Keuper facies during the Alpine orogenies.

The Iberian Ranges are NE-SW trending linear structures formed during Alpine orogenies in a basin that originated during the Early Permian, one of a series of rift basins in Western Europe developed during the rupture of Pangaea. An analysis of the palaeogeographical distribution of *Lingularia* in the Paleo- and Neotethys in relation to the northward movement of Cimmerian terranes is included.

The aspect of the lingulide brachiopods from the Moya site is similar to that of specimens previously described in Jalance and Henarejos by Márquez-Aliaga *et al.* (1999), so the Moya finds too are assigned to *Lingularia*. Among the large number of specimens collected one has been fossilized with its pedicle, an exceptional occurrence in fossil lingulids (Fig. 1).

From a taphonomic point of view, the lingulides occur as free-lying discrete valves, without directional orientation that means and accumulated association of an autochthonous population . In some places they have accumulated in quantities great enough to form layers of valves, but in some cases only moulds of the valves remain. A few specimens show internal anatomical scars. Many valves are deformed, mainly along the midline: such features cannot be interpreted as characteristics of the shell because they were caused by fossil diagenetic process due to very rapid desiccation and heating. This mass mortality of the lingulide population probably occurred during a very drastic drop to

a salinity to less than 20 psu, presumably in very shallow water. During the rapid putrefaction of the soft body accelerated by osmotic changes, individuals were released from the burrow. Then the dorsal valve became separated from the ventral valve (Fig. 1) while the pedicle and body parts were still attached to the ventral valve, but those appurtenances too were at some later time removed. The final step of fossilization of the layers of lingulides took place under non marine conditions.

The taphonomic environments in the Moya area were probably different from and more drastic than involved in the preservation of lingulides at Jalance and Henajeros.

Fig. 1. Pedicle attached to the ventral valve of a *Lingularia* specimen.

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