

DEVONIAN HOMALONOTIDAE TRILOBITES AS PALEOENVIRONMENTAL INDICATORS: SOME OBSERVATIONS FROM THE PONTA GROSSA FORMATION, PARANÁ BASIN, BRAZIL¹

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Recent advances in our knowledge of the vertical distribution and taphonomy of invertebrate macrofossils of the Ponta Grossa Formation, a third order transgressive systems tract of Pragian-Frasnian age, allowed the refinement of our knowledge on the paleoecology of some groups (e.g. trilobites). Here we describe the new occurrences of trilobites in the Francelina section, Ponta Grossa County, Paraná State, where lower shoreface to offshore deposits of Sequence B (a 3rd order depositional sequence) are surprisingly fossiliferous. We compare the fossil content and taphonomy of trilobites of this occurrence with those now well-known from the same sequence, cropping out at Jaguariaíva County, Paraná State. The studied outcrop is represented by massive siltstones and millimetric lenses of very fine-grained sands. Frequently, ferruginous nodules and concretions containing very well preserved fossils are present. The Francelina siltstones yielded 120 specimens of trilobites, including homalonotids (n=64), calmoniids (n=28) and undetermined specimens (n=28). Homalonotids are represented by cephalon (n=18), thorax (n=25), pygidium (n=16), cephalon-thorax (n=1), and thorax-pygidium (n=4). Out of these, 9 specimens are referred to *Digonus*, 13 specimens to *Burmeisteria* and 42 are unidentified. Calmoniids are represented by cephalon (n=3), thorax (n=17), pygidium (n=4), cephalon-thorax (n=2), thorax-pygidium (n=2). These include *Calmonia* (n=11), *Pennaia* (n=4), *Metacryphaeus* (n=5) and 8 unidentified specimens. As for the Jaguariaíva section of the Ponta Grossa Formation, the occurrence and vertical distribution of the trilobites in the Francelina section is non random, but is controlled and predictable by the characteristic sedimentation regime in the TST. For example, it is noteworthy that in the Francelina section the lower shoreface deposits are mainly characterized by the expressive occurrence of homalonotids. Indeed, these are known as typical shallow water trilobites, which is in accordance with the stratigraphical interpretations already available for the Francelina deposits. Additionally, these trilobites seem to be absent or are rare in the offshore deposits of the Ponta Grossa Formation, as well exemplified by the occurrences of the Jaguariaíva section (railroad section), where calmoniids are very common and the homalonotids absent. Hence, the occurrences of homalonotid trilobites may be useful to track the shallow water deposits of the Ponta Grossa Formation, especially when other sedimentologic, stratigraphic and taphonomic evidences are lacking. To test this, we are now re-examining several occurrences of the Sequence B, from the Ponta Grossa Formation cropping out in the Jaguariaíva and Ponta Grossa counties.