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### ABSTRACT

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# The earliest Ordovician trace fossils *Cruziana* and *Rusophycus* from Baltica

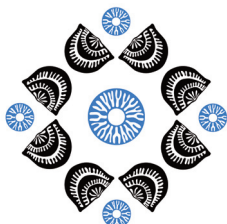
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Trace fossils of the ichnogenera *Cruziana* and *Rusophycus* are described for the first time from the Lower Ordovician of Baltica. These specimens were found from the upper Tremadocian–lower Floian glauconite sandstone of the Leetse Formation in the Leetse and Uuga cliffs on the Pakri Peninsula, North-West Estonia. The one from the Leetse locality was collected already in the 19th century but was hidden in museum collections. On this piece of rock, together with the *Rusophycus*, brachiopods *Leptembolon lingulaeformis* and *Thysanotos siluricus* occur. They indicate that the sample comes from the strata corresponding to the *Thysanotos siluricus* Brachiopod Biozone of the Hunneberg Stage. Different lithology of the two newly discovered loose slabs with trace fossils found under the Uuga cliff indicates that, most probably, they originate from different levels of the glauconite sandstone exposed in this section. One of them is heavily pyritized and yields a contact surface with the underlying beige argillite of the Varangu Stage with fragments of the graptolite *Kiearograptus supremus* and some undescribed acrotretid and other linguloid brachiopods. The second, less strongly lithified slab contains abundant fine debris of thin-shelled unidentifiable linguloid brachiopods and probably comes from a higher level. Earlier studies of conodonts revealed that the *Prioniodus elegans* Conodont Zone is missing in the Uuga section, thus narrowing down the possible interval of origin of these ichnotaxa to the *Paroistodus proteus* zone.

Interestingly, these two slabs preserve the dissimilar pattern of grouping and orientation of the multiple *Rusophycus/Cruziana* traces giving some idea about the ethology of trilobites who probably left these traces. The earliest trilobites in the Ordovician succession of Estonia are recorded from the Mäeküla Member, the uppermost part of the Leetse Formation, from an interval where calcareous component first appears in the sediment and thus also the trilobites with their calcitic exoskeleton are preserved. The only trilobites recorded from the Mäeküla Member of the Leetse Formation in these two localities are specimens of *Paramegistaspis leuchtenbergi* who could have been the trace maker with its macropygidium being of similar size to its cephalon if the second slab would come from the same interval. However, there are more candidates, mainly isoteline trilobites with similar characteristics which are preserved in older but calcareous succession in Sweden and Norway.



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