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LATE TREMADOCIAN ACRITARCHS FROM THE
CERATOPYGE SHALE AT OTTENBY, ÖLAND, SWEDEN

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HILIS-TREMADOCI AKRITARHID CERATOPYGE KILDAST OTTENBY LÄBILÖIKES,
ÖLAND, ROOTSI. Ivo PAALITS

ПОЗДНЕТРЕМАДОКСКИЕ АКРИТАРХИ ИЗ ЦЕРАТОПИГЕВОВОГО СЛАНЦА РАЗ-
РЕЗА ОТТЕНБЮ, ЭЛАНД, ШВЕЦИЯ. Иво ПААЛИТС

Key words: acritarchs, Late Tremadoc, *Ceratopyge* Shale, Sweden.

The material for palynological study was collected from the *Ceratopyge* Shale and Limestone during a field excursion to Öland Island, Sweden. The Ottenby klint outcrop is located near the southern point of Öland (Fig. 1) and seems to be there the best exposure of the *Ceratopyge* Limestone, well characterized with macrofossils. A detailed lithological description of the section and a review of the fossil occurrences was given by Tjernvik (1956).

The Upper Tremadoc at Ottenby is represented by the typical *Ceratopyge* Shale covered by an approximately 1.3 m thick unit of *Ceratopyge* Limestone (Fig. 2). Though in southern Öland the *Ceratopyge* Shale reaches up to 2.3 m in thickness (Westergård, 1944), at Ottenby only the topmost 10 cm was exposed. At this level, merely the inarticulate brachiopod *Broeggeria salteri* was recorded by Tjernvik (1956). However, Moberg and Segerberg (1906) registered an occurrence of *Ceratopyge forficula* in the *Ceratopyge* Shale at Ottenby. The overlying *Ceratopyge* Limestone is well characterized by macrofossils and shows about 20 trilobite species typical of the Upper Tremadoc (Tjernvik, 1956; Jaanusson & Mutvei, 1982).

Out of the four samples collected from the study interval only one from the *Ceratopyge* Shale yielded well-preserved acritarchs (Fig. 2). This acritarch assemblage comprises mainly stelliferids (64%), leiosphaerids (26%), and cymatiogaleas (6%).

The following species were identified from the top of the *Ceratopyge* Shale: *Acanthodiacrodium comptulum* Rasul, *A. formosum* Gorka, *A. ubuii* Martin, *Acanthodiacrodium* sp., ?*Athabascaella* sp., *Cymatiogalea cristata* (Downie) Rauscher, *C. cuvillieri* (Deunff) Deunff, ?*Dasydorus* sp., *Goniosphaeridium* sp., *Microhystridium* sp., *Leiosphaeridia tenuissima* Eisenack,

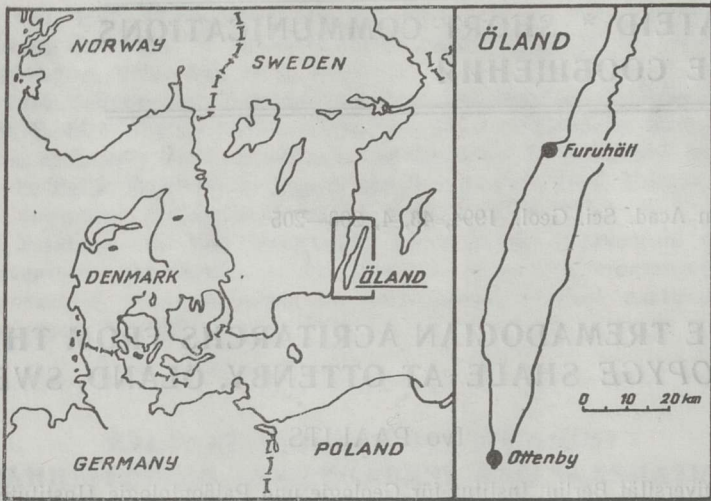


Fig. 1. Location of the Ottenby section, Öland, Sweden.

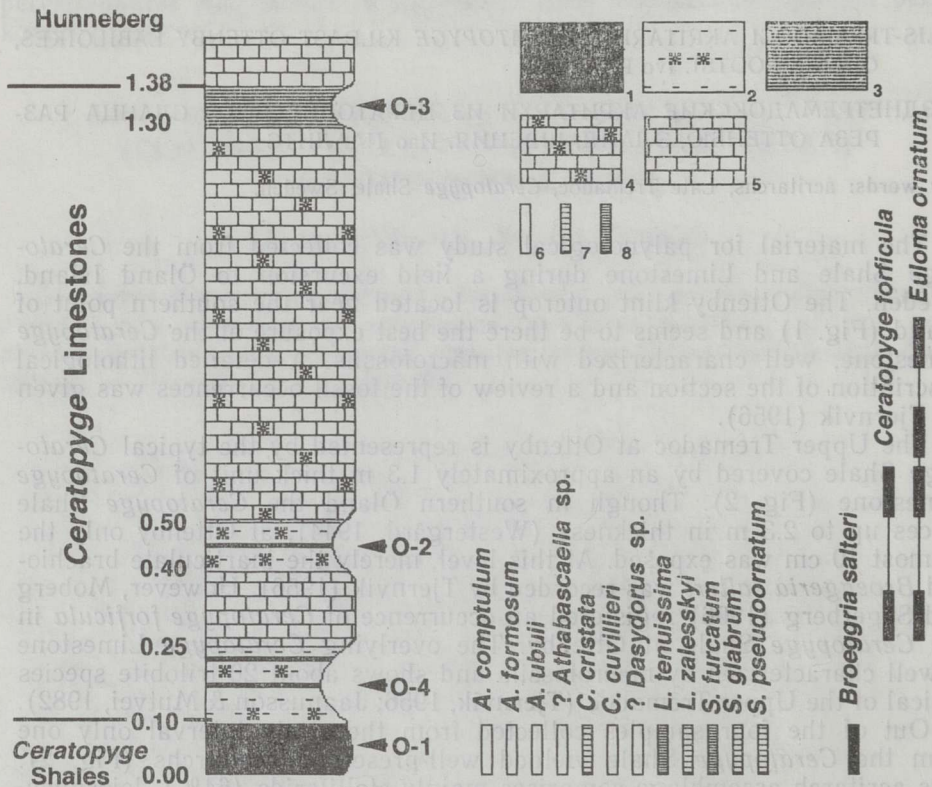


Fig. 2. Section through the Late Tremadocian beds at Ottenby with the distribution of selected fossil taxa.

1, organic-rich alum-shale; 2, glauconitic silt/sandstone; 3, claystone; 4, glauconitic limestone; 5, limestone. The number of acritarchs: 6, rare; 7, common; 8, very common. The distribution of inarticulate brachiopods and trilobites is given after Tjernvik (1956).

Leiosphaeridia sp., *Lophosphaeridium zaleskyi* (Naumova) Umnova, *Stelliferidium furcatum* (Deunff) Deunff, *S. aff. furcatum* (Deunff) Deunff, *S. glabrum* (Martin) Tongiorgi, *S. pseudoornatum* Pittau, *Trichosphaeridium* sp.

The acritarch assemblage, described by Tongiorgi (Bagnoli et al., 1988) from the glauconitic sandstones with shaly laminae and established as *Ceratopyge* Shale in Furuhäll, contains some taxa not represented in the shales from Ottenby. These are *Aryballomorpha grootaertii* (Martin) Martin & Yin, *Athabascaella playfordii* (Martin) Martin & Yin, and *Priscotheca tremadocea* (Gorka) Paalits.

The Varangu Formation, an age-analogue of the *Ceratopyge* Shale in North Estonia, is subdivided on the basis of conodonts into the lower and upper parts (Вийра et al., 1970). The acritarch assemblage described from the Varangu Formation (Волкова, 1993a; 1993b; Paalits & Erdtmann, in press), is similar to that observed from Furuhäll (Bagnoli et al., 1988). However, a "strange" association of acritarchs without *A. grootaertii* and *A. playfordii* but with *P. tremadocea* has been identified from several North Estonian sequences, apparently corresponding to the lower part of the Varangu Formation (unpublished data). Probably, the first appearance of *A. grootaertii* and *A. playfordii* did not take place earlier than in the middle of the *P. deltifer* time and the *Ceratopyge* Shale may be older at Ottenby (?lowermost part of the *P. deltifer* Zone) than the glauconitic sandstones with shaly laminae in the Furuhäll section. However, the possibility that the different composition of the acritarch assemblages is caused by facies conditions cannot be excluded. Anyway, more accurate and detailed investigation of the acritarchs is necessary to carry out the precise biostratigraphic division of the Upper Tremadocian deposits. Although the first attempts at finding acritarchs from the *Ceratopyge* Limestone did not yield any positive results, further investigations on this level are extremely important and necessary.

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