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### CORRELATION OF THE *PROETUS SIGNATUS* LEVEL (UPPER SILURIAN) IN GOTLAND, POLAND AND THE EAST BALTIC AREA

H. ALBERTI, Lieselotte ALBERTI, Reet MÄNNIL, Ewa TOMCZYKOWA. *PROETUS SIGNATUS*'E TASEME (ÜLEMSILUR) KORRELATSIOON GOTLANDIL, POOLAS JA IDA-BALTIKUMIS

Г. АЛЬБЕРТИ, Лизелотте АЛЬБЕРТИ, Рэет МЯННИЛЬ, Эва ТОМЧИКОВА. КОРРЕЛЯЦИЯ УРОВНЯ *PROETUS SIGNATUS* (ВЕРХНИЙ СИЛУР) НА О. ГОТЛАНД, В ПОЛЬШЕ И ПРИБАЛТИКЕ

For the correlation of Baltic Silurian sections mainly ostracodes, graptolites, brachiopods, etc. have been used. Relatively little attention has so far been paid to trilobites. This is partly due to insufficient study, but at present the situation in this respect is greatly improving. The authors' studies of trilobites from Gotland (Alberti), Poland (Tomczykowa) and the East Baltic (Männil) yield important data for correlation. In this note we shall mainly deal with the distribution of the species *Proetus signatus* Lindström.

On Gotland this trilobite species has mostly been found in the upper part of the Burgsvik Beds, from where also Lindström's type material derived (Lindström, 1885). New studies (Alberti) show that *P. signatus* s. l. occurs there from the Eke Marl to the Sundre Limestone inclusive, whereas certain morphological varieties (distinguished here as subspecies) are distributed as follows: subsp. 1 occurs in the Eke Marl, *P. signatus* s. str. in the Burgsvik and Hamra Beds and subsp. 2 in the Sundre Limestone. It should be noted that we have *P. signatus* and *Acastella prima* Tomczykowa together in the upper part of the Burgsvik Sandstone and Oolite. Above the oolites we have recorded an *Acastella* species which may be interpreted as phyletically transitional between «*prima*» and «*dayiana*».

In Poland the occurrence of *P. signatus* has been recorded in a number of Silurian sections in the platform area as well as in the Holy Cross Mountains. In the boring of Lebork IG-1 in northern Poland *P. signatus* s. str. occurs together with *Calymene beyeri* Richter et Richter in the interval between 1123 and 1134 m, containing also *Monoclimacis ultimus*, thus without doubt within the limits of the *ultimus* Zone (Fig. 1). *Acastella prima* has been found higher in the same boring, between 1040 and 1080 m, together with *Neobeyrichia incerta* Gailite, i. e., all mentioned trilobite species occur in the *Neobeyrichia incerta*—*Acastella prima* Zone (the lowermost zone of the Lower Podlasie Stage; Tomczykowa, Witwicka, 1974). It should also be mentioned that in this boring *Monograptus balticus* occurs between 1778 and 1882 m. Above this interval *Formosograptus ex gr. formosus*, and in the upper part of the Upper



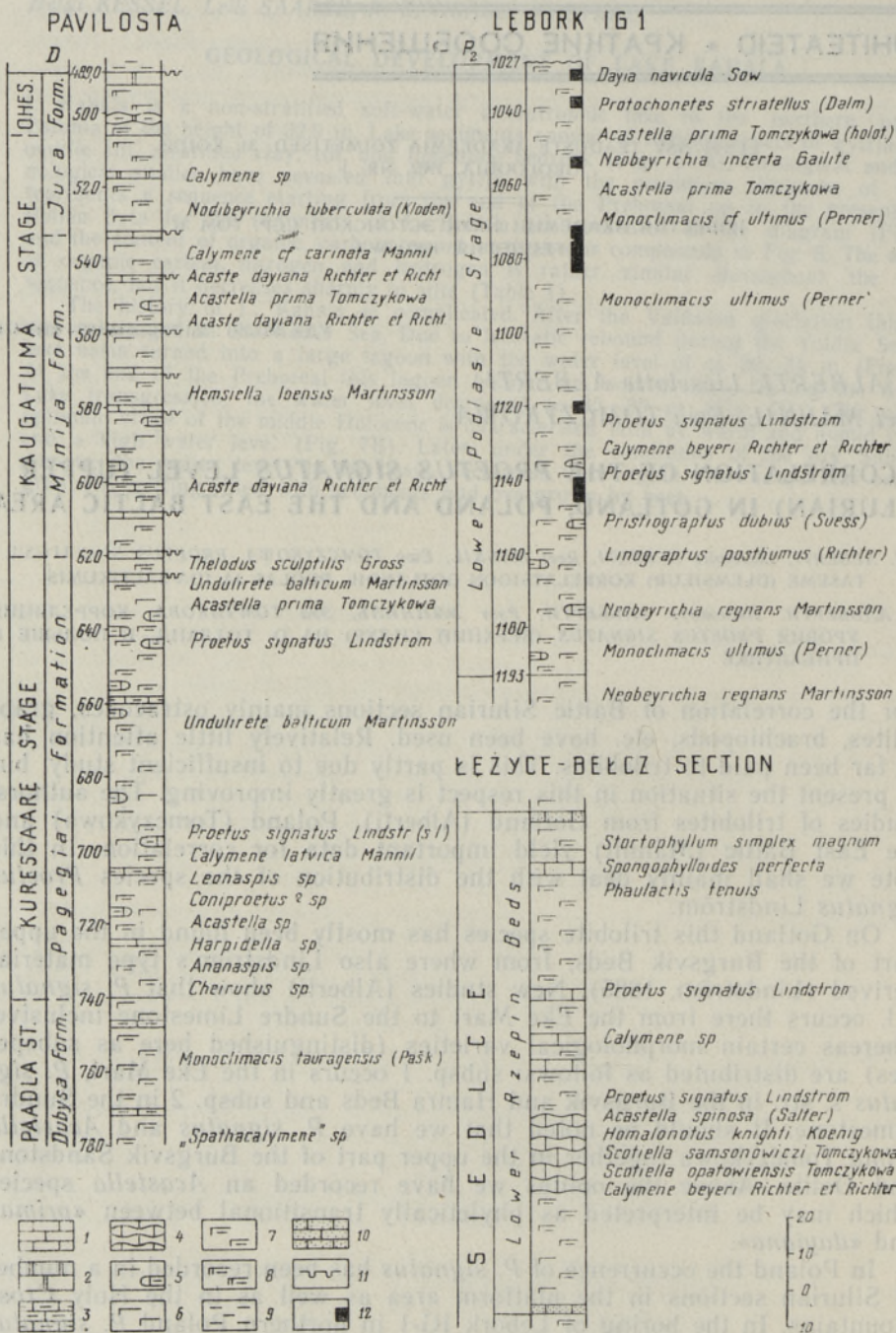


Fig. 1. Sections of the boreholes Pavilosta, Lebork IG-1 and outcrop at Leżyce-Belcz in the Holy Cross Mountains. 1 — limestone; 2 — dolomite; 3 — argillaceous limestone; 4 — nodular limestone; 5 — calcareous marl (mudstone) with limestone nodules; 6 — calcareous marl (mudstone); 7 — calcareous claystone and siltstone; 8 — argillaceous domerite (dolomitic claystone); 9 — clay; 10 — graywacke; 11 — discontinuity surface; 12 — uncored interval.

Siedlce Stage *F. formosus* as well as *Neobeyrichia alia* Gailite and *Neobeyrichia regnans* Martinsson have been found.

In the Holy Cross Mountains *P. signatus* s. str. has been identified in the







etc.) and evidently represents a facies-controlled variety. It is accompanied by rich fauna of relatively deep-water, mostly not yet described species, inter alia *Calymene latvica* Männil, *Ananaspis* sp., *Cheirurus* sp., *Harpidella* sp., etc. Trilobites are scarce immediately above this complex, but *P. signatus* is again found in the interval of 630—663.6 m, coinciding to some extent with the range of *Acastella prima* (625—639 m). This interval belongs also to the Kuressaare Stage, as the uppermost find of *Thelodus sculptilis* Gross comes from the depth of 625 m and *Undulirete balticum* Martinsson is found at 633.2—667.2 m (according to the unpublished data by T. Märss and L. Gailite). It should be said that *Acastella prima* or a closely related species occurs in the Pavilosta boring also at a higher level (547—522 m), almost side by side with *Acaste dayiana* Richter et Richter and other species characteristic of the Kaugatuma Stage.

From the above-said it follows that *Proetus signatus* is mostly distributed in the *formosus* and *ultimus* Zones; only in places, due to the facial conditions or perhaps to different stratigraphical interpretations, it is found slightly below the lower boundary of the *formosus* Zone (Kuressaare Stage), mainly as a non-typical subspecies. Besides, it appears that also some other Late Silurian trilobites have a high correlational value in this area, inter alia a deepwater «*Spathacalymene*» and *Encrinurus macrourus* Schmidt from the Ludlovian and *Acaste dayiana* Richter et Richter from the Downtonian (Fig. 2). Due to their wide geographical distribution and relatively frequent occurrence, these species as well as *Proetus signatus* are good index fossils in the studied area.

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