A Large Velata from the Lower Jurassic of East Greenland

by

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Among the numerous differently shaped Pectinids known from the Jurassic there occur at least 15 especially peculiar forms gathered under the generic name *Velata.* The species belonging to this genus have had a very chequered career, having i.a. been referred to the genera: *Spondylus*, *Avicula*, or *Hinnites*. They are, however, true Pectinids, differing from the real *Hinnites* from the Tertiary in having a flat right valve, and a more or less inflated left valve, while as a rule *Hinnites* has it vice versa.

The old generic name *Velata* proposed by QUENSTEDT in 1856 for this group of Pectinids is, as maintained by L. R. COX in 1928, quite valid, and has to be used instead of the younger names *Velopecten* PHILLIPPI, 1893, *Eopecten* DOUVILLÉ, 1897, *Prospondylus* ROLLIER, 1915, and *Hinnites* auctores.

Only one species of this genus has been met with in the Lias of East Greenland. This remarkable form belongs to the *Uptonia* horizon and has been named in honour of the late Dr. NICOLAI HARTZ.

Genus Velata Quenstedt 1856

Genotype: *Velata tuberculosa* (GOLDFUSS)

Velata hartzi n. sp.

(Fig. 1–7).

1934 *Velata hartzi n. sp.* ROSENKRANTZ (3) plate 8, fig. 1, no description.

Description.

Left valve (figs. 1, 3, 6 and 7) very thin, inflated, dented, oblong oval, in young specimens height greater than length; in the large full-grown individuals, subcircular in outline, height equal to length. Umbo acute, projecting. Anterior auricle large, undifferentiated, posterior auricle small. The surface of the shell covered with numerous rounded, somewhat irregular radial ribs comprising primaries, secondaries, tertia-

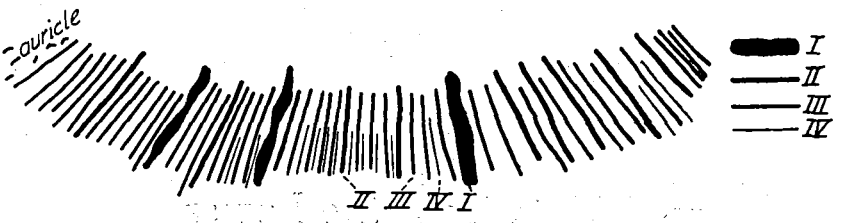


Fig. 1. Sceme showing the distribution of ribs along the periphery of the holotype (left valve), showing 3 primaries (I), 9 secondaries (II), 42 tertiaries (III) (the tertiaries of the anterior auricle not enumerated), and 13 quaternaries (IV).

ries, and quaternaries, the two first named categories more or less nodose. Radial ribs not observed on the posterior auricle. The primaries total three, the two strongest arranged symmetrically according to the midline of the shell, the third, somewhat fainter primary rib placed on the anterior part of the shell. In the interspaces between the primaries, a great number of fainter radial ribs appeare very near the umbo, and among these, nine ribs presumably appear before the remaining part and develop as secondaries, the rest remain fainter and is classed as tertiaries. Between the tertiaries of the adult specimen some few quaternaries are intercalated near

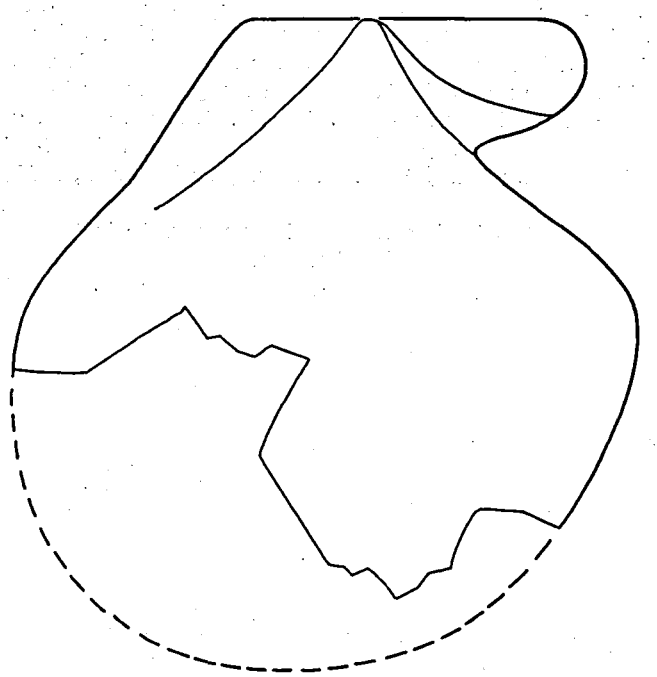
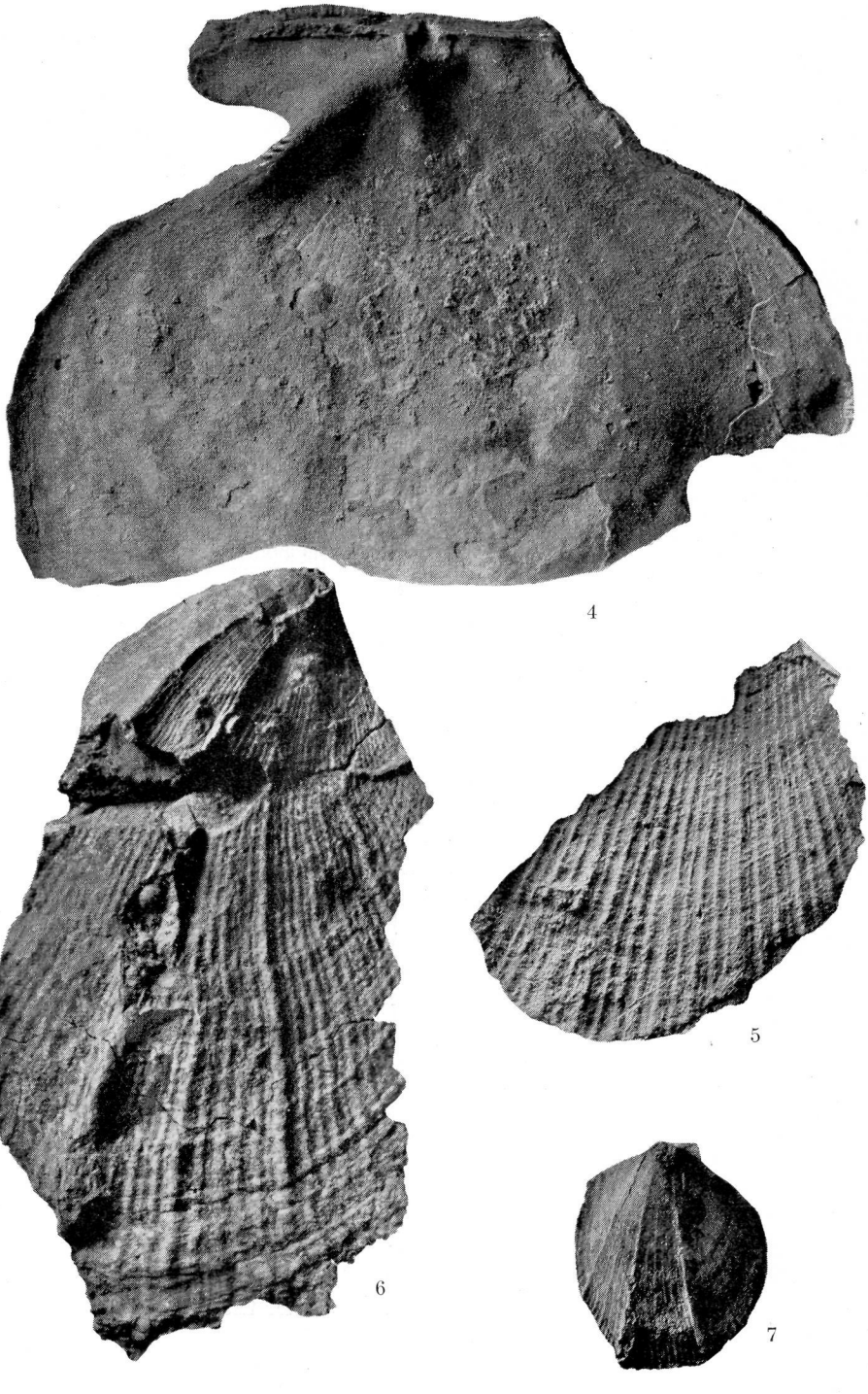


Fig. 2. *Velata hartzi n. sp.* Restored outline of right valve $1_{,5}$ × nat. size. Astarte Kløft. Jameson Land.

Fig. 3. *Velata hartzi n. sp.* Left valve, holotype, nat size, Lias γ, Ræve Kløft, Ivssorigseq, Jameson Land. CHR. HALKIER phot.

the periphery of the shell. The distributions of the radial ribs as developed in the holotype is shown schematically in fig. 1. The number of ribs in the peripheral zone of the holotype is about 66, excluding the ribs on the anterior auricle. Coarse, irregular concentric ornament forming furrows and bulks is seen all over the shell.

Right valve (text fig. 2, 4 and 5) very thin, flat, dented. The anterior auricle club-shaped with a deep byssal notch. The apical edge of the shell carrying four denticules (ctenolium) just below the anterior auricle and placed near the head of the byssal notch. The anterior auricle is on the inside limited from the remaining part of the shell by a broad ridge or auricular crura. Near the resilial pit a similar but bifurcated ridge is seen at right angles to the hinge line strengthening the shell just inside the auricular crura. The posterior auricle much smaller than the anterior one



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with a faint well rounded auricular ridge. Between the auricular ridge and the vertical bifurcated ridge a rather faint ridge is seen pointing towards the resilial pit. The resilial pit triangular, rather shallow; the basal margin not projecting into the cavity of the shell; the lower half of the lateral margins raised to faint ridges. Only one Cardinal crura observed, limiting a flat area covered with faint growthmarks and deliminated above by the upper cardinal margin which is overlapping the left valve.

The inner surface of the shell smooth, the outer covered with numerous, rounded, radial ribs, divided into primaries, secondaries, and tertiaries; the last-mentioned first occurring in the interspaces of the coarser ribs halfway between the apex and the shell. The difference in strength between the primaries and the secondaries by far so prominent as in the left valve. The radial ribs are crossed by numerous close-set concentric lines of growth giving the shell surface a reticulate appearance. The number of radial ribs has not been counted owing to the fragmentary state of the material available, but it certainly exceeds the number of ribs on the left valve.

Measurements.

Apical angle:

Left valve (Holotype fig. 3) abt. 110°
Right valve (fig. 4) abt. 110°
Right valve (fig. 2) abt. 100°

	Height:	Lenght:	Inflation:
Left Valve (Holotype fig. 3) mm	115.8	115.0	23
» » (fig. 6) mm	125.5	—	—
» » (fig. 7) mm	31.7	26.6	8
» » (North of Ivssorigseq) mm	28.5	24.7	7.5
Right Valve (fig. 4) mm	—	113.0	—
» » (fig. 2) mm	—	90.0	—

Type Locality.

Rævekløft at Ivssorigseq, Jameson Land.
Uptonia horizon. Lias γ. Carixian (Lower Pliensbachian).

Occurrence.

1. Rævekløft and surroundings of Ivssorigseq, Jameson Land:
   5 left valves, 2 right valves.
2. Mouth of Astarte Kløft, Jameson Land:
   1 left valve, 1 right valve.
3. Harris Fjeld, Jameson Land:
   1 left valve, 1 right valve.

Fig. 4–7. *Velata hartzi n. sp.* Lias γ, Jameson Land. CHR. HALKIER phot. — 4. Right valve, seen from the inside, nat. size. Harris Fjeld. — 5. Fragment of right valve showing sculpture. Ræve Kløft, Ivssorigseq, Jameson Land. — 6. Fragmentary left valve showing sculpture, nat. size. Harris Fjeld. — 7. Rather complete left valve, young specimen, nat. size. Astarte Kløft. Jameson Land.

All specimens collected in the *Uptonia* horizon, Lias γ and preserved in the Mineralogical and Geological Museum, Copenhagen.

Affinities.

From the above description it appears that the species in question is a true *Velata*. It possibly represents the largest species of this genus so far known from the Lias, and differs from all other Liassic species.

STAESCHE describes (4, p. 116) a rather large species from "Psilonotenkalk" Lias α in Schwaben, which has not been given a name owing to defectiveness of the material. It differs from *Velata hartzi* in having a less inflated left valve and fainter sculpture only showing primaries and secondaries. Moreover the ribs on the right valve are said to be all of the same strength.

All other Lias species: *Velata Davæi* (DUMORTIER), *Velata Hettangiensis* DECHASEAUX, and *Velata velata* (GOLDFUSS) are of a considerably smaller size than *V. hartzi* and differ highly in having a much finer developed sculpture.

With regard to the coarseness of the sculpture it must be mentioned that *Velata hartzi* is much closer related to Middle Jurassic species as *Velata abjecta* (PHILLIPS) and the genotype *Velata tuberculosa* (GOLDFUSS) from the Aalenian.

REMARKS

Among the marine Liassic material brought home from Kap Stewart in 1892 by N. HARTZ, member of the Danish Expedition to East Greenland under the leadership of RYDER, a fragment of a left valve belonging to this species has been found. The specimen was long ago handed over to Professor LUNDGREN for description, but he has made no mention of it in his treatise (2). The new species has, as mentioned above, been named in honour of Dr. N. HARTZ, who has made valuable contributions to the investigations of the Greenland Mesozoic and Kaenozoic rocks, as well as to the investigations of the Tertiary, Interglacial and Late glacial deposits of Denmark. In 1926–27 and 1934 I collected a more comprehensive material, as listed above, but as a whole it must be emphasized that this species is of a very rare occurrence in the Liassic beds of Scoresbysund, and has so far only been met with in the eastern part of Jameson Land.

LITERATURE

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