UKD 564.3:551.732:550.822 (438.142 Łopiennik + 438—12)

Kazimiera LENDZION

First Gastropod Fauna from the Klimontovian Stage (Lower Cambrian) of the South-Eastern Poland

The representatives of the gastropod genus *Aldanella* are described for the first time from the lowermost Lower Cambrian of Poland and their stratigraphic position is discussed. A new species, *Aldanella polonica* sp. nov., is distinguished.

The Klimontovian (Klimontów) stage was distinguished within the lowermost Cambrian (B. Areń, K. Lendzion, 1974*b*) taking into account a necessity to precise the age of some deposits of the lowermost Cambrian from the Polish part of the East European Platform. The deposits are very close to those of the Subholmia stage from the Góry Świętokrzyskie (J. Samsonowicz, 1960).

The Klimontovian deposits are very rich in faunal and floral remains the list of which steadily increases along with the progress in works and especially deep drilling works. The new fauna of ?Trilobita and Trilobitoidea recently described by K. Lendzion (1975) from the core material from upper parts of the Klimontovian stage (the Mobergella Zone) from north-eastern Poland.

A new fauna of *Gastropoda*, described here, was hitherto unknown from the lowermost Cambrian of Poland. It was recorded in lower part of the Klimontovian stage, that is in the Sabellidites Zone close to the boundary with the middle, Platysolenites Zone (Fig. 2), at depths from 5300.0 to 5307.0 m in the borehole Łopiennik in south-eastern Poland (Fig. 1). In several recently published profiles (K. Lendzion, 1972; B. Areń, K. Lendzion, 1974*a*, *b*) such as that of the borehole Radzyń an attempt was made to delineate the Vendian/Cambrian boundary on the basis of paleontological data. At present the assemblage of organic remains recognized as typical of the lowermost Cambrian may be supplemented with gastropods of the genus *Aldanella* recorded from the lowermost Cambrian (Sabellidites Zone). Gastropods of that genus were

hitherto known from the Lower Cambrian of Estonia (K. Mens, MS; E. Posti, MS) and Siberian Platform (V. A. Vostokova, 1962; V. V. Missarzhevsky, 1969; S. C. Matthews, V. V. Missarzhevsky, 1975).

In the profile of the borehole Łopiennik the Lower Cambrian deposits rest on the Vendian with sedimentary continuity (Fig. 2). The Upper

Fig. 1 Location of the borehole Łopiennik where the gastropod fauna was found
Lokalizacja otworu wiertniczego Łopiennik, w którym występuje opisana fauna ślimaków

Vendian deposits of the Lublin and Białopole series are represented by clay-siltstone rocks with numerous sandstone intercalations or, locally, sandstones. The rocks of the same type form the lowermost Cambrian but in that case their habitus is different, characteristic of the Cambrian. Some sedimentary differences traceable in the profile and taken into account in delineating the Vendian/Cambrian boundary are, however, of secondary importance in comparison with paleontological data. The gastropods recently recorded in the lowermost Cambrian of the Polish part of the East European Platform extend the assemblage of Cambrian organisms useable for bistratigraphic subdivision and correlation with coeval deposits from other parts of the world.

Clay-siltstone deposits of the Upper Vendian and lowermost Cambrian from Polish part of the East European Platform yield unmineralized ribbon-like plant remains formed of carboniferous dark-brown to almost black matter. The algae belong to the *Vendotaenides* group. Their very large accumulations, hitherto known from the Lublin series, were found for the first time in the East European Platform area in the Białopole series in the borehole Łopiennik. They were found especially in uppermost as well as lowermost part of the series, directly above igneous rocks of the Sławatycze series (Lower Vendian).

The analysis of the Vendian-Cambrian junction beds penetrated by the borehole Łopiennik has shown that worm tubes gradually appear along with disappearance of algae *Vendotaenides* and especially the representatives of the genus *Tyrasotaenia*. The worm tubes are initially represented by innumerous specimens of *Sabellidites* and in somewhat higher beds — also by *Onuphionella* and *Platysolenites*. In the borehole Łopiennik first Gastropoda appear together with *Platysolenites* (Fig. 2).

The physico-chemical conditions predominating in the sedimentary basin were presumably unfavourable for luxuriant development of fauna. The skeletons preserved are very fine and fragile and the gastropod shells are preserved in the form of rare pyritized fragments.

In the top part of the Sabellidites Zone innumerous Miscellanea such as *?Fomitchella* sp. and *?Anabarites* sp. are accompanied by gastropods almost exclusively belonging to the genus *Aldanella*. The exception here

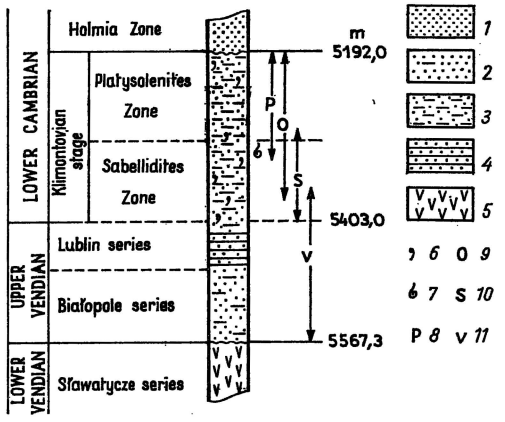

Fig. 2. A fragment of profile of the borehole Łopiennik

Fragment profilu z otworu wiertniczego Łopiennik

1 — sandstones; 2 — sandstones with claystone and siltstone intercalations; 3 — alternating sandstones, siltstones and claystones; 4 — claystones with thin siltstone and sandstone intercalations; 5 — intrusive rocks; 6 — glauconite; 7 — *Gastropoda*; 8 — *Platysolenites*; 9 — *Onuphionella*; 10 — *Sabellidites*; 11 — *Vendotaenides*

1 — piaskowce; 2 — piaskowce z wkładkami iłowców i mułowców; 3 — przewarstwiające się piaskowce, mułowce i iłowce; 4 — iłowce cienko przewarstwione mułowcami i piaskowcami; 5 — skały wylewne; 6 — glaukonit; 7 — *Gastropoda*; 8 — *Platysolenites*; 9 — *Onuphionella*; 10 — *Sabellidites*; 11 — *Vendotaenides*

is a single poorly preserved specimen (Pl. I, fig. 1) which may represent the genus *Anabarella*.

The specimens of *Aldanella* are generally poorly preserved but, fortunately, common enough for detailed analysis of their structure.

Gastropoda

Family Pelagiellidae Knight, 1956

Genus *Aldanella* Vostokova, 1962

Aldanella polonica sp. nov.

Pl. I, Figs. 2—8

Holotypus: Specimen figured in Pl. I, Fig. 2; Geological Institute Archives, Warsaw.
Stratum typicum: Lower Cambrian, Klimontovian stage, Sabellidites Zone.
Locus typicus: South-eastern Poland, borehole Łopiennik, depth 5300.9—5306.7 m.
Derivatio nominis: polonica /lat./ from Poland.
Diagnosis: Specimens small, ovate in outline, coiled into somewhat convex, low whorls; transversal wrinkles parallel to growth lines.
Material: Twenty one specimens preserved in the form of moulds or imprints sometimes with pyritized shell fragments attached.
Dimensions (in mm):

diameter	2.5	2.5	2.6	2.7	3.0
aperture length	1.0	1.5	1.4	1.4	1.6

Description: Specimens ovate in outline, slightly convex, coiled into two or three low, spiral whorls. Whorls closely coiled and visible on upper shell side. First whorl forming weakly convex apex. Lower shell side flat-rounded, gently sloping towards funnel-like eccentric umbilicus. Transversal section ovate; keel gently rounded. Apertural margin straight to slightly arcuate. Imprint of upper shell side displaying transversal wrinkles parallel to growth lines.

Discussion: The genus *Aldanella* is known only from the Lower Cambrian. It was first described from the lowermost Cambrian of the

Siberian Platform by V. V. Vostokova (1962). Subsequently V. V. Missarzhevsky described several species from carbonate deposits of the Tommotian stage of the Siberian Platform. From the Lower Cambrian of the East European Platform representatives of this genus were described as „*Pleurotomaria*"? *kunda* Öpik from Estonia by A. A. Öpik (1956). Subsequent revision based on a large collection of representatives of the species enabled Estonian stratigraphers to place it in the genus *Aldanella* (K. Mens, MS; E. Posti, MS). Thanks to the courtesy of V. V. Missarzhevsky, K. Mens and E. Posti the author could compare her material with their collections. It appeared that *Aldanella polonica* sp. nov. from the borehole Łopiennik is closer to the species *A. kunda* (Öpik) from Estonia than to those from the Siberian Platform in shell shape and morphology. It is, however, larger than all of them except for *Aldanella* ex gr. *attleborensis* (Shaler et Foerste) which is still larger than it.

A remarkable similarity between the species from Poland and Estonia may result from identical facies and thus similar life conditions.

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Kazimiera LENDZION

NOWA FAUNA SZKIELETOWA (*GASTROPODA*) Z OSADÓW PIĘTRA KLIMONTOWSKIEGO DOLNEGO KAMBRU (POŁUDNIOWO-WSCHODNIA POLSKA)

Streszczenie

Osady piętra klimontowskiego obfitują w szczątki fauny i flory, przedstawicieli których wciąż przybywa w miarę postępu badań. Ostatnio opisana (K. Lendzion, 1975) nowa fauna *Trilobita* i *Trilobitoidea* pochodzi z górnej części piętra klimontowskiego z poziomu *Mobergella*. Nowa nieznana dotychczas w najniższym kambrze w Polsce fauna, opisana w niniejszym komunikacie, należy do *Gastropoda*. Występuje ona w dolnej części piętra klimontowskiego w poziomie *Sabellidites* (fig. 2). Fauna ta znaleziona została w otworze Łopiennik (fig. 1) na głębokości 5300,0—5307,0 m.

Znaleziony okaz *Gastropoda* należy do rodzaju *Aldanella* i opisany został jako *Aldanella polonica* sp. nov.

Казимера ЛЕНДЗЁН

НОВАЯ СКЕЛЕТНАЯ ФАУНА (*GASTROPODA*) В ОТЛОЖЕНИЯХ КЛИМОНТОВСКОГО ЯРУСА НИЖНЕГО КЕМБРИЯ (ЮГО-ВОСТОК ПОЛЬШИ)

Резюме

Отложения климонтовского яруса изобилуют остатками фауны и флоры, которых обнаруживается все больше по мере изучения этих пород. В последнее время описана (К. Лендзён, 1975) новая фауна *Trilobita* и *Trilobitoidea* относящаяся к верхней части климонтовского яруса горизонта *Mobergella*. Новая фауна, до сих пор не известная в самых низах кембрия в Польше, описанная в статье, относится к *Gastropoda*. Она залегает в нижней части климонтовского яруса, в горизонте *Sabellidites* (фиг. 2). Эта фауна была обнаружена в скважине Лопенник (фиг. 1) на глубине 5300,0—5307,0 м.

Найденный экземпляр *Gastropoda* относится к роду *Aldanella* и описан как *Aldanella polonica* sp. nov.

TABLICA I

Fig. 1. ? *Anabarella* sp. 1
Klimontovian stage, Sabellidites Zone, borehole Łopiennik, depth 5301 m; × 10
Piętro klimontowskie, poziom *Sabellidites*, otwór wiertniczy Łopiennik, głęb. 5301,0 m; pow. 10×

Fig. 2—8. *Aldanella polonica* sp. nov.
Klimontovian stage, Sabellidites Zone, borehole Łopiennik; Fig. 2 — depth 5 304.9 m; Fig. 3—6 — depth 5 305.6 m; Fig. 7 — depth 5 306.6 m; Fig. 8 — depth 5 306.7 m; × 10
Piętro klimontowskie, poziom *Sabellidites*, otwór wiertniczy Łopiennik; Fig. 2 — głęb. 5304,9 m; Fig. 3—6 — głęb. 5305,6 m; Fig. 7 — głęb. 5306,6 m; Fig. 8 — głęb. 5306,7 m; pow. 10 ×

Photos by Janina Modrzejewska
Fot. Janina Modrzejewska

TABLICA I

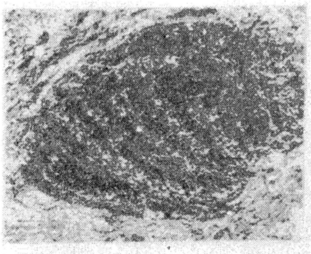

Fig.1

Fig.2

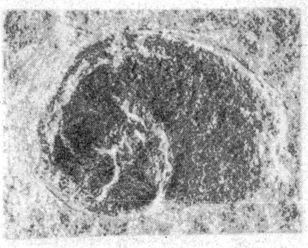

Fig.3

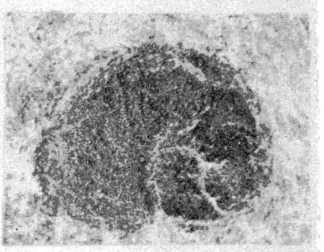

Fig.4

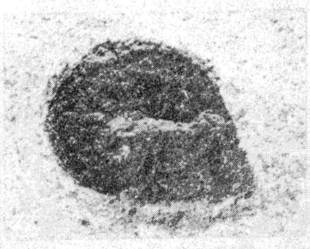

Fig.5

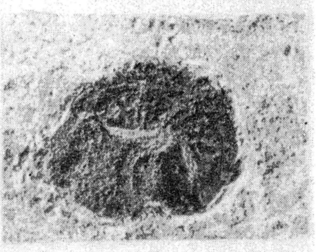

Fig.6

Fig.7

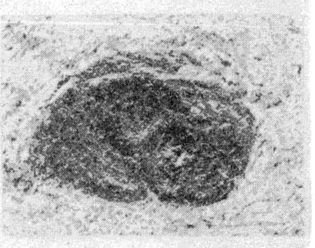

Fig.8

Kazimiera LENDZION — First Gastropod Fauna from the Klimontovian Stage (Lower Cambrian) South-Eastern Poland