

## Frasnian gastropod synecology and bio-events in the Dyminy reef complex of the Holy Cross Mountains, Poland


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Frasnian gastropods from the Kowala Formation (north-western part of the Holy Cross Mountains, Poland) form five reef associations and one lagoonal assemblage are described. The distinct influence of regional shallowing-upward cycles on the composition of gastropod fauna have been observed. Composition changes of this fauna were controlled by I Ib/c, I Ic, and I Id cycles. Early Frasnian reef association appeared with predominantly thick-shell gastropods, which occur in the upper Sitkówka Beds. At the beginning of I Ib/c cycle, Kadzielnia-type mud mounds with a high diversified gastropod association appeared. The next cycles caused the disappearance of mud mounds (I Ic), the sinking of the Dyminy reef (I Id), and extinction of the gastropod associations from the upper Sitkówka Beds. Two gastropod associations and one poorly diversified lagoonal assemblage predominated in the reef-cap stage. Frasnian reef gastropods have not been observed in the Famennian and Early Carboniferous series. Thus, they probably became extinct together with the collapse of the Frasnian reef ecosystem near the Frasnian–Famennian boundary. Twenty seven taxa have been recognized, among them three new species and two new genera are described: *Kowalatrochus sanctacrucensis* gen. et sp. nov., *Grabinopsis guerichi* gen. et sp. nov., and *Loxoplocus* (Donaldiella) *karczewskii* sp. nov. Two poorly known Gürich's species have been also revised: *Euryzone kielcensis* and *Orecopia kadzielniae*.

**Key words:** Gastropoda, Devonian, taxonomy, palaeoecology, Frasnian–Famennian extinction, Poland.

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