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Coralline algal limestones and rhodoliths from olisthostromes of the Krosno Beds (Oligocene, Polish Flysch Carpathians) - preliminary results

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Within olisthostromes of the Krosno Beds (Oligocene) in Skawinki near Lanckorona exotic pebbles/boulders of coralline algal limestones and rhodoliths were found. Skawinki are localised in Żegocina - Lanckorona Zone, at southern part of the Silesian nappe, Polish Flysch Carpathians. The presence of olisthostromes in the Krosno Beds (shaly-sandstones turbidites) is connected with activity of the Silesian Cordillera and suggest existence of accretionary prism in the nearest vicinity (*cf.* Cieszkowski & Polak, 1998).

Exotics of coralline algal limestones from Skawinki reach diameters up to 30 cm. Generally these limestones represent rhodolith facies. Packstone/grainstone limestones bearing rhodoliths and coralline algal crust debris contain also fragments of macrofossils: molluscs, bryozoans, echinoderms, polychaetes and rare fragments of colonial corals (*Aulopora* sp., *Actinacis* sp., *Astreopora* sp., *Polytremacis* sp). In some pebbles quartz grains are also present. Among large foraminifera occurring within the matrix, orthophragminids such as *Discocyclina* *varians*, *Discocyclina* sp., *Asterocyclina* sp. were identified. Nummulitidae are represented by small size forms and *Assilina alpina*. Preliminary studies on larger foraminifera suggest a Middle-Upper Eocene age. Small benthic foraminifera are represented by *Biloculina*, *Triloculina*, *Quinqueloculina* (Milioidae) and *Textularia* sp.

Coralline red algae are the main components of the studied limestones. Species identification is difficult since latest studies of fossil corallines indicate that fossil taxa need a systematic revision and neophylocological approach (e.g. Bassi, 1998). Corallinales (Rhodophyta, Corallinales) are represented by the subfamilies Melobesioideae (*Mesophyllum*, *Lithothamnion*) and Mastophoroideae (*Lithoporella*, *Spongites*, *Neogoniolithon*). The family Sporolithaceae is represented by *Sporolithon*. Rhodoliths are mainly ellipsoidal and spheroidal in shape

and show up to 7 cm in diameter. Within the rhodoliths encrusting foraminifera and bryozoans are also present. Coralline specimens show high bioerosion and abrasion suggesting long residence time on the sediment-water interface and possible low sedimentation rates.

The presence of coralline red algae is known from Paleocene - Eocene flysch deposits of the Polish Flysch Carpathians. Usually the corallines occur as biotritical material within sandstones (Golanka, 1974) or as calcarenite and calcudite algal limestones (Rajchel & Myszkowska, 1998). Much less commonly rhodoliths and coralline pebbles with better preserved coralline crusts occur (Leszczyński, 1978).

Paleogene coral-algal reefs are known from Slovakia (Samuel *et al.*, 1972). The coralline algal limestones of the Polish Carpathians do not show evidences of possible genetic relationships with reef development.

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