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SPONGE-MICROBIAL STROMATOLITES AND CORAL-SPONGE REEFS RECOVERY IN THE TRIASSIC OF THE WESTERN TETHYS AND NORTHERN PERI-TETHYS BASINS

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Very particular sponge-microbial stromatolites have been found both in the Germanic and in the Alpine Triassic. In both regions, the stromatolites formed within shallow, perilitoral zone; they occur within emerged oolitic bars or upon exposed karstified horizons and mark well the sequence boundary. The stromatolites are composed of interfingered, laminated segments of microbial origin and small (< 0.5 cm) lenticular, spongean bodies. They show variety in morphology ranging between mm-thin flat laminites to 50 cm-thick columnar horizons. As a rule, the thicker, the sponge-richer are the stromatolites. Because of the animal component, the growth of the stromatolites was independent from photo- and geotropic controls. For example, some stromatolites could envelope narrow, 1.5 m-deep, partly closed, karstic fissures penetrating oolitic shoals or grew within cracks piercing tepee-hummocks. Poor preservation of internal structures hinders unequivocal determination of the sponges but the dictyid Hexactinellidea seem to be the main constructor of the Triassic stromatolites. Moreover, the aphanitic and peloidal automicrite carbonate fabrics typical of the spongean-microbial association is recognizable.

The Triassic sponge-microbial stromatolites as Lilliputian metazoan-bacterial buildups could be recognized as a „Lazarus form" enabling survival and recovery of the sponge buildups after the Permian-Triassic extinction. In middle Triassic times (Pelsonian), the hexactinnelid sponges accompanied then by first *Scleractinian* corals gave rise to the oldest *in situ* found reefs in the Western Tethys province.

The best developed Pelsonian sponge-coral buildups occur in the western Upper Silesia where they form patches of some 2-80 meters across and several meters high.

The buildups, display vertical internal succession typical for the „catch up reefs" affected by the highstand shallowing-upward trend in the basin. Generally, the buildup construction began with prostrate colonies of hexactinellid sponges settled over subaqual bioclastic dunes and formed thin (up to 3 cm) veneers perfectly mimicking disposition of the dune surface. Contribution of the sponge component grew upsection and they started to form first biostromal fabrics and then biohermal buildups. With the further growth and relative shallowing, other organisms contributed to reef community; crinoids, brachiopods, serpulids, encrusting forams and the scleractinian branched corals (*Volzeia szulci*). The sponges and *Volzeia* corals built domes and knobs clustered together. When the reef crest reached the surf zone, the encrusting corals (*Pamiroseris silesiaca*) constructed crusts typical of highly turbulent environments.

The incipient Triassic buildups are commonly believed to inhabit deeper settings, but as indicate sedimentary context and the reef structural pattern itself, the Silesian reefs developed within storm wave zone. Early meteoric diagenetic imprints and direct replacement of the reefs by algal fabrics evidence that the reefs grew up within the photic zone. This in turn implies conclusion on a possible zooxanthellate algae-coral association, denied hitherto for the early scleractinian corals.

From the paleobiogeographical point of view, the Silesian reefs belonged rather to the circum-Tethyan reef belt than to the epicontinental Germanic basin.