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**A CAMBRIAN MICRO-FAUNA FROM THE DEAD SEA:  
PALAEOGEOGRAPHIC AND PALAEOECOLOGICAL IMPLICATIONS**

Olaf Elicki<sup>1)</sup> and Rafie Shinaq<sup>2)</sup>

1) Geological Institute, Department of Palaeontology, Freiberg University, Bernhard-von-Cotta-street 2, D-09599 Freiberg, Germany; [elicki@geo.tu-freiberg.de]

2) Yarmouk University, Jordan;

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In the Dead Sea region a Cambrian marine incursion can be studied in spectacular outcropping deposits. The short marine sedimentary phase (Burj Formation) reaches a maximum thickness of about 200 metres and thins out to the South in destination to the Arabian craton. The sediments of this short marine interplay consist of transgressive intertidal silt- and sandstones at the base (Tayan Mbr.), followed by sub- to intertidal carbonates (Numayri Mbr.). At the top of the marine succession, regressive and partly intertidal siliciclastics (Hanneh Mbr.) were deposited, overlain by continental sandstones. The sedimentary characteristics of the Burj Fm. point clearly to arid shallow marine conditions.

Hitherto, from the marine incursion, only some trilobites, brachiopods and hyoliths were examined. Biostratigraphically, the former indicate a highermost Early to early Middle Cambrian age. In contrast to these fossil groups, however, the micro-fauna and also the facial aspects of the marine carbonates are under investigation for a short time.

Recent work on the carbonate facies types and the micro-fauna of Jordanian outcrops led to recognition of different sedimentary types, hitherto unknown from this region. These rock types indicate that the carbonate depo-centres were represented by some large and low energy lagoons and an associated high energy oolite shoal complex. The lagoonal sediments are characterized by a low sedimentation rate and locally by entire bioturbation. In shoreward direction, the lagoonal facies changed into a microbial-dominated tidal or sabkha flat environment.

The biomineralized micro-fauna is mainly represented by excellent preserved sponge-spicules, by trilobites, hyoliths, echinoderms, brachiopods, hyolithelminths and some probable ostracods. Trilobites and hyoliths often show mass-accumulations and strong stream-orientated embedding within distinct horizons. Whereas biota from successions of the northern Dead Sea are generally highly reworked and abraded, such a strong agitation was not observed further south. Also massive allochthonous echinoderm layers were recognized only in the North. So, the regional position of a high energetic swell can be localized near the northern edge of the present Dead Sea. The taxonomic diversity of the observed fauna seems to be rather poor. There is a distinct pattern in the regional distribution of trilobite taxa: *Kingaspis* seem to occur exclusively in the outer (northern) high energy swell area, whereas *Realaspis* and *Redlichlops* occur only further south. From Israel deposits (Timna area), first "monoplacophoran"-like molluscs were newly reported (kind information: L. POPOV). Microbial mats and small mounds were also observed from this southern region. The occurrence of archaeocyaths in the Cambrian of the Dead Sea (there are occasional "myth-like" oral reports without any details, locality-information, pictures or samples)

cannot be confirmed until today.

The Cambrian micro-fauna from the Dead Sea can be subdivided palaeoecologically into habitats of a stressed biocoenosis (lagoonal and sabhka facies) and of an open-marine high energy biocoenosis (shoal/circum-shoal facies). Following the regional facies distribution, the shoal complex may have extended over hundreds of metres at least, lagoons probably up to few kilometres.

Palaeogeographically, smoother relations seemed to exist to the western Mediterranean region (trilobites, molluscs) and possibly to the Baltic and Avalonian area, too (molluscs). Future findings let expect more detailed information, especially regarding palaeogeographic relations to the Far East. The Dead Sea area could have a key-function in the reconstruction of the faunal exchange between the western and the eastern margin of Gondwana and so, it has an important position for trans-regional correlation in the Early-Middle Cambrian interval.

