

INDUAN (EARLY TRIASSIC) GIANT SPONGE-MICROBIAL BUILD-UPS IN ARMENIA

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The basal Triassic units of central Armenia offers the opportunity to study a new sponge-microbial community development in the aftermath of the end-Permian mass extinction. The sponge-microbial build-ups outcrop well in the Chanakhchi section (previous Sovetachen or Zangakatun). They are spaced from 5 to 20 m. and surrounded by thin-bedded platy lime mudstone in a deep ramp environment between the fair weather wave base and the storm wave base (1). The basal part consists of a succession of centimeter- to decimeter-scale branching columnar stromatolite within lime mud rich in fibers of putative keratose sponges. Calcium carbonate oversaturated sea-water caused a very early diagenetic replacement of the former organic tissue by calcite mono-crystals, which are often surrounded by calcium carbonate needles or fans (original aragonite). The following sponge-microbial growth phase consists of numerous superposed thrombolitic domes with specific internal structures reaching a total height of up to 12 m and a top head diameter of 8 m. An observed asymmetrical growth of the build-ups indicates a steady bottom current condition which also contributes, with strong storms, to the concomitant distal deposition of thin bedded bioclastic lime-mudstones and -wackestones containing ostracods, foraminifers, gastropods, bivalves, sponge fibers as well as ammonoids, and to embedding the build-ups. The thrombolites forms dark patches on the outcropping bioherm and, at least five texture types are recorded in the microstructures, comprising spherulites, coalescent hemispheric acicular calcite crystal intergrowths similar to sea-floor carbonate cements, and calcified sponge tissue network within lime mud, within thrombolites or within spar spheroids (former sponge bodies?). Although, if the microbialites from South China and South Turkey flourished only during the lower Griesbachian, the Armenian build-ups lasted the whole Griesbachian and extended up to the basal Dienerian, from *parvus* to *kummeliconodont* zones (2), that is, at least, twice long (about 700'000 years) as it is China and Turkey. To resume, the Chanakhchi basal Triassic sponge- microbial build-ups are of a new type and of a long duration, not yet known during this time interval.

(1) Friesenbichler, E., Richoz S., Baud, A. Krystyn, L., Sahakyan, L., Vardanyan, S., Peckmann, J., Reitner, J. & Heindel, K. (submitted): Sponge-microbialites from the lowermost Triassic Chanakhchi section in southern Armenia: Microfacies and carbon stable isotopes.

(2) Zakharov, Y.D., Biakov, A.S., Baud, A. and Kozur, H. (2005) Significance of Caucasian Sections for Working out Carbon-Isotope Standard for Upper Permian and Lower Triassic (Induan) and Their Correlation with the Permian of North-Eastern Russia. J. China University of Geosciences, 16 (2), 141-151.