

Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 16	Graz 2011
<i>IGCP 596 Opening Meeting</i>		Graz, 19-24 <sup>th</sup> September 2011	

## Late Devonian pelagic carbonates in northwestern Thailand: constraints and plate tectonic implications based on a multidisciplinary approach

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Southeast Asia comprises a complex assembly of continental blocks, volcanic arcs, accreted continental crust, and suture zones which constitute remnants of the closed oceanic basins and it is widely accepted that the two principal microcontinents, Sibumasu in the west and Indochina in the east, had formerly been a part of Gondwana. The tectonic framework of Thailand is formed of four units; these are from west to east, the Sibumasu block, the Inthanon zone, the Sukhothai zone, and the Indochina block (e.g., METCALFE 2006, 2009, 2011, UENO 1999).

Detailed conodont stratigraphy, microfacies, isotope geochemistry (see contribution by SAVAGE *et al.*, this meeting) as well as Nd isotope studies have been undertaken in two Late Devonian sections in the northwestern part of Thailand. The Mae Sariang section is characterized by very homogenous light- to dark-grey well-bedded limestones. This 11 m thick sequence of Late Devonian very condensed limestones in northwestern Thailand exhibits faunal associations and sedimentological / microfacies criteria which are indicative for an isolated pelagic facies setting, most probably on a seamount. Similar sequences are known worldwide in a few sections only. The unique Mae Sariang section is characterised by low sedimentation rates as recognised by a number of hardgrounds, Fe/Mn crusts, and occurring phosphates. The sequence comprises a number of pelagic faunal elements e.g., conodonts, cephalopods and pelagic ostracodes. The fauna is composed of rare megafossils and the faunal diversity is low (KÖNIGSHOF *et al.* in press). The sequence also contains some Late Devonian events as shown by stratigraphical and geochemical results.

The Thong Pha Phum section which is located about 350km farther south is characterized by a different facies setting, suggesting a proximal position of the section on the shelf. Furthermore, we present Nd isotopic data measured from conodonts of the two sections. These data constitute the first Devonian seawater signatures recognized within the Australian shelf of northeastern Gondwana and in the adjacent Paleotethys Ocean. Although the conodont samples in the investigated sections were not exactly of the same age (in terms of the conodont zonation), they clearly reveal a fundamentally different Nd seawater composition at both sites. Based on a multidisciplinary approach the position of the two Late Devonian sections are discussed in the framework of existing plate tectonic models.

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Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 16	Graz 2011
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Jahr/Year: 2011

Band/Volume: [16](#)

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