Zeitschnitten wider. Die Zeitschnitte können nur innerhalb einer Gattung mit gleichbleibendem Environment verglichen werden.

Die Untersuchungen wurden im Rahmen des FWF-Cluster „Changes in Eastern Alpine Miocene Ecosystems and their Geodynamic Control" als Zusammenarbeit der Projekte "Stable isotopes and changing Miocene palaeoenvironments in the East Alpine region"und "Evolution versus migration: Changes in Austrian Miocene molluscan paleocommunities" durchgeführt.

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Foraminifera from the late Permian of Shahreza (Central Iran)

Parvin MOHTAT-AGHAI

Institut für Geologie und Paläontologie, Universität Innsbruck, Innrain 52, A-6020 Innsbruck

The mass extinction at the end of the Paleozoic era about 251 million years ago, constituted the major biotic crisis "(The mother of mass extinctions)" in the history of life. According to SEPKOSKI (1989, 1990), 83 % of the marine genera disappeared at the P/T boundary. There are several hypotheses regarding the Permian extinction. The main ones include volcanic eruptions, a significant sea level drop, global cooling, possible bolide impact, and various other effects. It is widely proposed that several factors contributed to the overall devastation.

There is an almost continuous and complete sedimentary marine sequence through the Permian-Triassic boundary in Iran. It is one of the best sections in the world, which extends over a distance of more than 1400 km from the Julfa area in the northwest to the Hambast Range in central Iran. The Iranian sections are very well suited for the study of the P/T-Extinction event because they are the only pelagic sections in the world without an anoxia event at the P/T boundary.

As part of a wider investigation the micropaleontological components of the Uppermost Permian, P/T boundary and Lower Triassic deposits at Shahreza were analysed. The Permian-Triassic section of Shahreza is located in south-central Iran, about 70 km south of Isfahan along the main road from Isfahan to Shiraz.

The Permo-Triassic sequence of the Shahreza region displays remarkable similarities both in lithology and faunal composition to that of the Julfa area in the NW and Abadeh in the Hambast Range in Central Iran. Apparently they belong to a single NW trending basin, the Julfian-Abadehian basin, and were probably separated from other basins. TARAZ et al. (1981) divided the Permian in the Abadeh region into seven lithological units (1-7). Units 5-7 (Abadeh-Hambast formation) are the subject of the present investigations. The lower part of the Upper Permian deposits consists of dark-grey to grey dolomitic shallow marine limestone (Abadehian/Dzhulfian) and contains mainly small foraminifera, ostracods, brachiopods, crinoids, gastropods, corals, bryozoans (*Fenestella*) and algae (*Permocalculus*). A major sea-level rise prior to the P/T boundary is documented by a change in litho-and biofacies from a lagoonal to a basinal environment. The Upper Permian limestone passes gradually into 20 m of reddish, nodular, ammonoid-bearing (*Paratirolites*), deep-water limestone of Dorashamian

age. The Dorashamian limestones are very poor in foraminifera but contain abundant conodonts, ostracods, fish remains and ammonoids. The Lower Triassic (Units A-E) is also well exposed at the Shahreza section. It consists of yellow vermicular calcareous limestones and shales succeeded by a grey stromatolitic limestone with thrombolitic mounds.

Preliminary micropaleontological studies of the Shahreza sections reveal a new and distinct evolutionary trend in the late Permian deposits of Central Iran (Hambast Formation) as indicated by the preservation of the family of Biseriamminidae (*Dagmarita shahrezaensis* n. sp., Dzhulfian), a very important group for the biostratigraphy of this epoch (ALTINER 1997, 1999, ALTINER & ÖZKAN-ALTINER 2001). The new species differs from *Dagmarita chanakchiensis* by the small number of the chambers, the shape of the chambers and the absence of thornlike lateral expansions. *Dagmarita chanakchiensis* appears relatively early in the middle Permian (Early Murghabian/Wordian; VACHARD, 1980). *D. shahrezaensis* is late Dzhulfian in age. The present results show that the biostratigraphic pattern of foraminifera changed, due to the change in ecology and facies from a lagoonal to a basinal environment. A foraminiferal assemblage of high taxonomic diversity and frequency is recorded only during the Dzhulfian, but declined considerably around the end of Dzhulfian. The following biostratigraphically representative foraminifera for the late Dzhulfian are recorded in the Shahreza section:

Lunacammina permica, Pachyphloia sp; *Palaeotextularia* sp., *Climacammina valvulinoides*, (frequent), *C. sphaerica*, *Deckerella* cf. *composita; Globivalvulina* sp., *Paraglobivalvulina mira*, *Dagmarita chanakchiensis*, *Dagmarita shahrezaensis* n. sp; *Codonofusiella kwangsiana, C. schubertelloides* (frequent), *Nanlingella* sp.; *Nankinella orbicularis*; *Neohemigordius zaninettiae; Frondina permica.* Foraminifera appear to have two major crises in the late Permian, one, which wiped the larger fusulinids out, and one in the Late Dorashamian, which affected the small foraminifera. However small foraminifera disappeared in Shahreza gradually from the Dzhulfian to the Dorashamian and occurred only as a community of Lagenids and Permian Endothyrids (*Neondothyra reicheli and Nodosaria* sp.) below the P/T boundary.

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