Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 9	Graz 2004

LATE PERMIAN AND EARLY TRIASSIC MICROFOSSIL ASSEMBLAGES OF IRAN

Wolfgang METTE & Parvin MOHTAT-AGHAI

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

Foraminifera and ostracode assemblages from the Upper Permian (Dzhulfian, Dorashamian) and Lower Triassic (Griesbachian) of central and northwestern Iran have been analysed with respect to their biostratigraphy and extinction patterns. At the Shareza section (Hambast region, central Iran) seven foraminifera biozones could be identified (Mohtat-Aghai & Vachard, in press). Some of these biozones have only regional significance since they are defined by the local occurrence of taxa which is probably ecologically controlled. The base of the Dzhulfian is characterised by the appearance of *Dagmarita shahrezaensis* and *Frondina permica*. Locally identified "extinction events" can probably be correlated with sequence boundaries of the Kuff-Formation in Saudi Arabia (Sharland et al. 2001). The Upper Dzhulfian fauna is of low diversity, probably due to a biological crisis. The disappearance of most taxa in the Dorashamian except *Neoendothyra* and *Nodosaria* is thought to be a result of a significant increase of water depths.

The Upper Permian in northwestern Iran (Zal-section) yielded a number of relatively well preserved ostracode assemblages which show strong temporal variations in diversity and taxonomic composition. The faunas of the Lower Dzhulfian are relatively rich in genera and species and are characterised by the frequent occurrence of Healdiacea (*Cavellina* aff. *arcuata*) and various species of Kirkbyacea (i.e. *Carinoknightina notabilis*) and Hollinacea. In the Upper Dzhulfian the latter three ostracod groups become less abundant in favour of smooth-shelled Bairdiacea. This change is not due to extinction but reflects a deepening of the environment which is also documented by the macrofossil content. A continuation of the deepening in the Dorashamian is indicated by the appearance of *Polycope* and high abundance of Cypridacea (i.e. *Fabalicypris parva*). A very marked faunal turnover which is thought to be due to extinction occurs in the Upper Dorashamian. The assemblages from the Upper Dorashamian and Lower Triassic (Griesbachian) are of low diversity and consist predominantly of Bardiacea (*Praezabythocypris*), Healdiacea (*Pseudobythocypris* ?) and Indivisidae (*Indivisia*). This faunal change is probably a result of strong environmental perturbations (climatic change?) which are not clearly identified so far. Peculiar carapace ornamentations which are similar to "brackish water nodes" (see Fig. 2: 4,5) may be related to drastic changes in water chemistry. Lower Triassic ostracode faunas of other palaeo-Tethyan regions (i.e. Sohn 1970, Hao 1992, 1994, Crasquin-Soleau et al. 2004) suggest that the extinction patterns at the P/T-boundary in these regions are significantly different, possibly due to variations in facies and climatic conditions.

References

CRASQUIN-SOLEAU, S.; MARCOUX, J.; ANGIOLINI, L. & NICORA, A. 2004. Palaeocopida (Ostracoda) across the Permian-Triassic events: new data from southwestern Taurus (Turkey). – Journal of Micropalaeontology, 23: 67-76.

HAO, W.C. 1992. Early Triassic marine ostracods from Guizhou. – Acta Micropalaeontologica Sinica, 9(1): 37-44.

HAO, W.C. 1994. The development of the Late Permian – Early Triassic ostracod fauna in Guizhou Province. - Geological Review, 40(1): 87-92.

MOHTAT-AGHAI, P. & VACHARD, D. (in press). Late Permian Foraminiferal Assemblages from the Hambast Region (Central Iran) and their extinctions. – Revista Espagnola de Micropaleontologia.

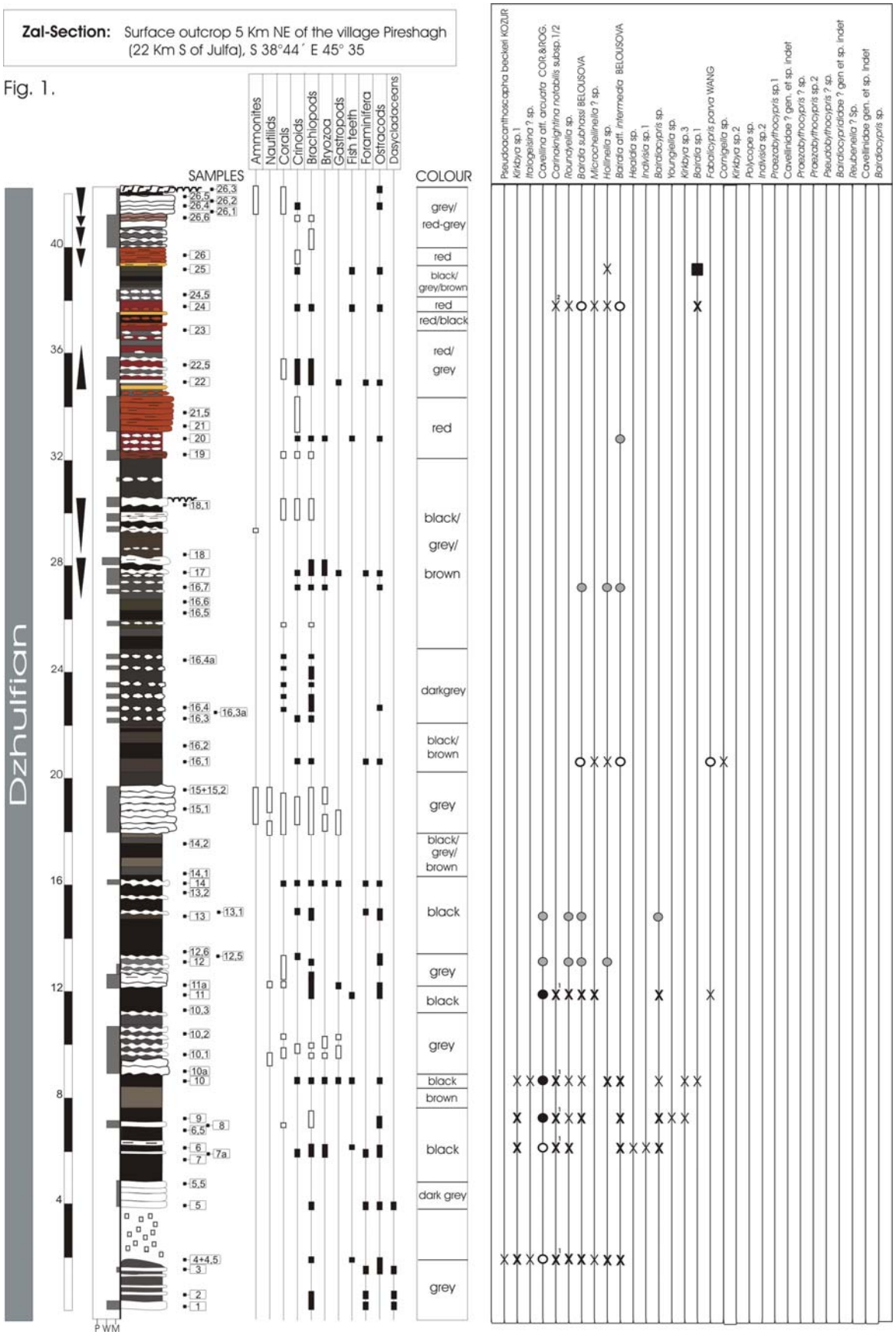
SHARLAND, P.R.; ARCHER, R.; CASEY, D.M.; DAVIES, R.B.; HALL, S.H.; HEWARD, A.P.; HORBURY, A.D. & SIMMONS, M.D. 2001. Arabian plate Sequence Stratigraphy. – GeoArabia, Spec. Publ., 2: 1-371.

Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 9	Graz 2004

SOHN, I.G. 1970. Early Triassic Marine Ostracodes from the Salt Range and Surghar Range, West Pakistan. – In: Kummel, B. & Teichert, C: (eds.), Stratigraphic boundary problems: Permian and Triassic of Western Pakistan. – University of Kansas, Department of Geology Special Publication, 4: 193-206.

Zal-Section: Surface outcrop 5 Km NE of the village Pireshagh (22 Km S of Julfa), S 38°44´ E 45° 35

Fig. 1.



Ber. Inst. Erdwiss. K.-F.-Univ. Graz	ISSN 1608-8166	Band 9	Graz 2004

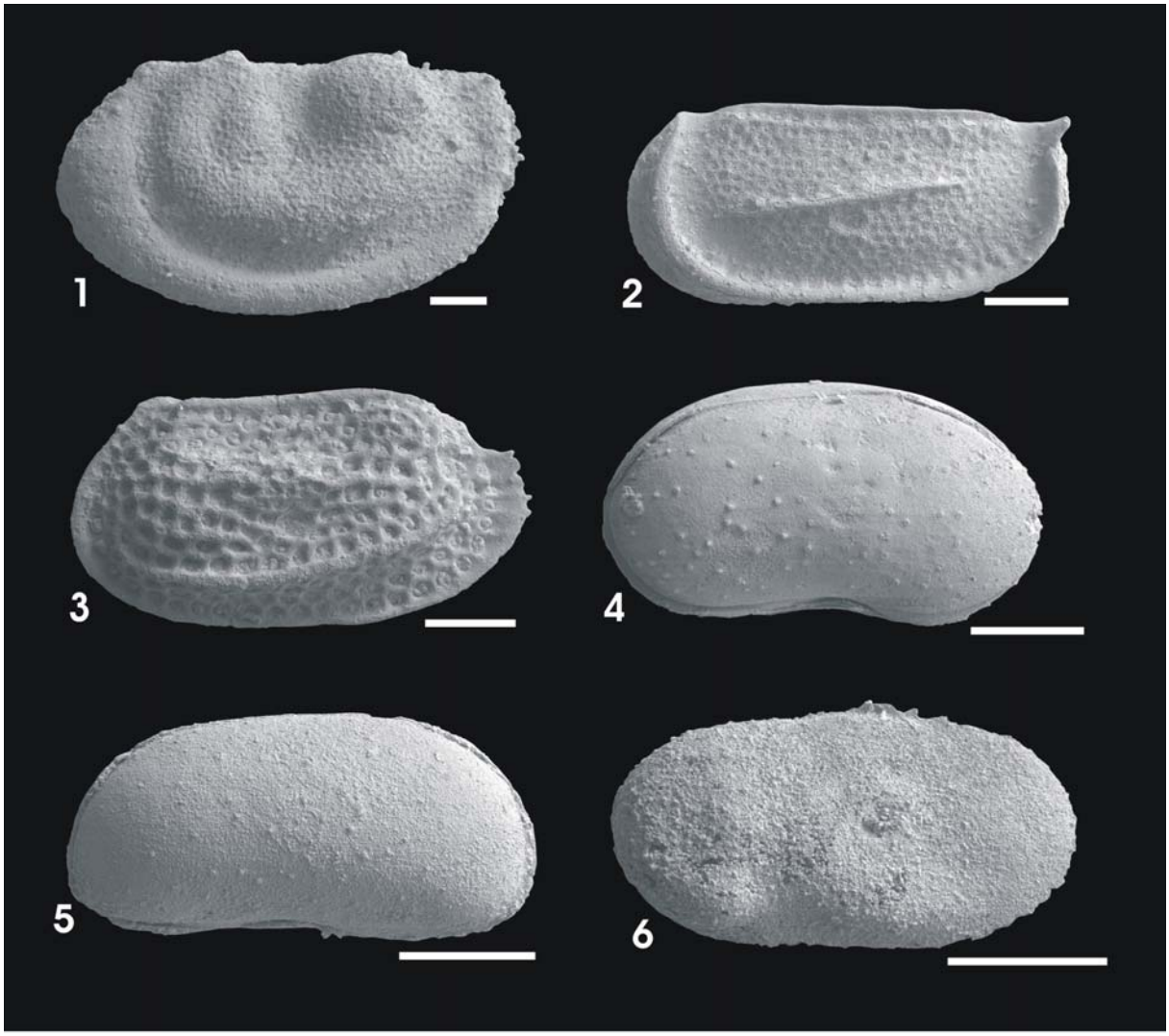


Fig.2: Characteristic ostracodes from the Upper Permian and Lower Triassic of the Zal-section: 1. *Hollinella* sp., 2. Kirkbya sp.1, 3. *Carinaknightina notabilis* subsp.1, 4. *Praezabythocypris* sp.1, 5. *Pseudobythocypris* ? sp., 6. *Reubenella* ? sp.. Scale bar = 200 µm.