

Preface

This issue of the *Turkish Journal of Earth Sciences* is dedicated to the late Okan Tekeli and to the geology of the Karakaya Complex in the Pontides. In 1981 in a seminal paper, Okan Tekeli suggested that the pre-Jurassic orogenic series in the Pontides, for which we now use the term Karakaya Complex, represented Late Palaeozoic–Triassic subduction-accretion complexes formed through the subduction of the Palaeo-Tethys. This model, which was based on his extensive field experience in the Tokat Massif in the eastern Pontides, and in the Ankara region, has been one of the leading models for explaining the depositional setting and tectonic evolution of the Karakaya Complex. The other model for the genesis of the Karakaya Complex is the rift model, first suggested in 1975 by Bingöl *et al.* The rift model assumes that the Karakaya Complex was deposited in a Late Permian intra-continental rift which developed into an oceanic marginal basin and closed by the latest Triassic. At present, there is no consensus as to which of these models is the correct one, and it is significant that one of the guest editors of this special issue (MCG) is a proponent of the rift model, and the other (AIO) of the subduction-accretion model.

The special issue comprises eight papers related to the geology of the Karakaya Complex and associated units.

The first paper by **Aral Okay** and **Cemal Göncüoğlu** summarises the present data on the stratigraphy, structure, petrology, geochemistry of the Karakaya Complex in the Pontides, and outlines the models used to explain its evolution. The second paper, by **Elizabeth Pickett** and **Alastair Robertson**, provides an extensive description of the units of the Karakaya Complex in northwestern Turkey with special reference to the Nilüfer Unit, a thick series of Permo–Triassic basic volcanic rocks, interpreted as remnants of oceanic islands or of an oceanic plateau. The paper by **Laurent Beccaletto** and **C. Jenny** describe an enigmatic and tectonically highly significant zone immediately west of the Karakaya Complex by providing new biostratigraphic, geochemical, isotopic as well as geologic data. This Ezine Zone has many of the ingredients of the Karakaya Complex, including Permian shallow-marine carbonates, Triassic pelagics and flysch-type deposits, but differs from it in other aspects. Another tectono-stratigraphic unit in northwestern Turkey is the Kazdağ Massif, a high-grade metamorphic complex protruding from under the Karakaya Complex. It is now widely regarded as a Oligo–Miocene extensional metamorphic core complex. Its pre-Tertiary evolution and its relation to the Karakaya Complex are unsolved issues. The paper by **Mehmet**



Okan Tekeli

Duru and his co-workers provides new information on the lithostratigraphy of the Kazdağ Group, including a new detailed geological map of the central and southern Kazdağ Massif. The rest of the papers in the issue deal directly with the Karakaya Complex. The paper by **Aral Okay and Demir Altiner** describes for the first time uppermost Triassic limestone from the Karakaya Complex. This discovery has implications for the timing of the Karakaya orogeny. The paper by **Cemal Göncüoğlu and their co-workers** describes Upper Permian radiolarian cherts from a clastic unit within the Karakaya Complex. Upper Permian limestones are common in the Karakaya Complex, and are usually interpreted as olistoliths. In contrast, the paper by **Necati Turhan and co-workers** interpret an extensive Upper Permian carbonate sequence in northwestern Turkey as autochthonous. Over the last 15 years, studies on the Karakaya Complex have been largely restricted to northwestern Turkey. Large outcrops of Karakaya Complex and related units in the central and eastern Pontides await further study. This bias in the Karakaya studies is partly rectified by the paper of **Ali Yılmaz and**

Hüseyin Yılmaz, which describe Permo–Triassic orogenic sequences from the Tokat Massif of the eastern Pontides. These sequences bear close resemblance to those described from northwestern Turkey, and attest to the extensive distribution of the Karakaya Complex throughout the Pontides.

A session on the Karakaya Complex was organised during the First International Symposium of the Faculty of Mines of İstanbul Technical University on Earth Sciences and Engineering, held in İstanbul, Turkey, in May 2002. This session formed the core of this special issue, which includes a few papers presented in the session, and several others submitted subsequently.

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Aral İ. Okay & M. Cemal Göncüoğlu



Okan Tekeli in the centre with the editors Aral Okay (left) and Cemal Göncüoğlu (right) in the field in the Karaburun Peninsula, September 2000.