

## Introduction

*In the western Pannonian Basin there are three distinct areas where during Mio/Pliocene time alkaline basaltic volcanism took place (front inner cover). Volumetrically the largest volcanic field, the Bakony – Balaton Highland Volcanic Field (BBHVF) is located adjacent to the north shore of the Lake Balaton (front inner cover). There, the vent remnants are advanced in erosion down to their crater/vent zone and give a good opportunity to study the feeding systems of predominantly phreatomagmatic volcanoes. North of the BBHVF, in a more dispersed setting, less vents form the Little Hungarian Plain Volcanic Field (LHPVF – front inner cover). The erosion level of these volcanoes allows studying the crater zone of predominantly phreatomagmatic volcanoes. In the western margin of the Pannonian Basin, a cluster of strongly eroded alkaline basaltic volcanoes form the Styrian Basin Volcanic Field (SBVF), a term which is generally used for volcano clusters located in Burgenland, Styria (both in Austria and in Slovenia). In this book the present state of research in the field of physical volcanology will be presented predominantly focusing on the BBHVF and LHPVF. The book reflects a summary of the results and volcanological view of the authors on the basis of their past ten years research on understanding the eruptive mechanism of the Mio/Pliocene volcanoes in the western Pannonian Basin.*

*The book starts with a general review of the Neogene small-volume intraplate volcanism in the western Pannonian Basin, with respect to other fields in the Pannonian Basin system of the same age and to other fields world-wide. The general review put the volcanism in a tectonic and geochemical framework based on the relevant literature. This information allows to create a general volcanological model, which is based on the authors own results. The general review of the volcanism is followed by a summary of the geomorphological aspects of the study of the volcanic fields in this region. This is a “stand alone” summary of the authors view of the syn-volcanic morphology and the possible volcanic landforms on the basis of studies of the preserved volcanic rocks. The chapter is followed by systematic descriptions and interpretations of the BBHVF, the Keszthely Mts. region and the LHPVF with a brief description of a few sites from the SBVF. The reason to present the BBHVF and the Keszthely Mts region separately is, that the latter is predominantly characterised by preserved intrusive complexes. Their description therefore thematically could be well separated from the BBHVF. The specific chapters of the volcanic fields are followed by concluding remarks.*

*Alongside a monographic style of the book, the chapters and the listed sites are arranged in a way that they are in concert with the relevant field trips organised before and after the Second International Maar Conference (2IMC) 2004.*

*The 2IMC an international volcanological meeting under the auspices of the International Association of Volcanology and Chemistry of the Earth Interior (IAVCEI) and the International Association of Sedimentologists (IAS) and also supported by other scientific organisations such as the Society for Economy Geology (SEG), Geologische Vereinigung (GV), Deutsche Geologische Gesellschaft (DGG), Magyarhoni Földtani Társulat (MFT) hosted in Hungary in 2004 was a joint meeting of Hungary, Slovakia and Germany.*

*There is no direct reference to the certain field trip stops in the main text of the chapters to keep the scientific information of certain volcanic fields confined and relevant. The field trip programmes are presented in separate hard page (as a page marker plate) with references of the single stops to the related chapters. Enclosed at the back inner cover are 3D digital terrain models which highlight the field trip routes. Numbers on the maps correspond to page numbers of the related pages in the chapters of the monograph.*

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