

Editorial

Foreword to the thematic set arising from the international conference “Basalt 2017”

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The *Basalt* meetings are particularly, but not solely, focused on extensive Cenozoic magmatism and volcanism across Europe and beyond from a multi-faceted perspective of all relevant disciplines of geosciences. These include physical volcanology, mineralogy, petrology, geochemistry, geophysics, stratigraphy with palaeontology, geohazards and geoheritage. The main goals of these meetings include presentation of new discoveries and developments in the understanding of within-plate alkaline magmatism as well as bringing together to a small meeting scientists with distinctly diverse fields of expertise. This melting pot serves as stew for new, non-conformist ideas and becomes a topical platform for fostering a truly inter-disciplinary research.

Following the successful *Basalt 2013* meeting held in Görlitz, Germany, the *Basalt 2017* conference (<http://basalt2017.geocon.cz>) was set in the historical town of Kadaň, Czech Republic, on September 18–22, 2017. The conference site was selected due to its historical and picturesque centre and also its location in the north-eastern foothills of the Doupovské Hory Volcanic Complex. Kadaň, surrounded by fabulous volcanic landscapes, provided a good starting point for pre- and post-conference field-trips as well as mid-conference guided walk. The meeting was attended by over 40 participants from ten countries, who presented the results of geochemical, petrological, volcanological, geophysical and paleontological studies of within-plate alkaline volcanic systems and



Participants of the *Basalt 2017* conference on the top of Úhošť Hill during mid-conference field trip.

lithospheric mantle. Several contributions also reached out to geoheritage and geohazards. Special attention was paid to the role of Central European volcanology in the development of Earth Sciences in the past centuries.

Of the numerous contributions presented during the meeting, four manuscripts have finally qualified to be implemented in the this thematic set of the *Journal of Geosciences*.

As a starting point, *Tietz and Büchner* summarize the etymology of the common term “basalt”. The authors looked back in historical publications, finding that the word “basalt” results from Agricola’s misspelling of the original Pliny’s word “basanite”. And thus the word “basalt” was introduced by Agricola (1546) for the modern science on the hill hosting the castle of Stolpen, located near Dresden.

Origin and composition of the Stolpen Volcano, the type locality for “basalt”, is the focus of following paper by *Tietz et al.* The authors present detailed geological and volcanological information from numerous small exposures (many of them irretrievably lost as a consequence of extensive human modification of the original landscape), combined with petrography and geochemistry. Surprisingly, the type locality for “basalt” is actually classified as basanite. Reconstruction of the Stolpen Volcano evolution shows that it experienced first a maar-forming phreatomagmatic eruption. The later hypothetical scoria cone grew up within the maar-crater that was finally gradually filled with a lava lake. The thick lava body filling up a funnel-shaped crater is documented by the orientation of columnar jointing.

A similar multidisciplinary approach was applied by *Mysliveček et al.* to basaltic trachyandesite occurrences

on the southern foothills of the České Středohoří Mts. The belt of small hills between Zahořany and Chotiněves near Litoměřice represents the apical part of a single large sill. Based on the ground magnetic data, this sill had two feeders, and possibly developed by merging two growing smaller sills. The composition of this sill fills a gap in the complete differentiation trend of the České Středohoří Volcanic Complex, ranging now from nephelinites and basanites to trachytes and phonolites. The K–Ar geochronological analysis dates the emplacement of this sill to 29 Ma, fitting to the climax of volcanic activity of the České Středohoří Complex.

Sonnenbrand or Sunburn is an alteration form of volcanic rocks, whose origin has with variable intensity been discussed for several decades. *Nováková et al.* present results of petrography and rock-magnetic study focused on sunburn-affected alkaline rocks and differences between the fresh and sunburn lithologies at the same outcrop. The increased conductivity in sunburn facies leads to greater frequency of lightning strikes. The sunburn basalts therefore tend to carry completely overprinted magnetic properties.

Acknowledgements. The meeting was organised by the Czech Geological Society, with technical and administrative aid from the Czech Geological Survey. The organization of the meeting was financially supported by the North-Bohemian Mines (<https://www.sdas.cz>), and Thermo-Fisher Scientific (<https://www.thermofisher.com>). All these institutions/companies are acknowledged for their generous support.