

Preface

The methodology of petrographic studies is developing gradually and therefore it is difficult to estimate, which methods will be used in the coming decades, and what will be detectable with these methods. One thing is sure, though. Mineralogists and petrographers will not get along without the microscopic study of thin sections under a polarizing microscope. This method is being used by a number of generations. Although the technique of thin section preparation changes, the quality of microscopes and also of their accessories enabling e.g. easy photographic documentation is increasing, the principles of this method remain unchanged.

The study of rocks under a microscope is relatively cheap and facilitates a lot of information about the mineral composition of a rock and even about processes of their origin and development. The quantity and quality of this information are highly dependant on the experience of the geologist doing the microscopic study. The theoretical basics of optical mineralogy can be mastered quite fast and easily. Yet the achievement of practical knowledge is a long-term and, in fact, never-ending process. After a few hours of microscopy, students of geology often gain the feeling that the same mineral looks different each time, and that they will never master microscopic study. The study of literature can also lead, unfortunately, to the reckless conclusion – “I will never learn it”. The number of colour pictures in book publications is highly limited, and therefore the authors of such publications are bound to be strict in their selection. Due to this fact, the published photos generally are of a high quality and the characteristic features of rock-forming minerals in question are easily observable.

During the study of our own thin section we find out that our mineral has not got characteristic features observable so well (or we do not see them at all) and that it does not resemble the mineral pictured in the book at all.

The on-line publication **“Rock-Forming Minerals of Igneous and Metamorphic Rocks in Thin Section”** by **Jiří Zimák** is, first of all, designed for students of geology, but due to its form it might also be used by lecturers who have not got suitable thin sections available or who want to save time on the preparation of their presentation. The majority of the publication is represented by 43 files in Microsoft Office PowerPoint format, where 43 of the most important rock-forming minerals (as decided by the author) are characterised. It is only a limited selection, which definitely is subjective (the author did not resist including his stilpnomelane – look, how beautiful it is in a thin section). Critics of this selection might give the advice: an electronic publication can be easily extended with other minerals and you can add your own photos, and if you can share them with me (e-mail address is included in “About the Author”), the possible future new edition of the publication may be complemented (you will, of course, be cited as authors of these photos). The order of minerals in this electronic publication does not respect any mineralogical system; the sequence given has proved itself useful during practical instruction (it begins with a microscopic study of granitoid rocks in thin sections).

All micro-photos shown in this publication were captured using an OLYMPUS BX–50 microscope supplemented with an OLYMPUS Camedia C–7070 camera. In most cases, each slide is composed of two pictures of the same object in plane-polarized light (PPL, the vibration direction of the lower pole is marked with a red arrow) and in cross-polarized light (XPL). The majority of thin sections used during the preparation of this e-book were gotten from rock samples obtained in the area of the Czech Republic and in its closest surroundings (Slovakia, Germany and Austria).

The author wants to acknowledge **RNDr. Václav Vávra, PhD.** (Masaryk University in Brno), who lent several dozen thin sections, many of which were used to make out microphotos. The same acknowledgement belongs to both reviewers – **doc. RNDr. Miroslava Gregerová, CSc.** (Masaryk University in Brno) and **Imad Kadhim Abdulzahra, M.Sc.** (State Company of Geological Survey and Mining of Iraq) – for their invaluable suggestions, which led to the qualitative improvement of the publication “Rock-Forming Minerals of Igneous and Metamorphic Rocks under the

Microscope” (CD-rom, ISBN 978-80-244-22260-2, Palacký University in Olomouc in the year 2009). The presented on-line book “Rock-Forming Minerals of Igneous and Metamorphic Rocks in Thin Section” follows and extends the textbook from year 2009. The on-line book is accessible on company website URGAL Ltd. Olomouc (Czech Republic), with which the author has a long-term cooperation.