

Alkaline Rocks

Introduction

A symposium on "Alkaline Complexes" was organized by Mr. A. U. Falster, Dr. P. B. Moore, and Dr. E. E. Foord and sponsored by the Mineralogical Society of America. The symposium was held in Wausau, Wisconsin during September 16-18, 1983. Due largely to the efforts of the general chairman (A. Falster) the symposium was well organized and executed, and was very much enjoyed by all of the attendees. A total of 17 abstracts were presented orally over the first two days, and a field trip was taken to the Wausau and Stettin plutons on the third day. The entire symposium was executed for a cost of only \$750, which is remarkable considering what was accomplished.

At the conclusion of the symposium, which was attended by about 35 people from two dozen institutions in North America, it was agreed to prepare a special issue devoted to alkaline rocks for *The American Mineralogist*. This proposal was submitted to the MSA Council and approved. P. B. Moore and E. E. Foord served as technical co-chairmen and coordinators for the issue.

A total of 10 papers were submitted for consideration, of which two were rejected, one was withdrawn, and one was not revised in time. Other petrologists and mineralogists working with alkalic rocks were contacted and invited to submit papers. Thus, three of the six accepted papers have been contributed by people who did not actually attend the symposium. Additional papers on alkaline rocks and/or their mineralogy are in preparation and will appear in future issues of *The American Mineralogist*.

The six contributions in this issue span a wide range while having a common base, that of alkaline rock petrology and mineralogy. The paper by E. A. duBray on the Silsilah ring complex and associated tin mineralization, Kingdom of Saudi Arabia, is of both petrologic and economic interest. A. P. Jones and L. M. Larsen have examined the behavior of rare earth elements during crystallization of nepheline syenites of the Motzfeldt Center, South Greenland. Carbonatitic rocks were the focus of papers by A. H. Treiman and E. J. Essene, and V. Morogan and R. F. Martin. The paper by Treiman and Essene has extended knowledge of the Oka alkaline complex, Quebec and presents evidence for silicate-carbonate liquid immiscibility in one of the intrusions in the complex. A paper on partial melting of fenetic assemblages in the Oldoinyo Lengai carbonatitic volcano, Tanzania by V. Morogan and R. F. Martin documents the progressive changes in metagranitic and metagabbroic basement xenoliths that have been caught up in alkali carbonatitic magma.

Two papers dealing with aspects of the mineralogy of alkaline rocks include those by P. Černý and D. L. Trueman, and D. D. Hogarth and others. Černý and Trueman have characterized polyolithionite occurring within albitized and greisenized peralkaline granite and syenite at Thor Lake, in the Blachford Lake complex, N.W.T., Canada. Hogarth and others have examined rare-earth element minerals in four carbonatites near Gatineau, Quebec and have interpreted their results to indicate that formation took place at conditions of low temperature and strong oxidation.

While interest in alkaline rocks and their mineralogy has been high for several generations, we believe that even more interest is being shown currently and that this will continue to increase. Some of the remaining major gaps in the knowledge of these rocks are only now being realized and addressed. The literature on alkalic rocks is steadily increasing and we are pleased to present these papers to the geologic and mineralogic community.

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