

BOOK REVIEW

by Tony Nikischer

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Pegmatites

by David London

This is a large format hardcover work, Number 10 in the Special Publication Series produced by internationally renowned journal, The Canadian Mineralogist. Earlier volumes of the series well known to collectors include de Fournier's Glossary of Mineral Synonyms, Laszlo Horvath's Mineral Species Discovered in Canada and others. A work of nearly 370 pages, this addition to the series is richly illustrated with both color and black and white images and charts, and a CD that not only captures all of the illustrations, but also provides a "pdf" of chapters of Granitic Pegmatites Short Course (Handbook 7) that was published in 1982 by the Mineralogical Association of Canada.

Collectors often ask about mineral photographs, and yes, this volume has many photographs of specimens and rock textures found in pegmatites. However, this is not a coffee table book, but rather a serious scientific treatment of the subject, divided into two major parts with eighteen (18) chapters. The first major segment, Geology, will be of greatest interest to collectors, and it includes nine (9) chapters that deal with definitions (8 pages), historical views of formation (7 pages), anatomy and classification (17 pages), mineralogy (51 pages), transition from granite to pegmatite (11 pages), common granite pegmatites (7 pages), rare-element pegmatites (19 pages), miarolitic pegmatites (15 pages) and non-granitic pegmatites (7 pages).

The mineralogy chapter, by far the largest in Part 1, provides overviews and occurrences of major pegmatite minerals, often with details of composition, petrological applications, uses, structure and habit, and other insightful observations. Specific localities are frequently discussed, and copious mineral photographs with detailed captions are provided. Mineral species purists may object to the use of "loose" mineral names such as columbite, tantalite, tapiolite etc., but such lapses in slavishly following strict IMA-recognized mineral names are often forgiven when used in geological/petrological discussions. Like "biotite", these mineral names are not valid species, but they live on in common usage.

The second part, Origins, contains nine (9) chapters of varying length. Topics include pegmatite sources and chemical signatures (13 pages), fractional trends in magmas (9 pages), crystallization of rare-earth minerals (15 pages), the Jahns-Burnham model (20 pages), application of experimental petrology (23 pages), pressure-temperature conditions (15

pages), rheological properties of pegmatite-forming melts (7 pages), internal evolution in pegmatites (41 pages), and a most interesting epilogue of pegmatite science (5 pages). A thirty-eight (38) page list of references closes out this massive volume. An index was not provided.

Like the Geology section, each chapter in Part 2 is amply illustrated with color diagrams and images that typify the textual rock components being discussed. It was observed that only one mineral image was used twice (columbite in figures 4-18 and 17-4), so there is virtually no repetition in the photographs, and all are crisp and professionally presented.

I was especially delighted by the author's open-minded discussion of what is known, unknown and still unanticipated. His honest discussion of the pivotal and widely-accepted Jahns-Burnham paper disclosed the dangers of citing unpublished or "in-press" works, and it was eye-opening to learn that no current or former model of pegmatites accounts for the monstrous K-spar crystals over 10 meters in dimension observed in places like Tanco (Manitoba). In fact, the author suggests that for two commonly held views, "enormous disparities exist in granite-pegmatite relations, one that essentially negates an aqueous vapor stage and another that assures it will form". There are still "unknown unknowns" at work here!

Readers will dabble here, digest some, move on, come back and nibble more. There is a great deal of science presented here, and it is offered in clear, concise language. This is not a casual read, but a fountain of information to be sampled and studied. Paper quality is glossy, heavy stock, and layout and production quality of the book is consistently excellent. The book is available from the Mineralogical Association of Canada's website (www.mineralogicalassociation.ca) for \$125.00 (\$100.00 for members of the Association) or by mail from **Mineralogical Association of Canada** 490, rue de la Couronne Québec, Québec, CANADA G1K 9A9 Phone: (418) 653-0333 • Fax: (418) 653-0777. Shipping by surface mail is \$10.00 to the U.S., air mail is \$20.00.