Appendix

Glossary of important pegmatite-related terms (alphabetical)

*Aplo-pegmatite*:

Intrusion body with alternating layers or randomly distributed domains of pegmatite and aplite.

*Blocky zone*:

Megacrystic (crystal size >50 cm) zone within a pegmatite body. Blocky zones are commonly a textural feature of intermediate and core zones of pegmatites.

*Border zone*:

The border zone is a thin selvage (only a few centimeters thick) that continuously or discontinuously surrounds the pegmatite body along the contact with its host rocks. The grain size is fine- to medium-grained (~1-5 mm), and the texture is hypidiomorphic granular (granitic), or bimodal if the fine-grained portion constitutes a groundmass of larger (~1-3 cm) crystals of tourmaline, muscovite, biotite, hornblende, beryl, or elongate alkali feldspar crystals. Border zones are generally treated as chilled margins (*e.g.*, Jolliff *et al.* 1992). The border zones of pegmatites do not necessarily represent the initial composition of the emplacing pegmatite melt because it might be syn- or post-emplacement contaminated by the host rock lithology (London 2008).

*Complex zoned pegmatite*:

Complex zoned pegmatites are zoned pegmatites containing late-stage replacement units which superimpose and replace the primary magmatic mineralogy and zoning.

*Core zone*:

The innermost unit of a pegmatite body, whether a single mass or multiple repetitions of the same mineralogy at the same structural or sequential position, is regarded as the core. The proportions of core material to the other zones can be exceedingly variable. Cores of monomineralic quartz are common, but cores also consist of quartz plus various proportions and combinations of perthite, albite, lithium aluminosilicates, and phosphates such as montebrasite (London 2008).

*Intermediate zone*:

These interior units are marked by a sharp increase in crystal size, as much as an order of magnitude over the outer border and wall zones. Intermediate zones tend to be dominated by a single mineral phase, typically perthitic microcline, plagioclase, quartz, spodumene, petalite, or montebrasite. The intermediate zones may by symmetrically or asymmetrically distributed through the pegmatite, and may be discontinuous as well. Intermediate zones are most prominently developed in the thickest portions of a pegmatite body, and they tend to pinch out and disappear as the body thins (Jahns 1953, London 2008).

*Layered pegmatite (banded pegmatite, line rock)*:

Layered pegmatites commonly occur at the endocontact of shallow-emplaced granite and porphyry intrusions, or they form isolated bodies in metamorphic host rocks. Layered textures are developed particularly in sub-vertical or sub-horizontal sheet-like pegmatites. They comprise rhythmic or alternating layers which differ strikingly in texture and composition. The boundaries of the individual layers are commonly sharp and sub-parallel to the nearest contact surface. The crystal growth direction is inward to the magmatic body or dike forming comb-like unidirectional solidification textures (see also *unidirectional solidification textures*). Despite the fact that layered pegmatites are well studied, there is little consensus regarding how they form. There are sometimes textural transitions to the *stockscheider* (Jahns & Tuttle 1963).

*Miarolitic pegmatite*:

The term miarolitic pegmatite describes a structural type of pegmatites that contains miaroles (open cavities, vugs, or pockets) which are partially filled with complex mineral assemblages. The open cavities are primary features that develop mainly during the late stages of pegmatite consolidation. Miaroles are variably lined with euhedral crystals that extend from the massive cavity wall into open space. Cavity crystals are often coated with late minerals, in particular, low-temperature hydrothermal minerals. Miaroles are generally regarded as indicators of pegmatite formation at pressures of 2 to 5 kbar (Černý 1991a, Zagorsky *et al.* 1999, and Peretyazhko *et al.* 2004).

*Pegmatite*:

A pegmatite is an essentially igneous rock, commonly of granitic composition, that is distinguished from other igneous rocks by its extremely coarse but variable grain-size, or by an abundance of crystals (>3 cm) with skeletal, graphic, or other strongly directional growth habits. Pegmatites occur as sharply bounded homogeneous to zoned bodies within igneous or metamorphic rocks. Granitic pegmatites occur in a variety of shapes and sizes, ranging from veins several centimeters across to large tabular bodies tens of square kilometers in outcrop area (Jahns 1953, 1955, London 2008).

*Pegmatite belt*:

A pegmatite belt consists of pegmatite fields related to a large-scale linear structure (lineament, deep fault, margin of a geosynclinal through within an old shield, contact zone of a large granite pluton, anticlinorial axis, *etc.*) and mutually related by a common structural position and geological environment. (Pegmatite belts may be X00 to X000 km long, with pegmatites of different types and ages) (Černý 1982).

*Pegmatite district*:

A pegmatite district is a part of a pegmatite province containing several associated pegmatite fields, separated from others either territorially or geologically (Černý 1982).

*Pegmatite field*:

A pegmatite field is a territory with pegmatites of a single formation type with common geological-structural environment, age, and igneous source (Černý 1982).

*Pegmatitic granite*:

In general, this term is problematic and should be avoided. It is suggested to define a rock as a granite or as a pegmatite.

*Pegmatite group*:

A pegmatite group is a territorially separated part of a pegmatite field represented by a local group of closely spaced pegmatites of a single type, with a common geological-structural position (Černý 1982).

*Pegmatite province*:

A pegmatite province is the total of pegmatite fields or belts within a single metallogenetic province. A pegmatite belt may represent a whole province; pegmatites may form during different tectonomagmatic cycles and may belong to different formations (Černý 1982).

*Replacement zone/unit/body*:

Replacement units are very irregular zones superimposing and cross-cutting the primary zoning of a pegmatite. The position and shape are largely independent of the structure and external shape of the host pegmatite. However, zonal contacts or fractures appear to control their initial formation. Grain sizes are irregular and may be fine-grained. They contain concentric structures, pseudomorphs, relics, veins, and solution cavities. They contain assemblages of rare or exotic minerals that are different from the host pegmatite and may be rich in volatile constituents. A pegmatite body can host several replacement units. The process can be described as auto-metasomatism (pegmatite intrinsic). However, the replacement processes are not fully understood and the recognition of replacement units is still under discussion (Simmons *et al.* 2003).

*Stockscheider*:

The German term “stockscheider” originates from the Erzgebirge region in Germany and Czech Republic, where the term was introduced by miners to localize granite-related tin mineralization. Stockscheider is a sheet- or cupola-like pegmatite which occurs commonly at the upper endocontact of granite intrusions and at intrusion-internal contacts of multiple intrusions. They are typically observed in subvolcanic, highly fractionated granites. The pegmatitic crystals often form comb textures (unidirectional solidification textures) terminating or branching commonly inward the intrusion, away from the contacts. Stockscheider may comprise layering where layers of comb-textured pegmatite alternate with aplite layers. The layering is generally sub-parallel to the intrusive contacts. If the layered structure is dominating, then the term layered pegmatite can be applied.

*Simple zoned pegmatite*:

A simple zoned pegmatite consists of relatively clearly distinguishable, semi-concentric to asymmetric zones including a *border zone*, a *wall zone*, one or several *intermediate zones*, and a megacrystic, sometimes mono-phase (quartz) *core*.

*Unidirectional solidification texture (UST)*:

Unidirectional solidification texture describes the uniform growth fronts of crystals commonly centripetal to the magmatic host body or dike forming comb-like crystal layers (Shannon *et al.* 1982). Some of the classical examples of USTs are the Megiliggar rocks in Cornwall, SW England.

*Wall zone*:

Where present, the wall zone of most pegmatites appears as a thicker (to ~1 m), coarser-grained (~1-3 cm) variant of the border zone. The anisotropic orientation of inwardly flaring minerals including tourmaline, beryl, micas, or feldspars commonly appears first in the wall zone (London 2008).