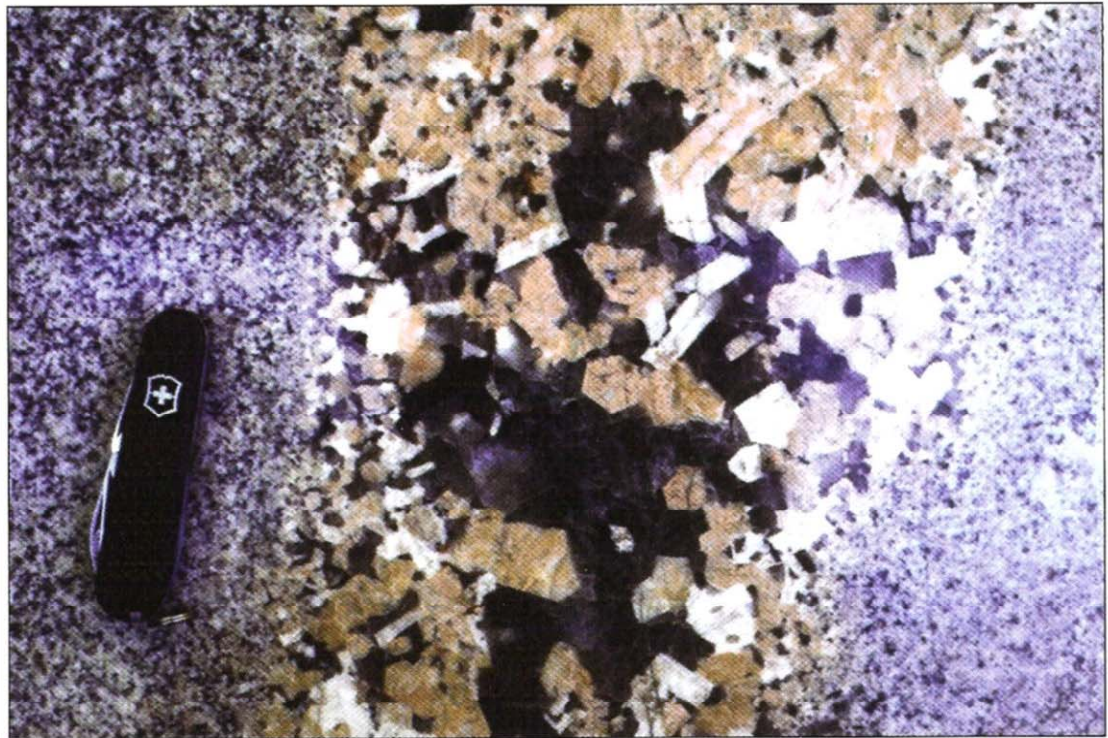


Pegmatite

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A granite pegmatite dike crosscutting a finer-grained granite. (From Press and Siever 2001; used with permission of Martin Miller, illustrator.)

A Word to the Wise is a new column that addresses the meaning behind common but not necessarily universally known nomenclature pertaining to mineralogy, geology, and other topics covered in *Rocks & Minerals*. For many of these terms there are both simple and complicated explanations of their meanings; we will focus on the basic aspects and give guidance for finding more detailed information.

Our first installment of A Word to the Wise concerns the term **pegmatite**. According to the American Geological Institute's *Dictionary of Geological Terms**—a very handy book—a pegmatite is “an exceptionally coarse-grained igneous rock, with interlocking crystals, usually found as irregular dikes [see fig.], lenses or veins, especially at the margins of batholiths” (another day's Word to the Wise). The key phrase is “exceptionally coarse-grained igneous rock.” In pegmatites, most grains are at least 1 cm across—often much more—and individual crystals can reach tens of feet in length. For example, a pegmatitic beryl from Malakilina, Malagasy, measured 18 meters (59 feet) in length, and spodumene crystals from the Etta mine, South Dakota, have been found to 14.33 meters (Rickwood 1981).

A common misconception is that a pegmatite is granitic in composition. Although this is true of most pegmatites, they can be of any mineralogical composition. Indeed, pegmatites from gabbros to granites to carbonatites to anorthosites are known

(Best 1982). Most granitic pegmatites exhibit a simple mineralogy consisting primarily of quartz and K-Na feldspars with smaller amounts of muscovite, tourmaline, and Fe-Mn garnets. Other granitic pegmatites, known as complex pegmatites, can be enriched in such chemical constituents as P, H₂O, Cl, F, S, Li, Be, Zr, Nb, Mo, Sn, Ta, W, Th, and U. The abundance of these elements in the parental magma leads to the formation of less-common minerals such as apatite, beryl, topaz, amblygonite, lepidolite, spodumene, tantalite, columbite, monazite, zircon, and uraninite. The common formation of gas pockets into which crystals can grow, unrestricted in space, leads to the regular formation of well-formed mineral specimens in pegmatites.

Because of their unusual nature, their economic importance (as a source of rare elements and minerals), and the variety of beautiful, well-crystallized minerals found within them, pegmatites have generated considerable interest, especially regarding their origins and modes of occurrence. Two useful Web sites that deal with many aspects of pegmatites are www.pegmatology.com and www.minsocam.org/MSA/Special/Pig.

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* The *Dictionary of Geological Terms* can be ordered from the American Geological Institute at www.agiweb.org/pubs.