



Plate 4. Sands are loose aggregates of minerals and/or rocks. Although most sands consist largely of quartz, they also include several other minerals that are resistant to weathering and erosion. This group of sand grains – which includes such minerals as apatite [$\sim\text{Ca}_5(\text{PO}_4)_3\text{Cl}$] (white), cassiterite (SnO_2) (orange), corundum (Al_2O_3) and kyanite (Al_2SiO_5) (blue), pyrite (FeS_2) (golden brown), and the pyroxene diopside ($\text{CaMgSi}_2\text{O}_6$) (green) – was extracted from a sand by panning; the grains are shown here as seen in reflected light, through a microscope. [Photomicrograph from Guigues, J., and Devismes, P., 1969, La prospection minière à la batée dans le Massif Armorican. Mem. Bureau de Recherches Géologiques et Minières, Orléans–La Source (Loriet), France]

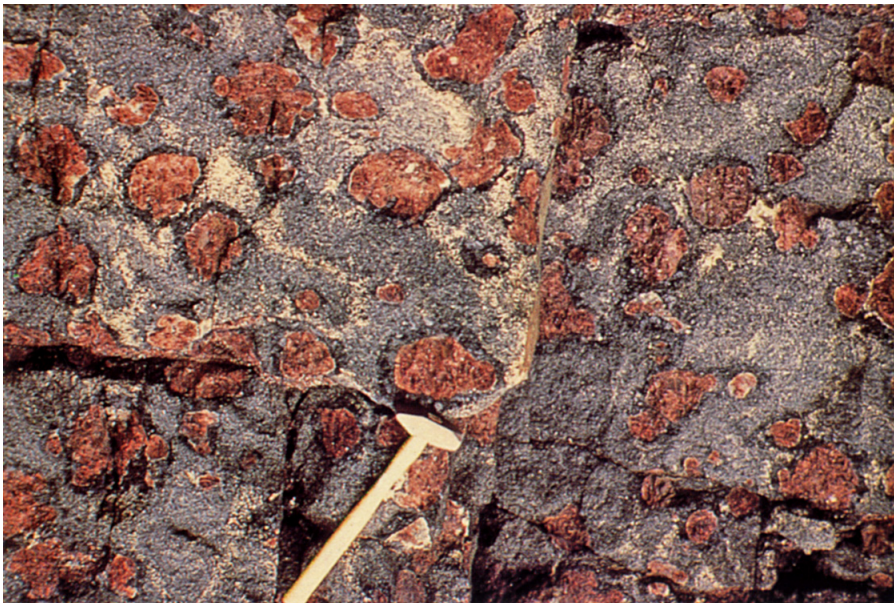


Plate 5. Example of a consolidated mineral assemblage. This distinctive rock from Gore Mountain, New York, is a metamorphic rock called garnet gneiss. Garnet crystals (red) are surrounded by collars of hornblende (black) set in a matrix of plagioclase feldspar and mica. (Photograph by Robert J. Tracy)