



Figure 1.1.4 One of the crater lakes of geologically youthful volcano Mount Gambier, South Australia, as portrayed in a picture by G.F. Angas painted in 1844–5. The illustration is from the artist's *South Australia Illustrated* (London, 1847). Reproduced with the permission of the National Library of Australia, Canberra.



Figure 2.5.3 Mount Elephant, the largest scoria cone in the Newer Volcanics province, looms up behind a homestead in western Victoria in this painting by Eugene von Guérard. The painting, called 'Larra' was completed in 1857, and is now in a private collection. It is reproduced here with the permission of the owner.



Figure 2.7.1 Tower Hill volcanic complex, Newer Volcanics province, Victoria, showing scoria-cone complex within a maar.



Figure 3.2.5 Lake Eacham, Atherton province, occupies a young maar about 1 km in diameter and up to 65 m deep. Stratified scoria forming the maar rim hosts upper-mantle and lower-crustal xenoliths. Lava fields and scoria cones are visible in background. Photograph courtesy of Murray Views, Gympie, Queensland.



Figure 3.4.6 Peralkaline rhyolite and trachyte plugs of the Glass Houses province showing, from left to right, Mount Coonowrin (Crookneck), Mount Tibberoowuccum, Mount Ngungun, Mount Coochin (in distance), and Mount Tibrogargan.



Figure 3.4.8 Basalt-capped coastal escarpment vegetated by burnt *Xanthorrhoea* sp. in the foreground, at Cunninghams Gap, Main Range province. The base of the Gap marks the boundary between underlying Governors Chair Volcanics and the overlying Superbus Basalt.



Figure 3.5.6 Central area of Warrumbungle volcano showing the Breadknife peralkaline-trachyte dyke in the foreground. The cleared area in the middle distance is erosion-exposed Jurassic basement.



Figure 3.5.7 Grand High Tops, Warrumbungle volcano, showing Beloungery Spire (trachyte) on the left skyline and Crater Bluff (peralkaline trachyte) on the right. The Breadknife dyke (peralkaline trachyte) is below and to the left of Crater Bluff.



Figure 3.6.7 Near flat-lying flows forming terraced hills in Monaro province. This view is southwest of Mount Cooper towards Wangollic Hill.



Figure 3.7.4 Aerial view of Mount Gambier volcanic province, South Australia, looking southeastwards. The town of Mount Gambier is on the left (north). From rear forward are the Blue Lake, Valley Lake, and Brownes Lake maar centres. The playing field in bottom left-hand corner is sited on an older cluster of maars, now partially buried by later tephra. The maar complex has developed on one of many northwest-trending crustal faults controlling the Otway Basin geometry.

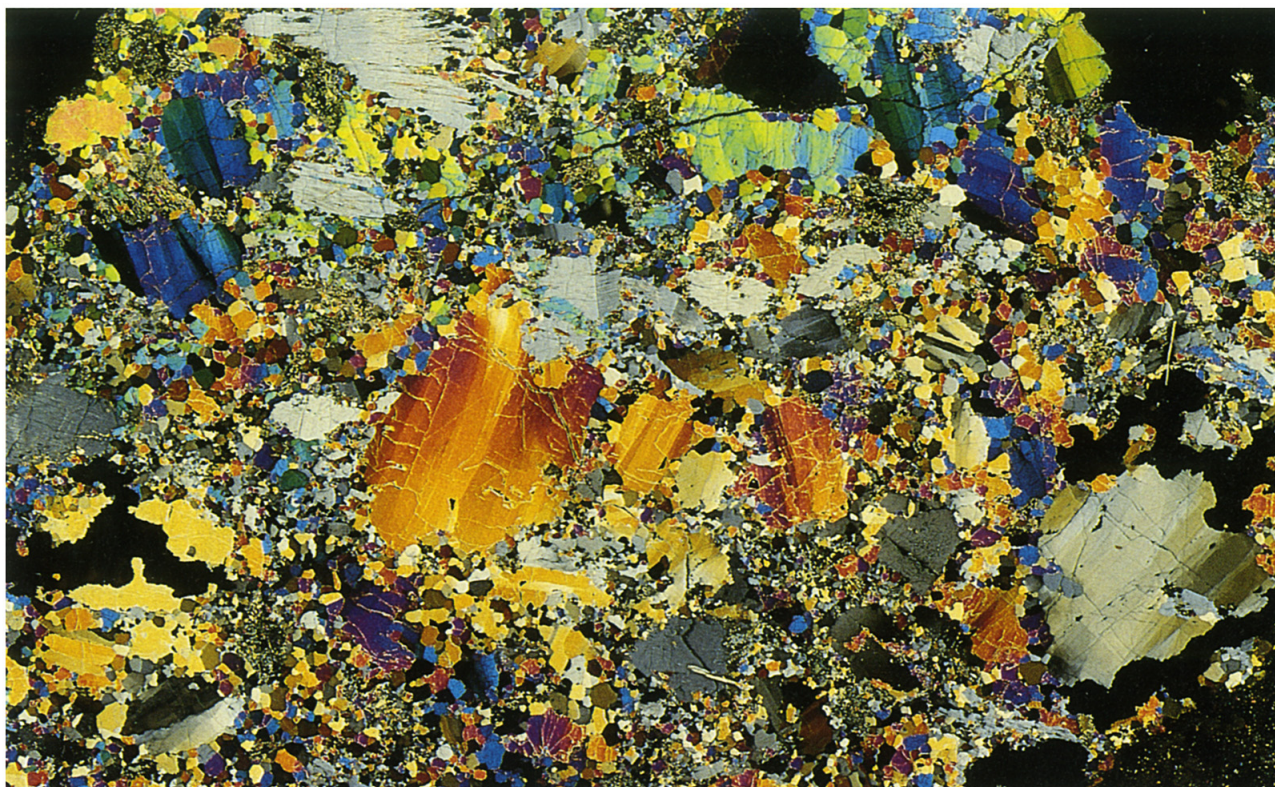


Figure 6.2.7 Porphyroclastic microstructure in a spinel harzburgite from Mount Shadwell (62734). Intensely strained olivine porphyroblasts having closely spaced, commonly curved kink bands are set in a matrix of equant polygonal neoblasts. Enstatite (pale grey) is strongly deformed and cleavages have opened to allow growth of fine olivine neoblasts. Field of view (with crossed polars) is 35×22 mm.



Figure 6.2.12 Porphyroclastic microstructure in garnet websterite from Lake Bullenmerri (81482). A lamellar augite porphyroclast of 5 cm maximum diameter has recrystallised to a mosaic of polygonal augite, bronzite, and garnet neoblasts. The porphyroclast has exsolved lamellae of garnet (black) and orthopyroxene, and has strong undulose extinction. Note the transition zone at the porphyroclast margin consisting of semi-aligned fine-grained neoblasts. Field of view (with crossed polars) is 35×22 mm.

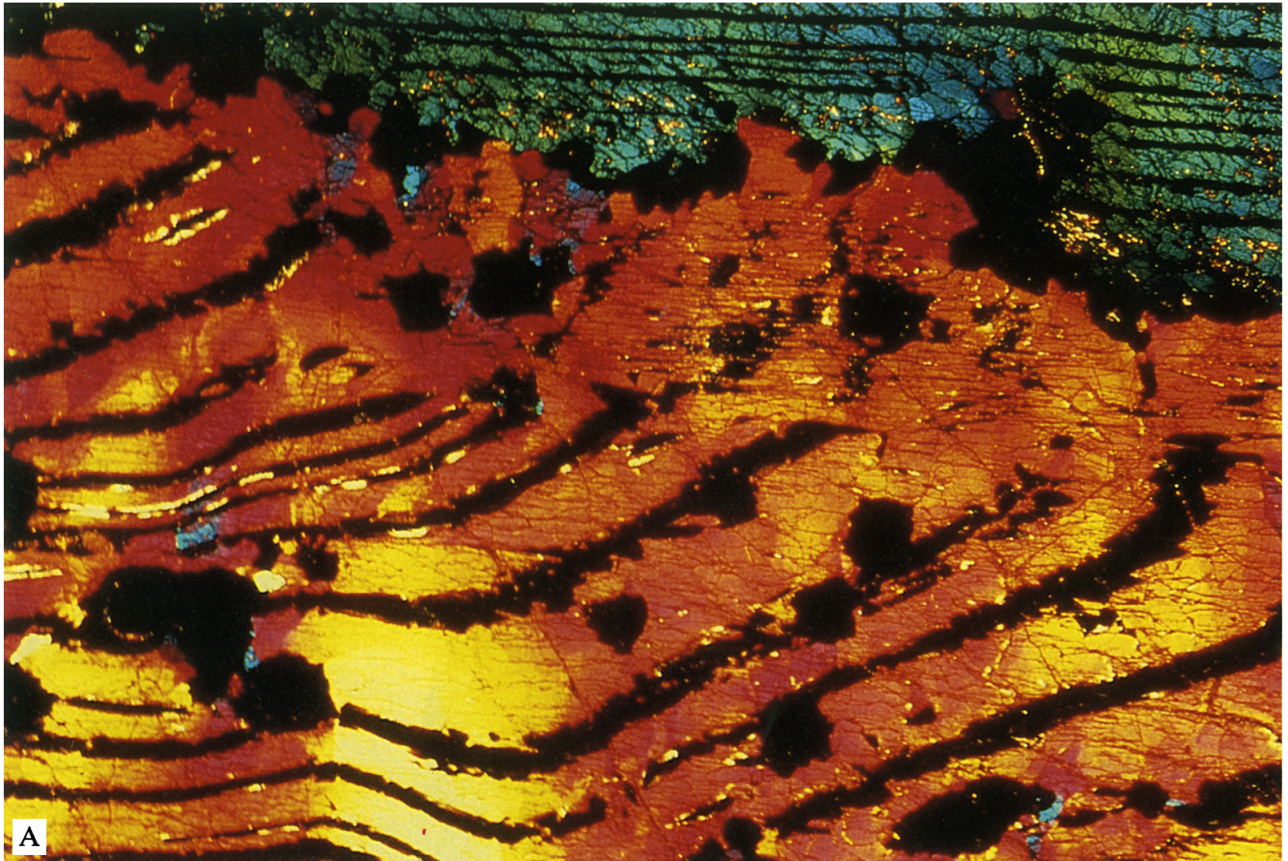


Figure 6.2.14 (A) Relict clinopyroxenes in metapyroxenite showing deformed exsolution lamellae of garnet, orthopyroxene, and spinel. Width photographed (with crossed polars) is 2.5 cm. (B) Same sample in plane polarised light. Spinel was present originally as inclusions in the primary, unexsolved clinopyroxene. Garnet rims developed on these original spinel grains during re-equilibration.

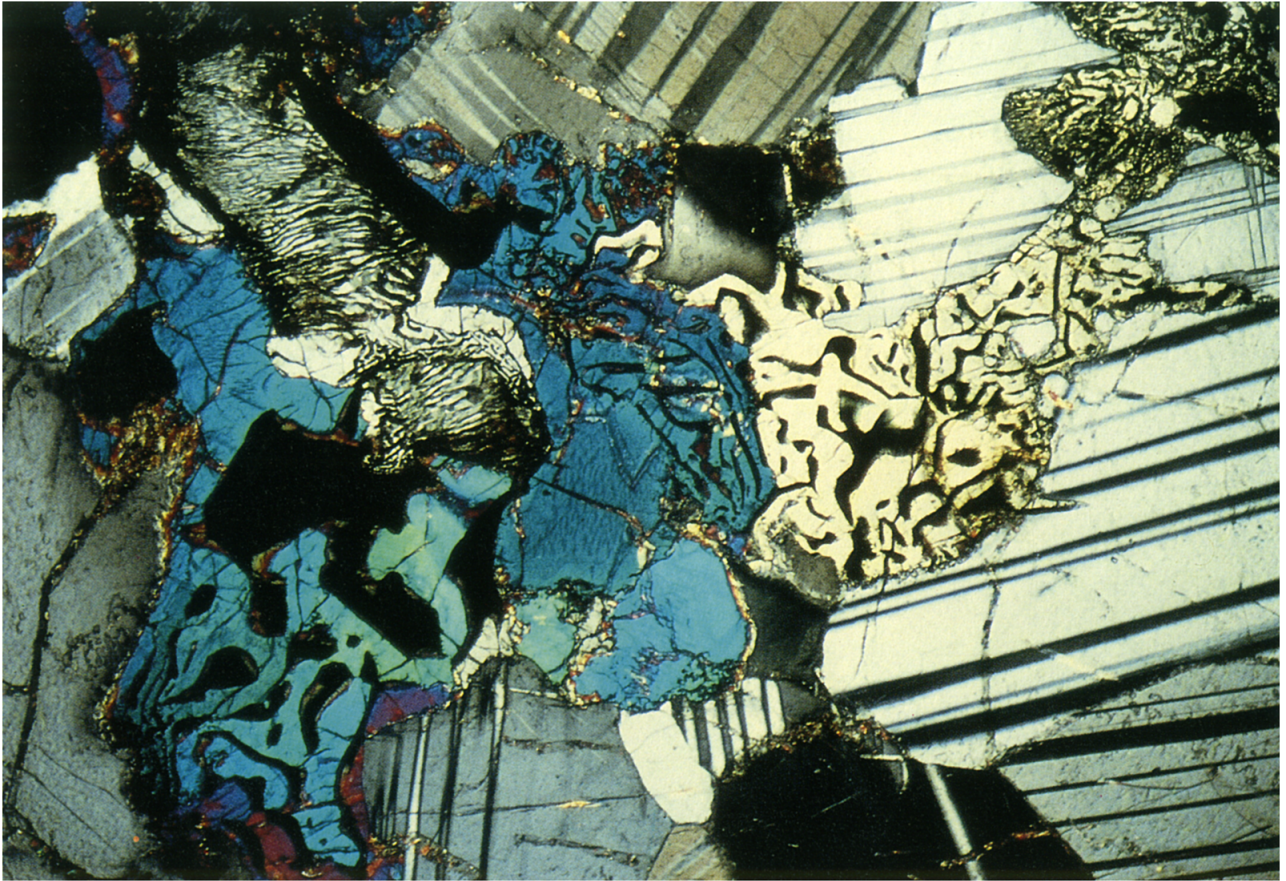


Figure 6.3.1 Coarse-grained symplectitic intergrowth of spinel with clinopyroxene and orthopyroxene in foliated granulite from Dundas (Sydney). Width photographed (with crossed polars) is 3.5 mm.