

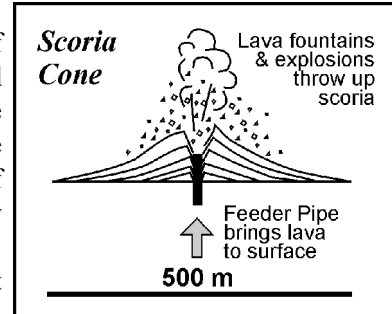
Types of Volcanoes in Western Victoria

Compiled by Ken Grimes, Hamilton Field Naturalists Club, June 2005.

Volcanoes erupt when molten material (called *magma*, and at about 1200°C) is forced up from great depths. On reaching the surface this may flow across the ground as lava, or be blasted into the air by gas pressure to build up cones of fragments. Most of the volcanoes in the Western District probably only erupted for a few weeks or months. The following are the main types found in the region; combinations also occur.

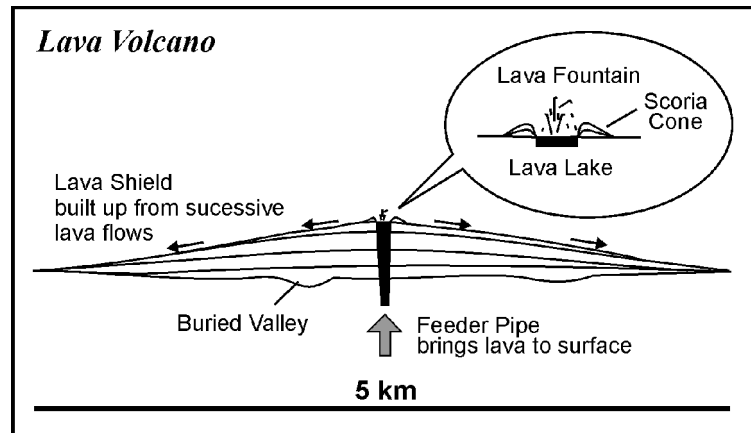
Scoria Cones:

Lava fountains, driven by gas pressure, jet up several hundreds of metres from a lava lake in the crater. These fountains throw out liquid frothy material which solidifies as it falls to form steep cones of loose scoria surrounding the vent. Larger explosions form bigger cones. If the material is still soft when it lands it may build up a steeper rampart of welded spatter. Occasionally lava in the crater may break out to flow across the surface. Thus scoria cones can grade to lava volcanoes. Examples near Hamilton are Mt. Eccles, Mt. Rouse and the steep cone at the top of Mt. Napier.



Lava volcanoes:

Also known as shield volcanoes, these are formed by relatively gentle lava flows which well out of a central crater and flow across the surface, or along old valleys. Small cones of scoria or spatter may form at the vent. The slopes are relatively gentle, but lava volcanoes are usually several kilometres across and some lava flows can run for long distances (e.g. the lava from Mt. Rouse flowed 60 km south to Port Fairy). Examples near Hamilton are Mt. Baimbridge and the lower, gentle, slopes that surround Mt. Napier. Further east, good examples are Mt. Hamilton and Mt. Widderin.



Maar craters:

These are broad but shallow craters, that form by violent steam-driven explosions. They occur near the coast where there is a large body of groundwater within the limestone beds. When rising hot magma contacts this water, steam is formed at high pressure and literally "blows the top off" to form a wide crater. The rock fragments are blown high into the air, and fall back to form layers of ash with larger chunks (*bombs*) of lava and limestone. In some cases ground-hugging *base surges* explode outwards from the vent to form rippled ash sheets. When the water is used up, the steam explosions are replaced by more gentle eruptions that may build scoria cones within the maar crater, as has happened at Tower Hill. After the eruption is over, the water may return to form a lake. Examples are Tower Hill and Lake Purrumbete.

