MOUNT WALSH, BIGGENDEN

Warwick Willmott

Mount Walsh is a prominent rocky bluff a few kilometres south of Biggenden, overlooking the town. It is included in the eastern part of the Mount Walsh National Park.

Despite its benign appearance today, it has had a violent geological history, which began in the late Triassic period (about 215 million years ago).

Events began with the eruption of volcanic rocks from one or more large, violent volcanoes. These were part of an extensive volcanic zone along the eastern margin of the continent, which developed during the last stages of active mountain building along the continental edge. Similar volcanic rocks exist behind the Sunshine Coast, in Brisbane (the Brisbane Tuft), and behind the Gold Coast.

It is believed that there was one volcanic centre in the Gayndah area, and another, slightly later, to the east towards Mount Walsh (the Mungore centre). The history of Mount Walsh is related to the Mungore centre.

Evolution of the Mungore centre and Mount Walsh

1. The first rocks erupted from the Mungore centre were thick layers of pyroclastics (consolidated fragmental material from violent explosions) and various volcanic- derived sediments. Remnants of these outcrop to the southwest of Mount Walsh, and their thickness, coarse fragment size and complexity there suggest that the centre of the volcano was in that area.

2. At some stage in the life of the volcano there was a truly gigantic explosion, with unimaginable volumes of hot fine lava particles and gas ejected into the air. This huge fluid cloud eventually collapsed and consolidated on the ground to form a layer 200m thick, with the material so hot that it welded together again to form a hard, tough rock. (welded tuff or ignimbrite).

3. The blasting upwards of such a huge volume of material caused the former underground magma chamber and the rocks above it to collapse downwards, to form a huge oval depression surrounded by a ring fracture. This was the *Mungore Caldera*, which was about 40km long and 25km wide, extending from near the present Mount Walsh to well west of the Gayndah-Goomeri highway (between Ban Ban Springs and Booubijan). Most of the welded tuff accumulated within the caldera. It is still preserved to the southwest of Mount Walsh and in the hills to the west of the highway. The margins of the caldera were intruded at the time of collapse by some of the magma, to form ring dykes of rhyolite or fine-grained granite (particularly evident south of Mount Walsh).

4. Despite such a massive eruption, further magma rose to the surface, with domes of rhyolite erupted and intruded within the caldera.

5. There was then a major surge of magma from below, particularly in the east of the caldera, where the whole ground surface bulged upwards. Much of this magma remained below ground level to slowly cool and consolidate to various types of granite. Two particularly prominent, oval bodies of such granite now outcrop at Mount Malarga, to the south of Mount Walsh, and Mount Walsh itself. *Mount Walsh* is a quickly cooled, very fine-grained granite, called aplite or granophyre, which is very resistant to erosion.

6.Some time later, the eastern part of the caldera, including the granite of Mount Walsh, was displaced northwards along the Perry Fault. It may have been further uplifted at that time.

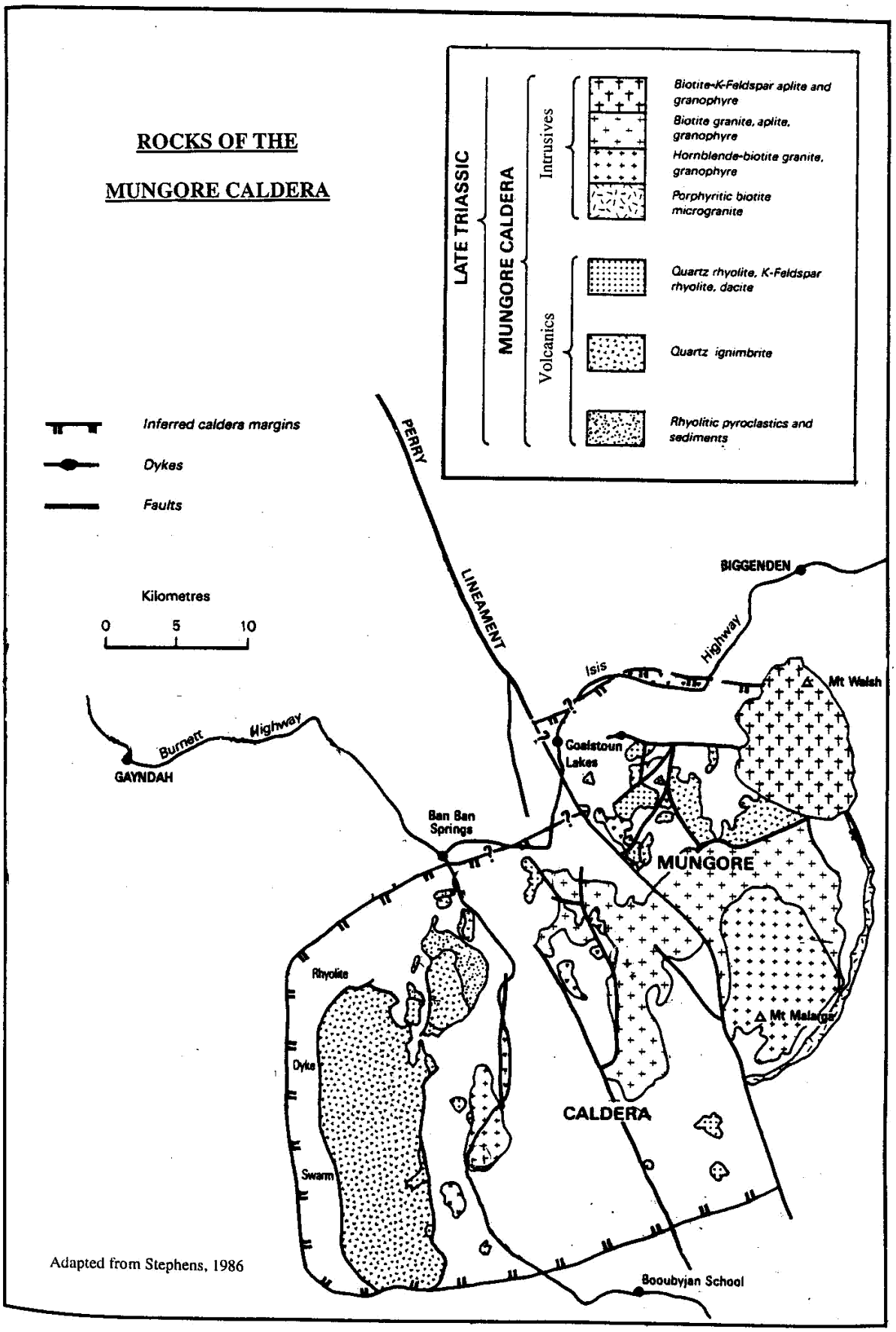
7. Since those distant late Triassic times, erosion has removed much of the volcanic sequence in the caldera, even re-exposing some of the older rocks beneath. The granites that were once below the surface have been revealed, and being more resistant than other rocks, have remained as prominent peaks, such as Mount Walsh.

Further reading:

Stephens, C., 1986: Late Triassic silicic volcanism near Gayndah. In 1986 Field Conference Guidebook. Geological Society of Australia (Qld Div), Brisbane.

Cranfield, L.C., 1994: Maryborough 1:250000 Geological Series -Explanatory Notes. Department of Minerals and Energy, Brisbane

[Note: The volcanic craters at Coalstoun Lakes, although within the area of the Mungore Caldera, are only 600,000 years old and completely unrelated to this story.]



This pamphlet and pamphlets covering other parts of Queensland can be found on the website of the Queensland Division of the Geological Society of Australia. Our homepage can be found at ***http://qld.gsa.org.au/*** and the pamphlets can be found at ***http://qld.gsa.org.au/rockland.htm***