

Granite outcrops on the Forestier Peninsula

by D. J. Jennings

The 1961 geological map of Tasmania shows no granite on the Forestier Peninsula, whilst the revised map published in the *Atlas of Tasmania* in 1965 shows granite on the foreshore at Cape Surville. With an interest in granite stemming from work in north-east Tasmania, Coles Bay and on Maria Island, the Cape Surville area was visited on three successive days from 29 February to 2 March 1972. The sea shore was reached by a different route on each occasion, indicating that although time and energy consuming, contrary to previous rumours descent to sea level is possible at intervals along this stretch of coastline.

Day 1

Descent was made five kilometres south of the east end of Schofields Road. Logging tracks were used along the cliff top with an easy descent through man-fern and sassafras to a boulder beach. The sequence in the 100 m cliffs of the gulch at the end of Schofields Road was interpreted from a distance as Ross-type sandstone overlying 60–70 m of Permian mudstone/siltstone. A shallow south-west dip makes correlation across the gulch imprecise but apparently this is the site of an E–W fault downthrowing 20 m south. The castellated ridge forming the headland 500 metres to the south again demonstrates well a sedimentary sequence of 50 m of grey mudstone overlain by 50 m of pale yellow sandstone.

Descending to the south, 700 m of boulder beach was traversed showing a headland of Triassic sandstone on Permian mudstone to the north, 200 m of Triassic sandstone at sea level (may be downfaulted or just landslipped), then fossiliferous, more or less indurated Permian siltstone and mudstone with cliffs, waterfalls and intertidal pavements before a sharp inaccessible contact. The next major headland is Cape Surville where a tower of 60 m of Permian mudstone rests on a 120 m plinth of Jurassic dolerite. At one place on the beach some half-dozen boulders of basalt occur. Their concentration and uniqueness suggest a local source. Inspection by F. L. Sutherland confirms olivine basalt unrelated to Jurassic dolerite, probably Tertiary in age. Samples of basalt and silicified/indurated fossiliferous siltstone/sandstone were collected.

Day 2

Approach was made via Macgregor Road and Richardsons Road and the descent effected in the creek bed three kilometres to the south of Schofields Road. Vegetation is rainforest, and granite and stinging nettles were encountered before the sea shore. The pebble beach is limited to approximately 100 m, the bedrock everywhere at sea level being a granite with fine-grained matrix, 30 mm rotten feldspar inlets and 10 mm clusters of glassy quartz. Shore scrambling and swimming achieved a vantage point some 400 m along the north side of the bay from which the considerable topography of the pre-Permian surface was well displayed. The scene was reminiscent of the east coast of Maria Island. A gully in granite infilled by Permian boulder beds to the north-east shows the base at some 60 m with a succession of small cliffs of Permian sediments rising to 350 metres.

Near the beach the base of the Permian is again estimated at 60 m (with weathering features suggesting some limestone beds near the base), whilst further south the Permian base descends to some 20 m only above present sea level. Boulders on the shore include monoliths of Triassic sandstone. A sample of clean, pale, fragmental Permian limestone was collected from a boulder on the shore. No Darlington-type limestone lithology was seen.

Day 3

Approach was again via Macgregor Road and Richardsons Road with the 1.5 km approach over intermittent fossiliferous Permian mudstone outcrop to The Sisters through heavy regrowth scrub. A safe but uncomfortable descent was made down 120 m of broken cliff and giant scree over a succession mainly composed of fossiliferous Permian limestone. An upper clean, massive fragmental limestone overlies an abundantly fossiliferous strophaloid siltstone and thence down into spirifer limestone beds, *Eurydesma* limestone, massive conglomerate, arkose and basal beds occasionally of re-cemented angular granite blocks only slightly disarranged from their original relative positions. The southern aspect of the headland is of granite porphyry with the base of the Permian succession descending from some 50 m inland to 5–10 m only above sea level on the point to the south.

The succession on the north aspect of the point is obscured by vast blocks many tens of metres in each dimension, probably of cliff-fall or landslide origin. No Triassic rubble occurs on this section of the shore.

The geology in the cliffs to the west and north is spectacular, with the Cape Surville dolerite sill rising from sea level beneath granite and with Permian rocks forming a conspicuous capping over granite and dolerite at a

variety of levels. The Sisters consist of four major islets aligned E-W off the headland; the inner two are indubitably of granite, and they may all be. The outer two have conspicuous horizontal stratiform structure with flat platform tops possibly due to unusually well-defined basal jointing or possibly due to bedding in highly resistant basal Permian conglomerate and arkose. A number of samples of limestone and granite were collected. The mapping of this stretch of shoreline promises to be physically and mentally demanding but scenically and spiritually rewarding.

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