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1987/15. Industrial minerals in Tasmania - Slate

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Abstract

Small deposits of slate in Tasmania have been worked intermittently.

INTRODUCTION

Slate is "a compact, fine-grained, metamorphic rock formed from such rocks as shale and volcanic ash, which possess the property of fissility along planes independent of the original bedding (slaty cleavage), whereby they can be parted into plates which are lithologically indistinguishable" (Glossary of Geology, 1977).

Slate was used extensively as a flooring and roofing material, although with the introduction of galvanised iron the latter use declined markedly.

DESCRIPTION OF THE DEPOSITS

Bangor - Pipers River

Two areas near Bangor have been quarried for slate. The slate in both areas is derived from the Mathinna Beds. The geology of the Bangor area was mapped by Marshall et al. (1965) with descriptions of the Mathinna Beds being given by Marshall (1970).

The area known as the Bangor Slate Quarries [around EQ110367] was investigated by Major L. Hood (who found coal near Catamaran in 1900) before 1872, when mining leases for slate were surveyed for Messrs Aikenhead and Blair. A Launceston syndicate began quarrying operations in the mid-1870s, the operations being taken over by David Blair and Joseph Clark around 1887. The latter operators sank a shaft and raised slate from underground, using the labour of Welsh and Cornish quarrymen. The market declined with the introduction of galvanised iron as a roofing product, and the venture collapsed, the stock being sold on 2 March 1888 (Twelvetrees, 1918). The old workings of two quarries, an adit and one shaft, along with the remains of the horse tramway along which the slate was hauled 17 km to the Egg Island jetty, were inspected by Twelvetrees (1918), when a lease (7670/M) was held over the quarries, and another lease (7693/M) was held to the north. A 1987 field inspection found the quarries, spoil heaps and deep shaft on a knoll to the west of Bangor. The quarries had been dug into the side of a small hill, while the shaft was sunk on the crest of the hill.

The northern workings [around EQ100390] were known as 'Justs' and were originally worked around 1872, although no work has been done since.

In the Bangor district one lease (18M/86) is currently held over the southern area, the old Bangor Slate Quarries. The Bangor slate is black in colour.

Turquoise Bluff - Lefroy

At Turquoise Bluff, north of Bangor, and near Lefroy, slate was quarried by the Australian Slate Company from 1876 to at least 1882. The workings are described briefly by Thureau (1882). The slate is derived from the Mathinna Beds, which in this area have yielded a graptolite fauna

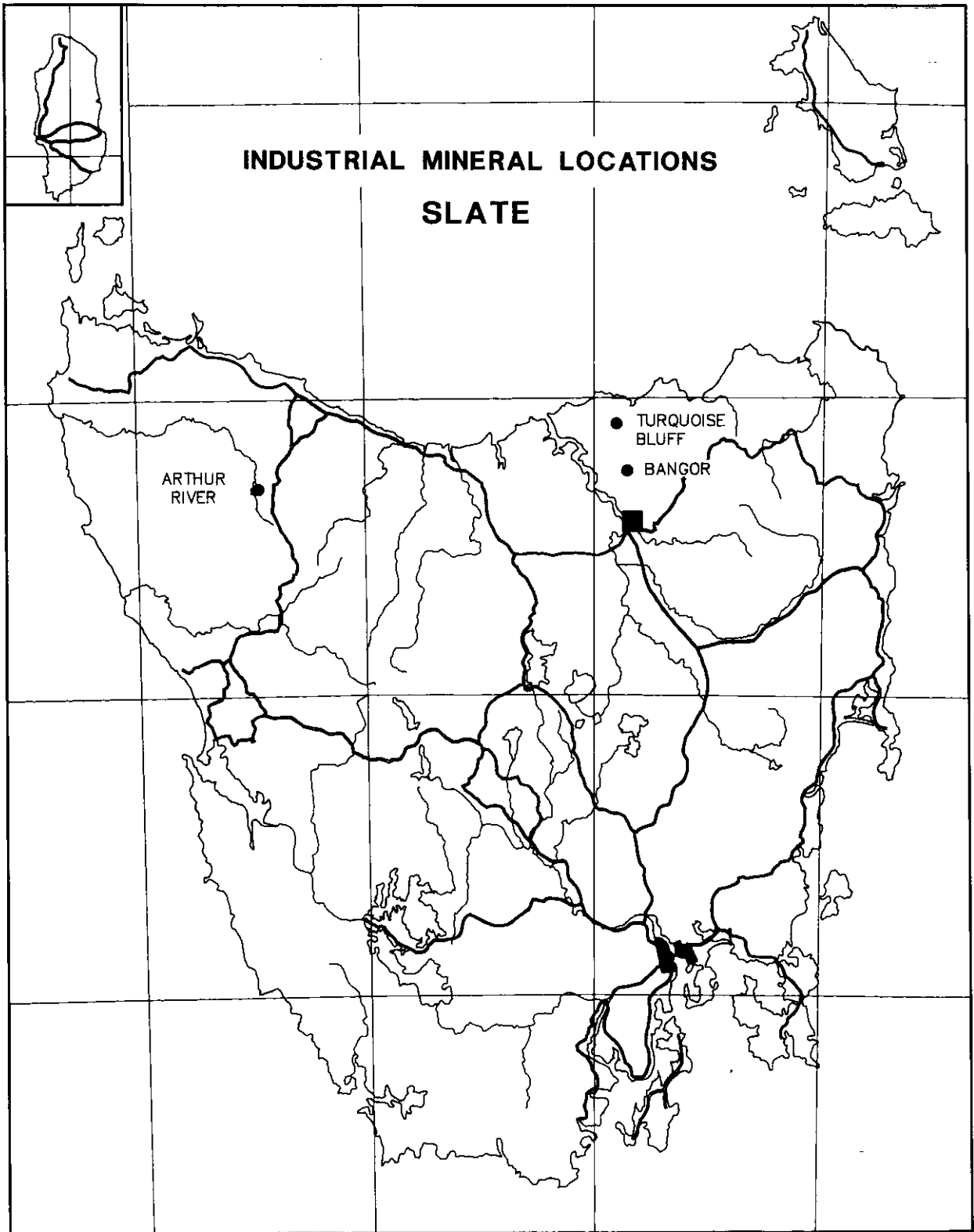


Figure 1.

indicating an Ordovician age (Banks and Smith, 1968). The name Turquoise Bluff apparently comes from the fact that minor traces of turquoise can be found on joint planes within the slate. The thicker coatings of turquoise are eagerly sought after by lapidary enthusiasts. The area was mapped by Marshall *et al.* (1965) and a description of the Mathinna Beds is given by Marshall (1970).

Since 1979, a lease (63M/79) has covered part of the Turquoise Bluff area and the slate has been worked intermittently. The newer workings [EQ044562] were examined by Turner (1981) and by the author in 1987. The lease is currently being worked by the Tasmanian Slate Company. The slate is badly jointed, and is dug out in large pieces. The bulk of the slate is black in colour, with a metamorphosed aureole around each piece. The metamorphism has occurred by water percolating along the joint planes. Large pieces of slate, with a white rim, are cut into slices on a large diamond saw. The white rims juxtaposed to the black colour of the slate are most attractive, and the slate is sold as floor tiling.

Arthur River

Henry Hellyer and party came across cliffs of slate in the Arthur River in February 1827. The cliffs were described by Hellyer:

"On the 21st February about noon, we came down upon the Arthur River, again, running east but seeing it turned to the north, we went round the bend and from it ascended its very high and steep bank, and came to the foot of a long line of perpendicular cliffs of slate, from two hundred to three hundred feet high, which upon examination proved to be slate of the best quality splitting in parallel thickness to the size of Ladies Countesses or Duchesses, and lying in a regular horizontal strata from end to end. I brought away specimens and engraved upon a large slab standing under the cliff 'Whoever is found stealing slate from this quarry will be dealt with according to Law', with the date below it. If the Arthur should be found navigable for barges, from hence to the coast this discovery so near the river might be valuable. The cliffs appear to extend for many chains across and would supply all the world in slates."

The area of the slate was visited in 1917 by J. Kirkup, who applied for a mining lease in March and in April escorted A. Williams, who wrote a report on the slate, on tour of inspection around the deposit. Williams (1917) wrote in glowing terms of the quality and quantity of slate available. The location was given as "12 miles north of Waratah and 11 miles south-west of the Preolenna Coal Mine". Binks (1980) has more accurately pin-pointed the cliff area as being 1.5 km south of the junction of Parrawe Creek and the Arthur River. The slate left by Hellyer was found by Kirkup and Williams (Williams, 1917) and evidently removed to a Melbourne museum (Binks, 1980).

Two leases were issued for slate in the area "five miles south of the junction of the Arthur and Hellyer Rivers" in 1917, one to J. Kirkup and one to C. C. Plante. The leases have since expired.

Fossil impressions on one sample of rock from Kirkup's 'slate' deposit were examined by Chapman (1929), who described the host rock as "slaty shale" and noted that the specimen, although only 7 mm thick, showed some "eleven definite layers of various coloured sediments, ranging from pale olive green to dark bluish green and even to black. The layers are perfectly

parallel and indicate an area of quiet deposition". The age of the deposit was assumed to be Cambrian. The fossils, classed as annelid remains, were named *Tasmanadia twelvetreesi*.

Fossils were found near the old Kirkup's slate deposit by Gulline (1967), in varved Permian sediments. Comparison between the new specimens and the original holotype of *Tasmanadia twelvetreesi* showed that both rocks consisted "of even laminations of siltstone and mudstone of varying colour with numerous erratic pebbles" (Gulline, 1967). The Kirkup's slate deposit is thus of Carboniferous age. The rock is a varved sediment, part of the Wynyard Tillite.

The original "Kirkup's slate find", as described by Henry Hellyer, was visited in 1987. The area is now traversed by numerous forestry roads. The "cliff" or steep bank near the large bend in the Arthur River is now heavily vegetated by regrowth, the area having been logged in recent years. The vegetation masks the cliffs which were, at the time of Hellyer's visit, quite visible.

CONCLUSIONS

Small deposits of slate suitable for tiling purposes do occur in Tasmania. Potential exists for additional areas other than the known deposits to be located in rock units such as the Mathinna Beds.

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