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LIMESTONE DEPOSITS AT WHITE ROCKS  
PARISH OF QUEANBEYAN

by

W. C. Smith

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In conjunction with an engineer of the Works and Housing Branch, a brief examination of the limestone deposits at White Rocks was made on 2/11/50 to determine their suitability as a source of road-metal and aggregate. The deposits have been mapped and described by D.J. Mahoney and T.G. Taylor (Report on a Geological Reconnaissance of the Federal Territory, 1913), and an enlarged copy of their plan is included with this report.

The character of the outcrops suggests that nearly half of the limestone would be unsuitable for crushing to half-inch size or larger. The only readily accessible limestone is the main southern deposit, whose inferred reserves of suitable limestone are about 30,000 cubic yards, interbedded with about 20,000 cubic yards of limestone which readily cleaves into thin plates. This is about half the reserves estimated by Taylor and Mahoney, partly because their estimate was of limestone suitable for cement-making.

LOCATION AND ACCESS

The limestone deposits at White Rocks occur in the Parish of Queanbeyan, on the western bank of the Queanbeyan River, about 2½ miles south of the town. The northern outcrops (A and B on the plan) lie in Water-and-Camping Reserve 42955, and the southern outcrops (C and D) lie in a quarry reserve. Access to these reserves is by an old track running east from a point about 100 yards south of the 2-mile peg on the Queanbeyan-Cooma road. The track runs just within the northern boundary fence of a grazing lease, and the distance from the road to the quarry in Outcrop C is approximately one mile.

DESCRIPTION OF LIMESTONE

The limestone is white, crystalline, and thinly bedded. In some horizons it cleaves readily along the bedding to give plates less than ¼ inch thick. This platy limestone may be unsuitable for crushing to the size required for road-metal or aggregate, and the exposures in the quarry at the northern end of Outcrop C indicate that the cleavage persists in depth. The remainder of the limestone is more massive in character, and, although it has colour-banding parallel to the bedding, it breaks irregularly under the hammer and should be suitable for crushing.

NORTHERN OUTCROPS

In the north-eastern corner of the water-and-camping reserve, there are two outcrops of limestone forming part of the high bank rising to 90 feet above an easterly bend of the river. These are interbedded with micaceous schistose rocks of possible volcanic origin and with phyllites. Between the two deposits there is an outcrop of porphyry, possibly a volcanic flow, and to the east and south-east there are quartz veins and tongues of granitic intrusives.

Outcrop A consists mainly of platy limestone, dipping north-east at 30 to 40 degrees. Only the top bed on the eastern side would be suitable for aggregate and road-metal, and this probably contains less than 5,000 cubic yards of limestone.

Outcrop B is a well-bedded but less platy limestone which may be suitable for aggregate and road-metal. It dips north-east at 50 degrees, and its north-western limit is obscured by soil. The best approach to this deposit is through the private property to the north, as the river bank is inaccessible. If the limestone continues under the soil cover far enough to permit quarrying down to river-level, there may be at least 20,000 cubic yards available.

#### SOUTHERN OUTCROPS

Within the quarry reserve, there are four outcrops of limestone, the largest of which (Outcrop C) forms a steep cliff rising to 150 feet above the river. They are interbedded with phyllites and are steeply folded with a pitch of 70 degrees east-north-east. Near the northern end of Outcrop C, there is a small exposure of granite.

Outcrop C, which forms the steep cliff above the river, consists of interbedded platy and more massive limestones. As it pitches east-north-east at 70 degrees and may be faulted on its eastern boundary, it probably contains only about 50,000 cubic yards of limestone above river-level. Of this no more than 30,000 cubic yards are suitable for aggregate and road-metal, the remainder being platy limestone.

This outcrop is accessible, almost to river-level, along an old track leading to a small quarry and the remains of an old kiln.

Outcrop D consists of three thin beds, mostly of platy limestone, separated by phyllite. The only limestone suitable for aggregate and road-metal is a thickness of about three feet on a steep cliff-face about 150 feet high. This should be accessible when Outcrop C has been worked out, and may yield about 3,000 cubic yards.

#### CONCLUSIONS

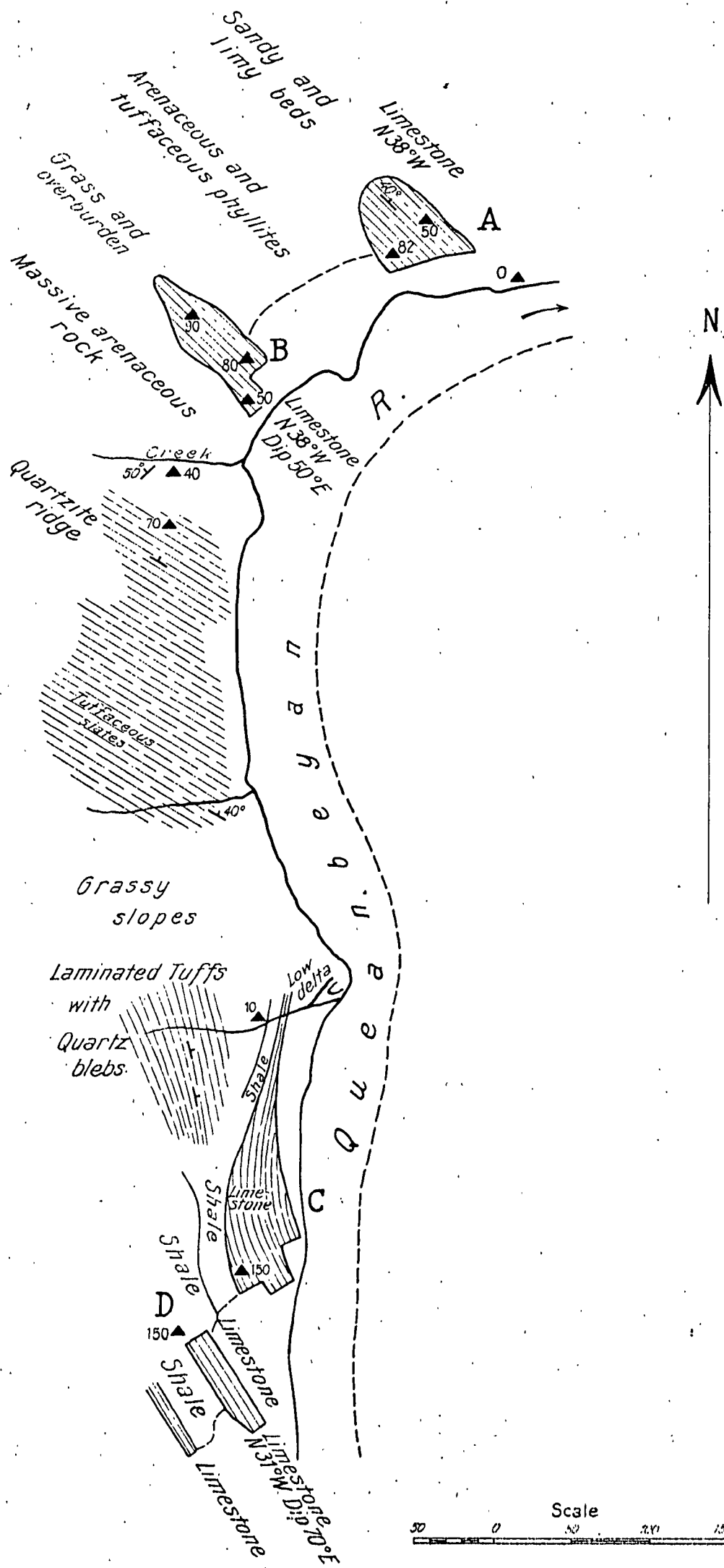
The most accessible limestone for immediate use is Outcrop C within the quarry reserve. This is three miles from Queanbeyan, and, if worked, would require the maintenance of one mile of earth track. Indicated reserves are about 30,000 cubic yards of the more massive limestone, but selection would be necessary if the platy limestone cannot be used.

Indicated reserves of Outcrop B are about 20,000 cubic yards, assuming that the limestone continues under the soil cover to the north-west; but, although the outcrop lies wholly within the water-and-camping reserve, the best access to it is through the private property to the north. Before attempting to work this deposit, it would be advisable to test the crushing properties of a representative sample and to dig a short costean within the private property to determine whether the limestone extends under the soil cover.

# White Rocks Limestone

## Parish of Queanbeyan, N.S.W.

after Mahoney and Taylor



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