TR7- 63- 66

15. LIMESTONE IN THE VALE OF BELVOIR

by V. M. Threader

SUMMARY

An estimated 300 million tons of low grade limestone occur in the Vale of Belvoir near Cradle Mountain in NW Tasmania.

INTRODUCTION

The Vale of Belvoir lies in the NE quarter sheet of the Mackintosh quadrangle.

There has been no previous mapping of the area, the only record being a brief description of rock types by Strzelecki (1845, p. 93).
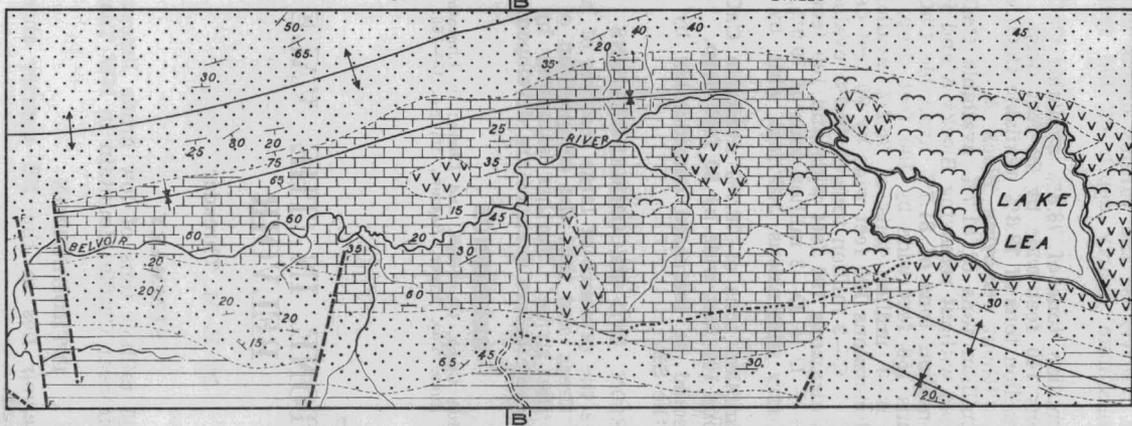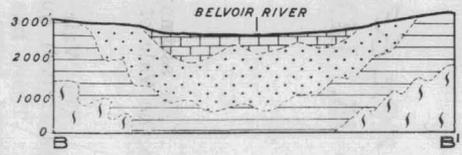
GEOLOGICAL MAP — VALE OF BELVOIR

FIGURE 19.

LEGEND

SEDIMENTARY
QUATERNARY
⌒⌒ SUPERFICIAL DEPOSITS
ORDOVICIAN
GORDON LIMESTONE
MOINA SANDSTONE
CAMBRIAN
PORPHYRY
PRECAMBRIAN
SCHISTS & SANDSTONE

IGNEOUS
TERTIARY
V V BASALT
STRUCTURAL
ANTICLINE
SYNCLINE
STRIKE & DIP OF STRATA

TOPOGRAPHICAL
═══ JEEP TRACK
······ FOOT TRACK

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BELVOIR RIVER

LAKE LEA

5 cm

64
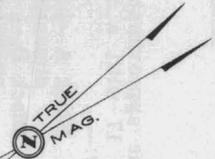
Access to the Vale is by a rough cart track running four miles westward from the Cradle Mountain Road. This is approximately the same as Fossey's track which later became known as the V.D.L. track. The turnoff is sign-posted approximately 21 miles from Wilmot and nine miles from Cradle Mountain.

PHYSIOGRAPHY

The Vale is four miles long and one mile wide with its long axis running NE-SW, and is drained by the Belvoir River, a tributary of the Mackintosh River. It is bounded in the NW by Black Range, in the SE by Bond Range, in the NE by Lake Lea and to the SW it narrows and is cut off by a bend in the river on a fault plane. Within these confines the elevation varies from 2,500 feet in the south at river level to 2,800 feet in the north at hill top level. The physiography is structurally controlled with a synclinal axis lying parallel to the long axis of the Vale. The main rock type is limestone and numerous sinkholes occur throughout. There is much underground drainage and the limestone outcrop appears cavernous. The evidence suggests a high proportion (estimated as up to 30-40%) of voids, a factor to be considered in estimating tonnages of limestone available for commercial purposes.

The average annual rainfall is 70 inches which, with the high elevation, accounts for the severity of the climate. There is no permanent settlement here and the land is only used as a summer pasture.

GEOLOGY

The Vale occupies a syncline in a sequence of folded rocks of the Junee Group. Gordon Limestone occurs in the trough of the syncline and the underlying Moina Sandstone and Owen or Roland Conglomerate are exposed on Black Range and Bond Range where the limestone has been removed by erosion. The fold measures approximately two miles from crest to crest across the Vale but appears to narrow southwards. The fold axis has been traced over a distance of eight miles.

There is abundant limestone outcrop along the Belvoir River, particularly in the southern portion, and there are prominent hills of it on either side of the V.D.L. track where it crosses the Vale. It is a uniform fine grained dark-blue rock streaked with calcite veins.

SUPERFICIAL DEPOSITS

The remnants of a basalt sheet occur on the edges of the Vale and, in places, as hill cappings within the Vale.

Dolerite boulders, weighing up to 5 tons or more, occur in the Vale as far north as Lake Lea. They presumably came from the Cradle Mountain area, approximately 10 miles away, and are found in great number on a hill separating the Belvoir River and Lake Lea drainage systems. This hill is probably a terminal moraine formed by north flowing glaciers. Other rock types, mainly Moina Sandstone, Roland Conglomerate and Cambrian porphyry also occur as erratics within the Vale.

ECONOMIC GEOLOGY

Eight sections across the Vale have been drawn; from these it is calculated that there are 580 million tons of limestone above the level of the river. After allowance has been made for voids

(estimated at 30%) and for possible inaccuracies in lithological boundaries a safe estimate would be in the order of 300 million tons. A composite limestone sample was taken across the Vale, and the analysis is given below.

Composite limestone sample from Vale of Belvoir: Assay No. 1826—

	%	
SiO_2	11.22	
Ti_2O_3	1.08	
Fe_2O_3	1.28	
CaO	46.20	(represents 82.5% $CaCo_3$)
MgO	2.19	(represents 4.6% $MgCo_3$)
Ignition loss	38.0	