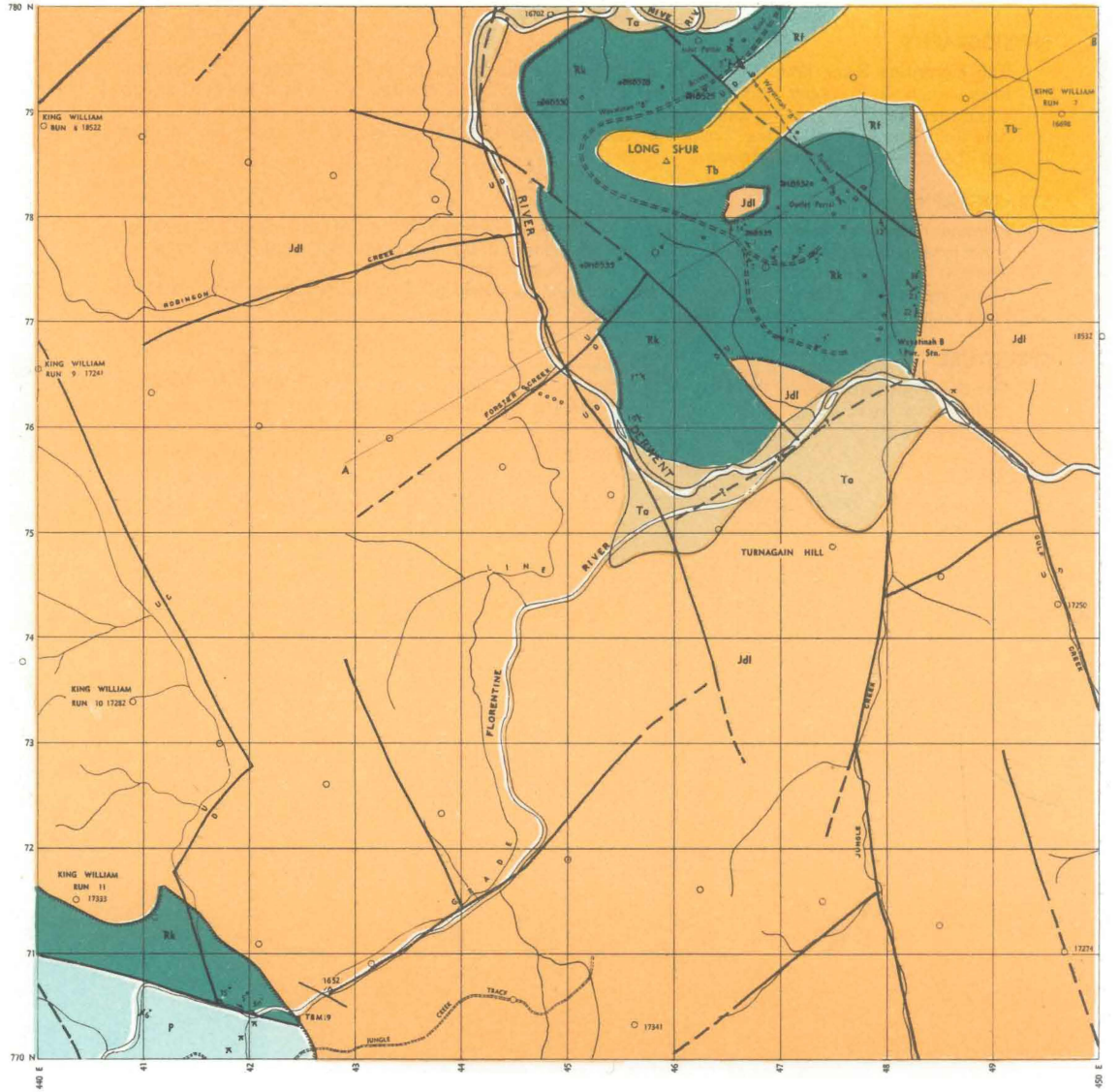
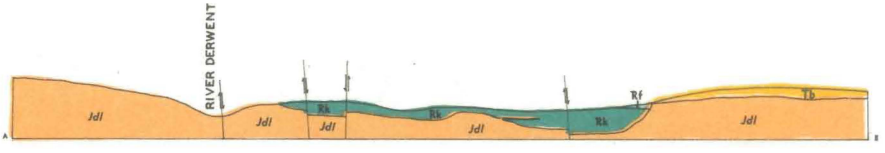
LONG SPUR

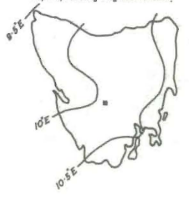




Tertiary System
Ta RIVER GRAVELS
Triassic System
Rf FELSPATHIC SANDSTONE
Rk KNOCKLOFTY SANDSTONE AND SHALE
Permian System
P UNDIFFERENTIATED PERMIAN SEDIMENTS
IGNEOUS ROCKS
Jurassic System
Jdl DOLERITE
Tertiary System
Tb BASALT

SCALE
0 1 2 MILES
0 5,000 10,000 FT.

Key Map Showing Magnetic Variation



Compilation from Aerial Photographs
Trigonometric Station Control by courtesy The Hydro-Electric Commission
Origin of co-ordinates 400,000 yds. West and 1,800,000 yds. South of True Origin of Zone 7.

Mapped and Compiled by I. B. Jennings.
September, 1954

FAULT
FAULT — POSITION APPROXIMATE
FORMATION BOUNDARY
STRIKE AND DIP
DOLERITE BOUNDARIES
DISCORDANT INTRUSIVE BOUNDARIES
DISCORDANT INTRUSIVE BOUNDARIES WITH CONCOMITANT FAULTING
VERTICAL JOINT
ROADS
TRACK
TRIG. STATION
BENCH MARK
ANEROID HEIGHT

N

THE GEOLOGY OF THE LONG SPUR AREA.

SHEET 44-77

PHYSIOGRAPHY.

The Florentine River flows through a steep mountainous gorge in this area to join the Derwent River which is in upper valley tract in this square. The Florentine River and several of its tributaries are partly fault controlled. Most of the hill slopes are very steep especially in the dolerite. The junction of the Florentine River with the Derwent is delayed for about half a mile but the cause of this is unknown.

STRATIGRAPHY.

Permian mudstones and sandstones occur in the south-western corner of this area. Knocklofty Sandstone and Shale occurs also in the south-west and on the lower slopes of Long Spur on which it is overlain transitionally by Feldspathic Sandstone.
These rocks are intruded by dolerite and overlain by flows of Tertiary basalt on the crest of Long Spur. Alluvium occurs in the river valleys.

STRUCTURE.

The dominant structure in the area is a normal fault trending just west of north and downthrowing to the north-east along which the Derwent flows in the northern part of the area. There are adjusting faults parallel and perpendicular to this.

REFERENCE.

Jennings, I. B., 1955: "Geology of the Mid-Derwent Area" **Pap. Proc. Roy. Soc. Tas.** Vol. 89.

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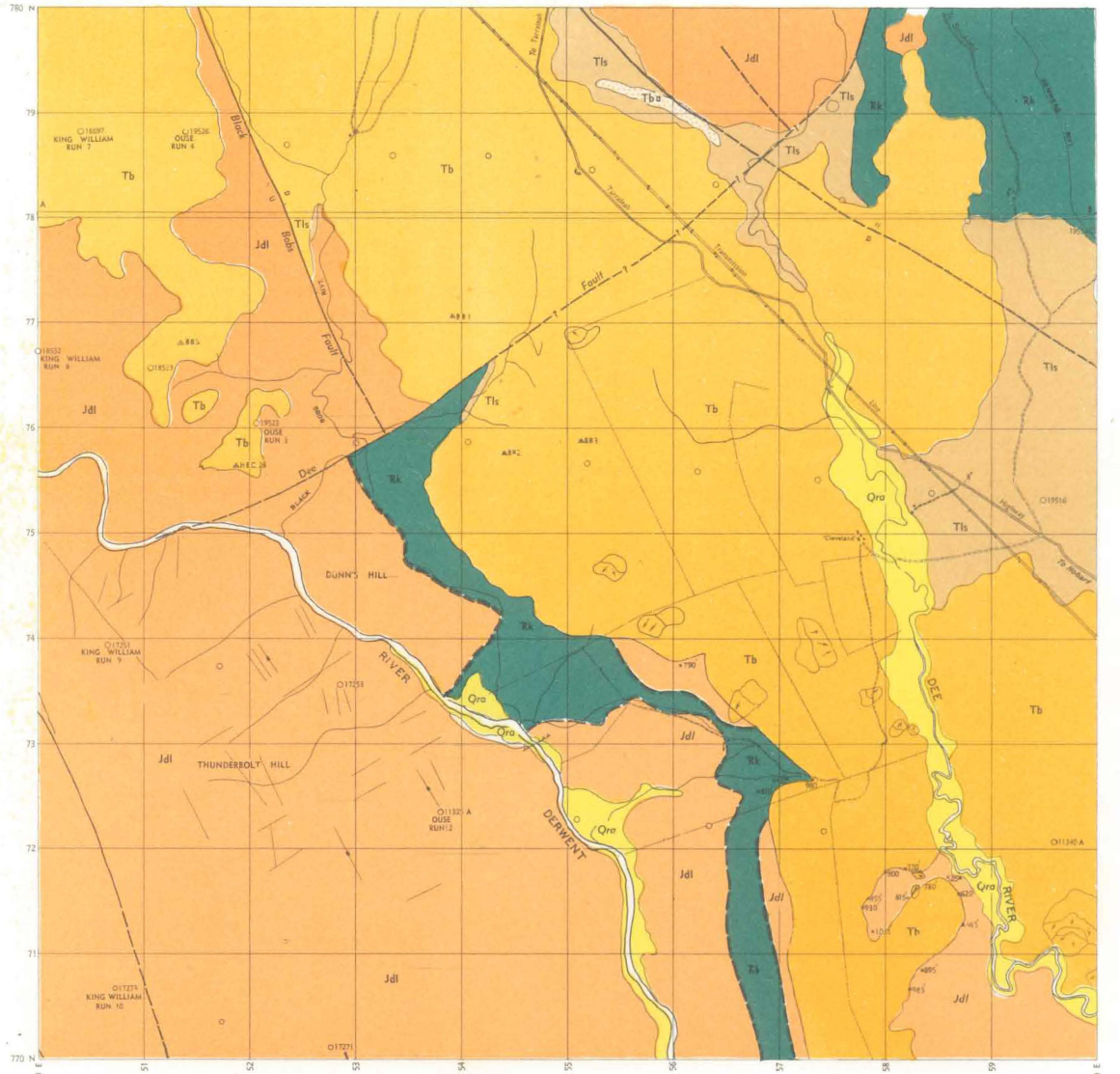
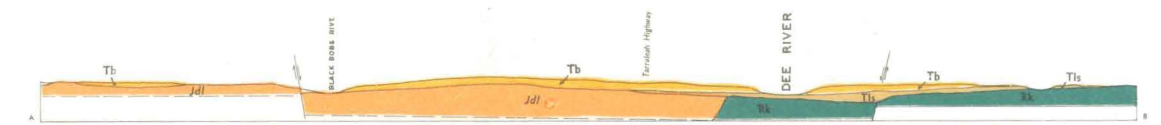
BLACK BOBS

45-77





Quaternary System

Qra ALLUVIUM

Tertiary System

Tls LAKE SEDIMENTS

Tba BAUXITE

Triassic System

Rk KNOCKLOFTY SANDSTONE AND SHALE

IGNEOUS ROCKS

Jurassic System

Jdl DOLERITE

Tertiary System

Tb BASALT

SCALE

0 1 2 MILES

0 5,000 10,000 FT.

Key Map Showing Magnetic Variation

Compilation from Aerial Photographs
Trigonometric Station Control by courtesy The Hydro-Electric Commission

Origin of co-ordinates 400,000 yds. West and 1,800,000 yds. South of True Origin of Zone 7.

Mapped and Compiled by I. B. Jennings

September, 1954

FAULT

FAULT — POSITION APPROXIMATE

FAULT INFERRED

FORMATION BOUNDARY

STRIKE AND DIP

DOLERITE BOUNDARIES

DISCORDANT INTRUSIVE BOUNDARIES

VERTICAL JOINT

ROADS

VEHICLE TRACK

TRIG. STATION

BENCH MARK

QUARRY

ANEROID HEIGHT

LANDSLIDE

THE GEOLOGY OF THE BLACK BOBS AREA.

SHEET 45-77.

PHYSIOGRAPHY.

Except for a short distance where it flows over Triassic shales, the Derwent River is in mountain tract in the area and is flowing roughly south-east. Black Bobs Rivulet is similarly mainly in mountain tract. The Dee River is in mountain tract in the north-east corner of the area where it flows over dolerite and sandstone but enters valley tract with meanders and a flood plain on Tertiary lake sediments and basalt. The local valley tract is produced by a resistant dolerite bar downstream.

STRATIGRAPHY.

Cross-bedded quartz sandstones and greenish-yellow shales of Triassic age outcrop in the north-east and near the centre of the square. They are intruded by dykes and sills of dolerite. Bauxite is exposed below basalt below the Liapootah Highway near the northern edge of the square. Tertiary lacustrine sands and clays outcrop in road cuttings in the Liapootah Highway and occur along the valley of the Dee River. Some poorly preserved plant remains are present. Above a silicified gravel there is a thickness of about a thousand feet of basalt in the form of a number of flows with interstratified clays. The basalt probably occupies a former river valley trending south-east.

STRUCTURE.

The area has been broken by faults of two ages. The Jurassic faults trending north-east occur near the junction of Black Bob's Rivulet and the Derwent and about a mile downstream. The Tertiary faults trend N.N.W. across the area.

ECONOMIC GEOLOGY.

Abundant road metal, dolerite or basalt, occurs in the area. Small outcrops of bauxite occur near the northern boundary of the sheet.

REFERENCE.

Jennings, I. B., 1955: The Geology of the Mid-Derwent Area. **Pap. Proc. Roy. Soc. Tas.** Vol. 89.

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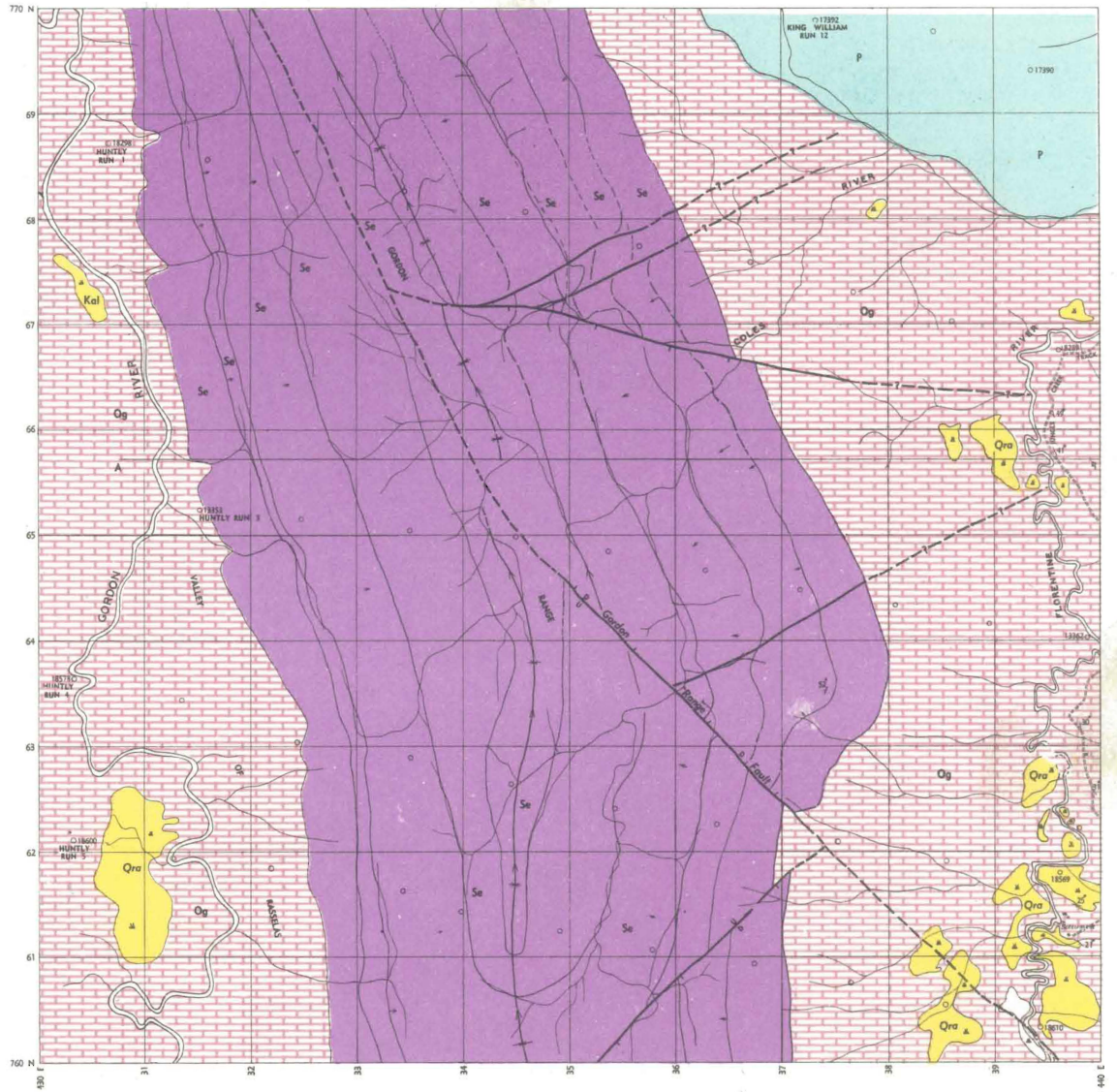
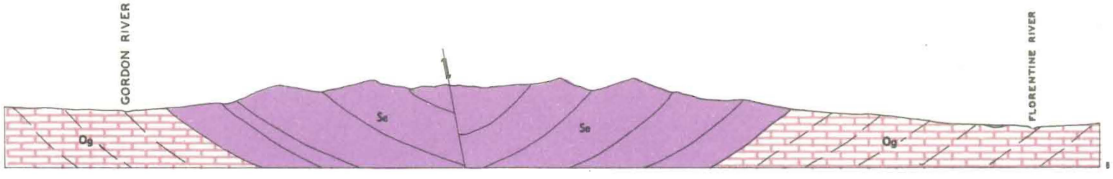
GORDON RANGE

43-76





Quaternary System

Qra MARSH DEPOSITS

Permian System

P UNDIFFERENTIATED PERMIAN SEDIMENTS

Eldon Group

Se
Se
Se
Se
Se
UNDIFFERENTIATED

Junee Group

Og GORDON LIMESTONE

SCALE

0 1 2 MILES

0 5000 10,000 FT.

Key Map Showing Magnetic Variation

Compilation from Aerial Photographs
Trigonometric Station Control by courtesy The Hydro-Electric Commission

Origin of co-ordinates 400,000 yds. West and 1,800,000 yds. South of True Origin of Zone 7.

Mapped and Compiled by I. B. Jennings.

September, 1954

FAULT INFERRED

FAULT WITH DOWNTHROW INDICATED

FAULT — POSITION APPROXIMATE

FORMATION BOUNDARY

FORMATION BOUNDARY POSITION APPROXIMATE

SYNCLINAL AXIS

TREND OF OUTCROP

STRIKE AND DIP

VEHICLE TRACK

TRACK

BENCH MARK

THE GEOLOGY OF THE GORDON RANGE.

SHEET 43-76.

PHYSIOGRAPHY.

The Gordon Range runs northerly through the centre of the map square with the flattish floored valleys of the Gordon and Florentine Rivers on either side. The range consists of cuestas and hog-backs of Eldon Group rocks. The Gordon River flows in a mature plain with swamps to the west of the range. The tributaries flowing into the Gordon from the Gordon Range are in mountain tract and show a well-defined trellis pattern. The Florentine River flows in a mature valley to the east of the range and its tributaries from the Gordon Range also show a trellis pattern.

STRATIGRAPHY.

Gordon Limestone of Middle and Upper Ordovician age occurs in the floor of the Gordon and Florentine Valleys. It is richly fossiliferous on some horizons near Benjamin and contains some sandy beds. It is overlain by quartzites and shales of the Eldon Group with a basal sandstone with tubicolar structures which may be the Crotty Quartzite. About fifteen hundred feet of Permian sediments overlie the Gordon Limestone unconformably. The basal beds are arkosic followed by limestones with interbedded quartz sandstones, and these are followed by sandstones, conglomerates and pebbly mudstones.

STRUCTURE.

The dominant structure is a northerly plunging syncline, symmetrical at the southern boundary of the sheet but asymmetrical further north due to the effect of the Gordon Range Fault which trends north-westerly at first but then runs north along the centre of the syncline. This fault and its associated minor faults are considered to be Tertiary in age. Flat-lying Permian sediments overlie the Gordon Limestone unconformably.

ECONOMIC.

Immense reserves of limestone are present in the Florentine Valley and road metal could be quarried from the Crotty Quartzite on the eastern side of the Gordon Range.

REFERENCES.

Carey, S. W., and Banks, M. R., 1954: Lower Palaeozoic Unconformities in Tasmania. **Pap. Proc. Roy. Soc. Tas.** Vol. 88, pp. 245-270.

Jennings, I. B., 1955: Geology of the Mid-Derwent Area. **Pap. Proc. Roy. Soc. Tas.** Vol. 89.

Opik, A. A., 1951: Notes on the Stratigraphy and Palaeontology of Cambrian, Ordovician and Silurian Rocks in Tasmania. **Bur. Min. Res. Geol. & Geophys.** Recs. 1951-5.

Twelvetrees, W. H., 1908: Tyenna to Gell River. **Dept. Lands and Surveys Dept.** 1907-08. **Parl. Paper** No. 13, 1908.

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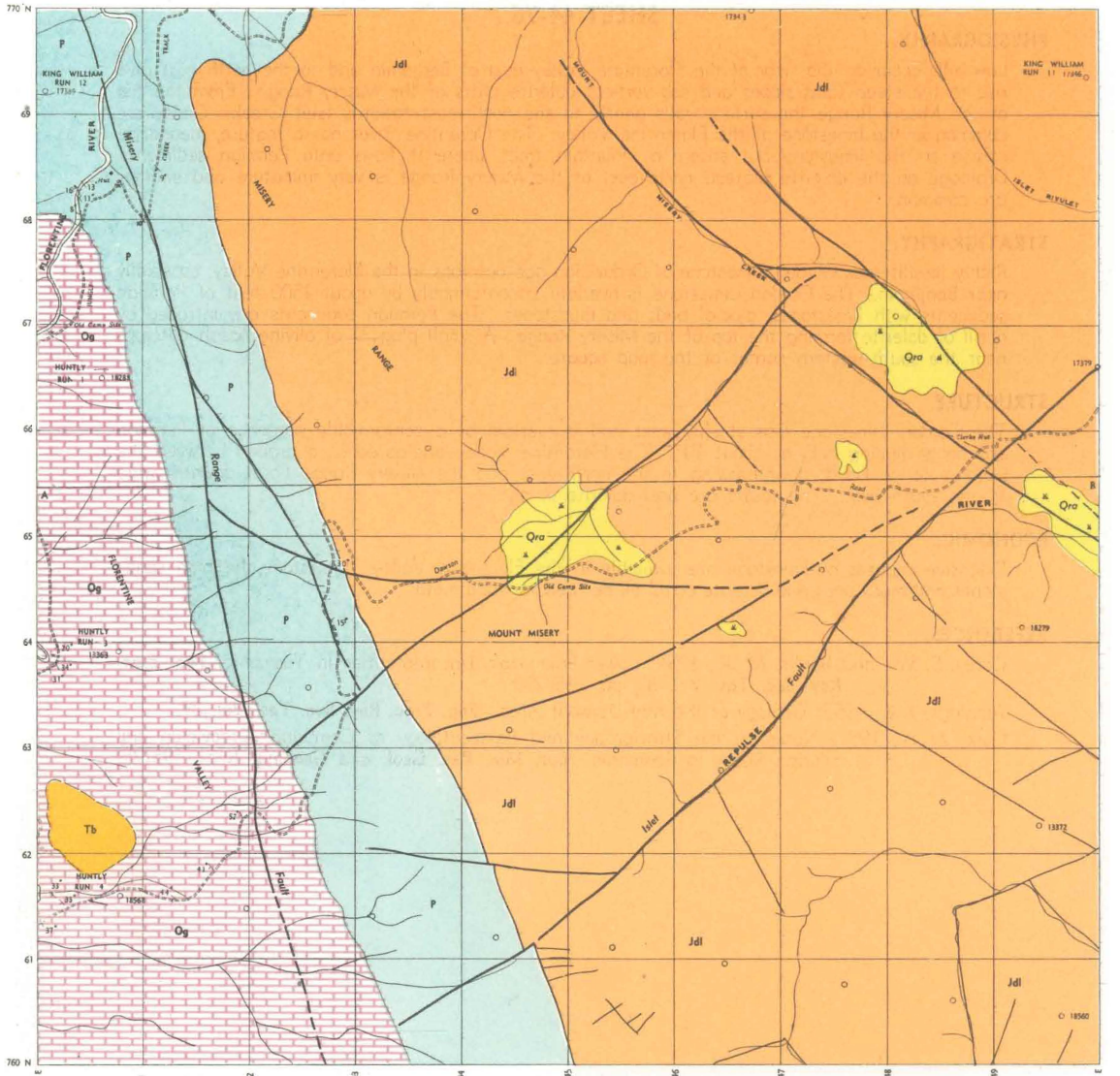
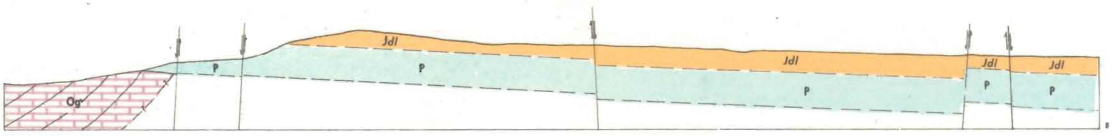
MISERY RANGE

44-76





Quaternary System

Qra MARSH DEPOSITS

Permian System

P UNDIFFERENTIATED PERMIAN SEDIMENTS

Junee Group

Og GORDON LIMESTONE

IGNEOUS ROCKS

Tertiary System

Tb BASALT

Jurassic System

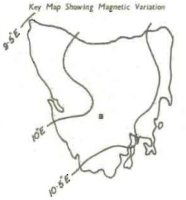
Jdl DOLERITE

SCALE

0 1 2 MILES

0 5,000 10,000 FT.

Key Map Showing Magnetic Variation



Compilation from Acrial Photographs Trigonometric Station Control by courtesy The Hydro-Electric Commission

Origin of co-ordinates 400,000 yds. West and 1,800,000 yds. South of True Origin of Zone 7.

Mapped and Compiled by I. B. Jennings

September, 1954

FAULT

FAULT — POSITION APPROXIMATE

FORMATION BOUNDARY

FORMATION BOUNDARY POSITION APPROXIMATE

STRIKE AND DIP

DOLERITE BOUNDARIES

CONCORDANT SILL

VEHICLE TRACK

TRACK

GEOLOGY OF MISERY RANGE.

SHEET 44-76.

PHYSIOGRAPHY.

Low hills occur on the floor of the Florentine Valley east of Benjamin and to the north-east give rise to the steep talus slopes and sub-vertical dolerite cliffs of the Misery Range. From the top of the Misery Range the surface falls gently to the north-east towards Islet Creek. Caves are common in the limestone of the Florentine Valley. The Florentine River has a mature, meandrine course on the limestone but enters a mountain tract where it flows onto Permian sediments. Drainage on the dolerite plateau north-east of the Misery Range is very immature and swamps are common.

STRATIGRAPHY.

Richly fossiliferous Gordon Limestone of Ordovician age outcrops in the Florentine Valley, especially near Benjamin. The Gordon Limestone is overlain unconformably by about 1500 feet of Permian sediments with limestones, glacial beds and mudstones. The Permian sediments are intruded by a sill of dolerite forming the top of the Misery Range. A small plug(?) of olivine basalt outcrops near the south-western corner of the map square.

STRUCTURE.

The Gordon Limestone dips steeply west and is overlain by a conformable sequence of Permian sediments dipping N.E. at about 10°. The Florentine Valley originated as a graben between the Gordon Range Fault, downthrowing to the north-east and the Misery Range Fault downthrowing to the south-west. The faults are post-dolerite in age.

ECONOMIC.

Extensive deposits of limestone are available in the Florentine Valley. Limestone, Permian sandstones and mudstones and dolerite could all be used for road metal.

REFERENCES.

Carey, S. W., and Banks, M. R., 1954: Lower Palaeozoic Unconformities in Tasmania. **Pap. Proc. Roy. Soc. Tas.** Vol. 88, pp. 245-270.

Jennings, I. B., 1955: Geology of the Mid-Derwent Area. **Pap. Proc. Roy. Soc. Tas.** Vol. 89.

Opik, A. A., 1951: Notes on the Stratigraphy and Palaeontology of Cambrian, Ordovician and Silurian Rocks in Tasmania. **Bur. Min. Res. Geol. and Geophys.** Recs. 1951/5.

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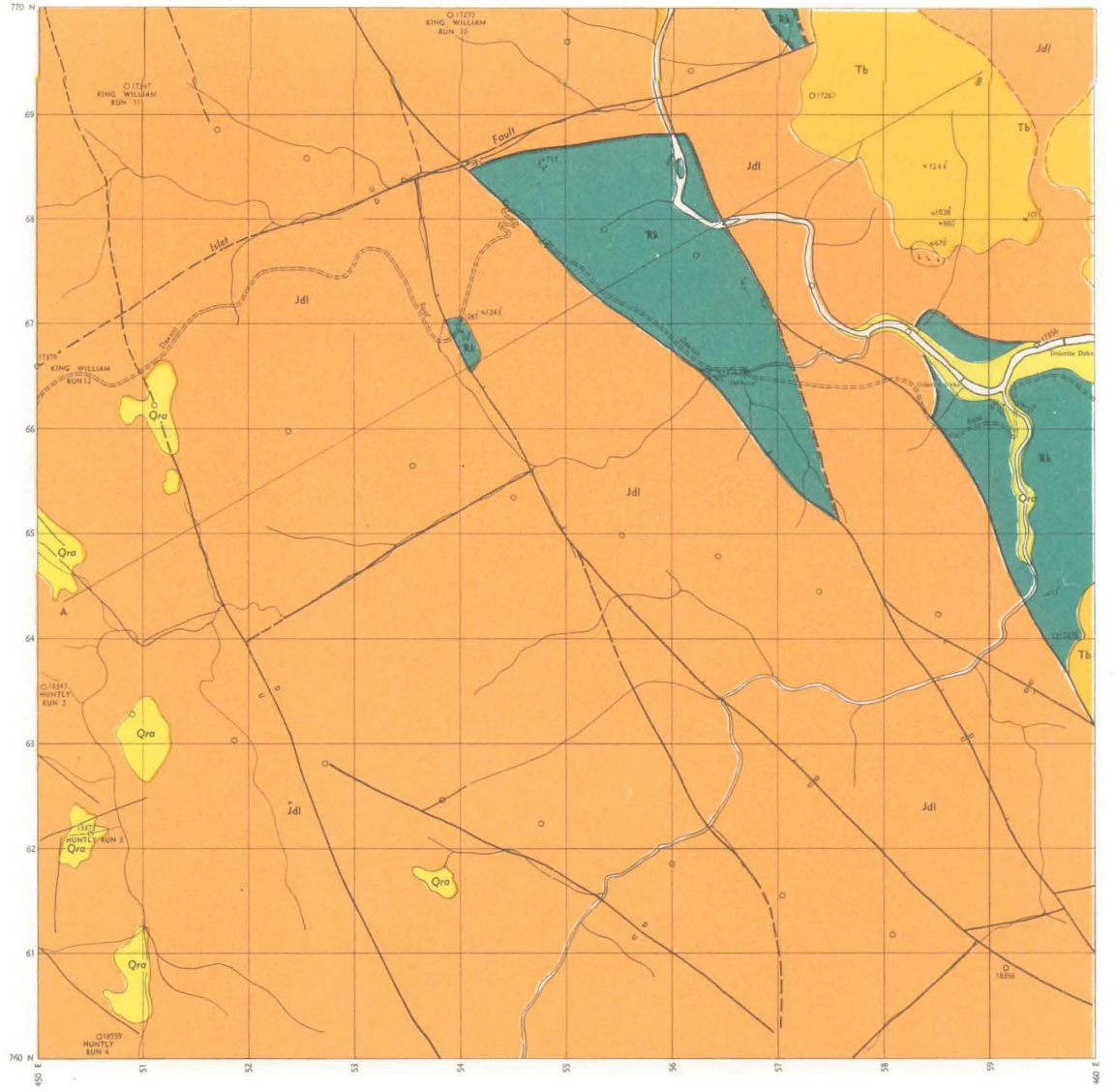
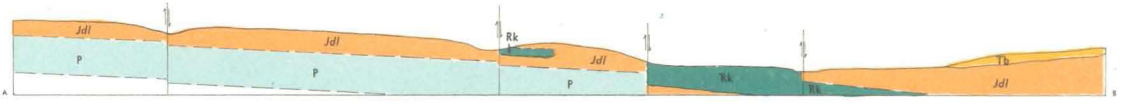
REPULSE

45-76





Quaternary System

Qra MARSH DEPOSITS AND ALLUVIUM

Triassic System

Rk KNOCKLOFTY SANDSTONE AND SHALE

IGNEOUS ROCKS

Tertiary System

Tb BASALT

Jurassic System

Jdl DOLERITE

SCALE

0 1 2 MILES

0 5,000 10,000 FT.

Key Map Showing Magnetic Variation

9.5E

10E

Compilation from Aerial Photographs
Trigonometric Station Control by courtesy The Hydro-Electric Commission

Origin of co-ordinates 400,000 yds. West and 1,800,000 yds. South of True Origin of Zone 7.

Mapped and Compiled by I. B. Jennings.

September, 1954

FAULT

FAULT POSITION APPROXIMATE

FORMATION BOUNDARY

FORMATION BOUNDARY POSITION APPROXIMATE

DOLERITE BOUNDARIES

DISCORDANT INTRUSIVE BOUNDARIES

DISCORDANT INTRUSIVE BOUNDARIES WITH CONCOMITANT FAULTING

STRIKE AND DIP

VERTICAL JOINT

VEHICLE TRACK

LANDSLIDE

THE GEOLOGY OF THE REPULSE RIVER AREA.

SHEET 45-76.

PHYSIOGRAPHY.

The area is mainly a deeply dissected youthful dolerite plateau sloping to the N.N.E. into the Derwent and cut by streams such as the Repulse River. The Derwent River is in valley tract with a flood plain developed towards the eastern boundary of the sheet and as many as four terraces. The north-eastern portion of the sheet consists of bare basaltic hills. The Derwent follows a course determined by the Tertiary faulting and the basalt. It follows the south-western margin of a structural trough. The Repulse and Islet Rivers are consequent streams on the dolerite plateau.

STRATIGRAPHY.

The oldest rocks present in this area are massive, cross-bedded sandstones and thinly-bedded micaceous shales of Triassic age. These have been intruded complexly by dolerite in the form of sills near the base and higher in the Triassic, and as dykes. Sub-basaltic clays and gravels of lacustrine and fluviatile origin outcrop beneath basalt at the eastern and north-eastern parts of the area.

STRUCTURE.

The main structure is a conformable sequence of Permian and Triassic sediments dipping N.E. at about 10° and intruded by dolerite sills and some dykes trending mainly just west of north and just north of east. This structure was later broken by faults of Tertiary age trending N.W. with a complementary set at right angles. The north-westerly faults mainly downthrow to the north-east.

REFERENCE.

Jennings, I. B., 1955: Geology of the Mid-Derwent Area. **Pap. Proc. Roy. Soc. Tas. Vol. 89.**